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ABSTRACT

Twnety-seven hypotheses relative to middle school operations were generated and tested through analyses of data gathered. Using various instruments data was obtained from: students, teachers, principals, and central administrative offices. Discussions and findings about the hypotheses are presented, and each is catalogued according to whether it was (1) accepted, (2) partially accepted, or (3) rejected. See also TM 000 935 and 936 for copies of the Student Questionnaire and the Teacher Questionnaire.
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FORT WORTH, TEXAS

SHORT TERM ASSESSMENT OF THE MIDDLE SCHOOL PLAN

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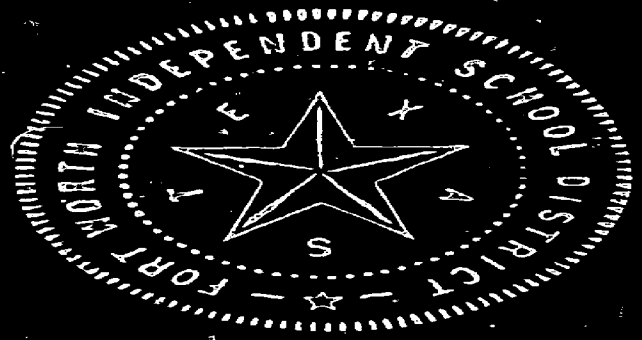

SHORT TERM ASSESSMENT OF THE MIDDLE SCHOOL PLAN

Prepared

for

Julius T. Truelson

Superintendent of Schools

Fort Worth Independent School District

by
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Director of Research
August, 1970

ABSTRACT OF FINDINGS

Twenty-seven hypotheses relative to middle school operations were generated and tested through analyses of data gathered. Using various instruments, data were obtained from varied sources: students, teachers, principals, and central administrative offices.

Discussions about each hypothesis are contained in the fore-going body of the present paper. Findings about each hypothesis are presented at the end of the discussions and are repeated below. Following this recapitulation of findings, hypotheses are catalogued according to whether they were (1) accepted, (2) partially accepted, or (3) rejected.

Recapitulation of Findings

Hypothesis 1a (p. 15-18)

> Middle schools to a greater extent than traditional junior high schools will feature innovative instructional practices.

The hypothesis is accepted.

The release from constrictions associated with the ninth grade facilitated the development of more flexible and innovative schools for children aged 11-14 featuring (1) team teaching, (2) continuous progress programs, (3) varied scheduling, and (4) greater opportunities for subject exploration.

Hypothesis 1b (p. 19-20)

> Innovative instructional programs at middle schools will stimulate building modifications in the direction of more open and flexible designs.

The hypothesis is accepted.

Of the nineteen building activities identified, fifteen involve developing open, flexible instructional areas.

Hypothesis 2a (p. 21-22)

> Middle school schedules for sixth graders will show blocks of time spent under the direction of one teacher (or a team of teachers) while eighth graders will be more or less completely departmentalized.

The hypothesis is rejected.

Grade levels within middle schools are on a single schedule. Differentiated scheduling, which would allow younger children to spend more time with a teacher (or team) than older children as a strategy to ease the transition from the self-contained organization of the elementary to the departmentalized organization of the high school, was not observed.

Hypothesis 2b (p. 23-24)

> Middle school faculties will be composed as substantial numbers of teachers with both elementary and secondary certification.

The hypothesis is accepted.

A significantly greater proportion of teachers in the two middle schools have elementary certification (79 per cent) than do those in the two junior high (45 per cent) schools.

Hypothesis 3a (p. 25-32)

> Sixth graders' physical characteristics will match those of seventh graders better than those of fifth graders.

The hypothesis is accepted.

Sixth grade boys -- on measures of weight and height -- differed slightly more from boys in grades five than from those in grade seven. Sixth grade girls differed considerably more from fifth grade girls than from seventh grade girls on those two measures.

Hypothesis 3b (p. 25-32)

Ninth graders' physical characteristics will match those of tenth graders better than those of eighth graders.

The hypothesis is partially accepted.

Ninth grade boys were more similar to tenth grade boys in height but more similar to eighth grades boys in weight. As girls had achieved the major portion of their ultimate height and weight in grade eight, differences thereafter were small and irrelevant.

Hypothesis 4a (p. 33-35)

Seventh and eighth grade students at middle schools will date less frequently than those at junior high schools

Hypothesis 4b (p. 33-35)

Ninth grade students at high schools will not date more frequently than those at junior high schools.

Hypothesis 4a is partially accepted.

Hypothesis 4b is accepted.

Dating practices of junior high eighth graders did not significantly differ from those in the same grade at middle schools. However, eighth grade students in a two-year middle school were found to date significantly less than eighth graders who had experienced middle school for only one year.

Dating practices of ninth graders in a high school setting were not found to differ significantly from those in a junior high setting, although the trend favored the former group.

It may be postulated that parental attitudes and individual maturation continue to be the dominating factors in determining the social life of adolescents. However, some evidence was gathered which would support a prediction of further reduction in the dating behavior of eighth graders as junior high experienced students depart from middle schools. The type of school related activities that are allowed to emerge certainly must also be a factor in determining social behavior.

Hypothesis 5a (p. 37-39)

> Substantially fewer inter-school athletic contests will be scheduled between middle schools than previously between junior high schools.

The hypothesis is rejected.

Middle schools schedule as many football games and more basketball games than previously under the junior high school organization.

However, several other aspects of the athletic program in the middle schools have been restricted in ways that are likely to lessen the impact of athletics on the total school life. These restrictions include (1) the elimination of pep rallies, cheer leaders, and marching bands, (2) the discouragement of student attendance at away-from-home games, and (3) the scheduling of games on local school fields.

Hypothesis 5b (p. 40-42)

> Substantial numbers of intra-school athletic contests and activities will be scheduled under the middle school organization.

The hypothesis is accepted.

Monthly reports from schools about activities suggest that substantial opportunity has been afforded middle school students to engage in inter-school contests. Schedules of activities have been developed and capable personnel provided to direct the activities.

Hypothesis 5c (p. 43-45)

Substantial proportions of middle school students will participate in athletic contests and activities.

The hypothesis is partially accepted.

Substantial and increasing involvement of children at a few schools and plans at others to re-kindle both student and staff interest in inter-school athletic contests and activities provides support for the partial acceptance of the hypothesis. A general slowness for students to respond to the programs at many schools necessitates a partial rejection.

Hypothesis 6a and 6b (p. 46-47)

6a Fewer dances and pep rallies will be officially scheduled under the middle school program than previously under the junior high program.

6b Marching bands will not be organized under the middle school program.

The hypotheses are accepted.

Many high school-oriented characteristics have been systematically excluded from the middle school program: dances, cheer leaders, pep rallies, and marching bands.

Hypothesis 7a (p. 48-49)

Many sixth graders in middle schools will enroll in classes involving subject matter not available in elementary schools.

The hypothesis is partially accepted.

Classes have been generally organized in Spanish for sixth graders. Homemaking and industrial art classes have, for the most part, limited enrollments to older students.

Hypothesis 7b (p. 50)

> Many sixth grade students in middle schools will spend some portion of their school day in specialized instructional areas not available in elementary schools.

The hypothesis is accepted.

Seventy per cent of middle school sixth graders named specialized instructional areas personally used by them that are not available in elementary schools.

Hypothesis 7c (p. 51-53)

> Sixth graders in middle schools will have teachers who are more specialized than will sixth graders in elementary schools.

The hypothesis is accepted.

Middle school teachers of sixth graders are certified for higher levels of instruction and are more likely to be specialists in their teaching fields.

Hypothesis 8a (p. 54)

> A substantial proportion of ninth graders in high schools will enroll in classes involving subject matter and/or specialized areas not normally available in junior high schools.

The hypothesis is accepted.

Approximately one-half of ninth graders questioned were able to name a subject or area available to them as a result of high school attendance.

Hypothesis 8b (p. 55-57)

> Ninth graders in high schools will have teachers available who are more specialized than those available to ninth graders in junior high schools.

The hypothesis is accepted.

High school teachers of ninth graders at two schools had earned substantially more hours of college credit in their areas of instruction than had junior high school teachers of ninth graders.

Hypothesis 9a (p. 57)

> Middle school students will have increasing amounts of scheduled independent study time as they proceed through grade levels.

The hypothesis is rejected.

Evidence was not produced through interviews with principals to indicate that older students in middle schools were allotted progressively greater amounts of independent time.

Hypothesis 9b (p. 58-60)

> Middle school students will exhibit improved competence in self-direction as they proceed thru middle school.

The hypothesis is partially accepted.

Nearly one-half (44 per cent) of teachers anonymously questioned expressed belief that student skills in self-direction were improving, whereas less than one-fourth (22 per cent) expressed belief that they were decreasing.

On a related question about improvements in conduct over the previous year, teachers could not agree. Nor could teachers agree whether or not substantial behavioral problems were arising during independent study time.

However, a large (but not major) proportion did express concern about the greater freedom provided students under the middle school philosophy.

Hypothesis 9c (p. 61-62)

> Middle school students will express greater feelings of self-worth then will similar junior high school students.

The hypothesis is rejected.

Differences in measures of self-worth obtained on middle school students were not significantly different from those obtained on a similar group of junior high school students.

Hypothesis 10 (63-65)

> Eighth graders who have one year of middle school experience will match or out-perform similar eighth graders with no middle school experience on a standardized achievement test battery.

The hypothesis is accepted.

The performance of middle school experienced students slightly, but not significantly, exceeded that of junior high experienced students on a measure of academic achievement.

Hypothesis 11a (p. 66-73)

> Middle school teachers will express general acceptance of middle school concepts.

The hypothesis is partially accepted.

A large majority of middle school teachers favored the combination of grades 6, 7, and 8, and generally favored middle school concepts. However, teachers tended to question many practices basic to current middle school objectives.

Hypothesis 11b (p. 74-77)

Middle school teachers will score higher on a measure of pupil-teacher rapport than will junior high teachers.

The hypothesis is accepted.

Teachers in schools that had operated as middle schools for two years scored significantly higher on the Minnesota Teacher Attitude Inventory than junior high teachers or one-year middle school teachers.

Hypothesis 11c (p. 78-83)

Individual guidance provided for middle school students will be superior to that provided junior high students.

The hypothesis is rejected.

Responses of students at two middle schools did not support the existence of a systematic plan by which teachers or other staff members profide student guidance, and three-fourths of a randomized sample of teachers from all middle schools refused to confirm an increase in student guidance at their schools.

Hypothesis 11d (p. 84-85)

The school drop-out rate of seventh, eighth, and ninth graders will decrease under the middle school plan.

The hypothesis is rejected.

A system-wide decrease in the drop-out rate was achieved in 1969-70, but the decrease was unrelated to the middle school movement.

Hypothesis 11e (p. 86-88)

The average daily attendance rates for grades 7, 8, and 9 will improve under the middle school organization.

The hypothesis is rejected.

The drop-out rate for grade eight was significantly reduced, but

that for grade nine and for the school system at large significantly increased. The increase in rate for the system increased from 5.4 per cent to 6.1 per cent, most of it occurring at grade nine.

Hypothesis 11f (p. 89-91)

Proportions of male teachers will not diminish at middle schools or at elementary schools.

The hypothesis is partially accepted.

The decrease in the proportion of men teachers at both the elementary and middle school level approached significance. The proportion of elementary men to the total elementary staff diminished from 8.2 per cent in 1967-68 to 6.4 per cent in 1969-70. In the middle schools, the decrease was from 34 per cent in 1968-69 to 31 per cent in 1969-70.

Accepted, Partially Accepted, and Rejected Hypotheses

Accepted:

Hypothesis 1a -- Middle schools to a greater extent than traditional junior high schools will feature innovative instructional practices.

Hypothesis 1b -- Innovative instructional programs at middle schools will stimulate building modifications in the direction of more open and flexible designs.

Hypothesis 2b -- Middle school faculties will be composed as substantial numbers of teachers with both elementary and secondary certification.

Hypothesis 3a -- Sixth graders' physical characteristics will match those of seventh graders better than those of fifth graders.

Hypothesis 4b -- Ninth grade students at high schools will not date more frequently than those at junior high schools.

Hypothesis 5b -- Substantial numbers of intra-school athletic contests and activities will be scheduled under the middle

Hypothesis 6a -- Fewer dances and pep rallies will be officially scheduled under the middle school program than previously under the junior high program.

Hypothesis 6b -- Marching bands will not be organized under the middle school program.

Hypothesis 7b -- Many sixth grade students in middle schools will spend some portion of their school day in specialized instructional areas not available in elementary schools.

Hypothesis 7c -- Sixth graders in middle schools will have teachers who are more specialized than will sixth graders in elementary schools.

Hypothesis 8a -- Numbers of ninth graders in high schools will enroll in classes involving subject matter and/or specialized areas not normally available in junior high schools.

Hypothesis 8b -- Ninth graders in high schools will have teachers available who are more specialized than those available to ninth graders in junior high schools.

Hypothesis 10 -- Eighth graders who have one year of middle school experience will match or out-perform similar eighth graders with no middle school experience on a standardized achievement test battery.

Hypothesis 11b - Middle school teachers will score higher on a measure of pupil-teacher rapport than will junior high teachers.

Partially Accepted:

Hypothesis 3b -- Ninth graders' physical characteristics will match those of tenth graders better than those of eighth graders.

Hypothesis 4a -- Seventh and eighth grade students at middle schools will date less frequently than those at junior high schools.

Hypothesis 5c -- Substantial proportions of middle school students will participate in athletic contests and activities.

Hypothesis 7a -- Many sixth graders in middle schools will enroll in classes involving subject matter not available in elementary schools.

Hypothesis 9b -- Middle school students will exhibit improved competence in self-direction.

Hypothesis 11a -- Middle school teachers will express general acceptance of middle school concepts.

Hypothesis 11f -- Proportions of male teachers will not diminish at middle schools or at elementary schools.

Rejected:

Hypothesis 2a -- Middle school schedules for sixth graders will show blocks of time spent under the direction of one teacher (or a team of teachers) while eighth graders will be more or less completely departmentalized.

Hypothesis 5a -- Substantially fewer inter-school athletic contests will be scheduled between middle schools than previously between junior high schools.

Hypothesis 9a -- Middle school students will have increasing amounts of scheduled independent study time as they proceed through grade levels.

Hypothesis 9c -- Middle school students will express greater feelings of self-worth then will similar junior high school students.

Hypothesis 11c -- Individual guidance provided for middle school students will be superior to that provided junior high students.

Hypothesis 11d -- The school drop-out rate of seventh, eighth, and ninth graders will decrease under the middle school plan.

Hypothesis 11e*-- The average daily attendance rates for grades 7, 8, and 9 will improve under the middle school organization.

*The ADA rate improved for the system as a whole but was not necessarily related to the middle school plan.

Summary Statements

Most of the major objectives of the middle school re-organization are being attained. Considerable progress has been affected in generating schools for young adolescents which are (1) developing flexible schedules and innovative curricula, (2) excluding high school oriented characteristics, (3) providing enriched experiences for sixth graders, (4) combining more compatible age groups, and (5) developing staffs which tend to be more nurturing, supportive, and accepting of students aged 11-14. Academic progress of students has been maintained during this initial adjustment period.

The data indicate that little progress has been affected toward the goal of providing a "bridge" between elementary and high schools in terms of easing the transition from modified self-contained to departmentalized organizations and in terms of scheduling differentiated opportunities for various age groups to develop skills in self-direction. The data also indicate that little progress has been made toward the goal of supplying the substantial amount of individual guidance recommended for adolescents by proponents of the middle school philosophy.

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SHORT-TERM ASSESSMENT OF THE MIDDLE SCHOOL PLAN

INTRODUCTION

As educational programs develop, it is appropriate to gather data periodically relative to the extent to which procedures are operational and to which original objectives are being met or approached. Initial plans for middle school implementation by Fort Worth Public School Administrators included continuous evaluation.

> The middle school needs to be checked frequently to be sure that it is achieving the purpose for which it was designed (6, p. 23, 1 a).
>
> Hypotheses which underlie the middle school should be periodically checked for validity and achievement (6, p. 23, 1b).
>
> Evaluation should provide feedback for improving or modifying existing practices (6, p. 23, 1c).

The present evaluation, after one year of middle school operation, tends properly to focus on the processes and may be described basically as an evaluation of procedures. It attempts primarily to answer the question, "Is the middle school organization proceeding as designed?"

Effects of the "middle school philosophy" on students and staffs are expected to be long-term, and an appraisal of these effects should be more fruitful after three to five years. However, efforts will be made at the present point to ascertain any immediate change in student academic achievement, social behavior, or self concept, and in teachers' attitudes toward children and belief in the middle school concept.

Implementation of the Middle School organization

During the year 1967-68 the superintendent initiated procedures designed to tap staff and community attitudes relative to a possible re-organization of schools into a 5-3-4 plan to replace the existing 6-2-3. The design would combine grades 6, 7, and 8 in the middle schools. Following a favorable response, the Board of Education acted to approve the implementation of the middle school concept in four schools during 1968-69: the new Leonard School, Meacham Junior High, Elder Junior High, and Riverside Junior High. In 1969-70 all other junior high schools converted to the 6, 7, and 8 grade plan with the exception of Handley and Meadowbrook Junior Highs and three junior-senior highs (grades 7-12): Como Junior-Senior High, Kirkpatrick Junior-Senior High, and I. M. Terrell Junior-Senior High.

Availability of space for ninth graders at the various high schools was the key to the re-organization. Present building plans will enable the Handley and Meadowbrook Junior Highs to move to the middle school plan in 1970-71 and for Kirkpatrick and Como Junior Highs to convert in 1971-72. The contemplated completion of a new high school in the Morningside area will allow I. M. Terrell Middle School to become operational at that time.

Rationale for the Middle School Organization

Why a re-organization of grade levels? The literature from the educational domain indicts the traditional junior high in two basic areas.

First, the presence of an offical high school grade has forced the entire junior high into an organization that is generally characterized as

rigid and unresponsive to the great variance in needs, interests, and talents of adolescents (6 , p. 1; 2 , p. 8). In a report to the Association for Supervision and Curriculum Development, the Commission on Secondary Curriculum wrote:

> Is today's high school program truly geared to meet such characteristics of today's younsters? The realistic answer must be a reluctant "no" (2 , p. 8-9).

As the ninth grade is subject to the Carnegie Unit requirements, among other*, restrictions have been applied to the intact junior high organization. It is felt that this constriction has been translated into a rigid, non-innovative instructional program that has not recognized uniqueness of students and subject matter. In non-instructional areas the junior high is described by critics as a mini-high school with activities designed for and focusing on the needs and interests of the more mature ninth graders (6 , p. 1; 2 , p. 10).

Second, new growth patterns of present-day youth (5, p. 1), both physically and socially, are pictured as resulting in student incompatibility within the 6-3-3 plan. The presence of ninth graders (15 year olds) in junior highs now seemingly brings undue social pressure on seventh and eighth graders while sixth graders (12 year olds) are cast in a similar role in the elementary school (6 , p. 1).

