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FOR SEVENTH GRADE STUDENTS IN A SANTA MONICA

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This study proposed to evaluate current practices for ability placement of pupils entering seventh grade English, social studies, and arithmetic classes in a selected junior high school of the Santa Monica (California) Unified School District.

Hypotheses to be tested were: (1) The effectiveness of placement practices at the seventh grade level can be predicted in one junior high school. (2) A given formula for predicting success of placement practices at the seventh grade level in one junior high school, when supplemented by substantiating evidence from recognized authorities in this area of investigation, can be used as an approach to general evaluative procedures in other junior high schools.

The statistical analysis for Hypothesis (1) employed the method of multiple regression. Sixth grade test scores in I. Q., reading, language, work study, and arithmetic were correlated with the grades earned by 537 pupils in seventh grade English, social studies, and arithmetic--the three basic subjects required in the selected school. School years examined were 1960-61 and 1961-62.

The three basic subjects were established as dependent variables; the test scores and marks in each of the basic subjects during sixth grade, as independent variables. It was found that sixth grade marks in social studies and arithmetic are most useful in predicting the three dependent variable, but that I. Q., reading comprehension, and arithmetic problem-solving also contribute significantly to an over-all predictive formula.

Hypothesis (1) was accepted on the basis of the findings, although each standard error of the above-named independent variables was greater than half a grade point indicating a substantial error for the most effective ability grouping. Hypothesis (2) was rejected for lack of further outside information to substantiate any inference drawn from the statistical findings. Certain criteria taken from the literature were, however, found to be operative in the selected junior high school:

1. The ability grouping program is grounded upon a basic philosophy of education and governed by definite policies on grading and promotions.

2. Provisions for modification of the curriculum and of instructional methods and materials, as well as for program flexibility and evaluation, are consonant with best practices.

One conclusion, reached independently from observation of current practices, was that administering standardized tests at the sixth grade level for the sectioning of seventh grade pupils does not permit the correlation of seventh grade scores with seventh grade marks.

Conclusions from the statistical analysis were:

1. I. Q., reading comprehension, and arithmetic problem-solving are significant for predicting successful seventh grade placement when combined in a multiple regression analysis.

2. Predicting successful placement in seventh grade English, social studies, and arithmetic groups from marks made in sixth grade social studies and arithmetic provide lower standard errors of estimate than do predictions from the I. Q., reading comprehension, and arithmetic problem-solving scores. There is therefore a positive significant relationship between marks made in sixth grade social studies and arithmetic and the English-social studies-arithmetic marks

in seventh grade.

It is recommended:

1. That junior high school administrators and/or counselors familiarize themselves with the curriculum and grading policies of feeder elementary schools so that there will be better vertical articulation between both levels of education.

2. That standardized tests be given at the end of the sixth grade so that scores may have greater validity in relation to seventh grade ability grouping.

3. That marks made in sixth grade social studies and arithmetic be considered when grouping pupils in seventh grade English, social studies, and arithmetic classes.

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FOR SEVENTH GRADE STUDENTS IN A SANTA MONICA
CALIFORNIA JUNIOR HIGH SCHOOL

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CHAPTER I

INTRODUCTION

In the history of American education, the junior high school is a relatively recent innovation. Yet, ever since its beginnings in Ohio (1909) and California (1910), it has found wide acceptance in school systems the nation over (17, p. 16). Designed to provide an appropriate exploratory and general education for pupils in the seventh, eighth, and ninth grades, it changed the 8-4 organizational structure of pre-college education prevalent since the Civil War to the 6-3-3 plan currently operating throughout most of the nation. As a social institution it is in a position to perform a unique service to young adolescents by offering them an environment in which to "find themselves" and to discover their potential for future educational and/or occupational success.

Modern concepts of human values and of personality development are concerned with many matters which once were neglected by the formal school, whose primary purpose was preparation for college marked by rigorous selectivity and competition. Pupil with bad manners

or nonconforming habits were quickly eliminated so that sixty years ago the doubtful "characters" and the inefficient students seldom finished the sixth grade. Today, practically all children are in the sixth grade, and continue into the junior high school, many of them going beyond. With so many children in school, and with educational expectations so much more varied in scope and kind, the long-prevailing "get-it-or-git" philosophy has given way to the philosophy which advocates the all-round development of the individual student (38, p. 18). Within the framework of this new philosophy the junior high school organization was first formed and developed. It could not have developed under the dominance of classical ornament and college preparation for gentlemen as the major school objectives.

Organizational structure, however, was not the complete answer to the many problems with which school people had been trying to grapple. As James Bryant Conant has so well concluded:

... this place of grades 7, 8, and 9 in the organization of a school system is of less importance than the program provided for adolescent youth. . . .

For example, the educational program in grades 7 and 8 should reflect the transitional nature of these grades. First, . . . early adolescence is a very special period physically, emotionally, and socially. . . . Second, these grades provide the transition from the elementary school with its essentially child-centered emphasis to the high school with its greater emphasis on subject matter. Concern for the physical, social, and emotional development of boys and girls properly exists at all

levels, but as they progress through the grades the role of organized knowledge becomes increasingly important (11, p. 1).

How such "organized knowledge" shall best be imparted has been a matter of much concern, particularly in recent years. But again Conant, with characteristic forthrightness, has pointed one way through his advocacy of "ability grouping":

I personally recommend three groups in academic courses with the bulk of the pupils in a particular grade in a large middle group. Preferably, the grouping should be accomplished subject by subject... (11, p. 8).

Conant concedes, of course, that "Grouping for instructional purposes is a subject about which educators with considerable experience disagree" (11, p. 8); but this concession is no surrender of his personal conviction. He merely adds, by way of emphasis, that "...any grouping arrangement assumes differentiated materials and teaching methods" (11, p. 9).

Such an approach to educating all the children is by no means new. From Pestalozzi to Lancaster to Dewey to Conant and others-- the problem has commanded the attention of educators for at least the past hundred years. The advantages of group instruction seemed obvious from the start: financially more feasible than the costly private instruction it was designed to replace, it also allowed for social interaction and learning among pupils. But more and more the disadvantages

accruing from an apparent neglect of individual differences--the slow learner, the average, the intellectually superior--began to be made manifest. Indeed, commented Briggs more than thirty years ago:

... The intellectually precocious pupil is quite as much a problem as the dull and retarded one. As a matter of fact, ... we know much more about how to teach the latter than the former (7, p. 167).

This and similar observations prompted a renewed effort to overcome these disadvantages, and led educators to examine ability grouping as a possible solution to the problem of meeting individual needs within a group atmosphere.

The Problem. --It was with an attitude of critical inquiry, therefore, that the present study was undertaken, the focus being upon observable results in one junior high school within the Santa Monica (California) Unified School District. The purpose of the study was to evaluate current practices for placing entering junior high school pupils in seventh grade English, arithmetic, and social studies classes. These practices, described more fully in a later chapter, are based upon criteria established through the scoring of tests administered to the sixth grade pupils in seven feeder elementary schools who subsequently attended the junior high school under study. Briefly, the scores considered are those achieved on the California Test of Mental Maturity (I. Q.) and the eleven Iowa Tests of Basic Skills, these scores

being supplemented subjectively by the sixth grade teacher's recommendation as to ability grouping.

It is, of course, clear that neither test results at the sixth grade level nor teachers' recommendations are necessarily accurate predictors of ability grouping in the seventh grade. For this reason, adequacy of placement can be judged only on the basis of actual achievement during the seventh grade year. The two school years selected for this study were 1960-61 and 1961-62. Marks for the 537 seventh grade pupils included in the investigation were secured at the end of the first semester of each of these school years, and it was upon this basis that the evaluation here attempted was made.

Hypotheses. -- The hypotheses of this study may be stated as follows:

(1) The effectiveness of placement practices at the seventh grade level can be predicted in one junior high school.

(2) A given formula for predicting success of placement practices at the seventh grade level in one junior high school, when supplemented by substantiating evidence from recognized authorities in this area of investigation, can be used as an approach to general evaluative procedures in other junior high schools.

Importance of the Study. -- The principle that schools should be adapted to the civilization in which they exist has become an educational

truism. Such adaptation, however, can be achieved only if the curriculum is not permitted to become static, if administrative practices avoid rigidity, if pupils are surrounded by an environment conducive to their best learning. As already suggested, ability grouping has been considered by some educators as one effective means of providing the necessary learning environment. Not all educators are convinced that this is true, however. Briggs, for example, warned:

When pupils are homogeneously classified with respect to intelligence as revealed by standardized tests, physical and social development can not safely be ignored. Two pupils with identical scores on an intelligence test may differ markedly in physical development, in interests, and in... "the horizontal growth" of the intellect. It is likely to be unfortunate to place such two pupils in the same class (7, p. 167).

In view of these conflicting opinions, it was thought that an analytic evaluation of placement practices in one junior high school might prove valuable when proceeding from the specific to the general. Certainly, there seems to be no question that the placement of seventh grade pupils in classes where they will be most challenged and successful in their work will add greatly to their confidence and future endeavors. This, of course, is a generalization which must be substantiated specifically. It is hoped, therefore, that the present study will contribute toward establishing the validity of the generalization on the basis of testable results of ability grouping at the seventh grade level in a selected junior high school.

Methods and Procedures. --Descriptive investigation was employed in a portion of this study. As defined by Good and Scates, a descriptive investigation includes:

... all of those studies that purport to present facts concerning the nature and status of anything--groups of persons, a number of objects, a set of conditions, a class of events, a system of thought, or any other kind of phenomena which one may wish to study (22, p. 259).

Almost any form of research might be included in this definition.

However, Good and Scates would:

... restrict the term to those studies which are concerned with general nature and standing (in the scale of human values) and with a particular time (22, p. 260).

The word "descriptive" may be said to apply more specifically to the method of reporting than to the procedures for gathering research data. With regard to the latter, this investigation used expert opinion, drawn from the literature, to establish evaluative criteria against which to weigh current placement practices in the junior high school under discussion.

Additionally, separate grades earned by the 537 subject pupils in English, arithmetic, and social studies during the seventh grade year were used to evaluate adequacy of placement according to the following factors:

- (1) Scores on the Iowa Test of Basic Skills (English, arithmetic, work study skills)
- (2) Scores on the Iowa Test of Basic Skills (reading)
- (3) Scores on the California Achievement Test (if Iowa Test scores were not available)
- (4) Elementary sixth grade records in English, arithmetic, and social studies
- (5) Scores on the California Test of Mental Maturity

In the statistical analysis, which employed the method of multiple regression, the scores on the eleven Iowa Tests of Basic Skills were correlated with the grades earned in English, arithmetic, and social studies, respectively, in the seventh grade. Again, the coefficient of correlation was used to determine the relationship between factors (2), (3), (4), (5), and the separate basic subject grades earned during the seventh grade year.

Organization of Remainder of Study. -- The divergence of educational opinion upon the subject of ability grouping for instructional purposes suggested in the foregoing pages has been expanded in Chapter II, which is intended as a concise summation of unfolding viewpoints on the subject in general.

Chapter III, which discusses at some length methods and procedures used in this investigation (1) a review of present practices in the Santa Monica junior high school under study and (2) a descriptive

investigation of evaluative criteria drawn from the literature.

In Chapter IV, findings of the statistical analysis are offered.

Chapter V summarizes the study in brief, presents conclusions drawn from the investigation as a whole, and makes recommendations based upon findings and conclusions.

CHAPTER II

REVIEW OF RELATED LITERATURE

Ability grouping is highly desirable and gives the individual an opportunity to develop to his optimum....

Ability grouping gives first place to subject matter and relegates the individual to second place....

Homogeneity is not possible....

Homogeneity is really reduced heterogeneity....

These, in essence, are the contradictory conclusions of recognized educators concerning the still controversial subject of "ability" or "homogeneous" grouping. Why there should be divergent a range of opinion in this area is not entirely clear; but it may stem from the fact that the two terms have frequently been used interchangeably, with the result that there has been some confusion concerning the precise problem under discussion. As defined by the Encyclopedia of Educational Research (29, p. 376), "Homogeneous grouping is the classification of pupils according to interests, needs, or purposes"; whereas,

Ability grouping has a much narrower meaning and refers to the formation of groups on the basis of ability to do the work and for the purpose of improving classroom instruction.

It was apparently this distinction that Conant had in mind when he recommended the grouping of pupils in academic courses, such grouping preferably to be accomplished "subject by subject" (11, p. 8).

Early Research and Opinion. -- That the distinction was less clear in the minds of earlier writers is evidenced by studies such as that reported by Billett. Titling his book The Administration and Supervision of Homogenous Grouping, Billett actually discussed ability grouping, drawing his data from the more significant studies published prior to 1932. One of these studies maintained that habit and character factors are a part of past school marks which are important to future success, and that intelligence tests do not measure these factors to any appreciable extent. Billett interpreted this view to mean that pupils should continue on the same level as that of previous years. More ever, he thought, teachers' marks measure accomplishment but not the ability to accomplish. "Therefore," he concluded:

... the basis of ability grouping should be the best available measure of native ability to accomplish, and the teacher's effort should be directed toward getting the pupil to work up to the level of his ability (4, p. 35).

The implication here would seem to be that the goal at which ability grouping is aimed requires determination. This matter was the subject of the Thirty-fifth Yearbook of the National Society for

the Study of Education: should ability grouping be predictive of future success in learning, or should it be developmental in nature? Predicting success involves bringing together pupils who will have attained similar academic stature at the end of the learning period. Developmental grouping, on the other hand, involves class placement of pupils who will be able to work together and succeed individually without reference to predicted success. In either case, mental ability, supplemented by certain variables used singly or in combination, are fundamental criteria for ability grouping. Among these variables the Yearbook suggested the following (30, p. 86):

- A. Physical Development
 - 1. Chronological age
 - 2. Physical maturity
 - 3. Physiological maturity
 - 4. Health
 - 5. Height
 - 6. Weight
 - 7. Anatomical age

- B. Intelligence
 - 8. Intelligence test results
 - a. Raw score
 - b. Mental age
 - c. I. Q.
 - 9. Teachers' ratings, singly or average
 - a. Of ability to learn
 - b. Of section to which pupil belongs
 - 10. Probable learning rate

- C. Achievement
 - 11. Achievement test results
 - a. Educational age
 - b. Achievement quotient
 - c. Subject age or subject quotient

- d. Raw scores on one or more subject-matter tests
- 12. Teachers' marks in one or more subjects
- 13. Rank in class

- D. Motivation
 - 14. Ratings or judgments on traits (e. g., industry)
 - 15. Achievement quotients or similar indexes
 - 16. Rank in class

- E. Social Factors
 - 17. Social age or maturity
 - 18. Home environment

- F. Special Abilities and Interests
 - 19. Prognostic or placement test results
 - 20. Special ability tests (as in music)

- G. Special Disabilities
 - 21. Defective vision or hearing
 - 22. Physical deformity
 - 23. Speech defects

Having established its thesis, the Yearbook proceeded to examine in what ways application of these criteria had been made. Gillespie Junior High School in Philadelphia, for example, inaugurated ability grouping mainly to provide more adequately for superior and retarded pupils. It was believed that a more satisfying curriculum could be offered through this means, and that teachers would be able to adjust their marking standards with greater ease. The Philadelphia Mental Ability Test was used as the primary basis for grouping, supplemented by standard achievement tests and comprehensive classroom tests. I. Q., mental age, chronological age, and probable learning rate, as indicated by previous achievement, were all

considered in grouping entering seventh-grade pupils (30, p. 262-263). No evaluation of the efficacy of this application of the suggested criteria was offered.

The staff at the Hutchins Intermediate School in Detroit, however, stated it had been fairly successful with the sectioning system it devised. This system first combined into a composite score results of the Detroit Alpha Intelligence Test, the elementary teacher's rating of general school ability, and the chronological age of the pupils. These factors were arbitrarily weighted to give 5 to the intelligence score, 4 to the elementary teacher's rating, and 3 to chronological age. Through the composite scores pupils were placed in rank order, and sectioning was made accordingly. Teacher reappraisal of pupil performance was continuous, and resectioning made whenever the need became apparent (30, p. 261-262).

Philip A. Boyer, a contributor to the same publication, questioned the use of so few criteria as a basis for sectioning, pointing out that at least theoretically, the best method was to consider a multitude of factors. He admitted, however, that a simple, easy, usable system is necessary if sectioning is to be accomplished without undue procedural involvement. He also pointed out that in graded schools both chronological age and I. Q. are factors to be considered in sectioning, particularly the I. Q., because it gives an indication of

the pupil's potential ability to learn. Past achievement, he thought, should likewise be taken into account as a predictor of future performance; but, like Billett, he cautioned that a pupil's past record of accomplishment is not necessarily a yardstick of his full ability to accomplish (5, p. 196-198).

In this connection, more than a decade before the appearance of the N. S. S. E. Yearbook, Fowler D. Brooks had conducted a study whose purpose and findings anticipated many of the results reported above. It was his intention to determine the value of fifth- and sixth-grade school marks and group tests of intelligence and achievement as a basis for grouping entering junior high school classes into sections homogeneous in respect to scholarship. Because Brooks' was one of the earliest investigations of this kind, and because his findings led to conclusions with which many modern educators agree, they are reproduced below:

1. Relatively accurate sectioning is secured if the pupils entering the first year class in junior high school are divided upon the basis of their sixth-grade school marks.
2. Sixth-grade marks give slightly more accurate sectioning than the average of fifth- and sixth-grade marks.
3. Dividing the first year class of a certain junior high school into three sections on the basis of sixth-grade marks, at the same time putting approximately

one third of the boys and one third of the girls in each section, and making two adjustments on account of differences in chronological age, gives 63 percent correct sectioning. By correct sectioning is meant that the pupil would be assigned to the same section by tests or school marks at the beginning of the first year in junior high school as he would be at the end of the year upon the basis of his scholastic success during the year.

4. Intelligence quotients from a group intelligence test give, on the average, 55 percent correct sectioning, if few adjustments are made on account of differences in chronological age; one of the achievement tests gives, on the average, 47 percent correct sectioning (8, p. 360-361).

On the other side of the ledger, Keliher made a strong case against homogeneous grouping, at least at the elementary level. In her opinion, if the total range of individual variations is considered, great reduction of those variations by sorting pupils into groups which are relatively stable is an impossibility. An individual is not consistent within his own abilities, she stated, and if the narrow range of academic skills is taken into account, a high degree of specificity in these skills is found within each person (25, p. 161-162).

With this view Burr apparently concurred, for his study seemed to support the opinion that grouping on composites of many characteristics cannot but result in heterogeneity (9, p. 11).

Recent Research and Opinion. --The lapse of a quarter-century did nothing to reconcile the opinions of proponents and

ponents of ability grouping. It merely provided more expressions on both sides of the controversy. C. A. Tonsor, for example, resorting for negative argument to the sociological factor involved in sectioning, maintained that so-called "ability grouping" merely helps develop the idea of second-class citizens. In his opinion, young people do not group themselves outside of school, and there is therefore no justification for grouping them inside. He believed that slow pupils will learn much from the brighter ones and the latter will derive benefit from having the opportunity to develop their social responsibility for the less able. The resentment of slow pupils resulting from their placement in a group away from the rest of their classmates, Tonsor stated, merely adds to their difficulties in learning (43, p. 75-76).

Such an argument may be mere rationalizing if, as Horner insisted, without ability grouping slower pupils will always be overshadowed by the brighter ones and will have no opportunity to express themselves (24, p. 9).