Major plans for correcting the deficiencies of the junior high will revolve around a re-organization of the schools into a 5-3-4 structure

*Also, classes must be 55 minutes in length; no class may exceed 35 students except band, etc.; only 10 per cent of the faculty may teach more than 150 students per day, and none may have more than 155 per day (12).

with grades 6, 7, and 8 in the middle school, and the adoption of the "middle school concept"(6 , p. 5-14). The following organizational advantages are possible through the adoption of this organization and philosophy:

1. The release from the Carnegie Unit requirements would free the middle school to become flexible and innovative in designing instructional programs to fit the specific needs of children aged 11-14 (6,#1, # 3; 8, p. 1-4).
2. Experiences and programs may be planned for age groups that are more physically and socially compatable: grades K-5 at the elementary level; grades 6-8 at the middle school level; and grades 9-12 at the high school level.
3. A transitional stage may be provided to bridge the gap as the child moves from the basically self-contained (one teacher for all subjects) classroom of the elementary school to the totally departmentalized (specialized teachers for separate subjects) organization of the high school (6 , p. 3, # 5).

Special needs of young adolescents will be met by the following middle school procedures:

1. Twelve year olds will have an opportunity to benefit from the specialized knowledge of middle school teachers and an expanded curriculum (6 , p. 2, # 2 & # 6).
2. Greater opportunities will be provided for students to explore subject fields and interests through increasing the number of available electives (6, #9).

3. Greater opportunities will be provided for students to receive individual guidance through increased interaction with a more nurturing staff of teachers and administrators (6, # 9).
4. Pressure to conform to more sophisticated behavior patterns of older adolescents would be lessened through elimination of high school oriented extra-curricula activities (6. # 7).
5. Increased opportunities for individual diagnosis and prescription will be provided through team teaching, continuous progress, intramural sports, etc. (6, #1, # 3).
6. Increased opportunities will be provided for students to gain in self-direction, self-knowledge, and self-worth through availability of larger numbers of exploratory courses, electives, non-scheduled time, continuous progress classes, and increased guidance from a supportive staff.
7. Ninth graders will have an opportunity to benefit from the more specialized program of the high school in terms of teacher specialists and sophisticated learning areas.

EVALUATIVE PROCEDURES

A tentative evaluation design was developed in four stages: (1) identification of objectives, (2) translation of objectives into measureable hypotheses, (3) selection of data-gathering instruments and sources, and (4) the stipulation of appropriate data analysis techniques. Results of these four steps are summarized in Appendix A.

Objectives and Hypotheses

Objectives were identified and summarized from those listed and discussed in the Handbook for Principals of Middle Schools (6). These objectives were then critiqued for the Research Department by FWISD administrators for accuracy in reflecting the goals of the middle school movement in Fort Worth.

Each initial objective and each potential problem area was translated into one or more hypotheses. The hypotheses, with related objectives, are listed below:

Objectives	Hypotheses
1. A release from the Carnegie Unit constriction will facilitate innovative organizational patterns focusing on individualization of instructions.	1a. Middle schools, to a greater extent than traditional junior high schools will feature innovative instructional practices of the following types: a. team teaching b. flexible scheduling c. independent study time d. non-graded or continuous progress plans e. subject exploration opportunities

	1b. Innovative instructional programs at middle schools will stimulate building modifications in the direction of more open and flexible designs.
2. The transition for students from the semi self-contained elementary classroom to the fully departmentalized high school organization will be eased.	2a. Middle school schedules for sixth graders will allow for blocks of time to be spent under the direction of one teacher (or a team) while eighth graders will be almost completely departmentalized.
	2b. Middle school faculties will be composed of teachers with both elementary and secondary certification.
3. The middle school will bring together pupils who are more compatible.	3a. Sixth graders' physical characteristics will match those of seventh graders better than fifth graders.
	3b. Ninth graders' physical characteristics will match those of tenth graders better than eighth graders.
4. The exclusion of the more socially mature ninth graders will ease social pressure on seventh and eighth graders.	4a. Eighth graders at middle schools will date less frequently than eighth graders at junior high schools.
	4b. Ninth graders at high schools will not date more frequently than ninth graders in junior high schools.
5. An emphasis on intra-school sports will be facilitated by a de-emphasized athletic program.	5a. Substantially fewer inter-school athletic contests will be scheduled between middle schools than previously between junior high schools.
	5b. Substantial numbers of intra-school athletic contests will be scheduled under the middle school organization.

5c. Substantial proportions of students, of both sexes, will participate in athletic contests and activities under the middle school organization.

6. The absence of ninth graders will allow the middle school to exclude many high school characteristics.

6a. Fewer dances and pep rallies will be officially scheduled under the middle school program than previously under the junior high program.

6b. Marching bands will not be organized under the middle school program.

7. An enriched curriculum and more specialized teachers and facilities will be available for sixth graders.

7a. Many sixth graders in middle schools will enroll in classes involving subject matter not available in elementary schools.

7b. Many sixth grade students in middle schools will spend some portion of the school day in specialized instructional areas not available in elementary schools.

7c. Sixth graders in middle schools will have large proportions of teachers who are subject-specialists than will sixth graders in elementary schools.

8. An enriched curr culum and more specialized teachers and facilities will be available for ninth graders.

8a. A substantial proportion of ninth graders will enroll in classes involving subject matter and/or specialized areas not available in junior high schools.

8c. Ninth graders in high schools will have teachers available who are more specialized than those available to ninth graders in junior high schools.

9. Flexible scheduling will provide greater opportunities for students to gain competence in self-direction.

9a. Middle school students will have increasing amounts of scheduled independent study time as they proceed through the middle school instructional levels.

9b. Middle school students will exhibit improved competence in self-direction as they proceed through middle school instructional levels.

9c. Middle school students will express greater feelings of self-worth than will similar students in junior high schools.

10. Academic achievement will be maintained and possibly improved.

10a. Eighth graders who have one year of middle school experience will match or out-perform similar eighth graders with no middle school experience on a standardized achievement test battery.

11. The philosophy of the middle school movement, in terms of meeting the specific needs of young adolescents will be reflected in the flexible, supportive attitudes of middle school teachers and in the substantial provisions for individual guidance.

11a. Middle school teachers will express general acceptance of concepts.*

11b. Middle school teachers will score higher on a measure of pupil-teacher rapport than junior high teachers.

11c. Individual guidance available for middle school students will be substantial and superior to that offered previously under junior high organizations.

*Educational Research Service, NEA, Circular No. 2, 1969, p. 17, "What is the Difference Between a Middle School and a Junior High School?"

lld. The school drop-out rate of 7th, 8th, and 9th graders will decrease under the middle school program.

lle. The average daily attendance rate for grades 7, 8, and 9 will improve due to the middle school plan.

llf. The proportion of male teachers will not change in either elementary or middle schools.

Data Gathering Techniques

Two junior high schools were available in 1969-70 for utilization as comparative schools. Two middle schools were matched with these in terms of socio-economic status and academic achievement. This paring facilitated some comparisons between students and staffs at traditional junior high schools and newly organized middle schools. These matched pairs will be referred to continually in the section reporting results. Table I shows the average achievement at the two middle schools and the two comparative schools as determined from a 1969-70 fall administration of the Iowa Tests of Basic Skills at grade eight.

TABLE I: ACADEMIC ACHIEVEMENT AT THE PAIRED SCHOOLS

Schools	Average Percentile Ranks, Iowa Tests of Basic Skills, Grade 8, 1969-70					
	Vocab.	Read.	Lang.	Social Studies	Arith.	Composite
Pair A						
Middle School	73	55	63	74	43	63
Junior High	76	46	71	61	48	63
Pair B						
Middle School	65	46	58	44	26	47
Junior High	61	46	58	48	20	47

Ethnic proportions were not involved as all schools served predominately white communities. Schools were not well matched in size. The two middle schools enrolled over 2400 students compared to near 1600 students in comparative schools.

Various instruments and techniques of data gathering were employed to test the hypotheses (Appendix A). Conferences were conducted with principals and/or vice principals of most middle schools and at the two junior high schools to collect information relative to previous, present, and planned practices. Data was also collected from appropriate offices in the central administration building. School faculties and students contributed input through the use of questionnaires developed to test specific hypotheses. Standardized instruments utilized included the Minnesota Teacher Attitude Inventory, the California Test of Personality, and the Iowa Test of Basic Skills. Other than questionnaires, two

instruments were developed by the Research Department to test teachers' knowledge of and commitment to the middle school philosophy and to measure social maturity of adolescents.

Each instrument and data source will be identified and discussed as findings regarding hypotheses are reported.

Review of the Literature

The newness of the middle school plan pre-empts the presence of a large body of literature assessing its effectiveness. For the most part, existing studies are the products of graduate students fulfilling requirements of doctoral programs with the cooperation of public school systems. These studies tend to focus on rather specific aspects of the middle school movement rather than preparing a general assessment. Gaskill's (7) summary of the literature included studies dealing with related fields - team teaching, flexible scheduling, etc. - as well as those whose centrality was the effects of the re-organization on specified age groups in terms of personality development or academic achievement. Some tapped parental and teacher attitude toward the 5-3-4 plan.

Using a questionnaire, Austin (1) found that parents in Houston, Texas, significantly favored the middle school plan. Glissmeyer (8) reports a significant majority of middle school teachers favoring the 5-3-4 plan for sixth graders. The latter writer concluded that the middle school offered sixth graders a more optimum environment for both

academic and personal development, although reporting no significant differences in academic achievement of sixth graders in elementary schools and matched sixth graders in middle schools.

In contrast to Popper's (9) assertion that claims by middle school proponents that children are maturing earlier, Dacus (4) assessed the physical and social development of children in grades 5-10 and concluded that sixth graders were more like seventh graders than like fifth graders, and that ninth graders were more like tenth graders than like eighth graders. On the basis of his measures of physical growth, the onset of puberty, and social maturity he recommended the combination of children in grades 6, 7, and 8.

In comparison, Sterns (11) and Shovlin (10),however, concluded that sixth graders' behavior may be socially accelerated in middle school through emulation of eighth graders. Shovlin failed to find differences in academic achievement, but Sterns found a trend favoring elementary sixth graders.

At least one psychologist (14) warns against a possible "loss of identity" by younger children if dealt with impersonally in a large school setting and recommends an emphasis on "small groups that stay together a lot". Wattenberg (14) also reminds staff members that young adolescents continue to need to receive gratification from adults as well as from peers.

In summary the literature from the educational domain relative to the middle school plan is meager and inconclusive, highlighting the need for

continuous monitoring of processes and effects. While studies have not yet credited significant achievement gains to the more re-mixing of age groups, certain instructional strategies facilitated by the middle school plan offer promise for benefits in this area. However, the middle school movement implies a reduction of pressure of these young adolescents for achievement (3), preferring to focus on attitudes toward learning, individual skills, and learning techniques.

RESULTS

As the data were gathered and analyzed for each hypothesis separately, results are presented in that context and according to the sequence of the design (page 6).

Hypothesis 1a

> Middle schools to a greater extent than traditional junior high schools will feature innovative, instructional practices.

Data relative to the hypothesis were basically gathered through interviews with middle school principals and/or vice-principals. Thirteen of the fifteen middle school principals were successfully contacted for this purpose as well as principals of the two junior high schools. The Director of Secondary Schools for Administration provided supplementary information, and reports made to that office by individual schools concerning their organization and assignment of teachers to classes were secured.

From information thus obtained Table II was developed.

The data clearly indicate the highly innovative climate pervading middle schools. Prior to the middle school re-organization practically none of the practices reported in Table II were in effect under the junior high organization.

TABLE II: INNOVATIVE PRACTICES* AT MIDDLE SCHOOLS, 1969-70, AS DESCRIBED BY PRINCIPALS

Practice	Operational 1969-70 (Number of Schools)	Additionally Planned for 1970-71 (Number of Schools)
1. Team teaching		
Teaching and planning functions	9	4
Planning day scheduled	5	8
2. Continuous progress (Multi-grade)	3	7
3. Independent study scheduled	6	2
4. Complete-incomplete grading in electives	3	---
5. Scheduling		
6 periods of 55 min.	2	2
7 periods of 45 min.	10	---
Rotating	2	3
Modular	1	---
6. Trimester schedule	0	3
7. Checklist progress reports	0	3

*Possible sources of error in Table II include (1) the ambiguity of some terms, (2) the fluidity of school plans for 1970-71 at the time of the interviews (3) the time constriction of the interview, and (4) the general purpose of the interview.

In a few schools, team teaching was approached through the provision of experience for staff in team planning with the expectation of extending the team responsibility into teaching in 1970-71. Most principals, in their plans for 1970-71, indicated a need for a day set aside for planning each week or within a rotating series.

Most continuous progress programs centered around mathematics in 1969-70 with many staffs adding continuous progress in reading for the coming year.

Changes in scheduling tended to favor the rotating schedule because of its' provision for variety and because it decreased teachers' daily loads.

Principals were more wary about independent study periods: only two schools planned to add them in 1970-71. Those presently allowing students to engage in some self-direction during a daily or weekly period relied substantially on both aides and teachers to supervise children at these times.

Three schools plan to organize around a trimester schedule during 1970-71; and three aim to report academic progress with the use of a checklist rather than the traditional A, B, C, D, and F l ter system. The former practice complements the continuous progress concept.

Other innovative practices operational during 1969-70 include the use of pass-fail or complete-incomplete grading in electives and physical education and the designation of certain here-to-fore elective subjects as required for specific grade levels. One middle school requires Spanish of all sixth and seventh grade students and speech of eighth graders; another requires either Spanish or science of all sixth graders.

Findings About Hypothesis 1a

The hypothesis is accepted.

The release from constrictions associated with the ninth grade facilitated the development of more flexible and innovative schools for children aged 11-14 featuring (1) team teaching, (2) continuous progress programs, (3) varied scheduling, and (4) greater opportunities for subject exploration.

Hypothesis 1b

Innovative instructional programs at middle schools will stimulate building modifications in the direction of more open and flexible designs.

Information about building modification was obtained from the office of the school architect and the deputy superintendent.

Modifications planned or in progress reflect the trend toward assignment of students to teams of teachers for both large and small group activities.

Building activities may be delineated into two types: those emerging from the most recent bond program and those specially approved by central administrators to facilitate team teaching at petitioning schools. Both types feature the open, flexible design. Bond program additions and modifications are listed in Table III.

TABLE III: BOND PROGRAM BUILDING ACTIVITIES

Plant	Modification/additions
Benbrook Elementary School	New classrooms
Diamond Hill Elementary School	Team teaching area
Handley Junior High School	Cafeteria with library
Morningside Middle School	Team teaching area
Leonard Middle School	Team teaching area
Rosemont Middle School	Team teaching area
McLean Middle School	Team teaching area
Eastern Hills High School	Team teaching area

Table IV presents schools for which modifications have been requested by local staffs and approved by central administrators specifically to meet the needs of team teaching.

TABLE IV: APPROVED MODIFICATIONS TO FACILITATE TEAM TEACHING*

Plant	Modification Planned
Stripling Middle School	Remove walls; combine 4 classrooms
Forest Oak Middle School	Remove walls; combine 8 classrooms
Wm. James Middle School	Remove walls; combine 6 classrooms
Riverside Middle School	Remove walls; combine 6 classrooms
Daggett Middle School	Remove walls; combine 6 classrooms
Dunbar Middle School	Remove walls; combine 8 classrooms
I. M. Terrell High School	Remove walls; combine shop areas
Alexander Hogg Elem.	Remove walls; combine 6 classrooms
M. H. Moore Elem.	Remove walls; combine 4 classrooms
Kirkpatrick Elem.	Carpet combined classrooms
Glencrest Elem.	

*in order of assigned priority

Findings About Hypothesis 1b

The hypothesis is accepted. Of the nineteen building activities identified, fifteen involve developing open, flexible instructional areas.

Hypothesis 2a

> Middle school schedules for sixth graders will show blocks of time spent under the direction of one teacher (or a team of teachers) while eighth graders will be more or less completely departmentalized.

Schedules of all middle schools, obtained from the Director of Administration for Secondary Schools, were examined and all interviewed principals were questioned for evidence pertaining to differentiated scheduling of sixth, seventh, and eighth graders.

Neither principals nor schedules provided information that would indicate that sixth graders were spending more time with one teacher (or one team of teachers) than eighth graders. The data did not indicate any differentiation of scheduling by grade level. Complete departmentalization -- each subject presented by different teachers -- was generally the practice in each school for all students. Students were individually scheduled at all schools, except one, where intact classes stayed together throughout the day for basic subjects.

In a recently completed national survey of practices at middle schools, the Educational Research Service of the American Association of School Administrators reported that sixth graders were assigned to self-contained classrooms in one-fifth of the middle schools and in partial-departmentalized organizations in one-half of the schools. Approximately one-third of these schools partially-departmentalized seventh graders, and one-fourth partially-departmentalized eighth graders (5, p. 7).

Findings About Hypothesis 2a

The hypothesis is rejected.

Grade levels within middle schools are on a single schedule. Differentiated scheduling, which would allow younger children to spend more time with a teacher (or team) than older children as a strategy to ease the transition from the self-contained organization of the elementary to the departmentalized organization of the high school, was not observed.

Hypothesis 2b

Middle school faculties will be composed of substantial numbers of teachers with both elementary and secondary certification.

Certification of teachers at the two junior high schools and the two matched middle schools were obtained from personnel records. Results of this collection of data are reported in Table V.

TABLE V: CERTIFICATION OF TEACHERS AT TWO JUNIOR HIGH SCHOOLS AND MATCHED MIDDLE SCHOOLS

Certification	Junior High Schools		Matched Middle Schools		Significance of The Difference
	N	%	N	%	
Both Elementary & Secondary	26	41%	38	40%	Not Significant
Secondary Only	35	54%	20	21%	Significant*
Elementary Only	3	5%	37	39%	Significant*

*at .001 level of confidence

The faculties of the middle schools are composed of significantly more teachers with elementary certification only (39%) than those at the two junior highs (5%) and significantly fewer teachers with secondary certification only (21%) than those of the two junior highs (54%). This change in the composition of teaching staffs in terms of certification obviously is basically the result of the introduction of elementary teachers into middle schools.

Combining teachers with certification on both levels shows that 45

per cent of teachers at the junior highs and 79 per cent at the middle schools have elementary certification. This difference in proportions is significant (P = .001).

Findings About Hypothesis 2b

The hypothesis is accepted.

A significantly greater proportion of teachers in the two middle schools have elementary certification (79 per cent) than do those in the two junior high (45 per cent) schools.

Hypothesis 3a

Sixth graders' physical characteristics will match those of seventh graders better than those of fifth graders.

Hypothesis 3b

Ninth graders' physical characteristics will match those of tenth graders better than those of eighth graders.

Heights and weights of all students, grades five to ten, within one high school district were obtained from health department records. The district was fairly homogeneous with regard to socio-economic status, and only the white ethnic group represented. The latter condition was met because of possible difference in growth rates of ethnic groups. Measurements were collected separately for boys and girls due to reported differences in growth rates and patterns (Appendices B, C). Heights and weights were taken by school nurses during the fall under similar though not exact conditions. Over 200 measures were obtained generally on each grade level.

Weights

Table VI reports the (1) average weights, (2) a measure of variation, and (3) the range for students at each grade level. Means are plotted in Exhibit "A".

TABLE VI: FALL WEIGHT MEASURES OF STUDENTS, GRADES 5 TO 10

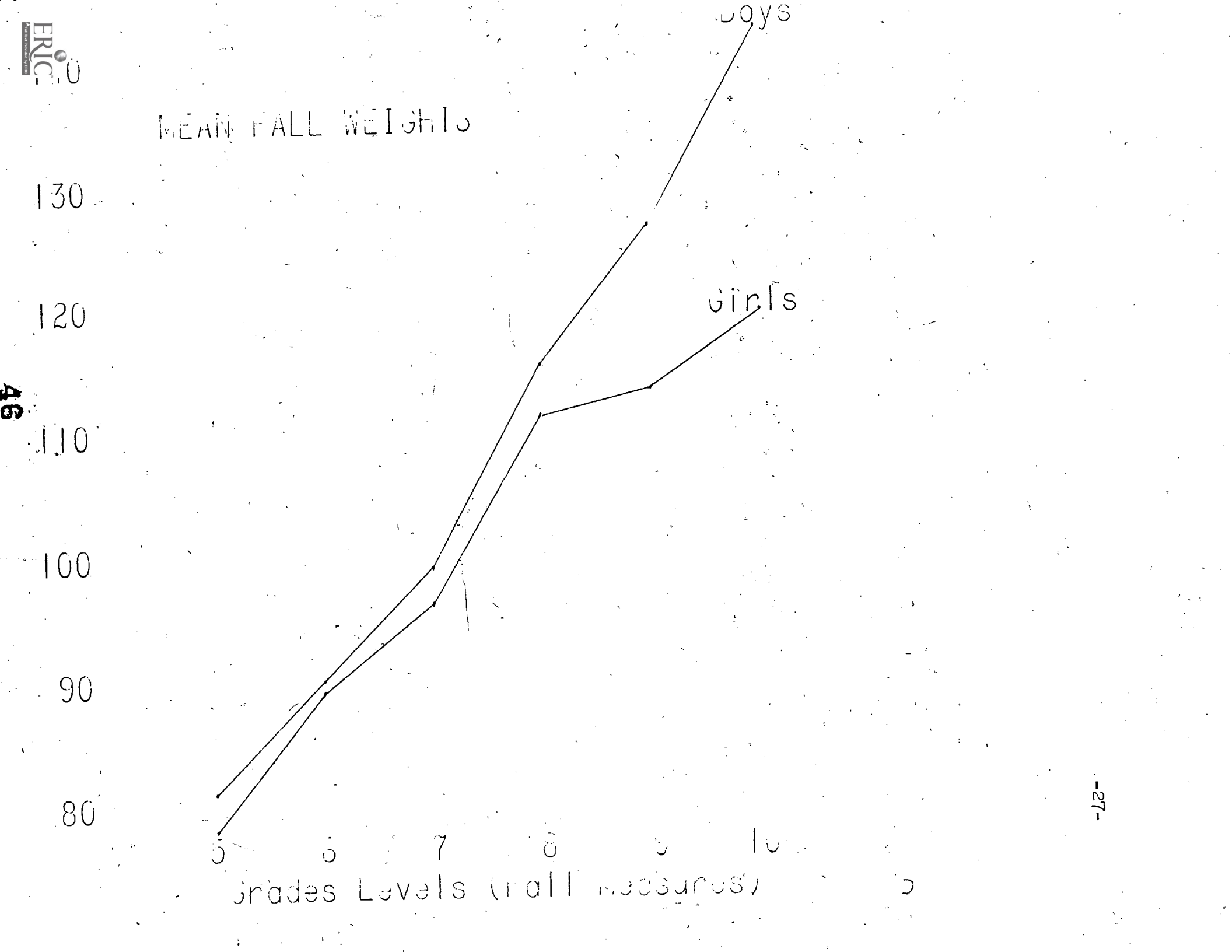
Grade	Boys				Girls			
	Number	Avg. Weight	Variation	Range	Number	Avg. Weight	Variation	Range
5	191	82 (9)	17	52-162	216	79 (11)	16	52-157
6	258	91 (8)	18	57-162	244	90 (7)	20	62-157
7	289	99 (17)	19	57-157	281	97 (15)	19	57-162
8	261	116 (11)	26	57-207	287	112 (2)	19	67-187
9	206	127 (16)	25	67-252	232	114 (6)	22	77-217
10	220	143	25	92-223	268	120	19	82-222

Sixth graders - in terms of weight - were more like seventh graders than like fifth graders.

The difference between mean weights of sixth graders and fifth graders was 9.2 pounds for boys and 11.2 pounds for girls. Smaller mean differences, 8.4 pounds for boys and 7.1 pounds for girls, were found between sixth graders and seventh graders.

Ranges of weights for fifth, sixth, and seventh graders were very similar for both girls and boys. Weights of students ranged generally from 55 pounds to 160 pounds within these three grade levels. Measures of variation also changed only slightly.

The largest change in weight measures occurred between seventh and eighth graders where the change in mean weights were 17 pounds for the boys and 14 pounds for girls. The measure of variation of weights expanded


MEAN FALL WEIGHTS
130
120
110
100
90
80
Boys
Girls
5
6
7
8
9
10
Grades Levels (Fall Measures)

from 19 to 26 for boys and held throught grade ten. Variation in girls' weights was basically constant from grade six through grade ten. These data are consistent with empirical observation which supports heterogeneity of male sizes and relative homegeneity of female sizes. The upper range of eighth grade boys' weights was extended from near 160 to over 200 pounds: that of eighth grade girls was extended from near 160 to approximately 190 pounds.

The rate of weight gain for boys continued to be high after grade eight, but that of girls diminished. Ninth grade boys' mean weight differed from that of eighth grade boys by 11 pounds and that of tenth grade boys by 16 pounds. The upper range of ninth grade boys' weights was extended fifty pounds over that of eighth grade boys. And, thus, in terms of range ninth grade boys were more similar to tenth grade boys.

Summary Statements About Weights

1. Students in grades 5, 6, and 7 were generally quite similar in terms of weight measures, mean weights, variation of weights, and range of weights. Sixth grade girls were, however, substantially more similar to seventh grade girls in terms of mean weight (7 pounds difference) than to fifth grade girls (11 pound difference). Sixth grade boys slightly tended to be more like seventh graders in mean weights.
2. Ninth graders were more like tenth graders in terms of range of weights, but more like eighth graders in mean weights.
3. The most notable change in all measures of weight reported -- mean, variation, and range -- occurred between grades seven and

Heights

Table I reports height measures obtained from health records of over 1400 students, grades 5-10. These data are plotted in Exhibit "B".

Sixth graders were more like seventh graders in terms of mean height than they were like fifth graders. Sixth grade girls' mean height exceeded that of fifth grade girls by nearly three inches, while differing from seventh grade girls' mean height by less than two inches. Sixth grade boys, also, tended to be slightly more similar to seventh grade boys than to fifth grade boys on the measure of mean height. Changes in range and measures of variation among the three grades--five, six, and seven--were comparable.

TABLE VII: FALL HEIGHT MEASURES OF STUDENTS, GRADES 5 TO 10

Grade	Boys				Girls			
	N	Mean Height (Inches)	SD (Inches)	Range (Inches)	N	Mean Height (Inches)	SD (Inches)	Range (Inches)
5	208	57.0 (2.6)	2.9	50-67	232	57.0 (2.9)	2.8	51-67
6	257	59.6 (2.4)	3.1	52-68	236	59.9 (1.8)	3.1	51-67
7	297	62.0 (2.8)	3.4	52-73	283	61.7 (1.6)	2.8	53-69
8	260	64.8 (2.2)	3.5	56-75	279	63.3 (.6)	2.5	57-70
9	206	67.0 (1.9)	2.9	57-74	233	63.9 (.8)	2.4	57-70
10	230	68.9	3.1	60-78	273	64.7	2.5	57-73

girls
MEAN FALL HEIGHTS
68
67
66
65
64
63
62
61
60
59
58
57
56
5
6
7
8
9
10
grades Levels (Fall measures)

Ninth grade boys tended to be slightly more similar to tenth grade boys than to eighth grade boys on the measure of mean height; growth rates of girls had de-accelerated so that eighth, ninth and tenth grade girls differed by less than an inch in mean height from girls in subsequent or preceding grades.

Ninth grade boys tended to be more similar to eighth grade boys than tenth grade boys in terms of ranges of heights. The range of ninth grade heights changed from 57-74 inches to 60-78 inches for the tenth grade range.

Summary Statements About Height

Girls' heights approach maximum by fall of the eighth grade, having incurred generally a two inch annual gain in height in preceding years. Subsequent annual gains in height averaged less than an inch.

Boys continued to incur a two-inch height increase annually through grade ten, a rate only slightly less than preceding years.

Girls heights progressed toward homogeneity; boys retained their heterogenous characteristic.

Findings About Hypothesis 3a

The hypothesis is accepted.

Sixth grade boys--on measures of weight and height--differed similarly from boys in grades five and seven. However, sixth grade girls differed considerably more from fifth grade girls than from seventh grade girls on those two measures.

Findings About Hypothesis 3b

The hypothesis is partially accepted.

Ninth grade boys were more similar to tenth grade boys in height but more similar to eighth grades boys in mean weight. As girls had achieved the major portion of their ultimate height and weight in grade eight, differences thereafter were small and irrelevant.

Hypothesis 4a

Seventh and eighth grade students at middle schools will date less frequently than those at junior high schools.

Hypothesis 4b

Ninth grade students at high schools will not date more frequently than those at junior high schools.

Questionnaires administered to random samples of eighth and ninth grade students at two middle schools, two junior high schools, and two high schools contained questions about dating practices (Appendix D, question # 4, a-e). Responses are summarized in Table VIII.

The data in the table show the dating practices of students to be very similar regardless of the organization of the school attended. Approximately one-fifth of the eighth graders, whether in middle schools or junior high schools, are car-dating. The types of dating, the dating frequencies and the ages of their dates are not significantly different.

Approximately one-half of the ninth graders indicated that they were dating in both junior high and high school settings, and specific dating patterns of these two groups of ninth graders do not significantly differ. One-third of both groups of ninth graders reported "steady dating" at one time or another.

The data indicated that very few eighth and ninth graders are dating older students, dating more than once a week, or single-pair dating.

TABLE VIII: DATING PRACTICES OF EIGHTH AND NINTH GRADERS

Organization	Car Dating	Single Pair Dating	Double Dating	Date in Own Grade Only	Date Older Students	Date Once a Week	Date More Than Once Week	Steady Dating at Times
Eighth Graders								
(78) at Middle Schools*	20%	4%	16%	6%	14%	15%	3%	20%
(82) at Junior Highs*	22%	8%	14%	7%	15%	17%	5%	15%
Ninth Graders								
(88) at High Schools*	58%	6%	57%	25%	33%	46%	12%	33%
(83) at Junior Highs*	47%	10%	37%	23%	24%	43%	4%	33%

*No differences were significant within grade level
(All per cents are based on total number questioned)

Table IX reports, separately for boys and girls, the proportion who are car dating under the two types of organizations. No differences, by sex, were significantly different within grade level.

TABLE IX : EXTENT OF DATING BY SEX

Grade and Organization	Car Dating	
	Boys	Girls
Eighth Graders		
At Two Middle Schools*	22%	19%
At Two Jr. High Schools*	19%	24%
Ninth Graders		
At Two Jr. High Schools*	34%	57%
At Two High Schools*	50*	62%

* No differences were significant within grade level.

One significant difference within grade level was found. Eighth graders at a two-year middle school were dating significantly less than eighth graders at a one-year middle school. This evidence suggests that traditional junior high social patterns may continue temporarily to influence behavior of middle school students, but that the impact will be diminished with the emergence of completely new middle school student populations.

Summary Statements About Hypothesis 4a and 4b

Hypothesis 4a is partially accepted.

Hypothesis 4b is accepted.

Dating practices of junior high eighth graders did not significantly differ from those in the same grade at middle schools. However, eighth grade students in a two-year middle school were found to date significantly less than eighth graders who had experienced middle school for only one year.

Dating practices of ninth graders in a high school setting were not found to differ significantly from those in a junior high setting.

It may be postulated that parental attitudes and individual maturation continue to be the dominating factors in determining the social life of adolescents. However, some evidence was gathered which would support a prediction of further reduction in the dating behavior of eighth graders as junior-high experienced students depart from middle schools. The type of school related activities that are allowed to emerge centainly must also be a factor in determining social behavior.

Hypothesis 5a

Substantially fewer inter-school athletic contests will be scheduled between middle schools than previously between junior high schools.

Schedules, obtained from the Director of Athletics, of football and basketball inter-school contests for the current and previous years were examined.

The number of inter-school athletic games playable is limited to eight for middle school students by instructions contained in the Handbook for Principals of Middle Schools, (6, p. 11). Basketball games are limited to ten (not including available tournaments).

Table X reports the number of games scheduled for five schools as junior high schools in 1966-67 and 1968-69 and as middle schools in 1969-70 (Division 3A).

TABLE X : NUMBER OF FOOTBALL GAMES SCHEDULED FOR JUNIOR HIGH AND FOR MIDDLE SCHOOLS

School	Number of Games Scheduled		
	1966-67 As Junior High	1968-69 As Junior High	1969-70 As Middle School
Middle School #1	7	7	7
Middle School #2	7	7	7
Middle School #3	7	7	7
Middle School #4	7	7	7
Middle School #5	7	7	7
Jr. High School #1	7	7	7 *
Jr. High School #2	7	7	7 *

* continues to be junior high

2. The transition for students from the self-contained elementary classroom to the fully departmentalized high school organization will be eased.	2a. Middle school schedules for sixth graders will show blocks of time spent under the direction of one teacher (or a team) while eighth graders will be almost completely departmentalized.	2a. Schedules at middle schools for all grade levels. 2a. Student questionnaires	2a. Compare amounts of daily time spent with a specific teacher (or a team) by grade level.
	2b. Middle school faculties will be composed of teachers with both elementary and secondary certification.	2b. School personnel records 2b. Teacher questionnaires	2b. Report proportions of middle school teachers with certification on each of the two levels.
	2c. Middle school students will indicate that they are well known by a teacher (or a team) to a greater extent than will junior high students.	2c. Student questionnaire	2c. Compare varying proportions of experimental and control subjects reporting that they are well known by teachers.
	2d. Middle school teachers in larger proportions than junior high teachers will indicate that they know a select group of students well.	2d. Teacher questionnaire	2d. Compare proportions of experimental and control teachers reporting that they know a select group of students well. Statistical tests: Significance of difference of proportions.
3. The exclusion of the more socially mature ninth graders will ease social pressure on seventh and eighth graders.	3a. Seventh and eighth grade girls at middle schools will date less frequently than seventh and eighth grade girls at junior high schools.	3a. Student questionnaire at experimental and control schools. 3a. Parent questionnaire at experimental and control schools.	3a. Compare the frequency of dating of experimental and control subjects.
	3b. Ninth grade girls at high schools will not date more frequently than ninth grade girls in junior high schools	3b. Student questionnaires at junior high and high schools.	3b. Compare dating frequencies. Statistical Tests: Chi Square Goodness of Fit Test

4. An emphasis on intra-school sports will be facilitated by the absence of a high school orientated athletic program.	4a. Substantially fewer inter-school athletic contests will be scheduled between middle schools than previously between junior high schools.	4a. Athletic Office: List of inter-school contests for middle schools and previously for junior high schools.	4a. Compare frequencies on a bar graph.
	4b. Substantially more intra-school athletic contests will be scheduled under the middle school organization than previously under the junior high.	4b. Individual middle school schedules.	4b. Compare frequencies on a bar graph. Statistical Tests: None
	4c. Greater proportions of students, of both sexes, will participate in athletic contests under the middle school organization than previously under the junior high organization.	4c. Student questionnaire: (1) 8th graders in middle schools (who were 7th graders in junior high) and present 7th graders in middle schools. (2) 9th graders in high school (who were eighth graders in junior high school) and present 8th graders in middle schools.	4c. Compare proportions: (1) 7th graders in both settings (2) 8th graders in both settings Statistical Tests: Significance of difference of two proportions.
5. The absence of ninth graders will allow the middle school to exorcise many high school characteristics.	5a. Fewer dances and pep rallies will be officially scheduled under the middle school program than previously under the junior high program.	5a. Individual middle school records.	5a. Compare frequencies.
	5b. Marching bands will not be organized under the middle school program.	5b. Middle school survey.	5b. Compare numbers. Statistical Treatment: None

6. The middle school will bring together pupils who are physically and socially compatible.	6a. Sixth graders' physical characteristics will match those of seventh graders better than fifth graders.	6a. Records from Health Division for experimental 5th and 6th and 7th graders' heights and weights.	6a. Examine difference between mean heights and weights and variances of age groups.
	6b. Ninth graders' physical characteristics will match those of tenth graders better than eighth graders.	6b. Records from Health Division for experimental 8th, 9th, and 10th graders' heights and weights.	6b. Examine difference in mean heights and weights and variances of age groups.
		6a and b. Health Division: Charts presenting normal growth curves for boys and girls separately.	6a and b. Analyze difference in means and variances by age groups. Statistical Tests: Significance of differences between means and variances for large, non-correlated samples.
7. An enriched curriculum and more specialized teachers and facilities will be available for sixth graders.	7a. A substantial proportion of sixth graders in middle schools will enroll in classes involving subject matter not available in elementary schools.	7a. Schedules of sixth graders at experimental schools. 7a. Student Questionnaire	7a. Compute porportion enrolled in classes not available at the elementary school level. Compute the proportion of the school day spent in such classes.
	7b. A substantial proportion of sixth grade students in middle schools will spend some portion of the school day in specialized instructional areas not available in elementary schools.	7b. Schedules of sixth graders in middle schools. 7b. Student Questionnaire	7b. Compute proportion of students spending part of school day in specialized areas and proportion of school day spent in these areas. Statistical Tests: Significance of proportion differing from zero.