About midway between these two points of view is that expressed by Parker and Russell who believed that it is impossible to group two children "homogeneously," let alone an entire class. They amended this statement by pointing out they did not mean that children should never be grouped, but only that there is probably no basis for

forming pupils into groups. The early confusion between "homogeneous" and "ability" grouping appears still to be operating here, since the multiple bases for grouping cited by the authors and taken from the curriculum guide of the Oakland, California, public schools are, in fact, examples of the "classification of pupils according to interests, needs, or purposes"(29, p. 376) which defines homogeneous grouping. Among these bases are "interest grouping," "special needs grouping," "team grouping," "full class grouping," "tutorial grouping," and "research grouping" (34, p. 170). None of these, obviously, fits the definition of "ability grouping."

Within the last decade, according to Kozal, some junior high schools have grouped their pupils according to reading scores, although this is not a common practice. The argument for this kind of sectioning is that most instruction depends on the pupil's reading skill, and that using reading as a primary basis for grouping gives about the same degree of reliability as using the I. Q. , since the two have a high correlation. Nevertheless, factors such as other achievement scores, maturity, counselor's advice, and teachers' recommendations are not ignored, and serve to supplement the reading score (26, p. 17).

Alexander Frazier of the Los Angeles County Schools questioned the "high correlation" between I. Q. and reading scores;

but he otherwise approved of the sectioning procedure reported by Kozal. I. Q. he considered to be "not too reliable," but thought that when it is added to the reading score and teacher's estimate of a pupil's study habits, there results a combination "that almost guarantees a division between ability groups" (20, p. 340). Unlike Parker and Russell (34), who believed that any grouping system should be flexible, Frazier placed no emphasis on "flexibility." But in this connection, it should be remembered that Parker and Russell were primarily concerned with "homogeneous grouping," whereas Frazier's interest frankly centered upon identifying "ability groups."

Similarly, Lincoln Junior High School in Charleston, West Virginia, placed much emphasis upon ability grouping but considered many criteria before determining what seemed to be the most efficacious sectioning. Admittedly not new, these criteria included the pupil's achievement scores, potential for learning, interest, reading skills, work habits, special talents in art and music, educational goals, and emotional stability. In addition, however, this junior high school's philosophy of education precluded the idea of "intellectual segregation," which Tonsor so vehemently decried. Rather, it advocated that all pupils spend a part of each day in home rooms, nonacademic classes, and extracurricular activities in a heterogeneous setting (6, p. 22-23).

A majority of the nation's junior high schools now apply criteria for ability grouping almost exclusively to required academic subjects. But according to a recent report by a city-wide committee, working under the leadership of the Francis C. Hammond High School in Alexandria, Virginia, the possibility of extending this concept to academic electives should not be overlooked. Hammond has had ability grouping since its opening in 1956, and has used virtually the same criteria for such grouping as those reported immediately above for Lincoln Junior High School. Two recommendations contained in Alexandria's city-wide committee report seem valuable for more than local consideration:

1. That the secondary schools group all pupils according to individual ability whenever feasible. Grouping will be applied in all multiple sections of required courses, and likely will be applied in academic electives.
2. That three groups be formed, with the various points in the criteria being regarded as guideposts rather than as hard and fast requirements. The top group will consist of those who have 120 I. Q. or above, reading ability of two or more grades above grade level and subject achievement above grade level. The middle group will consist of those who have I. Q. 's from 90 to 119, reading ability within the span of one grade above and one grade below normal grade level, and subject achievement at or near grade level. The lower group will consist of those who have an I. Q. below 90, reading ability more than one year below grade level, and subject achievement below grade level. Past grade record, teacher recommendation, health and emotional adjustment will be considered in all cases (21, p. 51).

It might be argued by some that the grouping plan suggested by the committee stems from a basic measurement which, at best, is subject to question; namely, the pupil's I. Q. With this argument Stalnaker (42, p. 24-25) probably would agree. Recognizing that different ability levels do exist, and that identification of pupils within these levels should be made as soon as schools are able to make special provisions for those identified, Stalnaker nevertheless objected to hasty or spurious identification. The process of selection, he thought, should consider the past experiences of the individual and interpret from this background his present performance and the possibilities for his future. With some acerbity, Stalnaker declared:

The most common error in identification is based on the assumption that mental organization is a simple unitary thing and that I. Q. or some other single measure is about as perfect an index of ability as can be obtained.

Concurring in this contention, Chauncey (10, p. 28-29) agreed that future educational progress will depend on the pupil's innate ability and his past educational experiences. School marks and test scores, he believed, are better predictors of future academic achievement when used in combination than when used singly. Since school marks may not always be uniformly determined, test scores supplementing them have the advantage -- at any grade level -- of furnishing

... a standardized, comparable set of observations of pupils who may have had different teachers and come from different schools with differing marking systems.

Testing and identifying intellectual ability should not, however, be limited during the junior high school years; rather, they should constitute a continuous process. Chauncey's reasons for this statement are these:

- a) The growth of intellectual abilities, as reflected by standardized test scores, has stabilized by this age-period, to the extent that an eighth-grade test is likely to be nearly as effective as a twelfth-grade test in predicting--let us say--college freshman marks.
- b) Our educational system generally requires of pupils differential curriculum choices at the end of the eighth (or sometimes ninth) grade. Decisions made at this point are in close interaction with long-range educational and occupational choices. These decisions tend to close some doors or hold them open. School administrators also must often make around this period particularly significant decisions about the "ability grouping" of pupils in such subjects as English and mathematics (10, p. 33-34).

But individual strengths and weaknesses must not be neglected, no matter what the results of standardized tests may indicate. Thus, "grouping across the board," that is, assigning a pupil to a group and having him take all subjects with this group, is not recommended. Ability in the individual subject should be the deciding factor (32, p. 80-81).

Perhaps with this thought in mind, the Middletown Public Schools of Rhode Island are currently conducting a unique experiment: automated grouping. Rollins describes the process:

Skills, understandings, and concepts having been identified, are listed sequentially. Those... which an individual pupil has not yet mastered are punched on the pupil's IBM card for each subject. Coding the items, once they have been placed in sequence, is a relatively simple matter. By using a sorter, it is possible to group pupils on the basis of those elements of a subject field which they have not yet learned. These groups are organized into classes and assigned to teachers who are already aware of the needs of the pupils in their classes. In this way the pupil's progress is measured in terms of what he has learned rather than in terms of the number of courses he has passed. A quick look at a pupil's IBM card reveals at once what he has learned already and what remains to be learned (37, p. 213).

This type of grouping is based on the premise that it is possible to place into logical sequence all of the experiences to which pupils are exposed in the different subject fields. This system provides for individual differences by "fitting the curriculum to each pupil rather than fitting the pupil to a preconceived curriculum" (37, p. 214).

It is, of course, too early to evaluate the Middletown experiment, which was begun in the fall of 1960 and which is still in process. Rollins' report, however, does provide some instructive implications. Thus far, consideration has been given only to sectioning plans adapted to pupils--plans which, though somewhat diverse in organization and execution, still preserve the basic aim of ability

grouping set out in the N. S. S. E. Thirty-fifth Yearbook; namely, "to bring together pupils who will be able to work together and to progress together under conditions permitting the fullest possible development of the individuals involved" (30, p. 84).

Infrequent as the observation may be, "individual differences" are not necessarily restricted to the pupil population. J. Lloyd Trump, one of the first to speak out on the subject, pointed to the fact that there are also individual differences among teachers--differences which should be used to the best advantage. The ideal school, in Trump's opinion, would be organized around three kinds of activities: large-group instruction, individual study, and small-group discussion. This type of organization would emphasize helping the pupil to solve problems independently; or, as Rollins has suggested, fitting the curriculum to each pupil. The teacher's role in such an organization would be to work with the pupil in whatever capacity the teacher was best qualified--whether in large-group activities, small groups, or individual study. The educational program thus would be flexible for the teacher as well as for the pupil (44, p. 7-23), and flexibility would be achieved through such methods as team teaching, programmed learning, and the use of community consultants, clerical help, instructional assistants, educational specialists, and teaching aides (45, p. 107-109).

Trump's envisioned "ideal school," innovational as it may seem, was actually anticipated by almost twenty-five years in the N. S. S. E. Yearbook of 1936. Looking toward the future, the Yearbook stated:

Study of school organization in relationship to better instructional services leads one to believe that the prevalent concepts of the teacher and her position in relationship to pupil groups must undergo a radical change. It is futile to hope that by inservice training or by salary inducements a superior teacher will eventually be available for every classroom. The only hope for making high caliber teacher leadership available for all pupil groups within a school designed for the most satisfactory child growth will be through a reorganization in which the position of teacher will be raised to a more significant professional level. In the reorganization there probably will be fewer professional employees designated as teachers and possibly an increasing number of assisting technicians and teacher clerks (30, p. 26).

No matter what the grouping plan, success or failure will ultimately depend on the teacher. More recent literature seems to be putting the emphasis on the quality of teachers, and accepting the idea of ability grouping as part of school organization. Just as ability grouping is a refinement of the graded school, so the recognition of individual differences among teachers is a refinement of the instructional program. Staff utilization at its best will allow for the grouping of teachers to work with different pupil ability levels and with different group-size activities according to the

abilities and qualifications of the teacher.

Summary. -- There is a definite distinction between homogeneous grouping and ability grouping. The former seeks to classify pupils according to interests, needs, or purposes; the latter, to bring together pupils on the basis of ability to do the work and for the purpose of improving instruction.

Despite some opposition among educators, ability grouping has become an integral part of the total educational program, particularly in recent years, and reflects the philosophy and objectives of the individual school. Although research and experimental studies have not yielded conclusive evidence as to the criteria to be used in grouping pupils according to ability, intelligence tests appear at the moment to be favored by most schools as the primary criterion. Such tests usually are supplemented by other criteria; namely, mental age, chronological age, achievement test scores, reading level, past performance, health and emotional adjustment, and teacher recommendation. Flexibility must characterize any ability grouping program to allow for pupil transfer from one group to another whenever the need arises. Moreover, the classification of pupils at different ability levels should be by subject rather than by group, since a pupil could very likely be at a high level in one subject and a low level in another.

Although continuous research, experimentation, and evaluation are needed to determine criteria and procedures to be used in ability grouping, a few recent studies have projected possible future developments. Among these are the proposed fitting of the curriculum to the individual pupil; the recognition and best utilization of individual differences among teachers; the organization of the school around three kinds of activities--large-group instruction, individual study, and small-group discussion; and the achievement of flexibility for both teacher and pupil through such methods as team teaching and the use of community consultants and other instructional assistants.

CHAPTER III

CURRENT PRACTICES IN ABILITY GROUPING
AT SANTA MONICA AND EVALUATIVE CRITERIA
DRAWN FROM THE LITERATURE

If, as Professor W. H. Pearson once remarked, "A generalization is a plateau where a tired mind rests," a retreat from that plateau seems now in order, so that the discussion may move from the general to the specific. In so doing, it appears advantageous to present the practices and procedures adopted by the Santa Monica junior high school here under consideration with respect to the following areas: (1) educational philosophy, (2) criteria used for grouping, (3) curriculum and course of study, (4) instructional methods and materials, (5) grading policies, (6) program flexibility, and (7) provisions for program evaluation.

Educational Philosophy. -- The selected junior high school, according to its principal, "is well aware of and accepts wholeheartedly" the statement of Basic Beliefs that serves as a framework for the educational program of the Santa Monica Unified School District. The Statement outlines the major principles which form the basis for planning and evaluating the curriculum, the teaching method, the administrative procedures, and the school facilities

which comprise the educational program. Among the major beliefs which have special pertinence to the subject of this study are:

... that education should lead to knowledge, skills, and understandings needed by each individual to live effectively as a person and as a citizen. . . .

... that education. . . is also training in ability to evaluate ideas and concepts, and to use the methods of critical thinking to form independent ideas.

... that the development of each individual to his highest potential is a major goal of quality education. . . .

... that good education provides for the development of responsible self-direction.

... that all people have some measure of creative ability. . . .

... that education should prepare students for the selection of leisure-time activities which contribute to life enrichment.

... the curriculum should include experiences which prepare individuals for adaptation to change in a world which is increasingly characterized by change.

Ability grouping, as one part of the total school program, was inaugurated for the purpose of providing educational opportunities for each individual pupil according to his ability to develop to his maximum potential in academic work.

Criteria Used for Grouping. -- The criteria used in academic placement practices for the seventh grade consist of the intelligence quotient taken from the California Test of Mental Maturity; reading,

language, work study, and arithmetic scores taken from the Iowa Test of Basic Skills; and teachers' recommendations. Tests are scored by the Los Angeles County Schools during October of the sixth grade; therefore, scores are approximately one year old when used for for seventh grade grouping.

The ability levels include sections of honor, above-average, average, below-average, and special classes for mentally retarded. There is ability grouping for English, social studies, and mathematics; no attempt is made to group by ability in other subjects.

The I. Q. is the basic criterion used for placement in the three subjects listed above. This is supplemented by the reading comprehension score and teacher recommendation for placement in English and social studies. The I. Q. is supplemented by the reading comprehension score, arithmetic problem-solving score, and teacher recommendation for placement in the mathematics class. If there is a decided discrepancy in any of the scores, such as a low mathematics score with a high I. Q. and reading score, the counselor makes an individual check of this to determine the mathematics placement. No special weights are given these individual scores. The counselor usually separates this test information in the following manner to form the ability groups:

HONORS: I. Q. --120+, Reading Comprehension Score--
8. 0+, Mathematics Problem-solving Score--
7. 0+

ABOVE AVERAGE: I. Q. --110+, Reading Comprehension
Score--7. 0+, Mathematics Problem-solving
Score, 6. 0+

AVERAGE: I. Q. --100+, Reading Comprehension Score--
6. 0, Mathematics Problem-solving Score--
6. 0

BELOW AVERAGE: I. Q. --80 +, Reading Comprehension
Score--below 6. 0, Arithmetic Problem-
solving Score--below 6. 0

SPECIAL: I. Q. --below 80. Pupils are placed in the
special training classes only after individual
testing and upon the recommendation of the
district guidance service with the approval
of the parent or guardian.

These scores are guides and are not considered rigid
criteria for ability grouping. The seventh grade counselor emphasizes
that she must know or know about the sixth grade teachers in order to
judge what each teacher means when a recommendation is made. The
counselor must also know each teacher the new pupils are to have.

Curriculum and Course of Study. -- At the selected junior
high school, it is believed that to have ability grouping and not to
modify the courses of study for pupils with varying abilities would
cause failure of the program to provide for individual differences.
Thus, the course of study is modified for the different ability groups
in English, mathematics, and social studies. An example of this

differentiation may be observed by comparing the course of study for a seventh grade honors group in mathematics with one for an average group, shown below:

COURSE OF STUDY

TITLE OF COURSE - Arithmetic GRADE 7 DEPT. MATHEMATICS

LENGTH OF COURSE - 40 WEEKS REQUIRED

LEVEL OF COURSE - Honors requirements

BASIC TEXT: McSwain, Ulrich, Cooke. Understanding Arithmetic
California State Series. 7 and 8, 1957

OBJECTIVES

1. To complete the required work for 7th grade mathematics in the 1st semester.
2. To complete the required work for 8th grade mathematics in the 2nd semester.
3. To prepare the class for algebra in the 8th grade.
4. To place those not qualified for algebra at the end of the year in an above-average 8th grade mathematics class.
5. To help students understand the meaning of our numbering system.
6. To help students understand the basic arithmetical processes.
7. To help students understand the meanings and the use of our decimal number system.
8. To help students learn and understand each of the four fundamental processes in arithmetic.
9. To help students understand the relationships between whole numbers, fractions, and decimals.
10. To help students develop the ability to solve mathematical problems.
11. To instill and develop good learning attitudes.

* * * * *

TITLE OF COURSE - Arithmetic Grade 7 DEPT. MATHEMATICS

LENGTH OF COURSE - 40 weeks REQUIRED

LEVEL OF COURSE - average requirements; above-average requirements

BASIC TEXT - McSwain, et al. Understanding Arithmetic 7,
State Text 1957

SUPPLEMENTARY MATERIALS

Workbooks, filmstrips, films, charts, equipment, and other materials listed in the Santa Monica Mathematics Teacher's Guide and the Teacher's Edition of the State Text

OBJECTIVES

1. To help pupils develop the ability to solve problems.
2. To help students understand the meanings inherent in our number system.
3. To help students learn to use with understanding each of the four fundamental processes.
4. To help develop desirable attitudes and character traits.
5. To provide a rich variety of experiences which will assure the ability of the pupil to supply quantitative procedures effectively in social situations in life outside the school.

Instructional Methods and Materials. -- The course of study sets up certain available materials which should be used according to the ability level of the group. It is common knowledge, however, that materials for the minimum requirements class are not readily available. Course objectives also differ, as indicated earlier. For example, it will be observed that the mathematics course of study provided for honors requirements takes no cognizance, in its eleven

objectives, of the need for helping pupils in these classes to "...develop desirable attitudes and character traits" or to "...assure the ability of the pupil to apply quantitative procedures effectively in social situations in life outside the school." These objectives do appear, however, in the course for "average" and/or above-average pupils at the seventh grade level. Should it be concluded that, in Santa Monica, the need for social adjustment through learning exists only among the latter group?

It is realized that different instructional methods are needed in the varied ability sections and it is also realized that individual teachers vary in their ability to use these methods (cf. supra, p. 23-24). For this reason, experimental team teaching, basically an effort to utilize more efficiently the staff at the junior high school, is in process. It envisions the combining of staff skills and resources, and presenting them in such manner as to make a more effective offering of the subject matter. The subject matter taught in these experimental classes is English and social studies in the ninth grade; English and social studies in the eighth; mathematics, science, English, and geography in the seventh. All ability level sections, with the exception of special training, are involved in this experiment.

Grading of Ability-grouped Pupils. -- The vice principal of the junior high school is chairman of a grading policy committee which consists of all department heads who, in turn, secure the opinions

of each member of their departments concerning grading. The grading policy currently in effect (1962-63), though it is subject to continuous evaluation, was proposed by the committee and approved by the principal. Briefly, it contains two facets: scholarship grading and citizenship grading. In the first instance, the curriculum is divided into two categories, as follows:

Achievement Subjects

English
 Social Studies
 Mathematics
 Foreign Language
 Science
 Typing
 9th Grade Art
 9th Grade Industrial Arts

Effort Subjects

Homemaking
 Music
 Physical Education
 7th and 8th Grade Art
 9th Grade Artcraft
 7th and 8th Grade Industrial Arts
 Speech Arts

In Achievement Subjects there need not be any direct relationship between the citizenship grade and the scholarship grade. (A student may receive a high citizenship grade and a low scholarship grade.) In Effort Subjects there should be a close relationship between citizenship and scholarship grades. (The assumption is that a student who expends great effort to earn a high grade will, in most instances, be considered to be a good citizen.)

With respect to Achievement Subject grading, pupils are first grouped in classes according to ability and their grades are worked out from their respective classifications. For example, minimum requirements classes achieving at their expectancy level have a

ceiling grade of C. "Over-achievers" in this group, that is, those who achieve at a significantly higher level than the rest of the class, are retested and graded in competition with students of the average requirements classes, so that if they are capable of achieving a grade higher than C they have the opportunity to do so. Similarly, the most common grade expected in the average requirements classes is a C, but this expectation need not be predictive of the achievement of all members of these classes. Some pupils may underachieve; some may overachieve. In either case, action is taken to adjust them to their appropriate achievement levels.

A like situation prevails among pupils originally assigned to above-average and honors requirements classes; i. e., whenever pupils fall above or below expected achievement, arrangements are made for their transfer to groups of pupils with abilities more in keeping with their own. Such transfers are made on the basis of grades attained in the Achievement Subjects alone, where each transferee is graded in competition with all other pupils in the school taking the same course. A pupil being graded in an Effort Subject is actually in "competition" only with himself; that is, his achievement is graded in relationship to his ability.