8. An enriched curriculum and more specialized teachers and facilities will be available for ninth graders.	7c. Sixth graders in middle schools will have large proportions of teachers who are subject-specialists than will sixth graders in elementary schools.	7c. Personnel Division: Records of sixth grade teachers in experimental middle schools and elementary schools.	7c. Proportion of students who have specialized teachers - proportioned day spent with specialized teachers.
		7c. Teacher Questionnaire	
	7d. Sixth grade teachers who have transferred to middle schools from elementary concentrate their teaching in specific subject areas.	7d. Individual schedules of sixth grade teachers at middle schools.	7d. Proportion of teaching time spent in specific subject areas.
		7d. Teacher Questionnaire	
	8a. A substantial proportion of ninth graders will enroll in classes involving subject matter not available in junior high schools.	8a. Schedules of 9th graders at experimental and control schools.	8a. Compute proportions of ninth graders in high schools taking courses not offered in junior highs. Compute the proportion of the school day spent in such classes.
		8a. Student Questionnaire	
	8b. A substantial proportion of ninth graders in high schools will spend part of their school day in specialized areas not available at the same level of sophistication in junior high schools.	8b. Schedules of ninth graders in experimental and control schools. Descriptions of specialized areas in experimental and control schools.	8b. Compute proportions of spending time in specialized areas not available in junior high. Compare descriptions of specialized areas in experimental and control schools.
		8b. Student Questionnaire	

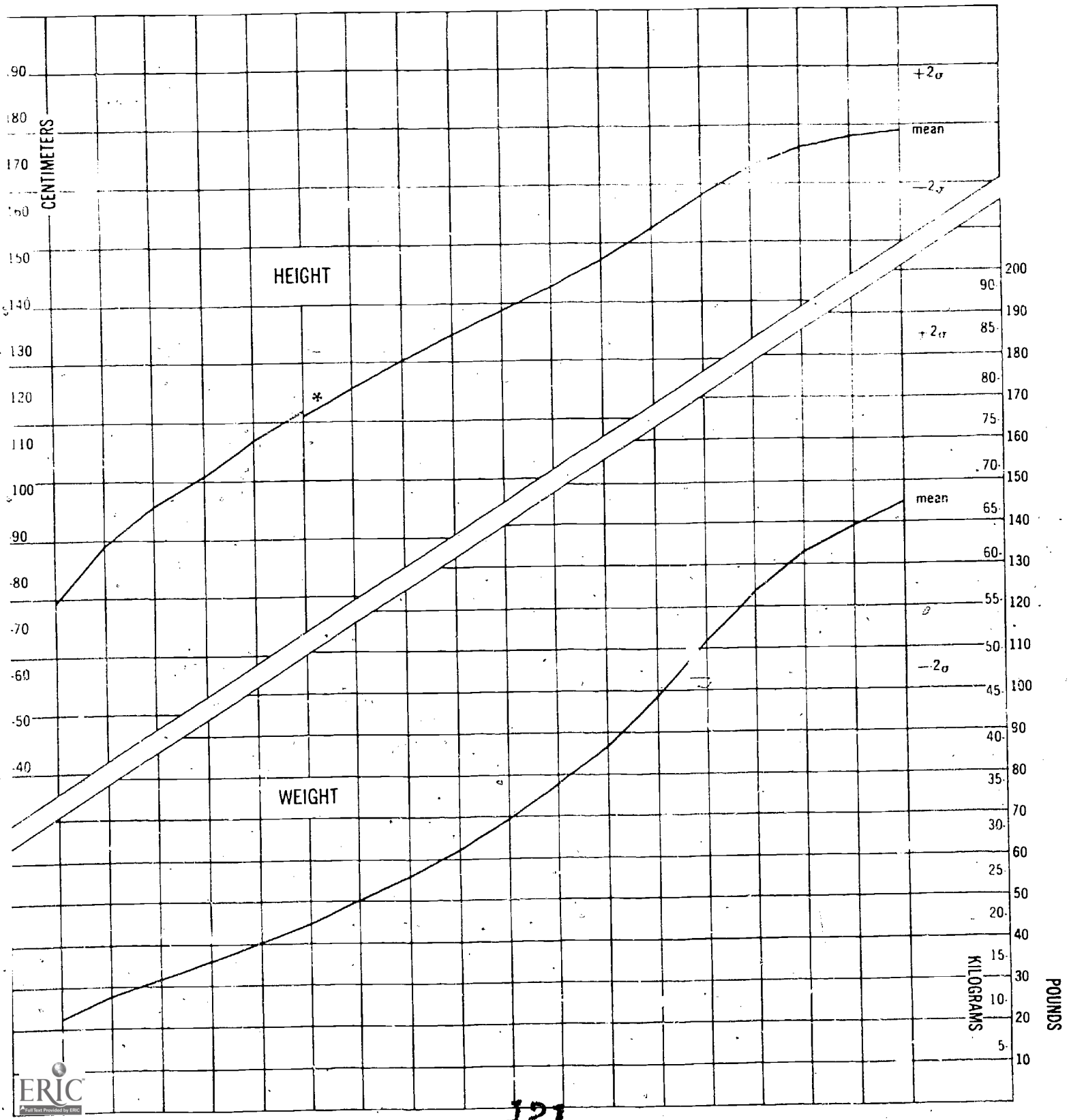
	8c. Ninth graders in high schools will have teachers available who are more specialized than those available to ninth graders in the middle schools.	8c. Personnel records. Ninth grade teachers at experimental and control schools.	8c. Analyze differences in proportions of highly specialized teachers available in the two settings. Statistical Tests: Significance of the difference of two proportions.
9. Flexible scheduling will provide greater opportunities for students to gain competence in self-direction.	9a. Middle school students have increasing amounts of scheduled independent study time as they proceed through the middle school instructional levels.	9a. Schedules of experimental subjects for all grade levels in middle school. 9a. Student Questionnaire	9a. Proportions of time allotted to independent study at various grade levels.
	9b. Middle school students will exhibit improved competence in self-direction as they proceed through middle school instructional levels.	9b. Teacher Questionnaire School records of student misbehavior. Parent Questionnaire Observation data	9b. Compare proportion of students, parents, teachers who feel that behavior improves. Analyze observational data.
	9c. Middle school students will exhibit greater self-confidence and feelings of self-worth than similar student in junior high schools.	9c. Administer California Test of Personality, Part I, to experimental and control subjects.	9c. Compare mean scores. Statistical Tests: (1) Significance of difference of proportions (2) Significance of difference of means for large correlated samples.

10. Academic achievement will be improved.	10a. Eighth graders who have one year of middle school experience will out-perform matched eighth graders with no middle school experience on a standardized achievement test battery.	10a. The Iowa Test of Basic Skills will be administered to experimental and control eighth graders in the fall.	10a. Mean gains from 6th grade testing to 8th grade testing of experimental and control subjects will be compared. Statistical Tests: Significance of difference of means for large independent samples.
11. The philosophy of the middle school movement, in terms of meeting the specific needs of young adolescents will be reflected in the flexible, supportive attitudes of middle school teachers and in the substantial provisions for individual guidance.	11a. Individual guidance available for experimental students will be substantial and superior to that offered previously under junior high organizations.	11a. Faculty lists and enrollment figures at individual schools. 11a. Counselor Division, FWISD.	11a. Compare counselor-pupil ratios.
	11b. Middle school teachers will score higher on a measure of pupil-teacher rapport than junior high teachers.	11b. Administer the MTAI (or portions) to experimental middle school and control junior high teachers.	11b. Compare measures of central tendencies and variation.
	11c. Middle school teachers will report greater belief in a version of middle school philosophy* than will junior high or high school teachers.	11c. Administer checklist* to all middle school teachers, and control junior high teachers, and sample of high school teachers.	11c. Compare measures of central tendency and variation. Statistical Tests: Significance of difference of means.
	11d. The school drop-out rate of 7th, 8th, and 9th graders will decrease under the middle school program.	11d. School drop-out rates and/or frequencies at all middle schools during 1969-70 and under previous junior high organization (1967-68).	11d. Compare rates. Statistical Tests: Significance of difference of proportions.

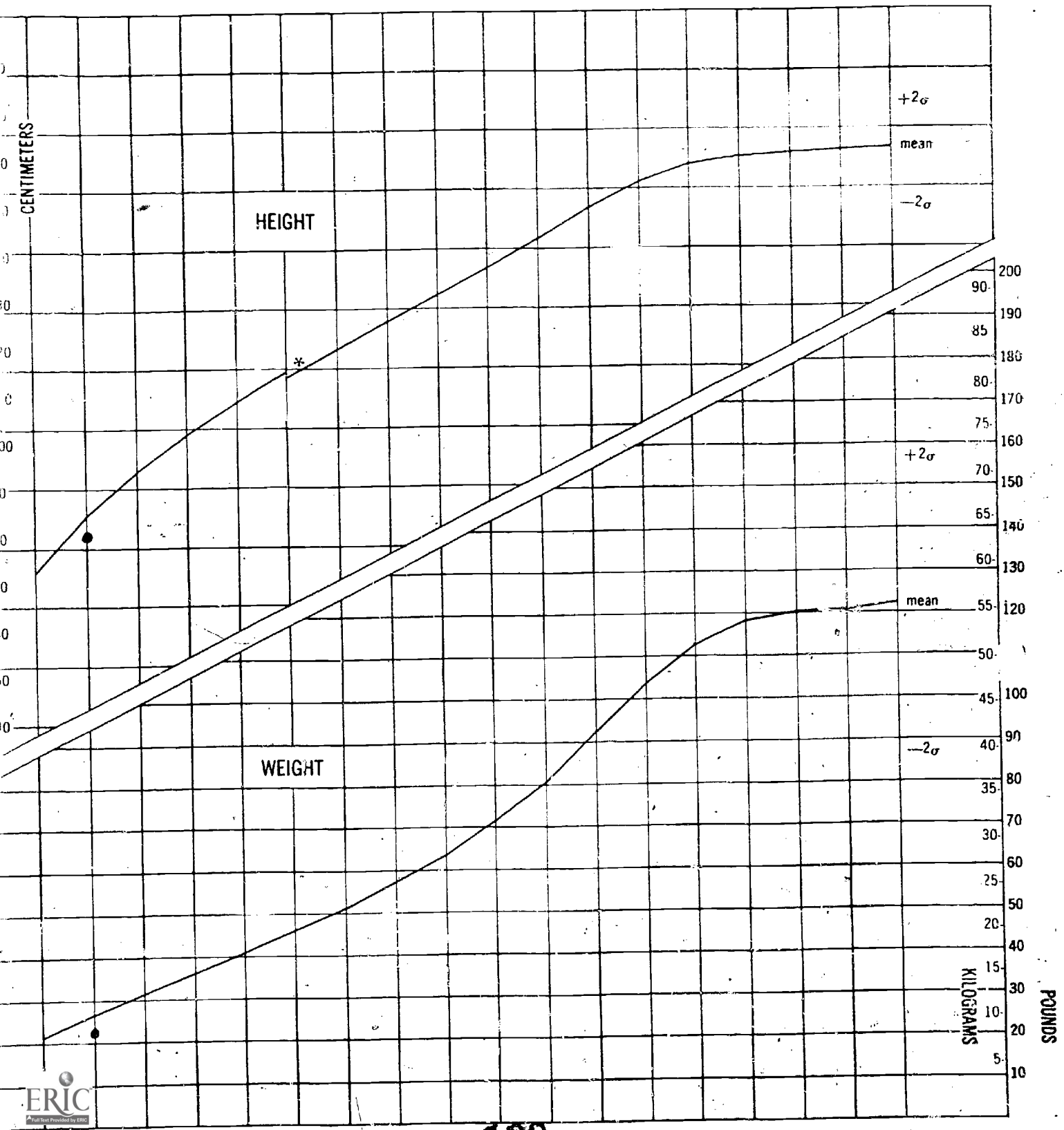
*Educational Research Service, NEA, Circular No. 2, 1969, p. 17, "What is the Difference Between a Middle School and a Senior High School?"

BOYS / PHYSICAL DEVELOPMENT
1 TO 18 YEARS

upine length to 6 years, standing height from 6 to 18 years



bine length to 6 years, standing height from 6 to 18 years



APPENDIX D

STUDENT QUESTIONNAIRE

Explanation to student: This questionnaire represents an attempt, by the Research Department of the Fort Worth Public Schools, to assess the educational and social growth of students in your particular age group. Please cooperate with this research by responding as accurately as possible to the questions. Do not sign.

Thanks,

Charles L. Evans
Director of Research

Demographic Data

		Circle One
1.	Sex?	Male Female
2.	Grade?	6 7 8 9
3.	School?	_____ Write in

1. Is there a certain teacher at your school that knows your school work better than other teachers? Yes No

   If yes, please explain why this teacher would know more about your school work.

   _____

   _____

2. How often have you, this school year, participated in school intramural athletic contests held between classes before or after school or on Saturday? PE None Once Several times

   If so, when? Before school After school Saturday

   What? _____

3. How often, last year, did you participate in school intramural athletic contests between PE classes before or after school or on Saturday?

None Once Several times

If so, When?

Before school After school Saturday

What? _____

4. Have you started car dating?

Yes No

If yes, please answer the following:

a. What type of dating usually?

Single pair Double dating Group dating

b. How frequently?

Once a month Once a week More than once a week

c. In what grade are the boys or girls in that you date the most?

_____

d. Are you going steady now?

Yes No

e. Have you gone steady this year at any time?

Yes No

5. How many times this school year have you talked individually with a counselor about a problem?

None Once Several times

6. Name the three persons (other than relatives), living or dead, that you admire the most and identify them.

(1) _____ Person's Name _____ Who is this person?

(2) _____ Person's Name _____ Who is this person?

(3) _____ Person's Name _____ Who is this person?

10. What school subject have you taken this year that you could not have taken if ninth graders had remained in junior high schools?

11. What <u>special areas</u> at school are you using that would not have been available to you if ninth graders had remained in junior high schools?

APPENDIX E

AWARDS PROGRAM
Friday, April 10, 1970

1. Introduction . . . . . Mr.
2. Spelling Champion . . . . . Mrs.
3. Girls Intramural Basketball . . . . . Miss Mrs.
4. Boys Intramural Basketball . . . . . Mr.
5. Intramural Gymnastics (Boys and Girls) . . . . . Mr.
6. Intramural Weight Training (Boys) . . . . . Mr.
7. Girls Saturday Basketball . . . . . Mrs. Miss
8. Boys Saturday Basketball . . . . . Mr.
9. Girls Varsity Volleyball . . . . . Miss Mrs.
10. Intramural Swimming (Boys) . . . . . Mr.
11. Girls Intramural Volleyball . . . . . Mrs. Miss
12. Boys Intramural Volleyball . . . . . Mr.
13. Girls Varsity Basketball . . . . . Miss Mrs.
14. Intramural Wrestling . . . . . Mr.
15. Boys Varsity Basketball . . . . . Mr.
16. Intramural Bowling (Boys and Girls) . . . . . Mr.
17. Boys Varsity Track . . . . . Mr.
18. Intramural Cross Country Track . . . . . Mr.
19 Girls Intramural Letters . . . . . Miss Mrs.
20. Boys Intramural Letters . . . . . Mr.
21. Boys Intramural Certificates . . . . . Mr.
22. Presentation of trophies to the school and Mr. . . . . .
23. Conclusion . . . . . Mr.

Table XI shows no change in number of football games scheduled, each school playing seven whether as a junior high or middle school. The remaining two junior highs also played seven games in 1969-70. Middle school teams are composed primarily of eighth graders while junior high teams were composed primarily of ninth graders.

Table XII reports the number of inter-school basketball games scheduled for the same five schools during the same period.

TABLE XI: NUMBER OF BASKETBALL GAMES SCHEDULED FOR JUNIOR HIGH AND MIDDLE SCHOOLS

School	Number of Games Scheduled		
	1966-67 As Junior High	1968-69 As Junior High	1969-70 As Middle School
Middle School #1	8	8	10
Middle School #2	8	8	10
Middle School #3	8	8	10
Middle School #4	8	8	10
Middle School #5	8	8	10
Junior High School #1	8	8	10*
Junior High School #2	8	8	10*

*continues to be junior high

The data in the table show an increase in number of games played by middle schools. Although junior high schools played eight games previously, middle schools played ten games in 1969-70. However, eighth graders in 1969-70 did not play as many games as did ninth graders (12 games).

Findings About Hypothesis 5a

The hypothesis is rejected.

Middle schools schedule as many football games and more basketball games than previously under the junior high school organization.

However, several other aspects of the athletic program in the middle schools have been restricted in ways that are likely to lessen the impact of athletics on the total school life. These restrictions include (1) the elimination of pep rallies, cheer leaders, and marching bands, (2) the discouragement of student attendance at away-from-home games, and (3) the scheduling of games on local school fields.

Hypothesis 5b

Substantial numbers of intra-school athletic contests and activities will be scheduled under the middle school organization.

Monthly reports, remanded to the physical education office by directors of intramural programs at each middle school, were summarized by the office for Secondary Instruction (13). Supplementory information was also obtained in interviews with middle school principals. This summary, cited above, is reproduced in Table XII to show the number of intramural meetings and the number participating for a five-month period. Boys' and girls'

TABLE XII: FREQUENCY OF INTRAMURAL ACTIVITIES AND EXTENT OF PARTICIPATION AT MIDDLE SCHOOLS, OCTOBER-FEBRUARY 1969-70. (13).

School	Number of Meetings*	Number Participating **
Middle School A	237	812
Middle School B	204	1,190
Middle School C	202	3,587
Middle School D	127	1,101
Middle School E	168	912
Middle School F	135	1,000
Middle School G	492	3,851
Middle School H	61	873
Middle School I	134	880
Middle School J	149	1,402
Middle School K	137	1,652
Middle School L	118	402
Middle School M	122	1,621
Middle School N	95	620
Middle School O	129	1,288
Jr. High School A	70	638
Middle School Total for Five-month period	2,510	21,191
Middle School Average for five-month period	167 Meetings	1,412 Participants**

** boys and girls combined
*not necessarily different participants

The data indicate that middle schools have invested substantial time in intramural activities. According to the monthly reports, the fifteen middle schools scheduled 2,510 meetings and attracted 21,191 participants during the five-month period. The average for each school was 167 meetings and 1,412 participants for the five-month period; or 33 meetings and 280 participants each month.

Meetings for boys and girls were held separately both before school, after school, and Saturday. Two schools reported meeting before school only, six reported meeting after school only, and seven reported meeting at both times. One reported meeting on Saturday. The schedules for the meetings, according to conversations with principals, varied somewhat during the year with the availability of equipment and areas shared with the athletic program.

Data concerning the personnel assigned to the intramural program at local schools (13) are summarized in Table XIII.

TABLE XIII: PERSONNEL ASSIGNED TO THE INTRAMURAL PROG[illegible] AT MIDDLE SCHOOLS

Type of Personnel	Sex		Total
	Male	Female	N
Athletic Coaches	None	None	None
Physical Education Instructors	9	24	33 (77%)
Others	10	0	10 (23%)
Totals	19 (44%)	24 (56%)	43

Physical education instructors are predominantly (77%) assigned to the intramural activities, while no coaches of athletic teams were reported assigned dual roles. Responsibilities were more or less assigned to males and females equally, reflecting the program goal to provide for both boys and girls.

Findings About Hypothesis 5b

The hypothesis is accepted.

Monthly reports from schools about activities suggest that substantial opportunity has been afforded middle school students to engage in inter-school contests. Schedules of activities have been developed and capable personnel provided to direct the activities.

Hypothesis 5c

Substantial proportions of middle school students will participate in athletic contests and activities.

Data collected in conjunction with hypothesis 4b, and presented in Table XIII, provided information about the extent to which students participated in intramural activities at individual schools. Although the total number of participants shown in Table XIII is impressive, the report does not specify different participants. It is not clear, from an examination of the monthly report, just how many different students were served by the program, although a great many meetings were scheduled (conclusion of hypothesis 4b).

Data pertaining to hypothesis 4c were specifically collected through the use of student questionnaire (Appendix D, question # 2 and 3).

A random sample of students at middle schools were asked about the extent of their participating in school intramural athletic contests. Their replies are summarized in Table XIV.

TABLE XIV: PARTICIPATION IN INTRAMURAL ATHLETIC CONTESTS AT TWO MIDDLE SCHOOLS*

	Responses		
	Never	Once	Frequently**
Sixth Graders	58%	16%	26%
Seventh Graders	60%	8%	32%
Eighth Graders	57%	26%	17%
Average	58%	17%	25%

* random sample of 300 students
** most indicated participation after school

Although twenty-five per cent of polled middle school students indicate participation frequently in intramural contests, some question about the validity of the responses must be entertained for two reasons. First, students in one middle school reported participating frequently in intramural contests the previous year as junior high students when such a program was not available. Second, many students in our junior high reported frequent participation in intramural contests when one is not in operation at that school. One possible explanation is that students construed the term "intramural athletic contest (Appendix D, question #2 and #3) to refer to scheduled, inter-school athletic contests. In any event, the responses suggest a need to interpret items on questionnaires to students at this level during the administration of the instrument to improve validity.