Many factors enter into this plan of grading, but none, perhaps, more vitally than the grading distribution report required

to be filled out by teachers and submitted to the vice principal. Any discrepancies or peculiarities therein noted are discussed with the teacher, department head, and counselor of the grade level in question so that appropriate action may be taken to correct the situation, if necessary.

Program Flexibility. -- The grading policy of the school makes it clear that flexibility is an important aspect of the ability grouping program. An example of flexibility may be seen in the following statement concerning pupils in a minimum requirements class:

For those who "overachieve," that is, who achieve at a significantly higher level than would be expected of them and at a significantly higher level than the rest of the class, there should be action taken to shift them to an Average Requirements Class. If this is not possible, the teacher will provide work at the Average Requirements level for these individual students.

Thus does the school recognize the need to provide for immediate transfer, if feasible, from one group to another and, if not feasible, the necessity of flexibility within the group that will take care of these individual differences. Indeed, whenever it is impossible to make the program shifts recommended by the grading policy committee for ability-grouped pupils, because of such difficulties as mechanics of scheduling, it is the teacher's responsibility to group within his own classes. This necessarily means providing different assignments and different tests for pupils who vary

significantly from the bulk of the class. Grouping, as accomplished by enrollment counseling processes, cannot be highly refined even under the best of circumstances. Thus, the need to establish sub-groups within many classes that have already been ability-grouped by the counselors comes as no surprise to the teacher. So far as policy is concerned, however, transfers are recommended from higher to lower sections as well as from lower to higher groups.

Provisions for Program Evaluation. --Provisions for determining the effectiveness of the ability grouping program are made through use of teacher comments on the grade distribution reports described above, and through employment of teacher and pupil questionnaires which ask pertinent questions about various aspects of the program and results observed and experienced. (For copies of these questionnaires, see infra, Appendix A.) Ultimately, of course, it is neither teacher nor pupil but the grade counselor who is responsible for discovering the "real" reason for either a teacher's or pupil's requesting the latter's transfer to another section. Many reasons other than ability may be attributed to the teacher's request for the transfer, even if he thinks ability is the cause. A pupil, on the other hand, sometimes asks for a change in program because the work in his placement section is too easy or too difficult. Some clue as to the success of the ability grouping program is provided the counselor

through a check of the grade distribution of the pupil's class. But clues do not provide the answer to the important question: If the grade distribution coincides with the grading policy, is this fact the result of efficient ability grouping (the responsibility of a given grade counselor), or did the grading policy influence the teacher in assigning grades?

Evaluative Criteria for Ability Grouping Drawn from the Literature. --Although there is an abundance of literature on ability grouping, little of it pertains to the evaluation of grouping programs. The reason for this lack of evaluative literature has been explained, at least tentatively, by Ethel Cornell:

We can evaluate such results as can be measured only in the light of the conditions and purposes of the particular experiment. These vary so greatly that results are obviously not comparable (14, p. 290).

And Kyte commented that:

...within a given school...[ability] grouping of children is a success, elsewhere it may fail. The point of view and skill of principals and teachers, not the plan, makes the difference (27, p. 160). [underscoring supplied]

Nevertheless, some evaluative criteria were discovered which may be applied to the seven areas enumerated at the beginning of this chapter.

1. The ability grouping program should have a basic philosophy. Ability grouping can be evaluated only upon the basis of the philosophy of education that has been accepted by the school and school district. Not to include such a basic philosophy as an aspect of evaluation would be to disregard the essential relatedness of purposes, means, and ends. Achieving the educational objectives that are paramount in this basic philosophy will determine the value of ability grouping (2, p. 127).

Fred Englehardt affirmed this assertion to some extent by pointing out that pupil classification is closely interrelated with all phases of school administration and depends to a degree on the educational philosophy of the school (19, p. 28). In this connection, the principal of the junior high school under study has prepared the following statement which he has called "An Attitude About Administration":

Persons as individuals are the ends of human activity and are not to be conceived as means, that is, as pawns to be moved about on the chessboard of life. This exaltation of the dignity and worth of the individual gives significance to all the human relationships which make up so large a portion of the school administrator's activities. There is always the temptation to become engrossed in the system so that the smoothness of the action of the organization becomes in itself a satisfying goal for administrative activity. There is also the temptation to judge one's administrative effectiveness in terms of the material resources provided. Democratic leadership re-emphasizes the importance of considering the effect of every activity upon each human being involved.

In the case of school activities this means a primary interest in the effect upon individual pupils, individual teachers, individual parents, and individuals within the community who are involved in one way or another with the work of the school.

This "Attitude " appears to substantiate Davis's contention that the way in which one views the objectives of the school is a philosophical matter (15, p. 211). Moreover, he added, school practices are determined very largely by the interpretation of a society's philosophy. Therefore, since the American philosophy of education requires that each individual have an equal opportunity to learn to his capacity, any system of grouping which advances such opportunity most efficaciously is justifiable. Ability grouping, Davis thought, if carefully planned and executed in light of the school's philosophy of education, might well be the preferable system (15, p. 215).

2. A multitude of factors should be considered when sectioning pupils into ability groups. Experiments, research, and opinions of recognized educators lead to the conclusion that the use of a single criterion is not adequate for the most effective ability grouping. There is still, however, considerable controversy as to what specific criteria to use and what weight should be given each factor. The nearest agreement appears to center on the belief that high grade averages or opinions of teachers as to the brightness of

the pupil should not be the sole basis for ability grouping. Rather, in the opinion of Ryan and Crecelius (39, p. 360-361), such factors as I. Q., rank in class, health, weight age, height age, dentition age, social age, and reading rate should be taken into account. To these criteria for grouping, Boyer would add chronological age and past achievement (5, p. 196-198). And Chauncey, without denying the value of these multiple factors in establishing ability grouping, would place even more emphasis upon pupil's current verbal and mathematical ability (10, p. 28-29).

Although most of the literature stresses I. Q. as the fundamental criterion, Frazier considered this factor only supplemental to reading score and the teacher's opinion concerning the pupil's study habits (20, p. 340). This does not mean that he thought I. Q. should not be taken into account. It is merely indicative of the fact that, according to the literature reviewed, he, along with Stalnaker (42), placed less emphasis upon I. Q. than upon other factors; e. g., a pupil's background of experiences and objectively determined possibilities for his future success (42, p. 24-25).

The importance of using objective data as the measurement of a pupil's ability was demonstrated in such experimental studies as those carried out by Connor and Hawkins at Aptos Junior High School, San Francisco, the Batavia (New York) Junior-Senior High School,

and West Technical High School, Cleveland, in all of which achievement test scores played a decisive role (13, p. 261-273).

The diagnostic value of the various factors to be considered when sectioning pupils into ability groups has been summed up by George C. Kyte as follows:

... Weight is given to chronological age as a partial index of physical maturity and social adjustment. Mental age and the intelligence quotient also are taken into account. Perhaps the wisest use of the intelligence quotient is as an index of general academic readiness, because of the manner in which intelligence tests are validated. Achievement-test data are used to provide a further refined classification of pupils. The extent to which the tests are diagnostic with respect to essentials determines their primary value in discovering children's individual needs and in planning to meet them... (27, p. 164).

But in connection with the use of test scores, Conant has warned:

It is important to emphasize the comparison of students' test scores with the norms developed by the publisher of the test, rather than with school or local norms. Use of local norms or school distributions of scores in determining the identification of academically talented students can be very misleading and can cause serious misinterpretations of the study results, unless the distribution of academic talent in the school happens to be exactly the same as that in the test publisher's nation-wide sample (12, p. 135).

3. There should be provisions for modification of the curriculum. Separating pupils into different ability groups without proper modification of the curriculum and course content would be contrary to the purposes of grouping. Thus, there should be a

required basic content in all subject areas for all persons and depth content for those pupils with the ability and interest to profit from this enrichment. Again quoting Kyte :

Desirable enrichment of the curriculum is provided to meet the needs of specially gifted children and of mentally superior children. For these children, and in fact for all children, marked attention is given to the creation of instructional environments conducive to furthering the type and amount of learning desired. Procedures are adapted to children's needs and to the nature of the learning experiences required to meet them (27, p. 164-165).

Trump, however, would be even more specific:

... the curriculum needs to perform the dual functions: keep everyone up to date in order to cope with the personal and group problems of the age and culture, and challenge the specialized talents of the individual (44, p. 10-11).

There would be little overlapping from one group to another if maximal motivation existed and the curriculum permitted the pupil to use his full mental capacity. The curriculum must offer all pupils the opportunity for profitable and successful learning experiences. Ideally, curriculum adjustment for the different ability levels may be made by varying the amount and difficulty of the work required and/or by changing the content if appropriate for the present and future needs of the pupil concerned (13, p. 249). As a matter of fact, according to O. L Davis,

In a functioning and interacting group, pupils make greater gains in subject matter mastery under ability

grouping than under other grouping plans, provided that there is differentiation of the subject matter to be learned. Thus it is that individualization of the curriculum for the variability of any group contributes more significantly to academic progress than the criteria used to comprise the group (15, p. 214).

4. Provisions should be made for the modification of instructional methods and materials. The outstanding problem in ability grouping is not one of sectioning but of adjusting the subject matter and method of teaching so that the pupil can and will use his mental ability. Wrote George Kyte in 1952:

There is a distinct tendency to provide opportunities for pupils to plan their assignments individually and co-operatively. At the same time, each pupil is made responsible for personal achievement. To facilitate the development of essential skills, he is aided through diagnosis and individual instruction. His continuous progress in a well-articulated program is planned for in the school organization (27, p. 164).

In essence, this is the same idea as that advanced in the N. S. S. E.

Yearbook nearly two decades earlier:

Teachers must be permitted an opportunity not only to make adjustments of subject matter and method but also to know why. . . . that is the purpose of facilitating the use of the most priceless of all human traits, the ability to see relations, to learn (30, p. 113, 115).

The Yearbook, however, spoke with less authority than appeal to reason. It was not until 1950 that the idea took root in so authoritative a document as the Encyclopedia of Educational Research. Here, A. S. Northby, writing on the topic, "Secondary Administration:

Classification of pupils, " stated unequivocally:

The success of any plan of grouping is largely dependent upon the effectiveness of the adjustments made to adapt instructional methods and materials to the abilities of the resulting groups (31, p. 1168).