Student participation in intramural activities was a topic discussed with principals. For the most part principals did not indicate satisfaction with student response to the intramural program. However, many indicated plans for 1970-71 aimed at generating greater student enthusiasm. Their plans included efforts to (1) revitalize supervisory staffs, (2) secure more equipment, and (3) provide inexpensive awards and other incentives.

Types of strategies and activities reported by principals varied considerably from school to school. Most schools provided opportunities for students to appear unannounced and form competing teams. Other also scheduled contests among physical education classes and open tournaments.

An undetermined number held local school track meets. The admirable goal to reach all students was evidenced at one middle school by the running of a "fat boys" event. Although the "times" were not particularly impressive, the courage and competive spirit shown by these non-athletic types and the dedication of the intramural directors at this particular school to all students were. Some schools provided awards (Appendix E).

Intramural programs are new to Fort Worth schools and face several obstacles. Neither students nor staffs are inter-school oriented with regard to athletic contests. Transportation problems may limit the involvement of students at after-school activities. A survey reported by one principal showed that only one-fifth of the student body was available due to transportation difficulties. The absence of spectators was, also, suggested as having a deadening influence.

Findings About Hypothesis 5c

The hypothesis is partially accepted.

Substantial and increasing involvement of children at a few schools and plans at others to re-kindle both student and staff interest in inter-school athletic contests and activities provides support for the partial acceptance of the hypothesis. A general slowness for students to respond to the programs at many schools necessitates a partial rejection.

Hypothesis 6a and 6b

6a Fewer dances and pep rallies will be officially scheduled under the middle school program than previously under the junior high program.

6b Marching bands will not be organized under the middle school program.

Data relative to the hypotheses were collected through interviews with individual middle school principals. Principals were questioned about extra-curricular activities and practices tradionally associated with senior high schools. Responses are reported in Table XV.

Table XV EXTRA-CURRICULAR PRACTICES AT MIDDLE SCHOOLS

	Student Council	News-papers	Dances	Pep Rallies	Cheer Leaders	March-ing Bands	Chorus	Clubs
Middle Schools	53%	33%	None	None	None	None	73%	100%
Junior Highs	50%	50%	100%	100%	100%	100%	100%	100%

Practices regarding student government may or may not be related to the middle school movement. Student Council operations may, in some cases, have been de-emphasized partially due to lack of staff time to invest in these activities rather than due to deliberate neglect. A few principals indicated plans to re-establish self-governing groups.

Newspapers, commonly printed professionally in the past as official school publications, now generally function as a language department activity

and are often mimeographed.

No middle school principals reported continuing any type of school sponsored or school related dances. One junior high reported regularly parent sponsored teen canteens; one occasionally provides facilities for dances sponsored by youth organizations.

No middle school principal reported scheduling pep rallies or the election of school cheer leaders.

Marching bands were not reported at any middle school although bands of various types are developed as part of the instructional program. Occasionally, schools allow these uniformless bands to play on the side lines for home football games.

Most middle schools continue to sponsor and supervise clubs and school choruses.

Findings About Hypotheses 6a and 6b

The hypotheses are accepted.

Many high school-oriented characteristics have been systematically excluded from the middle school program: dances, cheer leaders, pep rallies, and marching bands.

Hypothesis 7a

Many sixth graders in middle schools will enroll in classes involving subject matter not available in elementary schools.

Texas Education Agency's required subjects for sixth graders were not changed with the middle school organization. Required for sixth graders are English, reading, spelling, mathematics, handwriting, art, social studies, science, physical education, health and safety, and music (6, p. 8). However, administrative policy (6, p.8) allows sixth graders, in middle schools, an opportunity to enroll in electives such as homemaking, industrial arts, Spanish, band and/or orchestra. These courses were not available in elementary school.

Class assignment of teachers at all middle schools were examined to ascertain the areas in which sixth graders were receiving instructions and sixth grade [illegible] wo middle schools were questioned regarding classes which would [illegible] have been available to them if they had remained in elementary schools.

This examination of fall class assignments of middle school teachers indicated that sixth grade Spanish classes were organized in nearly one-half of the middle schools, while classes in homemaking and industrial arts were generally restricted to seventh and eighth graders.

Responses from randomized sixth graders in the two matched middle schools indicated that approximately fifteen per cent of these students were studying Spanish, fifteen per cent were enrolled in homemaking classes,

and twelve per cent were enrolled in woodshop.

Findings About Hypothesis 7a

The hypothesis is partially accepted.

Classes have been generally organized in Spanish for sixth graders. Homemaking and industrial art classes have, for the most part, limited enrollments to older students.

Hypothesis 7b

> Many sixth grade students in middle schools will spend some portion of their school day in specialized instructional areas not available in elementary schools.

The randomized middle school sixth graders were asked if there were instructional areas and facilities available to them only as a result of their assignment to middle schools (Appendix D, question 11). Areas and facilities so identified are listed below:

Mathematics laboratory
Home economic area
Band room
Woodshop area
Library and resource center
General physical education facilities: gymnasium, track, tennis court
Science laboratory

Areas relative to physical education were mentioned most often reflecting their general use by sixth graders. Other areas were mentioned by only a few, indicating rather restricted use consistant with the findings relative to hypothesis 7a. Over seventy per cent indicated personal use of instructional areas not available in elementary scho

Findings Relative to Hypothesis 7b

The hypothesis is accepted.

Seventy per cent of middle school sixth graders named specialized instructional areas personally used by them that are not available in elementary schools.

Hypothesis 7c

> Sixth graders in middle schools will have teachers who are more specialized than will sixth graders in elementary schools.

Information about the certification and teaching specialties of teachers of sixth graders in the elementary schools providing students for the two junior highs and of teachers of sixth graders in the two matched middle schools was obtained from the Director of Personnel. In the one-year middle school, teachers of sixth graders were identified through an inspection of the teacher roster and class assignment schedule: all teachers in the two-year middle school taught sixth graders and were included in the comparison.

Table XVI compares the sex, certification, and teaching specialties of the three groups of teachers identified above.

Although a smaller proportion of middle school teachers were men, these men contact many classes and students daily while the direct impact of a male teacher in elementary school is generally limited to a small number of students.

Records indicated that only one-third of the teachers of sixth graders in elementary schools were certified for more than elementary teaching. In contrast, in the middle schools sixty to seventy-five per cent of the sixth graders' teachers were certified for instruction above the elementary school level.

Teaching specialties were identified as those in which teachers had completed eighteen hours of credit. The data in the table indicate that

TABLE XVI: CHARACTERISTICS OF TEACHERS OF SIXTH GRADERS IN ELEMENTARY* AND MIDDLE SCHOOLS

	N	Sex	Certification	Specialties (18 hours or more)			
				Lang. Arts % Avg. Hrs.	Math % Avg. Hrs.	Science % Avg. Hrs.	Soc. Stud. % Avg. Hrs.
Teachers of 6th Graders in Elem. Schools	18	44% men	El-Sec. 33% Elem. 67%	44% 22	None	39%	67% 30
Teachers of 6th Graders in one-year Middle School	18	17% men	El-Sec. 33% Sec. 28% Elem. 39%	86% 24	None	33% 29	100% 46
Teachers of 6th Graders in Two-year Middle School**	45	22% men	El-Sec. 36% Sec. 42% Elem. 22%	92% 28	86% 27	100% 30	100% 33

* Assuming that the most elementary teachers teach most subjects
** All teachers teach sixth graders

one-half of the elementary school teachers of sixth graders are specialists in social studies, one-third are specialists in science and none specialized in mathematics. In the middle schools a minimum of four-fifths of teachers of sixth graders are specialists in language arts and social studies. Differences between faculties in the one-year and the two-year middle school appear in mathematics and science specialties held. In the latter school, practically all teachers hold specialties in areas taught, including mathematics and science, while in the one year middle school only one-third of the science teachers are specialists in that area and none of the mathematics teachers are certified in that area. The inadequacy of the professional preparation of mathematics teachers, in comparison to that of teachers in other areas, may be related to system-wide depressed achievement in that area.

Findings About Hypothesis 7c

The hypothesis is accepted.

Middle school teachers of sixth graders are certified for higher levels of instruction and are more likely to be specialists in their teaching fields.

Hypothesis 8a

> Numbers of ninth graders in high schools will enroll in classes involving subject matter and/or specialized areas not normally available in junior high schools.

Data relative to the hypothesis were obtained from student responses on a questionnaire administered to a random sample of ninth graders in two high schools (Appendix D, questions #10 and #11).

Students were asked to list any subject or area available to them as ninth graders in a high school setting that would not have been available in a junior high. Approximately fifty per cent named such a subject. Examples of subjects named were: German, French, Latin, Reserve Officers Training Corps, typing, plastics, and power mechanics. Nearly twenty per cent mentioned typing.

Approximately fifty per cent also named areas and other opportunities available to them as a result of high school attendance. Laboratories, simulators, school clubs, school publication, swimming pool, driver education facilities, drafting facilities, typing rooms and equipment, the armory, etc. were named. In some cases the higher level of sophistication of areas common to all schools - libraries, cafeterias, etc. - impressed ninth graders.

Findings About Hypothesis 8a

The hypothesis is accepted.

Approximately one-half of ninth graders questioned were able to name a subject or area available to them as a result of high school attendance.

Hypothesis 8b

> Ninth graders in high schools will have teachers available who are more specialized than those available to ninth graders in junior high schools.

Teachers of ninth graders attending the two high schools enrolling students from matched middle schools and those teaching ninth graders at the two junior highs were identified through an examination of all assignments of teachers within the four schools. Certification and extent of subject specializations were furnished by the Director of Personnel.

Table XVII shows the certification level of teachers of ninth graders attending the high schools and of those attending the junior high schools.

TABLE XVII: CERTIFICATION OF HIGH SCHOOL AND JUNIOR HIGH TEACHERS OF NINTH GRADERS

Certification*	Junior High Teachers of Ninth Graders	Senior High Teachers of Ninth Graders	Differences
Professional	36%	28%	Not significant
Provisional	52%	62%	Not significant

*not including emergency certification

Although a slightly larger proportion of junior high school teachers of ninth graders held professional certification than did high school teachers of ninth graders, the difference in the proportions was not statistically significant.

Table XVIII shows the number of hours of college credits earned by the two groups of teachers in their instructional areas.

TABLE XVIII: HOURS OF CREDIT EARNED IN INSTRUCTIONAL AREAS BY HIGH SCHOOL AND JUNIOR HIGH SCHOOL TEACHERS OF NINTH GRADERS

Instructional Area	Average Number of Hours of Credit Earned	
	Junior High Teachers of Ninth Graders	Senior High Teachers of Ninth Graders
English	39 hrs. (One without Eng. Spec.)	45 hrs.
Foreign Language	13 hrs. (One without FL Spec.)	41 hrs.
Mathematics	22 hrs. (One without Math Spec.)	37 hrs.
Science	40 hrs.	57 hrs.

The data in the table show the superior preparation of high school teachers of ninth graders in comparison to that of junior high teachers of ninth graders. In each basic academic area examined, the high school teachers had earned considerably more hours of college credit than the junior high teachers. Furthermore in three of the four areas, a junior high teacher was not specialized in his area of instruction.

Findings About Hypothesis 8b

The hypothesis is accepted.

High school teachers of ninth graders at two schools had earned substantially more hours of college credit in their areas of instruction than had junior high school teachers of ninth graders.

Hypothesis 9a

Middle school students will have increasing amounts of scheduled independent study time as they proceed through grade levels.

Data relative to the hypothesis were obtained through structured interviews with middle school principals.

Differentiated scheduling of independent study time was not apparent. With one exception, schools allowing systematic independent study time for students did not vary the time allottment for the various age groups. Other aspects of independent time varied from school to school in terms of areas utilized, assignment of personnel for supervisory duties, and options available at that time to students.

Findings About Hypothesis 9a

The hypothesis is rejected.

Evidence was not produced through interviews with principals to indicate that older students in middle schools were allotted progressively greater amounts of independent time.

Hypothesis 9b

Middle school students will exhibit improved competence in self-direction.

The randomized, middle school teachers were asked three questions related to the hypothesis (Appendix F, questions 6, 7, and 8). Teachers were asked (1) to estimate whether the self-directional skills of the students were improving, (2) to assess the behavior of students during independent study periods, and (3) to compare the frequency of misbehavior problems during 1969-70 with that during previous year at their school.

Teacher responses to the three questions are reported in Table XIX.

TABLE XIX: TEACHER ASSESSMENT OF STUDENTS' SKILLS IN SELF-DIRECTION

Question	Per Cent of Teachers Expressing Each Possible Answer		
#6 How would you assess the self-directional skills of students at your school?	Improving 44%	No Change 34%	Lessening 22%
#7 Do students have an individual study period?		Yes 69%	
a. If so, are they supervised?		Yes 60%	
b. By whom?	Teachers 66%		Aides 34%
c. Are behavior problems substantial at these periods		Yes 53%	
#8 How does the frequency of classroom behavioral problems compare to that of last year at this same school?	Decreasing 28%	No Change 38%	Increasing 34%

Responses to item #6 on the questionnaire indicated that the majority of teachers felt that self-directional skills of students were either improving, or at least, not regressing under a policy of increased freedom. Almost one-half expressed the opinion that these skills were improving, twice as many as saw a decrease in skills.

Responses to item #7 on the questionnaire indicated that most middle schools were providing independent study time for students and that time was supervised primarily by teachers. Approximately one-third each expressed the belief that, compared to the previous year, the frequency of behavioral problems had "decreased", "increased", and "remained constant".

Credit for a decreased frequency of behavioral problems was given almost equally to (1) the effects of individualization of instruction and (2) presence of younger students who were described as more malleable.

Blame for an increase in frequency of behavioral problems was assigned, in order of magnitude, to (1) presence of a student population with less desirable academic characteristics, (2) lack of or ineptness of administrative personnel, (3) too much freedom for students, and (4) presence of younger children. Several teachers specifically referred to a shortage of vice-principals as a contributing factor to an increase in student misconduct. Others cited the practice of providing independent study time for large numbers of students simultaneously without proper facilities

or opportunity for them to exercise their theoretical options.

Findings About Hypothesis 9b

The hypothesis is partially accepted.

Nearly one-half (44 per cent) of teachers anonymously questioned expressed belief that student skills in self-direction were improving, whereas less than one-fourth (22 per cent) expressed belief that they were decreasing.

On a related question about improvements in conduct over the previous year, teachers could not agree. Nor could teachers agree whether or not substantial behavioral problems were arising during independent study time. However, a large (but not major) proportion did express concern about the greater freedom provided students under the middle school philosophy.

Hypothesis 9c

Middle school students will express greater feelings of self-worth then will similar junior high school students.

A graduate student had secured approval from the Superintendent to gather evidence (7) relative to the immediate effectiveness of the middle school organization in the areas of academic achievement and self-concept. Part of the requirements for approval of research by out-of-district personnel or agencies is that such studies in some way benefit the local public school system. It followed that measures planned, administered, and analyzed by the student could be, and were, incorporated into the present evaluation.

The instrument utilized to measure self-concept was the California Test of Personality, Part I. This section of the instrument includes measures of self-reliance, sense of personal worth, sense of personal freedom, withdrawing tendencies, and nervous symptoms.

The instrument was administered in the spring of 1969-70 to all eighth graders in the two junior high schools and in two of the two-year middle schools similar (but not matched) to the former in terms of socio-economic status and academic achievement of students. Students reponding to the test had completed either two years in middle schools or two years in junior high schools.

Results of the administration are reported in Table XX in terms of proportions of students scoring at various levels of percentile ranks.

TABLE XX: PROPORTIONS OF MIDDLE SCHOOL AND JUNIOR HIGH SCHOOL EIGHTH GRADERS SCORING AT FOUR LEVELS ON THE CALIFORNIA TEST OF PERSONALITY

Students	N	Quartile I N	%	Quartile II N	%	Quartile III N	%	Quartile IV N	%
Middle School Eighth graders	576	261	45%	137	24%	133	23%	45	8%
Junior High School Eighth Graders	438	193	44%	114	26%	93	21%	38	8%
Difference Between Proportions		Not Significant		Not Significant		Not Significant		Not Significant	

It may be seen from the data that differences in proportions of the two groups of students scoring at all levels on the instrument were not significant.

Findings About Hypothesis 9c

The hypothesis is rejected.

Differences in measures of self-worth obtained on middle school students were not significantly different from those obtained on a similar group of junior high school students.

Hypothesis 10

> Eighth graders who have one year of middle school experience will match or out-perform similar eighth graders with no middle school experience on a standardized achievement test battery.

The Iowa Test of Basic Skills was administered to all eighth graders in October, 1969, and to sixth graders in the fall of 1967. It was, therefore, possible to compare the two-year gain on this instrument of two groups of eighth grade students: one group having completed one year of middle school experience, the other having completed one year of junior high school experience. Students were in attendance at a junior high school and a middle school serving similar socio-economic areas. Academic achievement at the two schools was very similar. The data were gathered from existing records, prepared for data analysis by Gaskill (7), and statistically treated by the North Texas State University Data Processing Complex. In order to equalize students initially on the pre-test the analysis of co-variance was applied.

Table XXI presents the pre and post test scores and two year gains by the two groups of students separately. Results for the composite (total test) and for each major subtest are reported.

TABLE XXI: COMPARISON OF GAINS OF MIDDLE AND JUNIOR HIGH STUDENTS ON THE IOWA TEST OF BASIC SKILLS

	Pre-Test (GE)	Actual Post-Test (GE)	Adjusted* Post-Test (GE)	Gain (GE)	Significance of Difference in Gains
			Vocabulary		
Junior high	6.72	8.70	8.65	1.98	Not
Middle School	6.62	8.70	8.74	2.08	Significant
			Reading		
Junior High	6.55	8.16	8.09	1.54	Significant
Middle School	6.41	8.29	8.35	1.84	(P = .05)
			Language Skills		
Junior High	6.93	8.66	8.62	1.69	Not
Middle School	6.87	8.43	8.46	1.59	Significant
			Study Skills		
Junior High	6.65	8.37	8.34	1.69	Significant
Middle School	6.58	8.71	8.74	2.16	(P = .001)
			Mathematics		
Junior High	5.87	8.09	8.13	2.26	Significant
Middle School	5.97	7.94	7.90	1.93	(P = .01)
			Composite		
Junior High	6.54	8.40	8.37	1.83	Not
Middle School	6.50	8.41	8.44	1.94	Significant

* adjusted with co-variance statistical treatment to equalize groups on pre-scores

The major finding is that there was no significant difference for the total test (composite); however, the gain on the composite favored students with middle school experience. Three significant differences are reported for major subtests, two favoring middle school school experienced students -- study skills and reading -- and one favoring junior high experienced students -- mathematics skills.

Eighth graders attending both remaining junior high schools were also matched as well as possible with students from two two-year middle schools, and gains on the Iowa Test of Basic Skills were compared similarly. This comparison was less exact as pre-tests scores of these two groups differed substantially, favoring the students at the combined junior highs. The co-variance treatment was applied to equalize students on the pre-test.

Results were similar to those previously described comparing eighth graders at only one junior high snd one middle school. The difference on the total test slightly favored, but not significantly, the middle school experienced students. Three significant differences were obtained on major subtests, two favoring middle school experienced students -- reading and study skills -- and one favoring junior high experienced students -- language skills.

Findings About the Hypothesis

The hypothesis is accepted.

The performance of middle school experienced students slightly, but not significantly, exceeded that of junior high experienced students on a measure of academic achievement.

Hypothesis IIa

Middle school teachers will express general acceptance of middle school concepts.

In a national assessment of middle school practices, the Educational Research Division of the National Education Association included a publication listing separately twelve concepts identified with the middle school movement and twelve contrasting concepts identifiable with traditional secondary schools (Appendix G). These two lists of contrasting concepts were combined randomly and sent to Fort Worth administrators and consultants concerned with middle and secondary schools. Each was asked to identify - from the combined list of twenty-four concepts - the concepts which he felt were generally accepted as valid objectives for Fort Worth's middle school movement. Eleven of the original twelve were so identified, indicating general agreement by Fort Worth administrators with the current definition of the middle school philosophy.

The eleven concepts plus their contrasting secondary school practices, were randomly incorporated into a single list (Exhibit "C") to which a random sample of teachers at each middle school were asked to anonymously express agreement or disagreement. In addition, all teachers at the two junior high schools and the two matched middle school were asked to respond.

Table XXII summarized the responses of all teachers at two middle schools. All eleven of the middle school concepts were judged by these teachers as those to be emphasized in an "ideal school" or as those about

Exhibit C

TEACHER CHECK LIST

RESEARCH DEPARTMENT

Instructions:

Check the characteristics that should be emphasized in an ideal school for children aged 11-14. Please return to your school's office without signing.

___ 1. One teacher for each class

___ 2.* Substantial student self-direction under expert guidance

___ 3.* Flexible scheduling

___ 4. A subject-centered program

___ 5. A body of information to be learned

___ 6. Competition

___ 7.* Belief in oneself

___ 8.* Student independence

___ 9.* Student responsibility for learning

___ 10. A six-period day

___ 11. A textbook approach

___ 12.* A child-centered program

___ 13.* Learning how to learn

___ 14.* Multi-subject exploration

___ 15. Teacher control

___ 16. Teacher responsibility for student learning

___ 17. Principal-made schedule

___ 18. Teacher-made lesson plans

___ 19.* Variable group sizes

___ 20.* Team teaching

___ 21. Standard-sized, fixed classrooms

___ 22.* Student self-pacing

which teachers were "unable to agree". Nine of the eleven secondary school characteristics were rejected by these teachers. All concepts judged as those "to be emphasized" were middle school concepts. Nevertheless, considerable disagreement is seen to exist regarding concepts rather crucial to the middle school philosophy: variable group size, multi-subject exploration, a child-centered program, student independence, and flexible scheduling.

TABLE XXII: MIDDLE SCHOOL TEACHERS' ACCEPTANCE OF SELECTED MIDDLE SCHOOL CONCEPTS

(Characteristics That Should be Emphasized in an Ideal School)

Should be Emphasized (Yes: 64%-92%)	Undecided (Yes: 43%-60%)	Should Not be Emphasized (Yes: 12%-28%)
*1. Student self-direction under expert guidance	*1. Flexible Scheduling	1. One teacher per class
*2. Belief in oneself	*2. Student Independence	2. A subject-centered curriculum
*3. Student-responsibility for learning	*3. A child-centered program	3. A body of information to be learned
*4. Learning how to learn	*4. Multi-subject exploration	4. Competition
*5. Team Teaching	5. Teacher control	5. A six period day
	6. Teacher-made lesson plans	6. A textbook approach
	*7. Variable group sizes	7. Teacher responsibility for student learning
	*8. Student self-pacing	8. Principal-make schedules
		9. Standard-sized fixed classrooms

*Middle school concepts

Table XXIII reports the responses of teachers at the two junior high schools. These faculties accepted four middle school concepts, could not agree on five, and rejected two: student self-pacing and team teaching. Eight of the eleven high school concepts were rejected.

Acceptance of middle school concepts by junior high teachers and middle school teachers, as shown in Table XXII and XXIII, was similar. Significantly larger proportions of middle school teachers expressed approval of (1) team teaching and (2) students responsibility for learning than did junior high teachers. Thirty-five per cent of the latter teachers expressed approval of team teaching in contrast to sixty-four per cent of the two middle school staffs.

Responses of randomized middle school teachers and those of the previous faculties were combined in Table XXIV to ascertain the status of general teacher acceptance of middle school practices. This recapitulation shows substantial agreement on the part of Fort Worth teachers with middle school concepts. Six of the eleven concepts were judged as those to be emphasized in an ideal school for children aged 11-14, teachers were in disagreement on four, and one was rejected: student self-pacing. Some ambiguity of terms probably invalidated a few responses.

TABLE XXIII: JUNIOR HIGH TEACHERS' ACCEPTANCE OF MIDDLE SCHOOL CONCEPTS

Should Be Emphasized (Yes: 65%-91%)	Undecided (Yes: 36%-62%)	Should Not be Emphasized (Yes: 13%-35%)
*1. Student self-direction under expert guidance	1. One teacher for each class	1. A subject-centered curriculum
*2. Belief in oneself	*2. Flexible scheduling	2. A body of information to be learned
*3. Student responsibility for learning	*3. Student independence	3. Competition
*4. Learning how to learn	*4. A child-centered program	4. A six-period day
5. Teacher control	*5. Multi-subject exploration	5. A textbook approach
	6. Teacher-made lesson plans	6. Teacher responsibility for learning
	*7. Variable group sizes	7. Principal-made schedules
		*8. Team teaching
		9. Standard-sized, fixed classrooms
		*10. Student self-pacing

*Middle school concepts

TABLE XXIV: GENERAL TEACHER ACCEPTANCE OF SELECTED MIDDLE SCHOOL CONCEPTS

Should Be Emphasized	Undecided	Should Not be Emphasized
*1. Student self-direction under expert guidance	*1. Flexible scheduling	1. One teacher for each class
*2. Belief in oneself	*2. Student independence	2. A subject-centered curriculum
*3. Student responsibility for learning	*3. A child-centered program	3. A body of information to be learned
*4. Learning how to learn	*4. Multi-subject exploration	4. Competition
5. Teacher made lesson plans	5. Teacher control	5. A six period day
*6. Variable group sizes		6. A textbook approach
*7. Team teaching		7. Teacher responsibility for learning
		8. Principal-made schedule
		9. Standard-sized, fixed classrooms
		*10. Student self-pacing

*middle school concepts

Randomized middle school teachers were also asked on a questionnaire to identify the grades which, in their views, were best suited for combinating in a school for adolescents. Teachers were given the opportunity of selecting any combination of three grades from grades five through nine. Results are shown in Table XXV.

TABLE XXV: TEACHER SELECTION OF MOST COMPATIBLE GRADES

Possible Combination	Per Cent of Middle School Teachers Selecting This Combination
Grades 5, 6, 7	4%
Grades 6, 7, 8	80%
Grades 7, 8, 9	16%

Four-fifths of the randomized middle school teachers expressed preference for a school combining grades 6, 7, and 8.

Teachers' general comments about the middle school movement were solicited through the use of a questionnaire and reported intact in the Appendices (I) and, in part, in discussions relative to specific hypotheses. Fort Worth principals, also, were given an opportunity to list either positive or negative effects of middle school operation that were not anticipated.

Elementary principals, for the most part, indicated that substantial improvement had occurred in school discipline and supported the view that sixth graders were too mature for elementary school. Several, however, noted a loss in student leadership.

A few secondary principals expressed concern about the adjustment problems of younger students in their more mature school settings, but several high school principals indicated a general rise in enthusiasm due to the infusion of ninth graders.

Findings About Hypothesis 11a

The hypothesis is partially accepted.

A large majority of middle school teachers favored the combination of grades 6, 7, and 8, and generally favored middle school concepts. However, teachers tended to question many practices basic to current middle school objectives. Complete comments of teachers about middle school practices are provided in the Appendices (I).

Hypothesis 11b

Middle school teachers will score higher on a measure of pupil-teacher rapport than will junior high teachers.

The Minnesota Teacher Attitude Inventory was administered to all teachers in the two junior high schools and in the two matched middle schools. A random sample of ten teachers from each remaining middle school also responded to the instrument. The procedure provided only for the identification of the schools in which respondents taught.

The instrument purports to measure a teacher's attitude toward children on an autocratic-democratic continuum. Teachers who set rigid standards of behavior for students tend to score low: teachers who are flexible and supportive tend to score high. This instrument is recommended by authorities for research purposes but not for evaluation of an individual teacher. Scores can range from -150 to +150. A sample page is included in the Appendices (H).

Table XXVI reports the scores of all teachers at the two junior high schools and the two middle schools.

TABLE XXVI: SCORES ON THE MINNESOTA TEACHER ATTITUDE INVENTORY OF JUNIOR HIGH AND MIDDLE SCHOOL TEACHERS

Teachers	Minnesota Teacher Attitude Inventory			
	Number	Mean Score	Range	Per Cent Negative
All Teachers at two Middle Schools	80	16*	-67 to 96	39%
All Teachers at two Junior High Schools	61	1*	-83 to 84	48%

* difference significant at .05 level of confidence

Teachers at the two middle schools scored significantly higher than those at the two junior high schools. Scores at middle schools ranged higher: scores at junior highs ranged lower. Two-fifths of the scores at middle schools were negative; one-half of the scores at junior highs were negative. This difference was not significant.

Scores of the two middle schools are not reported separately. It is important, however, to the discussion below to acknowledge that scores of teachers at the school that had operated as a middle school for two years were significantly higher than those of teachers at the school experiencing only one year as a middle school.

The random sample of middle school teachers did not score significantly higher on the MTAI than did junior high teachers. This comparison is made in Table XXVII.

TABLE XXVII: SCORES ON THE MTAI BY JUNIOR HIGH TEACHERS AND A RANDOM SAMPLE OF MIDDLE SCHOOL TEACHERS

Group of Teachers	Number	Minnesota Teacher Attitude Inventory		
		Mean Score	Range	Negative Per Cent
Random Sample of Middle School Teachers	128	4*	-96 to 95	45%
All Teachers at two Junior High Schools	61	1*	-83 to 84	48%

* Differences are not significant

This greater variance of middle school teachers scores and the significantly higher scores at the middle school noted previously led to another comparison. All scores obtained from the three remaining two-year middle schools were combined and compared with those from one-year middle schools as well as with junior high teachers. Results of this comparison are presented in Table XXVIII.

TABLE XXVIII: SCORES ON THE MTAI BY TEACHERS IN ONE-YEAR MIDDLE SCHOOLS, TWO-YEAR MIDDLE SCHOOL, AND JUNIOR HIGH SCHOOLS

Group of Teachers	Number	Minnesota Teacher Attitude Inventory		
		Mean Score	Range	Per Cent of Scores Negative
Two-Year Middle School Teachers**	31	16*	-46 to 79	35%
One-Year Middle School Teachers**	97	1	-96 to 95	47%
All Teachers at Two Senior High Schools	61	1	-83 to 84	48%

* differs significantly from means of other groups at the .05 level of confidence
** randomized samples

It may be seen from the data in the table that one-year middle school teachers obtained scores quite similar to those obtained by junior high teachers in both average score, range, and per cent of scores which were negative. However, two-year middle school teachers earned significantly higher scores than either one-year middle school teachers or junior high teachers and obtained a substantially lower proportion of scores which were negative, although the latter differences were not significant.

It may be concluded from these results that a significant improvement in teachers' attitudes toward students has been obtained in schools which have experienced two years of involvement in middle school operations. The data do not disclose whether the improvement is due to teacher selectivity or teacher adjustment to the middle school philosophy.

Findings About Hypothesis 11b

The hypothesis is accepted.

Teachers in schools that had operated as middle schools for two years scored significantly higher on the Minnesota Teacher Attitude Inventory than junior high teachers or one-year middle school teachers.

Hypothesis 11c

Individual guidance provided for middle school students will be superior to that provided junior high students.

Data relative to the hypothesis were obtained from two sources: student questionnaires and teacher questionnaires. Randomized students at both middle and junior high schools were asked if a certain teacher (or a team of teachers) had unusual knowledge about their academic problems and, if so, to explain why (Appendix D, question 1). They were also asked to state the number of contacts they had had with the school counselor, if any (Appendix D, question 5). Teachers were asked to assess the amount of guidance generally provided students at their school during the present and previous year (Appendix F, question 11a).

Table XXIX reflects the responses by students at two junior high schools and two matched middle schools when asked if certain teachers had unusual knowledge of their academic progress. It might be anticipated that increased emphasis on individualization and counseling by teachers in middle schools would result in greater student-knowledge.

The responses of students from the two school organizations were fairly similar as shown in Table XXIX. Although more students (37 per cent) in middle schools responded in the affirmative than in junior highs (31 per cent) the difference was not significant ($t = 1.24$). However the difference at grade seven favoring the two middle schools was significant ($P = .05$).

TABLE XXIX: TEACHER-KNOWLEDGE OF STUDENTS' ACADEMIC SKILLS AT MIDDLE AND JUNIOR HIGH SCHOOLS.

Grade	Per Cent Responding "Yes" To Question One	
	Middle School Students*	Junior High Students*
Grade Six	28%	--
Grade Seven	43%**	28**
Grade Eight	37%	30%
Grade Nine	--	36%
Averages	37%	31%

* random sample of approximately 300 students.
** differences are significant at the .05 level of confidence.

The extent to which middle school teachers are providing counseling and guidance for students probably varies considerably from school to school. For this reason, inferences cannot with assurance be made from the data gathered at the two schools examined to all middle schools. At this early point in the development of a child-centered school, it is likely that considerable variation exists within each school as well as among the schools. This variation is exposed by the data in Table XXX.

While responses from the two junior high schools were quite homogeneous- no significant differences among grade levels or between schools were observed- considerably variations in responses were noted at middle schools. Significant differences were found favoring(1) seventh graders in middle school A over eighth graders (2) eighth graders over all other

students in middle school B and (3) sixth graders at middle school A over similar students at middle school B.

TABLE XXX: VARIATIONS IN TEACHER-KNOWLEDGE OF STUDENTS WITHIN MIDDLE AND JUNIOR HIGH SCHOOLS

Grade	Per Cent Responding "Yes" at Middle Schools		Per Cent Responding "Yes" at Junior High Schools	
	School A	School B	School A	School B
Grade Six	44%*	15%	--	--
Grade Seven	52%**	35%	29%	27%
Grade Eight	29%	43% ***	27%	33%
Grade Nine	--	--	33%	39%
Average	43%	32%	30%	33%

* significantly greater than grade 6, school B
** significantly greater than grade eight, school A
*** significantly greater than other grades in school B

An inspection of the reasons why a teacher was more knowledgeable about their progress revealed (1) no difference in reasons under the two organizational plans and (2) failed to reveal any systematic plan by the middle school faculties to provide guidance. Teachers of junior high students were credited with knowledge of students for the same reasons credited to middle school teachers and to teachers traditionally:

"She knew (or taught) my mother....my sister;" "She goes to our church;" "she likes me," etc.

Table XXXI reports student responses when asked about their interaction with school counselors. Differences were slight and not significant. Obviously, counselors at these schools had only minimal contact with individual students.

TABLE XXXI: STUDENT-COUNSELOR CONTACTS

Grade Level	Per Cent Who Talked With Counselor During School Year					
	Never		Once		Often	
	Middle School	Junior High	Middle School	Junior High	Middle School	Junior High
Grade 6	83%	--	13%	--	4%	--
Grade 7	80%	86%	12%	13%	8%	1%
Grade 8	87%	74%	7%	9%	6%	17%
Grade 9	--	78%	--	7%	--	15%
Averages	83%	79%	11%	10%	6%	11%

A random sample of teachers at each middle school was asked if student guidance had increased, decreased, or remained constant at their schools during 1969-70 over the preceding year (Appendix F, question 11a). Approximately one-half (53 per cent) of the teachers indicated that there had been "no change", less than one-fourth (22 per cent) responded "increased", and a similar proportion (25 per cent) responded "decreased".

Teachers who felt that student guidance had "increased" credited, for the most part, (1) small-group work manageable under the team teaching plan and (2) the possibilities for pupil-teacher interaction during students' independent time and teachers' planning time.

Teachers who felt that student guidance had "decreased" blamed primarily (1) increased student loads and (2) inadequate administrative staffing generally. A few teachers specified that counselors were kept busy performing non-counseling duties.

In the expectation that the amount and quality of individual guidance supplied by teachers to students might be related to the teacher-pupil ratio or teacher-student load, teachers were asked (Appendix F, Question 9, 10) about their (1) average class load, (2) daily teaching load, and (3) total semester teaching load under the junior high organization and under the middle school organization.

The responses of middle school teachers indicated that class loads were similar but that daily loads had increased from an average of 165 students to 172 students while total semester loads had increased from 173 students to 188 students. However, seventy per cent (Appendix F, Question 5) expressed equal or greater satisfaction with teaching in 1969-70 in contrast to 1968-69.

Findings About Hypothesis 11c

The hypothesis is rejected.

Responses of students at two middle schools did not support the existence of a systematic plan by which teachers or other staff members provide student guidance, and three-fourths of a randomized sample of teachers from all middle schools refused to affirm an increase in student guidance at their schools.

The proportion of middle school students reporting that a specific teacher was better acquainted with their academic work than other teachers was not significantly greater than the proportion of junior high students responding similarly. However, the considerable variation in the responses between and within middle schools -- in contrast to the homogeniety of responses at junior high schools -- indicates that individual counseling by middle school teachers may be emerging.

Hypothesis 11d

The school drop-out rate of seventh, eighth, and ninth graders will decrease under the middle school plan.

The number of students dropping out of school is reported annually by individual middle, junior, and high schools to the Director of Federal Programs. These data, for 1968-69 and 1969-70, were obtained and are summarized in Table XXXI. Total enrollment figures for September of these school years were obtained from reports reproduced in the office of the Assistant Superintendent for Administration.

TABLE XXXI: STUDENT DROP-OUTS, 1968-69 AND 1969-70

Grade	1968-69			1969-70		
	Total Enrollment*	Number of Drop-outs	Rate	Total Enrollment*	Number of Drop-outs	Rate
7	7174	55	.7%	7243	70	1.0%
8**	7038	158	2.2%	7152	121	1.7%
9**	6655	276	4.1%	6862	464	6.8%
10	6486	613	9.5%	6344	656	10.3%
11	5698	614	10.8%	6021	640	10.6%
12	4838	328	6.8%	4908	393	7.4%
Totals**	37,889	2,044	5.4%	38,530	2,344	6.1%

* September
** rate differ significantly at .05 level of confidence or beyond

Data presented in the table report a significant (P = .001) increase in the drop-out rate for the system and for grade nine from 1968-69 to 1969-70. The drop-out rate at grade eight was significantly (P = .05) reduced.

Findings About The Hypothesis

The hypothesis is rejected.

The drop-out rate for grade eight was significantly reduced, but that for grade nine and for the school system as a whole significantly increased.

Hypothesis 11e

The average daily attendance rates for grades 7, 8, and 9 will improve under the middle school organization.

Average daily attendance rates at middle schools and two junior high schools for 1968-69 and 1969-70 are reported in Table XXXIII for grades seven and eight.