And, Northby implied, failing to modify the instructional methods and materials for any group, no matter how comprised, by forcing each pupil to learn by the same methods and materials is gross irresponsibility (31, p. 1170). Moreover, wrote Davis as late as 1960, the mere grouping of pupils does not insure individualized instruction. The type of instruction provided is more important than the process used in making the section (15, p. 215).

5. The program should have definite policies on grading (marks) and promotions. Assigning grades and awarding promotions, like other facets of the educational program, are based primarily on the school's philosophy of education. Even though educators differ in their systems of grading and promotion there is, nevertheless, agreement that formulation of a plan should be a co-operative effort among the administrators, teachers, parents, and pupils (28, p. 222-224).

Many new reporting procedures are used in the junior high schools of America today, all of which, though they have taken a variety of forms, usually provide the following (23, p. 321):

1. An evaluation of pupil progress in terms of the objectives of the total educational program and the various subjects in that program.
2. An evaluation of pupil progress in terms of the individual child rather than on the basis of a uniform standard for the group.
3. An analysis of the child's progress toward specific objectives in a subject, rather than one over-all mark for the subject as a whole.
4. An evaluation of the pupil's progress on aspects of development such as attitudes, character, and personality qualities, citizenship traits, and study habits.
5. Separate report forms for the different subjects.
6. Less frequent reports to parents than with the traditional report cards, but a more detailed report when one is made.
7. Teacher-pupil conferences to discuss with the individual pupil the progress he is making.
8. Parent-teacher conferences to discuss the child's progress in school. In some schools, such conferences are held at regular intervals, but in others they are at the request of either the teacher or the parent.

The adopted plan for marking and reporting should have resulted from the participation of the administration, the teachers, representative groups of parents, and the thinking of the pupils. Moreover, no plan should be considered static but should require continuous re-evaluation so that necessary changes may be made (23, p. 325).

It will be remembered that in the Santa Monica junior high school under study school marks reflected only the progress or status of the pupil in the course, and that there is no relationship between the citizenship grade and the scholarship grade. There is apparently good precedent for this practice. Harl R. Douglass has provided the following principles upon which to build an adequate system of marks and marking (16, p. 370-371):

1. The marks assigned in school subjects should measure achievement in the subject concerned.
2. Marks assigned by different teachers should represent as nearly as possible the same relative degree of achievement.
3. The distribution of marks should be based upon the assumption that the courses of study for different year levels are equally well adapted to the ability of students for whom they are intended.

And, Douglass added, the distribution of marks by the various teachers and departments probably should be studied at least once a year, so that any deviations from the principles stated above may come under scrutiny and a solution be found whereby uniform standards throughout the school may be insured (16, p. 373).

6. Regulations concerning ability grouping should be flexible. Writing in the N. S. S. E Yearbook for 1936, A. H. Turney commented, "Flexibility must be conserved so that the few distinctly nontypical members of each group may receive

special treatment" (46, p. 111). On this point a majority of educators are agreed, regardless of whether or not they espouse the principle of ability grouping (e. g. , Charles A. Tonsor, supra, p. 16-17). In those schools where ability groups have been formed, provisions must be--and usually are--made for the transfer of individual pupils from one ability group to another as the need arises. According to Davis, such flexibility can be justified on many grounds: demonstrated ability, under-achievement, schedule conflicts, unsatisfactory performance, and change in pupil objective. Moreover, there must also be flexibility within the class in order to provide for the individual differences that are bound to exist even in an ability group (15, p. 215).

In The Principal at Work, Kyte commented upon "pupil adjustment," his term for flexibility. Wrote Kyte:

... The adjustment of each pupil must be based upon a thorough study of that pupil, a survey of the various conditions affecting him, and an analysis of the school situation influencing his development. His adjustment must be considered also from the standpoint of the effects on other children in the school. Their welfare and development are important also. All these items point to the necessity of providing for the continuous adjustment of each individual in and through groups at a rate compatible with his general ability, potentialities, needs, and interests (27, p. 166-167).

Looking toward attaining this desirable goal, Kyte formulated the following principles applicable to adjustment (27, p. 167):

1. The adjustment of every pupil should be based upon all his recognized essential needs.
2. The adjustment of every pupil should be made in situations which will provide for all important aspects of his development.
3. The adjustment of every pupil should be based upon a comprehensive study of the many facts and factors regarding him, the conditions in school and out affecting him, and the facilities pertinent to his complete development.
4. The adjustment of every pupil necessitates modifications of the curriculum, methods of teaching, school organization, administration, and supervision to meet his various needs.

More recent literature advocates flexibility not only within ability groups but in the use of the school staff as well, together with varied activities that provide for large-group instruction, individual study, and small-group instruction that will enable the pupil to solve problems on his own (45, p. 7-23).

7. Provisions should be made for program evaluation. As pointed out at the beginning of this section, there is a paucity of literature pertaining to the evaluation of grouping programs. That such programs should be evaluated, there can be little doubt. How the evaluation should be made may either be open to question or deduced from general evaluative procedures applicable to other areas of the total school program. Programs of instruction to meet individual differences of pupils, for example, depend upon both diagnosis and prognosis, and evaluation should therefore be in

terms of the products from the planning and the execution of the program. Certainly, interpretation of results should disclose strengths and weaknesses in the situation with respect to effects, procedures, and persons, based upon an analysis of accomplishments in the light of objectives set up for the program. Unfortunately, as Englehardt has pointed out, new practices and innovations (ability grouping was an innovation in 1936) too often are introduced into the schools and continued on without testing them to see if the ends sought are being served (19, p. 22). He did not, however, proceed upon this brief lament. Nevertheless, one may turn to Kyte for general suggestions about evaluative procedures:

Appraisal, when correctly utilized, is applied research. It involves the selection and application of research techniques which will provide valid findings regarding a particular situation. The major phases of appraisal are (1) delimitation of the situation to be appraised; (2) selection of the criteria to be used as the bases for making judgments; (3) selection of the procedures for gathering the necessary data; (4) control of all variables except the factor to be appraised; (5) organization and analysis of the information; and (6) interpretation of the results (27, p. 504).

With respect to the last-named step in the process of evaluation, he added:

...interpreting results involves arriving at meaningful conclusions. In any appraisal this procedure is twofold: (1) determining the significant conclusions to be drawn from the findings and (2) reaching conclusions by a comparison of these findings with the established criteria (27, p. 507-508).

But it is Cornell who has provided the most direct summarizing statement concerning evaluation of the ability grouping program, per se:

The results of ability grouping seem to depend less upon the fact of grouping itself than upon the philosophy behind the grouping, the accuracy with which grouping is made for the purpose intended, the differentiation in content, method, and speed, and the technique of the teacher, as well as upon more general environmental factors (14, p. 304).

These numerous variables would appear to make mandatory that evaluation of the program be a continuous process so that modifications, maintenance, or termination could be decided upon at the most appropriate time.

CHAPTER IV

STATISTICAL ANALYSIS

The first of the two hypotheses stated in the introductory chapter of this study was: The effectiveness of placement practices at the seventh grade level can be predicted in one junior high school. To determine acceptance or rejection of this hypothesis, marks for the 537 seventh grade pupils included in the study were gathered at the end of the first semester of each of the school years 1960-61 and 1961-62. These data were analyzed by the method of multiple regression applied to three dependent and fifteen independent variables, which are defined as follows:

Dependent

- Y_1 - the grade the pupil received in English at the end of the first semester of the seventh grade
- Y_2 - the grade the pupil received in social studies at the end of the first semester of the seventh grade
- Y_3 - the grade the pupil received in arithmetic at the end of the first semester of the seventh grade.

Independent

- x_1 - the grade the pupil received in English at the end of the sixth grade

- x_2 - the grade the pupil received in social studies at the end of the sixth grade
- x_3 - the grade the pupil received in arithmetic at the end of the sixth grade.
- x_4 - the I. Q. score of the pupil taken during the sixth grade (California Test of Mental Maturity)
- x_5 - Iowa Test of Basic Skills (Reading Vocabulary) given during the sixth grade
- x_6 - Iowa Test of Basic Skills (Reading Comprehension) given during the sixth grade
- x_7 - Iowa Test of Basic Skills (Spelling) given during the sixth grade
- x_8 - Iowa Test of Basic Skills (Capitalization) given during the sixth grade
- x_9 - Iowa Test of Basic Skills (Punctuation) given during the sixth grade
- x_{10} - Iowa Test of Basic Skills (Language Usage) given during the sixth grade
- x_{11} - Iowa Test of Basic Skills (Map Reading) given during the sixth grade
- x_{12} - Iowa Test of Basic Skills (Reading Graphs and Tables) given during the sixth grade
- x_{13} - Iowa Test of Basic Skills (Knowledge and Use of Reference Materials) given during the sixth grade
- x_{14} - Iowa Test of Basic Skills (Arithmetic Concepts) given during the sixth grade
- x_{15} - Iowa Test of Basic Skills (Arithmetic Problem Solving) given during the sixth grade

During the preliminary analysis, partial regression coefficients of the fifteen independent variables on each of the dependent variables were computed to determine which of the independent variables are useful in predicting the dependent variables (see Table 1).

Table 1. Partial Regression Coefficients

	Y_1	Y_2	Y_3
x_1	-.02627	-.01077	.04118
x_2	.19979	.30823	.20030
x_3	.18763	.19125	.20431
x_4	.00241	-.00428	.00860
x_5	-.00526	-.00084	-.00714
x_6	.00619	.00968	.00152
x_7	.00488	-.00109	-.00714
x_8	.00438	.00469	.00610
x_9	.00279	.00262	.00613
x_{10}	.00581	-.00081	.00179
x_{11}	.00302	.00267	.00559
x_{12}	-.00581	.00364	.00201
x_{13}	.00821	.00611	-.00154
x_{14}	-.00503	-.00484	.00440
x_{15}	.00318	-.00160	-.00411

A multiple regression analysis was performed, fitting Y_1 to $x_1, x_2, x_3, \dots, x_{15}$. The least squares equation obtained was

$$\hat{Y}_1 = -.02627 x_1 + \dots + .00318 x_{15} + C_1 .$$

In order to help determine which of the fifteen independent variables were most important, a separate F-test, using 1 and 521 degrees of freedom, was performed on each coefficient of the above regression equation to see if the population regression coefficient could be zero. F-values obtained are listed in Table 2.