TABLE XXXIII: ADA RATES AT JUNIOR HIGHS AND MATCHED MIDDLE SCHOOLS FOR GRADES SEVEN AND EIGHT, 1968-69 AND 1969-70

Schools	Average Daily Attendance Rates			
	1968-69		1969-70	
	Grade 7	Grade 8	Grade 7	Grade 8
Matched Middle Schools	90.2	90.5	93.2	92.3
Two Junior High	90.3	90.7	93.2	93.1
All Middle and Junior High Schools	88.9	88.9	91.4	90.3

Average daily attendance rates, during 1968-69, were quite similar, and rates improved similarly for both middle and junior high schools. Generally all schools improved their ADA rates from 1968-69 to 1969-70.

Table XXXIV compares the ADA rates for the two junior high schools, the four two-year middle schools combined, and the thirteen remaining one-year middle schools combined.

TABLE XXXIV: 1969-70 ADA RATES FOR JUNIOR HIGHS, ONE-YEAR MIDDLE SCHOOLS, AND TWO-YEAR MIDDLE SCHOOLS

Schools	ADA Rates for 1969-70 (Grade Levels Combined)
All Two-Year Middle Schools	90.6
All One-Year Middle Schools	91.0
Two Junior High Schools	93.0

It is seen that the ADA rate at the two junior highs exceeded that of one-year and two-year middle schools during 1969-70. ADA rates are related to socio-economic indexes, and the data in the table are not controlled for this relevant variable.

Table XXXV reports 1969-70 rates of ninth graders in the two junior highs and in the two high schools to which matched middle school students are assigned. ADA rates were similar.

TABLE XXXV: 1969-70 ADA RATES FOR NINTH GRADERS IN HIGH SCHOOLS AND IN JUNIOR HIGH SCHOOLS

Students	Ada Rates for 1969-70
Ninth Graders in Junior High	92.5
Ninth Graders in Matched Senior Highs	92.8

In 1968-69 all ninth graders in middle schools earned an ADA rate of 88.5; whereas, all ninth graders in high schools earned one of 90.3 in 1969-70. However, this improvement is consistent with the general system-wide increase in ADA rates in 1969-70.

Findings About Hypothesis 11e

The hypothesis is rejected.

A substantial improvement in average daily attendance at grades 7, 8, and 9 has occurred as part of a system-wide phenomenon and is not restricted to the middle-school organization. Improvements in ADA at junior highs equalled those at middle schools and at high schools.

Hypothesis 11f

Proportions of male teachers will not diminish at middle schools or at elementary schools.

Information relative to the hypothesis was provided by the Directors of Administrations and the Director of Personnel.

Table XXXVIreports the proportions of elementary teachers that were men for the present and previous years.

TABLE XXXVI: MALE TEACHERS IN ELEMENTARY SCHOOLS, 1967-68 THROUGH 1969-70

1967-68		1968-69		1969-70	
Number of Men	Total* Staff	Number of Men	Total* Staff	Number of Men	Total* Staff
131 (8.2%)	1,607	116 (7.5%)	1,542	90 (6.4%)	1,398

* Excluding kindergarten and special education teachers.

A decrease in proportion of male teachers from 8.2 per cent of the total elementary staff to 6.4 per cent in 1969-70 is shown. This loss approached significance (t=1.81)

Transfers of elementary teachers to middle schools are reported in Table XXXVII. The data indicate that male teachers comprised less than one-tenth of the total elementary staff each year, but that approximately one-third of those teachers transferred to middle schools were men.

TABLE XXXVII: TEACHER TRANSFERS FROM ELEMENTARY SCHOOLS TO MIDDLE SCHOOLS, 1967-68 THROUGH 1969-70.

School Year	Transferred to Middle School For the Subsequent Year	
	Male	Female
1967-68	10 (28%)	36
1968-69	28 (38%)	73
1969-70	3 (27%)	11
Total	41 (34%)	120

At the middle school, the proportion of men dropped slightly also. Table XXXVIII reports the proportions of men teachers in middle and junior high schools during 1968-69 and 1969-70. The decrease in proportion of men teachers approached significance (t=1.87).

TABLE XXXVIII: MALE TEACHERS IN MIDDLE AND JUNIOR HIGH SCHOOLS, 1968-69 AND 1969-70.

1968-69		1969-70	
Men Teachers	Total Staff	Men Teachers	Total Staff
291 (35%)	827	269 (31%)	867

Findings About Hypothesis 11f

The hypothesis is partially accepted.

The decrease in the proportion of men teachers at both the elementary and middle school level approached significance. The proportion of elementary men to the total elementary staff diminished from 8.2 per cent in 1967-68 to 6.4 per cent in 1969-70. In the middle schools, the decrease was from 34 per cent in 1968-69 to 31 per cent in 1969-70.

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APPENDICES

A. TENTATIVE EVALUATION DESIGN

B. BOYS' PHYSICAL DEVELOPMENT

C. GIRLS' PHYSICAL DEVELOPMENT

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I. COMMENTS BY TEACHERS ABOUT MIDDLE SCHOOLS

Appendix A

TENTATIVE DESIGN FOR MIDDLE SCHOOL EVALUATION
RESEARCH DIVISION

Objectives	Hypotheses	Data Gathering Techniques/Sources	Analysis of Data
1. A release from the Carnegie Unit constriction will facilitate innovative organizational patterns.	1a. Middle schools, to a greater extent than traditional junior high schools and high schools, will feature innovative instructional practices of the following types: a. team teaching b. flexible scheduling c. independent study time d. non-graded or continuous progress plans e. tutorial programs f. subject exploration opportunities g. individualization of instructions for slow and rapid learners	1a. School survey: Survey all middle, junior high, and high schools for practices by grade and /or subject area. 1a. Student questionnaire	1a. Compare practices at each middle school with practices there prior to becoming a middle school. 1a. Compare practices at experimental schools with practices at control schools. 1a. Compare practices of middle schools with practices at high schools.
	1b. Innovative instructional programs at middle schools will stimulate building modifications in the direction of more open and flexible designs.	1b. Business office: Building modifications in progress or planned for all schools. 1b. School survey	1b. Compare modifications (and requests for modifications) at middle schools with those at other schools. 1b. Compare modifications at experimental and control schools. Statistical tests: Significance of difference of proportions

The transition for students from the self-contained elementary classroom to the fully departmentalized high school organization will be eased.	2a. Middle school schedules for sixth graders will show blocks of time spent under the direction of one teacher (or a team) while eighth graders will be almost completely departmentalized.	2a. Schedules at middle schools for all grade levels. 2a. Student questionnaires	2a. Compare amounts of daily time spent with a specific teacher (or a team) by grade level.
	2b. Middle school faculties will be composed of teachers with both elementary and secondary certification.	2b. School personnel records 2b. Teacher questionnaires	2b. Report proportions of middle school teachers with certification on each of the two levels.
	2c. Middle school students will indicate that they are well known by a teacher (or a team) to a greater extent than will junior high students.	2c. Student questionnaire	2c. Compare varying proportions of experimental and control subjects reporting that they are well known by teachers.
	2d. Middle school teachers in larger proportions than junior high teachers will indicate that they know a select group of students well.	2d. Teacher questionnaire	2d. Compare proportions of experimental and control teachers reporting that they know a select group of students well. Statistical tests: Significance of difference of proportions.
The exclusion of the more socially mature ninth graders will ease social pressure on seventh and eighth graders.	3a. Seventh and eighth grade girls at middle schools will date less frequently than seventh and eighth grade girls at junior high schools.	3a. Student questionnaire at experimental and control schools. 3a. Parent questionnaire at experimental and control schools.	3a. Compare the frequency of dating of experimental and control subjects
	3b. Ninth grade girls at high schools will not date more frequently than ninth grade girls in junior high schools	3b. Student questionnaires at junior high and high schools.	. Compare dating frequencies. Statistical Tests: Chi Square Goodness of Fit Test

An emphasis on intra-school sports will be facilitated by the absence of a high school orientated athletic program.	4a. Substantially fewer inter-school athletic contests will be scheduled between middle schools than previously between junior high schools.	4a. Athletic Office: List of inter-school contests for middle schools and previously for junior high schools.	4a. Compare frequencies on a bar graph.
	4b. Substantially more intra-school athletic contests will be scheduled under the middle school organization than previously under the junior high.	4b. Individual middle school schedules.	4b. Compare frequencies on a bar graph. Statistical Tests: None
	4c. Greater proportions of students, of both sexes, will participate in athletic contests under the middle school organization than previously under the junior high organization.	4c. Student questionnaire: (1) 8th graders in middle schools (who were 7th graders in junior high) and present 7th graders in middle schools. (2) 9th graders in high school (who were eighth graders in junior high school) and present 8th graders in middle schools.	4c. Compare proportions: (1) 7th graders in both settings (2) 8th graders in both settings Statistical Tests: Significance of difference of two proportions.
The absence of ninth graders will allow the middle school to exorcise many high school characteristics.	5a. Fewer dances and pep rallies will be officially scheduled under the middle school program than previously under the junior high program.	5a. Individual middle school records.	5a. Compare frequencies.
	5b. Marching bands will not be organized under the middle school program.	5b. Middle school survey.	5b. Compare numbers. Statistical Treatment: None

The middle school will bring together pupils who are physically and socially compatible.	6a. Sixth graders' physical characteristics will match those of seventh graders better than fifth graders.	6a. Records from Health Division for experimental 5th and 6th and 7th graders' heights and weights.	6a. Examine difference between mean heights and weights and variances of age groups.
	6b. Ninth graders' physical characteristics will match those of tenth graders better than eighth graders.	6b. Records from Health Division for experimental 8th, 9th, and 10th graders' heights and weights.	6b. Examine difference in mean heights and weights and variances of age groups.
		6a and b. Health Division: Charts presenting normal growth curves for boys and girls separately.	6a and b. Analyze difference in means and variances by age groups.
			Statistical Tests: Significance of differences between means and variances for large, non-correlated samples.
An enriched curriculum and more specialized teachers and facilities will be available for sixth graders.	7a. A substantial proportion of sixth graders in middle schools will enroll in classes involving subject matter not available in elementary schools.	7a. Schedules of sixth graders at experimental schools.	7a. Compute porportion enrolled in classes not available at the elementary school level. Compute the proportion of the school day spent in such classes.
		7a. Student Questionnaire	
	7b. A substantial proportion of sixth grade students in middle schools will spend some portion of the school day in specialized instructional areas not available in elementary schools.	7b. Schedules of sixth graders in middle schools.	7b. Compute proportion of students spending part of school day in specialized areas and proportion of school day spent in these areas.
		7b. Student Questionnaire	
			Statistical Tests: Significance of proportion differing from zero.

An enriched curriculum and more specialized teachers and facilities will be available for ninth graders.	7c. Sixth graders in middle schools will have large proportions of teachers who are subject-specialists than will sixth graders in elementary schools.	7c. Personnel Division: Records of sixth grade teachers in experimental middle schools and elementary schools.	7c. Proportion of students who have specialized teachers - proportioned day spent with specialized teachers.
		7c. Teacher Questionnaire	
	7d. Sixth grade teachers who have transferred to middle schools from elementary concentrate their teaching in specific subject areas.	7d. Individual schedules of sixth grade teachers at middle schools.	7d. Proportion of teaching time spent in specific subject areas.
		7d. Teacher Questionnaire	
	8a. A substantial proportion of ninth graders will enroll in classes involving subject matter not available in junior high schools.	8a. Schedules of 9th graders at experimental and control schools.	8a. Compute proportions of ninth graders in high schools taking courses not offered in junior highs. Compute the proportion of the school day spent in such classes.
		8a. Student Questionnaire	
	8b. A substantial proportion of ninth graders in high schools will spend part of their school day in specialized areas not available at the same level of sophistication in junior high schools.	8b. Schedules of ninth graders in experimental and control schools. Descriptions of specialized areas in experimental and control schools.	8b. Compute proportions of spending time in specialized areas not available in junior high. Compare descriptions of specialized areas in experimental and control schools.
		8b. Student Questionnaire	

	8c. Ninth graders in high schools will have teachers available who are more specialized than those available to ninth graders in the middle schools.	8c. Personnel records. Ninth grade teachers at experimental and control schools.	8c. Analyze differences in proportions of highly specialized teachers available in the two settings. Statistical Tests: Significance of the difference of two proportions.
Flexible scheduling will provide greater opportunities for students to gain competence in self-direction.	9a. Middle school students have increasing amounts of scheduled independent study time as they proceed through the middle school instructional levels. 9b. Middle school students will exhibit improved competence self-direction as they proceed through middle school instructional levels. 9c. Middle school students will exhibit greater self-confidence and feelings of self-worth than similar student in junior high schools.	9a. Schedules of experimental subjects for all grade levels in middle school. 9a. Student Questionnaire 9b. Teacher Questionnaire School records of student misbehavior. Parent Questionnaire Observation data 9c. Administer California Test of Personality, Part I, to experimental and control subjects.	9a. Proportions of time allotted to independent study at various grade levels. 9b. Compare proportion of students, parents, teachers who feel that behavior improves. Analyze observational data. 9c. Compare mean scores. Statistical Tests: (1) Significance of difference of proportions (2) Significance of difference of means for large correlated samples.

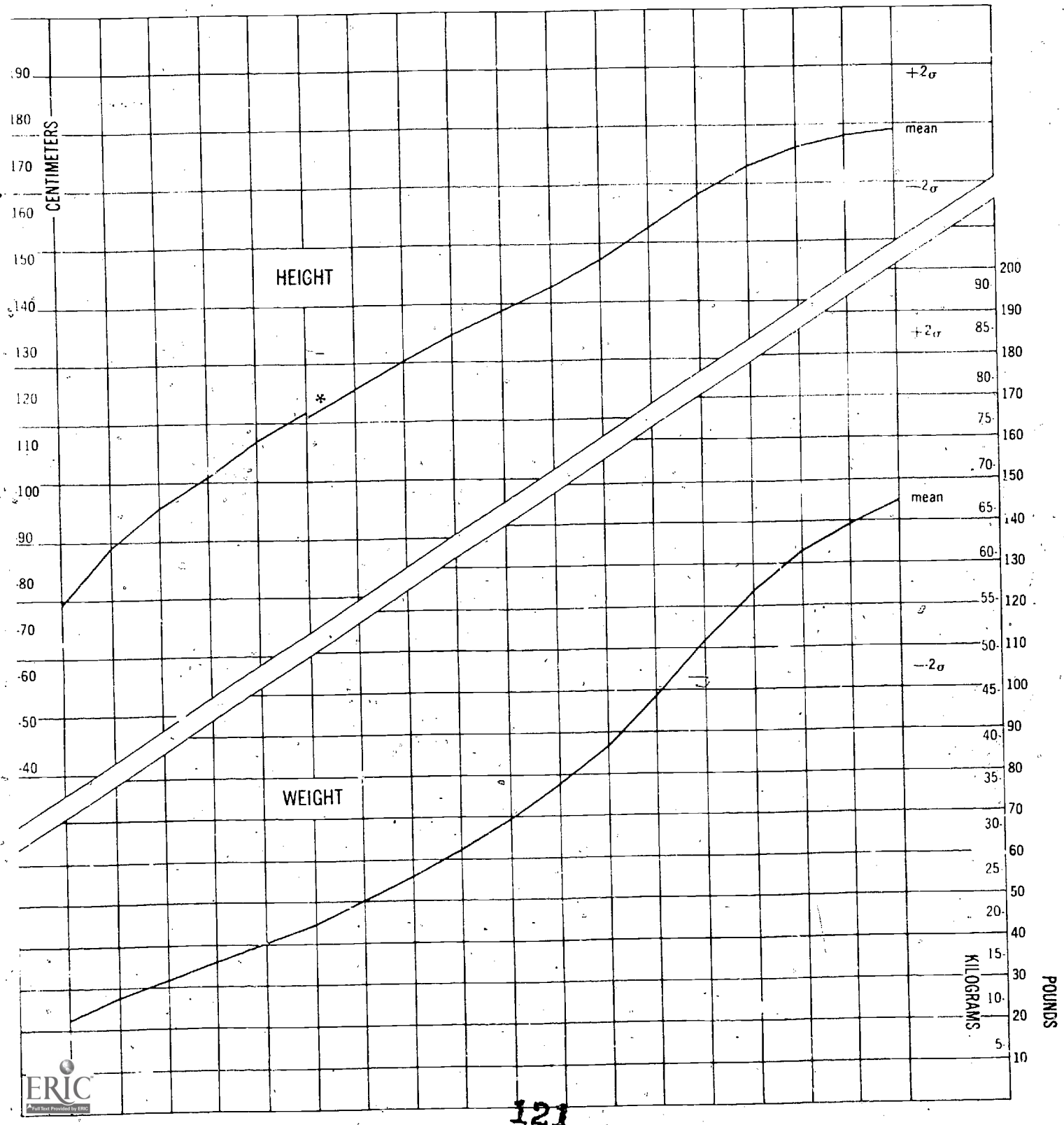
0. Academic achievement will be improved.	10a. Eighth graders who have one year of middle school experience will out-perform matched eighth graders with no middle school experience on a standardized achievement test battery.	10a. The Iowa Test of Basic Skills will be administered to experimental and control eighth graders in the fall.	10a. Mean gains from 6th grade testing to 8th grade testing of experimental and control subjects will be compared. Statistical Tests: Significance of difference of means for large independent samples.
1. The philosophy of the middle school movement, in terms of meeting the specific needs of young adolescents will be reflected in the flexible, supportive attitudes of middle school teachers and in the substantial provisions for individual guidance.	11a. Individual guidance available for experimental students will be substantial and superior to that offered previously under junior high organizations.	11a. Faculty lists and enrollment figures at individual schools. 11a. Counselor Division, FWISD.	11a. Compare couselor-pupil ratios.
	11b. Middle school teachers will score higher on a measure of pupil-teacher rapport than junior high teachers.	11b. Administer the MTAI (or portions) to experimental middle school and control junior high teachers.	11b. Compare measures of central tendencies and variation.
	11c. Middle school teachers will report greater belief in a version of middle school philosophy* than will junior high or high school teachers.	11c. Administer checklist* to all middle school teachers, and control junior high teachers, and sample of high school teachers.	11c. Compare measures of central tendency and variation. Statistical Tests: Significance of difference of means.
	11d. The school drop-out rate of 7th, 8th, and 9th graders will decrease under the middle school program.	11d. School drop-out rates and/or frequencies at all middle schools during 1969-70 and under previous junior high organization (1967-68).	11d. Compare rates. Statistical Tests: Significance of difference of proportions.

*Educational Research Service, NEA, Circular No. 2, 1969, p. 17, "What is the Difference Between a Middle School and a Senior High School?"

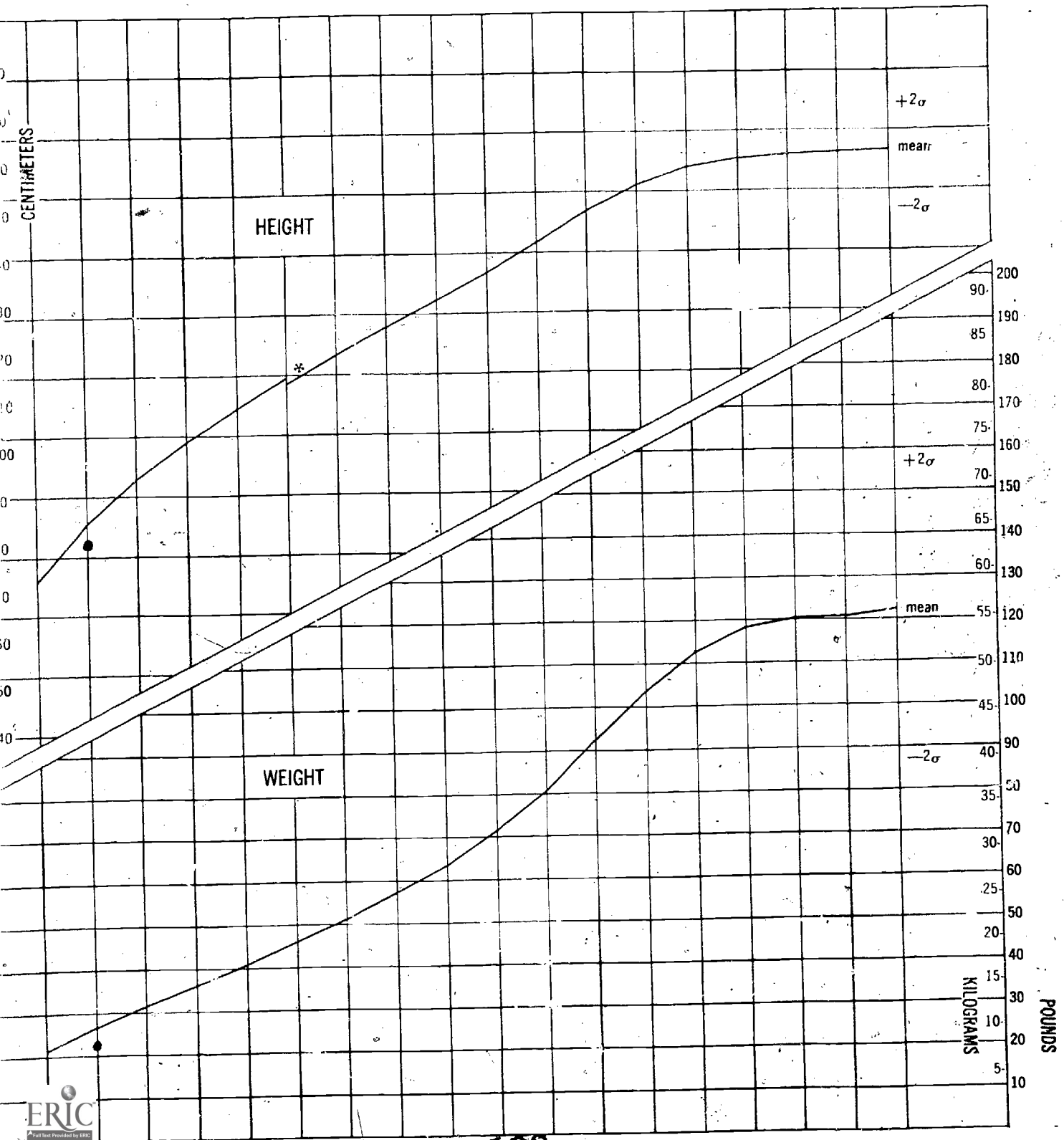
BOYS/PHYSICAL DEVELOPMENT
1 TO 18 YEARS

APPENDIX B

upine length to 6 years, standing height from 6 to 18 years



bine length to 6 years, standing height from 6 to 18 years



APPENDIX D

STUDENT QUESTIONNAIRE

Explanation to student: This questionnaire represents an attempt, by the Research Department of the Fort Worth Public Schools, to assess the educational and social growth of students in your particular age group. Please cooperate with this research by responding as accurately as possible to the questions. Do not sign.

Thanks,

Charles L. Evans
Director of Research

Demographic Data

		Circle One
1.	Sex?	Male Female
2.	Grade?	6 7 8 9
3.	School?	_____ Write in

1. Is there a certain teacher at your school that knows your school work better than other teachers? Yes No

   If yes, please explain why this teacher would know more about your school work.

   _____

   _____

2. How often have you, this school year, participated in school intramural athletic contests held between classes before or after school or on Saturday? PE None Once Several times

   If so, when? Before school After school Saturday

   What? _____

3. How often, last year, did you participate in school intramural athletic contests between PE classes before or after school or on Saturday?

None Once Several times

If so, When?

Before school After school Saturday

What? _____

4. Have you started car dating?

Yes No

If yes, please answer the following:

a. What type of dating usually?

Single pair Double dating Group dating

b. How frequently?

Once a month Once a week More than once a week

c. In what grade are the boys or girls in that you date the most?

_____

d. Are you going steady now?

Yes No

e. Have you gone steady this year at any time?

Yes No

5. How many times this school year have you talked individually with a counselor about a problem?

None Once Several times

6. Name the three persons (other than relatives), living or dead, that you admire the most and identify them.

(1) _____ Person's Name _____ Who is this person?

(2) _____ Person's Name _____ Who is this person?

(3) _____ Person's Name _____ Who is this person?

10. What school subject have you taken this year that you could not have taken if ninth graders had remained in junior high schools?

11. What special areas at school are you using that would not have been available to you if ninth graders had remained in junior high schools?

APPENDIX E

AWARDS PROGRAM
Friday, April 10, 1970

1. Introduction . . . . . Mr.
2. Spelling Champion . . . . . Mrs.
3. Girls Intramural Basketball . . . . . Miss Mrs.
4. Boys Intramural Basketball . . . . . Mr.
5. Intramural Gymnastics (Boys and Girls) . . . . . Mr.
6. Intramural Weight Training (Boys) . . . . . Mr.
7. Girls Saturday Basketball . . . . . Mrs. Miss
8. Boys Saturday Basketball . . . . . Mr.
9. Girls Varsity Volleyball . . . . . Miss Mrs.
10. Intramural Swimming (Boys) . . . . . Mr.
11. Girls Intramural Volleyball . . . . . Mrs. Miss
12. Boys Intramural Volleyball . . . . . Mr.
13. Girls Varsity Basketball . . . . . Miss Mrs.
14. Intramural Wrestling . . . . . Mr.
15. Boys Varsity Basketball . . . . . Mr.
16. Intramural Bowling (Boys and Girls) . . . . . Mr.
17. Boys Varsity Track . . . . . Mr.
18. Intramural Cross Country Track . . . . . Mr.
19 Girls Intramural Letters . . . . . Miss Mrs.
20. Boys Intramural Letters . . . . . Mr.
21. Boys Intramural Certificates . . . . . Mr.
22. Presentation of trophies to the school and Mr. . . . . .
23. Conclusion . . . . . Mr.

APPENDIX F

MIDDLE SCHOOL EVALUATION

TEACHER QUESTIONNAIRE

Instructions: You have been randomly selected to respond to this questionnaire. Please return unsigned to the Research Department, East Annex, Room 32, through the school mail. Thanks.

Charles L. Evans
Director of Research

Demographic Data

Circle One

1. Sex? Male Female

2. What students do you teach? 6 7 8 9

3. Are you a member of an operating, official teaching team? Yes No

   How long has your team been operational? _____

Miscellaneous

4. Circle 3 numerals to indicate which combination of grades you feel should be together in a school. 5 6 7 8 9

5. How are you enjoying teaching this year as compared to last year? More Less Same

   If more or less, why?

   _____

   _____

6. How would you assess the self-directional skills of the students at your school? Improving Lessening or No Change

7. If students have an independent study period, answer the following:

   a. Is it supervised? Yes No

   b. By whom? Teacher Aide

   c. Are behavior problems at this period substantial? Yes No

8. How does the frequency of classroom behavioral problems compare to that of last year at this same school? Decreased Increased or No Change

   If decreased or increased, how do you account for the change?

   _____

   _____

9. I you have taught in this school as a junior high teacher, please answer the following:

   a. What was your average class load? _____ Number of students

   b. What was your daily load? _____ Number of students

   c. What was your total load? _____ Number of students

10. As a middle school teacher ------

   a. What is your average class load? _____ Number of students

   b. What is your daily load? _____ Number of students

   c. What is your total load? _____ Number of students

11. If you taught at this school last year, please respond to the following question:

a. How does the amount of individual guidance provided students at your school compare with that provided last year at this school?

Decreased Increased or No Change

b. If increased or decreased, please explain.

_____

_____

12. How many years has this school been in operation as a middle school?

One Two

13. Do you feel that the middle school movement should result in an improved educational experience for students aged 11-14?

Yes No Uncertain

Optional comments or recommendations:

_____

_____

_____

_____

APPENDIX G

WHAT IS THE DIFFERENCE BETWEEN A MIDDLE SCHOOL AND A JUNIOR HIGH SCHOOL (5)

A middle school program is designed to recognize the uniqueness of the growth stage spanning the transition from childhood to adolescence.

The junior high has evolved into exactly what the name implies -- junior high school.

MIDDLE SCHOOL EMPHASIZES -	JUNIOR HIGH SCHOOL EMPHASIZES -
.. a child-centered program	.. a subjected-centered program
.. learning how to learn	...learning a body of information
.. creative exploration	..mastery of concepts and skills
..belief in oneself	.. competition with others
.. student self-direction, under expert guidance	.. adherence to the teacher-made lesson plan
.. student responsibility for learning	.. teacher responsibility for student learning
.. student independence	.. teacher control
.. flexible scheduling	.. the six-period day
.. student planning in scheduling	.. the principal-made schedule
.. variable group sizes	.. standard classrooms
.. team teaching	.. one teacher for a class
.. a self-pacing approach, with students learning at different rates	.. a textbook approach, with all students on the same page at the same time.

Minnesota Teacher Attitude Inventory, p. 1

SA—Strongly agree
A—Agree
U—Undecided or uncertain
D—Disagree
SD—Strongly disagree

1. Most children are obedient.
2. Pupils who "act smart" probably have too high an opinion of themselves.
3. Minor disciplinary situations should sometimes be turned into jokes.
4. Shyness is preferable to boldness.
5. Teaching never gets monotonous.
6. Most pupils don't appreciate what a teacher does for them.
7. If the teacher laughs with the pupils in amusing classroom situations, the class tends to get out of control.
8. A child's companionships can be too carefully supervised.
9. A child should be encouraged to keep his likes and dislikes to himself.
10. It sometimes does a child good to be criticized in the presence of other pupils.
11. Unquestioning obedience in a child is not desirable.
12. Pupils should be required to do more studying at home.
13. The first lesson a child needs to learn is to obey the teacher without hesitation.
14. Young people are difficult to understand these days.
15. There is too great an emphasis upon "keeping ..." in the classroom.
16. A pupil's failure is seldom the fault of the teacher.
17. There are times when a teacher cannot be blamed for losing patience with a pupil.
18. A teacher should never discuss sex problems with the pupils.
19. Pupils have it too easy in the modern school.
20. A teacher should not be expected to burden himself with a pupil's problems.
21. Pupils expect too much help from the teacher in getting their lessons.
22. A teacher should not be expected to sacrifice an evening of recreation in order to visit a child's home.
23. Most pupils do not make an adequate effort to prepare their lessons.
24. Too many children nowadays are allowed to have their own way.
25. Children's wants are just as important as those of an adult.
26. The teacher is usually to blame when pupils fail to follow directions.
27. A child should be taught to obey an adult without question.
28. The boastful child is usually over-confident of his ability.
29. Children have a natural tendency to be unruly.
30. A teacher cannot place much faith in the statements of pupils.

GO ON TO THE NEXT PAGE

APPENDIX I

TEACHER COMMENTS AND RECOMMENDATIONS ABOUT THE MIDDLE SCHOOL MOVEMENT

Approximately 140 teachers, randomized from each middle school, returned the teacher questionaire. Of this group, over one-third chose to comment or make recommendations (Appendix F, question 13). All of these expressed views are recorded below in three catogories: comments by teachers who perceived the middle school movement as worthy (71 per cent): comments by teachers who were uncertain about the worth of the movement (24 per cent); comments by teachers who perceived the movement as undesireable (5 per cent). Only meager editing was done by the present writer to exclude repetition and comments that were unrelated to the middle school movement.

Comments and Recommendations by Teachers Favoring the Middle School Plan

I do not want to change merely for the sake of change alone. I want to be given some time to work out a program and be prepared and know what is expected of me before I embark on some new method of teaching.

Yes, I feel that the middle school movement should result in an improved education of youth between the age 11-1r. The recommendations I would like to make for Mid-School (1) the changing of size of the classroom to meet the needs of the students. At the present, the classrooms are too small for team teaching as it should be. (2) All teachers should be assigned to only one subject matter if possible. (3) There is too much emphasis placed on sports in mid-school.

This is an excellent means of maturing 6th graders. I love it.

Better grouping of age levels. 9th grade should be in high school where courses are geared to them. This leaves the interest middle school freer to handle the interests of this younger age group.

Team teaching will work - good teams should be rewarded monetarily -. The workshops during the year should be used to exchange ideas on how to improve team teaching - and be directed run and taught by local practicing team teachers. Not supervisors or outside "Experts"

I think the middle school concept has proven itself worthy of continuation and should be a guide for other school districts possibly to improve themselves.

I'M highly in favor of the middle school. I've really enjoyed our rotating schedule.

We need to vary the class lengths. Some short periods and some long periods.

Only if the school is not operated as a secondary school.

I feel middle school has benefited both teacher and student from the teaching and learning process. It was a great challenge that enhanced my teaching potentials. It had its strengths and weakness. Most of all the students in my class enjoyed every minute of their work.

It is good that the more mature 9th graders are now gone - However, I dont believe that these pre-teens should be required to shoulder the responsibilities of rotating schedules, independent study, etc. I believe team teaching is good, if done properly -- A ten or 12 year old child coming from a self-contained classroom has a hard enough time getting accustomed to 6 or 7 new teachers.

The children I taught had reading problems. I think more than one reading clinic should be utilized here -- and should with the students for a three year period.

Our school is called a "middle" school but in practice was not really in a middle school program. One of the largest drawbacks to the heavy teaching loads was the lack of time for individual help. We were swamped in short period classes and regular classroom schedules. Individual contact with students was hard to schedule. In our low-rent-low-economic area our students need at least one teacher to be able to go to with problems.

Independent study should not be as liberal. A supervised study period will serve just as well. There should be a learning of freedom with order and trained for responsibilities to carry on. They need a gradual release to responsibility at this age.

We need smaller classes - so as to give more individual help.

It is certainly "honed" that the program will be allowed to result in a improved state, educationally, and that this allowance will not be "strategically staged" in the evidently desired locales (schoolwise) at the expense of the more than evident undesired ones.

Unless the proper facilities are available the middle school will fail. This is good, but too much is expected and too little has been given to work with.

I have seen some excellent results from team teaching independent study time, and other middle school techniques. The only failures I have observed were difficulties which could have been overcome by a competent principal. Our principal openly admitted to knowing nothing about the middle school program and having no desire or intention of learning about it. Despite, this, I feel I have done more real teaching and worked closer to the needs of my students than ever before due to the relevancy of the middle school program.

I feel that the main thing we need is more room - the program is good - but the facilities can and will continue to be improved. The opportunity to meet some days with a small group for discussion appeals to me - but in our department this year we were not set up with room to do this.

I think the middle school concept is excellent. These 3 age groups relate to each other much better and the 9th better in high school.

But it is doubtful that it will until teams of qualified teachers are used in all areas instead of just one or two. Also highly skilled aides would be of great benefit.

Most of the middle school objectives will result in improvement.

If Fort Worth is to have team-teaching, they are going to have to allot more money for remodeling older schools to adapt to the program.

There is less opportunity for the slow and uninspired student to receive the necessary direction. A system such as ours needs more teachers, not less, in order to be effective.

I feel that our students need additional guidance in use of their independent study.

I think independent study should be more supervised - more children returning to classes instead of present plan.

Comments and Recommendations by Teachers Who Were Uncertain About the Middle School Plan

I feel that the advantages have been cancelled by the disadvantages of no personal contact and individualized instruction.

It is hard to tell at present since we have 2 new grades coming in to get used to the new situation. I think we will be able to tell more next year.

We are a middle school in name only. We have grades 6-8 but have seen very few other changes. Instructional methods and student role in the school has changed little.

It was my understanding that the middle school was designed to operate ideally with an enrollment of around 750 students. (Maximum) As usual, the "idea" behind the movement sounds like the answer to a prayer--however, with 2000 students - too little building and too little equipment - it is difficult to judge the movement objectively. This time last year I was very "gung ho" for the program - at the moment - am uncertain.

The sixth graders are not mentally ready for this middle school program.

Middle school students are too young to handle a right a high per centage of self discipline. They have the intelligence: they lack the wisdom. "Bring up a child in the way he should go, and, when he is old, he will not depart from it". Let him bring himself up, and we reap a wanton harvest of society; riots, rebellion, lack of consideration for anyone but self. Since "it is not in man that walketh to direct his steps" (Jer. 10:23), we certainly err in expecting the child to be able to direct his steps).

Teachers need more training in presenting material according to individual needs of child. Often courses are inflexible and irrevelant to the child's world around him.

I am concerned about the lack of activities centered around the students' school life. How can we interest them in their subjects if we concentrate only on the subject matter as presented in a traditional classroom setting? I would like to see subject matter

clubs such as Library Club, Science Club etc. Perhaps 1 day a week could be assigned Club day and the students could use 1 independent study period to go to their club meeting.

The change seems too sudden with the elementary or high schools keeping the needed equipment.

At the end of this first year, the disadvantages of the middle school seem to exceed the advantages. Innovation might reduce or even remedy much of this.

I feel students at this age level need a great deal of firm, but fair guidance and cannot be allowed to decide all their own rules. I am a little pessimistic about 6th graders and possibly 7th and 8th grades having the ability because of their lack of maturity to discipline themselves, completely to use independent study time wisely.

The team teaching concept may be too advanced for the middle school age - although the idea of team teaching is a practical one.

In industrial arts - we are reaching more students, but they do not learn as much. They spend 2 hours a week in shop instead of 5 hours.

The class load is tremendous!! I feel that the students need more supervision especially sixth graders. The student body is not making good use of their independent study time. Our school is very crowded. We do not have the staff nor the room to carry out our program successfully.

The 6th grade should be a little more self-contained in basic subjects.

I feel serious psychological "pit-falls" are being over-looked, and that the "change" can do much harm without personnel acutely aware of the growth problems in this area. It has been felt, and I agree that the 7th grade child and the 9th grade pupil were a generation apart. Yet, this is true, also of the 6th graders and 8th graders. The premature social and competitive milieu can be better controlled now.

What's wrong with the 6, 2, 4 plan? 1 thru 6th, 7th and 8th, 9th thru 12th.

Comments and Recommendations by Teachers Who Perceived the Middle School Plan as Undesireable

Student load and grouping according to student achievement level does not provide time for individual guidance.

Sixth graders aren't ready for the problems presented to them by the older children.

Last year our students had things to do and look forward to. There were pep rallies, class officers - things to use their energy and time on. Now they have nothing. We have a drug problem. Having no activities or cutting out so many of them does not help this problem. It has been said that we do not want mini-high schools -- why not if it meets the needs of the students.

Too many classes: no time for individual work; too much noise.
Too little sectioning by ab

Please give these studer ing to work toward besides the one-sided learning you get in books. They're failing to develop wholly. They need social training, leadership training besides the mental and physical. By adding incentive devices that would give students the opportunity to lead and excel, we might even establish some king of moral and spiritual ideas in these children's minds without reading the Bible or praying-- in this respect, our schools are failing bitterly.