The largest F-values, all significant at the .01 level of confidence, appear as the coefficients of x_2 and x_3 and were therefore selected as indicating the variables making the major contribution in predicting $\hat{Y}_1, \hat{Y}_2,$ and \hat{Y}_3 . Therefore, with respect to \hat{Y}_1 , for example, a regression of this dependent variable was obtained using only x_2 and x_3 as the predicting independent variables. The least squares equation obtained was

$$\hat{Y}_1 = 0.754 + 0.306 x_2 + 0.289 x_3 ,$$

with the standard error of estimate being .708. Thus, when $x_2 = 2, x_3 = 3$, the estimated value of \hat{Y}_1 is 2.233. The standard error for this estimate of \hat{Y}_1 depends upon how far the x_2 and x_3 are from their respective means. For the estimate of \hat{Y}_1 of an individual having $x_2 = 2$ and $x_3 = 3$, the standard error of the

Table 2. F-values in Testing Significance of Partial Regression Coefficients

	Y_1	Y_2	Y_3
x_1	.36	.02	.35
x_2	18.84**	20.06**	10.41**
x_3	18.19**	8.46**	11.86**
x_4	.74	1.04	5.18*
x_5	2.30	.03	2.69
x_6	2.31	2.53	.08
x_7	2.69	.06	3.17
x_8	2.17	1.11	2.31
x_9	1.08	.43	2.87
x_{10}	5.65*	.05	.30
x_{11}	.81	.28	1.15
x_{12}	2.43	.42	.16
x_{13}	3.11	.77	.06
x_{14}	8.85**	.41	.42
x_{15}	.48	.05	.44

* Significant at the .05 level of confidence. (the 5% point of F with 1 and 521 degrees of freedom is 3.84).

** Significant at the .01 level of confidence. (The 1% point of F with 1 and 521 degrees of freedom is 6.64).

estimated value would be .709. The values of x_2 and x_3 which are farthest from the mean value are at zero. In this case, the maximum standard error occurs and is .714.

Using this formula for predicting placement in seventh grade English classes (\hat{Y}_1), it was immediately apparent that

$$2.233 - 2(.709) < \hat{Y}_1 < 2.233 + 2(.709)$$

so that

$$.815 < \hat{Y}_1 < 3.651$$

thus giving a 95% prediction interval for \hat{Y}_1 . The D grade represented by .815 as compared with the B+ grade represented by 3.651 would therefore indicate placement in an "average" class of pupils in English, unless the estimated value of \hat{Y}_1 were overbalanced by nonstatistical factors such as the sixth grade teachers' recommendations.

Table 3 indicates grade distribution and placement prediction in seventh grade English classes for the 537 pupils included in this study.

Table 3. Predicted \hat{Y}_1
 x_2 sixth grade social studies

	0	1	2	3	4
0	0.754	1.060	1.366	1.672	1.978
1	1.043	1.349	1.655	1.961	2.267
2	1.332	1.638	1.944	2.284	2.556
3	1.621	1.927	2.233	2.539	2.845
4	1.910	2.216	2.522	2.828	3.134

The same computational methods were employed in calculating the predicting equations for \hat{Y}_2 and \hat{Y}_3 . For \hat{Y}_2 , the predicting equation is

$$\hat{Y}_2 = 0.425 + 0.406 x_2 + 0.277 x_3$$

with 0.671 being the standard error of estimate. Thus, the predicted \hat{Y}_2 (placement of seventh grade social studies classes), according to the formula set out above, is shown in Table 4. The standard errors of the estimate in Table 4 vary from .671 to .677. The maximum error occurs when x_2 and x_3 are farthest from the mean.

Table 2. Predicted \hat{Y}_2
 x_2

	0	1	2	3	4
0	0.425	0.831	1.237	1.643	2.049
1	0.702	1.108	1.514	1.920	2.326
2	0.979	1.385	1.791	2.197	2.603
3	1.256	1.662	2.068	2.744	2.880
4	1.533	1.939	2.345	2.751	3.157

Using $\hat{Y}_3 = 0.762 + 0.277 x_2 + 0.334 x_3$, the predicted placement of seventh grade arithmetic classes (\hat{Y}_3) is given in Table 5. The standard error of estimate is .694 and the maximum standard error for the \hat{Y}_3 estimate is .700.

Additional multiple regression analyses were performed, fitting Y_1 , Y_2 , and Y_3 , respectively, to x_4 , x_6 , and x_{15} (the three statistical criteria now used for grouping the junior high school under study). The least squares equations obtained were:

Table 5. Predicted \hat{Y}_3

		x_2				
		0	1	2	3	4
x_3	0	0.762	1.039	1.316	1.593	1.870
	1	1.096	1.373	1.650	1.927	2.204
	2	1.430	1.707	1.984	2.261	2.538
	3	1.764	2.041	2.318	2.595	2.872
	4	2.098	2.375	2.652	2.929	3.206

$$\hat{Y}_1 = 0.723 + 0.0127 x_4 + 0.156 x_6 + 0.088 x_{15}$$

with the standard error of estimate being 0.748.

$$\hat{Y}_2 = 0.740 + 0.0059 x_4 + 0.028 x_6 + 0.115 x_{15}$$

with 0.818 being the standard error of estimate.

$$\hat{Y}_3 = 1.082 + 0.0190 x_4 + 0.090 x_6 + 0.114 x_{15}$$

with the standard error of estimate being 0.737.

The three criteria, x_4 , x_6 , and x_{15} are significant and do aid in the process of placing pupils in seventh grade English, social studies, and arithmetic groups; but the standard errors of estimate are greater than when using x_2 and x_3 . Therefore, x_2 and x_3 with standard errors of estimate for \hat{Y}_1 being 0.708, \hat{Y}_2 at 0.671, and

Y_3 at 0.694, are more helpful in placing pupils in these groups than x_4 , x_6 , and x_{15} .

In light of these findings, Hypothesis (1) may be considered as accepted.

It is suggested, however, that since the standard error of estimate in each instance is greater than half a grade point, non-statistical factors might well be taken into account along with those having statistical significance in order to derive the most desirable placement method.

There is, nevertheless, lack of evidence to support acceptance of Hypothesis (2). That hypothesis, as stated in Chapter I, reads: A given formula for predicting success of placement practices at the seventh grade level in one junior high school, when supplemented by substantiating evidence from recognized authorities in this area of investigation, can be used as an approach to general evaluative procedures in other junior high schools. Since the sampling and analysis are based upon the selected junior high school alone, inference cannot be drawn beyond this one school on the basis of the data derived without outside information to support such inference.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary. -- It was the purpose of this study to evaluate current practices for ability placement of pupils entering seventh grade English, social studies, and arithmetic classes in a selected junior high school of the Santa Monica Unified School District, California. These practices are based upon criteria established through the scoring of tests administered to sixth grade pupils in October of the year preceding entry into the junior high school, plus the sixth grade teacher's recommendation as to ability grouping. Scores considered are those achieved on the California Test of Mental Maturity (I. Q.) and the eleven Iowa Tests of Basic Skills.

Hypotheses to be tested were: (1) The effectiveness of placement practices at the seventh grade level can be predicted in one junior high school. (2) A given formula for predicting success of placement practices at the seventh grade level in one junior high school, when supplemented by substantiating evidence from recognized authorities in this area of investigation, can be used as an approach to general evaluative procedures in other junior high schools.

In connection with Hypothesis (2), seven criteria of a nonstatistical nature were drawn from the literature:

1. The ability grouping program should have a basic philosophy,
2. A multitude of factors should be considered when sectioning pupils into ability groups.
3. There should be provisions for modification of the curriculum.
4. Provisions should be made for the modification of instructional methods and materials.
5. The program should have definite policies on grading (marks) and promotions.
6. Regulations concerning ability grouping should be flexible.
7. Provisions should be made for program evaluation.

The statistical analysis for Hypothesis (1) employed the method of multiple regression. Test scores in I. Q. and in reading, language, work study, and arithmetic were correlated with the grades earned in seventh grade English, social studies, and arithmetic, respectively. Five hundred thirty-seven seventh grade pupils were used in the study, and the school years selected were 1960-61 and 1961-62.

The three basic subjects (English, social studies, and arithmetic) were established as dependent variables; and as independent variables, the test scores and marks in each of the basic subjects during sixth grade. To determine which of these fifteen independent variables are useful in predicting placement in each of the three basic subject classes at the seventh grade level, the partial regression coefficients of the independent variables on each of the three dependent variables were computed. The F-test, with 1 and 521 degrees of freedom, was then used for testing the significance of forty-five partial regression coefficients. It was found that sixth grade marks in social studies (x_2) and arithmetic (x_3) are most useful in predicting the three dependent variables.

The predicting equations for English (Y_1), social studies (Y_2), and arithmetic (Y_3), together with their respective standard errors of estimate, were found to be:

$$\hat{Y}_1 = 0.754 + 0.306 x_2 + 0.289 x_3$$

$$\text{S. E. E.} = 0.708$$

$$\hat{Y}_2 = 0.425 + 0.406 x_2 + 0.277 x_3$$

$$\text{S. E. E.} = 0.671$$

$$\hat{Y}_3 = 0.762 + 0.277 x_2 + 0.334 x_3$$

$$\text{S. E. E.} = 0.694$$

Since I. Q., reading comprehension, and arithmetic problem-solving were the criteria most heavily relied upon for predicting placement in seventh grade English, social studies, and arithmetic

classes, additional multiple regression analyses were performed fitting Y_1 , Y_2 , and Y_3 , respectively, to these criteria. The predicting equations for English (Y_1), social studies (Y_2), and arithmetic (Y_3), with their respective standard errors of estimate are:

$$\hat{Y}_1 = 0.723 + 0.0127 x_4 + 0.156 x_6 + 0.088 x_{15}$$

$$\text{S. E. E.} = 0.748$$

$$\hat{Y}_2 = 0.740 + 0.0059 x_4 + 0.028 x_6 + 0.115 x_{15}$$

$$\text{S. E. E.} = 0.818$$

$$\hat{Y}_3 = 1.082 + 0.0190 x_4 + 0.090 x_6 + 0.114 x_{15}$$

$$\text{S. E. E.} = 0.737$$

It is evident that the standard errors of estimate are greater in predicting Y_1 , Y_2 , and Y_3 , from x_4 , x_6 , and x_{15} than from x_2 and x_3 .

Although Hypothesis (1) is accepted on the basis of the findings, it should be noted that each standard error of estimate (using x_2 and x_3 or x_4 , x_6 , and x_{15}), is greater than half a grade point, which indicates a substantial error for the most effective ability grouping. On the basis of available data, then Hypothesis (2) fails of acceptance without further outside information to substantiate any inferences drawn from the statistical findings of this investigation.

Conclusions. --In view of all of the findings of the present study, the following conclusions, beginning with those drawn from the literature and proceeding to those evident from the statistical analysis, seem warranted:

1. The ability grouping program at the selected junior high school is grounded upon a basic philosophy of education and governed by definite policies on grading and promotions--two practices widely supported by authorities in the field.

2. Provisions made in the selected junior high school for modification of the curriculum and of instructional methods and materials, as well as for program flexibility and evaluation, are consonant with best practices according to the literature.

3. The present practice of administering the Iowa Test of Basic Skills at the sixth grade level for the sectioning of seventh grade pupils does not permit the correlation of seventh grade scores with seventh grade marks.

4. I. Q., reading comprehension, and arithmetic problem-solving--the three test criteria most heavily relied upon for seventh grade placement in the selected Santa Monica junior high school--were significant when combined in a multiple regression analysis.

5. Predicting successful placement in seventh grade English, social studies, and arithmetic groups from marks made in sixth grade social studies and arithmetic provided lower standard errors of estimate than did predictions from the I. Q., reading comprehension, and arithmetic problem-solving scores. There was, then, a positive significant relationship between marks made in sixth grade social studies and arithmetic and the English-social studies-arithmetic mark in seventh grade.

Recommendations. --On the basis of the findings and conclusions of this study, it is recommended:

1. That administrators and/or counselors at the junior high school level familiarize themselves with the curriculum and grading policies of the elementary schools from which potential seventh graders are drawn so that there will be better vertical articulation between both levels of education.

2. That standardized tests be given at the end of the sixth grade so that scores may have greater validity in relation to seventh grade ability grouping.

3. That marks made in sixth grade social studies and arithmetic be considered when grouping pupils in seventh grade English, social studies, and arithmetic classes.

4. That further study be made of the findings of this investigation with a view to clarifying reasons for present lack of correlation between placement practices in the junior high school and some of the independent variables here examined.

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APPENDIX

APPENDIX A(SELECTED) JUNIOR HIGH SCHOOL
TEAM TEACHING PROJECT
1960-1961

TEACHER QUESTIONNAIRE

There may be MORE, LESS, or about the SAME opportunity for certain types of activities in the project classes when compared with other classes. Will you please respond to each statement by circling the appropriate letter:

M L S M - MORE opportunity

L - LESS opportunity

S - about the SAME OPPORTUNITY

- | | | | |
|---|---|---|---|
| M | L | S | 1. Challenge superior students |
| M | L | S | 2. Appropriate pacing for slower pupils |
| M | L | S | 3. Individual help and remedial work for pupils who are in need of it |
| M | L | S | 4. Get pupils to participate in discussion and other class activity |
| M | L | S | 5. Get pupils to carry out self-directed learning activities |
| M | L | S | 6. Use a variety of approaches to instruction |
| M | L | S | 7. Use a variety of materials for the class |
| M | L | S | 8. Help pupils learn how to study and do independent research |

Respond to each of the following statements by circling the appropriate letter:

- A B C D 9. In planning class activities, the time I have spent is: A. less than; B. about the same as; C. greater than; D. considerably greater than for other classes.

- A B C D 10. In preparing materials for this class, the time spent is: A. less than; B. about the same as; C. somewhat greater than; D. considerably greater than for other classes.
- A B C D 11. With regard to classroom control, I have found: A. more; B. fewer; C. about the same number of behavior problems among the pupils.
- A B C D 12. I have tried new methods of organization and teaching in the project classes which I have been able to use: A. seldom; B. occasionally; C. very often in my other classes.
- A B C D 13. I believe that participation in a teaching team has resulted in: A. no; B. some; C. a great deal of improvement in my teaching in all classes.

Respond to each of the following statements or questions by checking the appropriate answer:

- Yes ___ No ___ 14. Team teaching produced a marked superiority in the students' attitudes because they felt they were in a specially selected group.
- Yes ___ No ___ 15. In relation to the students' sense of security I believe that, in general, they were more secure in team situations than they would have been otherwise.
- Yes ___ No ___ 16. Relative to the maturity level of student assignees to a team teaching situation, I feel that junior high school students are too immature to benefit from team teaching.
- Yes ___ No ___ 17. In my particular team I was of the opinion that the abilities, knowledge, and talents of the other two instructors noticeably enhanced the teaching of the subject matter.
- Yes ___ No ___ 18. The results obtained from team teaching have been worth the greater expenditure of time spent in outside preparation.

- Yes ___ No ___
19. Do you feel that the students benefited more from the team teaching approach than from the usual single teacher classroom method?
- Yes ___ No ___
20. If the project is continued do you feel more free time should be provided from regular classroom duties for team teaching preparations?
- Yes ___ No ___
21. Do you believe for an effective team teaching program outside clerical assistance is needed?
- Expand _____
- Reduce _____
- Maintain _____
22. Would you expand, reduce, or maintain, the project near its present proportions?
23. On the rating scale how would you evaluate your team teaching experience as it related to your subject?
- Excellent _____ Good _____ Average _____ Fair _____ Poor _____

(SELECTED) JUNIOR HIGH SCHOOL
TEAM TEACHING PROJECT
1960-1961

PUPIL QUESTIONNAIRE

In this class, the opportunities to do certain things may be MORE, LESS, or about the SAME as in most other classes. . Mark your answer for each statement as follows:

- | | | | |
|---|---|---|---|
| A | B | C | A - if you think there are MORE opportunities |
| | | | B - if you think there are LESS opportunities |
| | | | C - if you think the opportunities are about the SAME |
| A | B | C | 1. To assume some leadership in classroom activities |
| A | B | C | 2. To participate in discussion and other class activities |
| A | B | C | 3. To work with other pupils on committees or in small groups |
| A | B | C | 4. To meet in comfortable, pleasant classrooms |
| A | B | C | 5. To be unnoticed when you misbehave |
| A | B | C | 6. To make friends with many other pupils |
| A | B | C | 7. To enjoy the subject and the class work |
| A | B | C | 8. To be successful in the work required of the class |
| A | B | C | 9. To learn how to study effectively |
| A | B | C | 10. To learn to think for yourself |
| A | B | C | 11. To do things in which you are personally interested as part of the class work |
| A | B | C | 12. To learn how to behave properly |
| A | B | C | 13. To be challenged to do your best |
| A | B | C | 14. To use printed materials besides the textbook |
| A | B | C | 15. To use the library in connection with the subject being studied |
| A | B | C | 16. To hear reports from other pupils |
| A | B | C | 17. To hear speakers from outside the school |

- | | | | |
|---|---|---|--|
| A | B | C | 18. To get individual help with class work when you need it. |
| A | B | C | 19. To check your own progress in class work |
| A | B | C | 20. To understand the purposes of assigned class work |
-

For each of the following statements, mark your answer as follows:

A - if you LIKE the situation described

B - if you DISLIKE the situation described

C - if you are INDIFFERENT - you feel you can't really say you like or dislike the situation described

- | | | | |
|---|---|---|--|
| A | B | C | 21. Being in a large class |
| A | B | C | 22. Having different teachers at different times or for different activities |
| A | B | C | 23. Having more than one teacher in the classroom |
-

For each of the following statements or questions, mark your answer on the following scale of values: (Circle the appropriate number)

- 1 - Excellent
- 2 - Good
- 3 - Average
- 4 - Fair
- 5 - Poor

- | | | | | | |
|---|---|---|---|---|--|
| 1 | 2 | 3 | 4 | 5 | 24. (a) Give your opinion of <u>large team teaching sessions</u> . |
| 1 | 2 | 3 | 4 | 5 | (b) Evaluate the <u>average class sessions</u> . |
| 1 | 2 | 3 | 4 | 5 | (c) Evaluate the <u>small drill groups</u> . |
| | | | | | 25. Rate the following features of the <u>large team teaching sessions</u> : |
| 1 | 2 | 3 | 4 | 5 | (a) Physical features (ability to see and hear). |
| 1 | 2 | 3 | 4 | 5 | (b) Opportunities to recite or ask questions. |
| 1 | 2 | 3 | 4 | 5 | (c) Materials presented. |
| | | | | | 26. Do you believe that guest speakers add to your knowledge? |

Respond to each of the following questions by checking the appropriate answer:

- Yes ___ No ___ 27. In your opinion was there an advantage to the similarity or course content (in class where the three classes kept pace)?
- Yes ___ No ___ 28. Did you do more work for the team teaching class than you believe you would have done in regular class?
- Yes ___ No ___ 29. Do you feel that working with a team of teachers in a single subject is more valuable than working with one teacher in the subject?
30. What were the best lessons you experienced in the Team Teaching program? (Use other side of paper, if necessary).

English class:

Social Studies
(or Georgraphy)
class:

Mathematics:

Science Class: