A COMPARATIVE STUDY OF TWO GROUPING PROCEDURES IN THE JUNIOR HIGH SCHOOL ON MEASURES OF ABILITY AND ACHIEVEMENT IN MATHEMATICS AND ENGLISH

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This is to certify that the

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A COMPARATIVE STUDY OF TWO GROUPING PROCEDURES IN THE JUNIOR HIGH SCHOOL ON MEASURES OF ABILITY AND ACHIEVEMENT IN MATHEMATICS AND ENGLISH

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AN ABSTRACT

The Problem

Recent educational developments in this country continually have emphasized the importance of individual differences in learning. There are many conflicting and confused opinions relating to the classification and grouping of pupils for instruction. This study attempted to measure pupil growth in achievement as the result of a program which, for two years for 291 pupils through seventh and eighth grades, grouped pupils and emphasized adaptation of instruction to varying levels of ability and to differing rates of progress. The total class of seventh grade pupils in the fall of 1957 at Frost Junior High School, Jackson, Michigan, was chosen as the experimental group. The total class of 236 eighth grade pupils in the spring of 1957 at Frost Junior High School was used as the control group. No effort had been made to attain homogeneous grouping with respect to achievement or progress in the control group.

It was hypothesized that progress grouping in English and in arithmetic would reduce the wide range of differences for instruction in a limited class period and would facilitate the adjustment of teaching methods and curriculum content to the needs of individuals in the particular group.

The objective was to encourage and permit each pupil in the experimental group to progress for two years along a continuum of subject learning in English and in mathematics at a rate and to a depth commensurate with his ability. It was hypothesized that as this program progressed there would be a high correlation between potentiality and achievement for these pupils.

This study necessitated a project that would provide in-service training for junior high school teachers to prepare them to implement the program and to plan adequate communication with pupils, teachers, parents and other citizens concerning its aims.

Methods and Procedures

The first step was to find criteria for the establishment of groups of pupils for instruction with as much homogeneity of progress in learning in English and in mathematics as possible. A classification information card devised for use in sectioning the experimental group contained data on scholastic aptitude and achievement, teacher opinion in the form of the estimated progress level at the close of the school year, and an evaluation of the general quality of work and the pupil's position (high, average, low) within his present progress group.

Teachers and supervisors evolved an educational program in English and in mathematics for pupils in the experimental group that (1) would permit each pupil to progress through the developmental program at his own rate of learning, (2) made provision for broad flexibility in methods and materials to meet individual differences in needs and achievement.

In order to make comparisons of achievement in the two types of groupings, it was necessary to have measures of ability and perfor-

mance of both the experimental and the control groups. The following tests were completed by both the experimental and control groups: the Verbal Reasoning and Numerical Sections of the Differential Aptitude Tests, the Cooperative English Test and the California Arithmetic Achievement Test. Members of the experimental group who had been sectioned heterogeneously for Social Studies were tested in September and again in May for achievement in Social Studies.

The Pearson Product Moment correlation technique was employed to determine if the levels of functioning in the two groups were statistically significant. The means standard deviations and intercorrelations of each of the variables were computed.

Ability levels of the two groups were compared using the t test for the significance of the difference between the means.

The means scores of the two groups on each of the criterion variables were compared using the t test.

An r to z transformation was employed to test the significance of the difference between correlations.

Findings

An examination of the findings of this study reveals that while the mean ability scores of the experimental group were lower than the mean ability scores of the control group, the experimental group earned higher mean percentile scores on the vocabulary and comprehension sections of the Cooperative English test and on the fundamentals section of the California Arithmetic test.

It may be inferred from the lack of generally higher achievement by the control group, which had the higher mean ability scores, and from



the superiority of performance by the experimental group in certain areas, that the grouping for instruction employed in the experimental group resulted in an improved performance by that group.

A comparison of the correlations earned by the experimental group with the correlations earned by the control group for each variable revealed that in the experimental group there was a closer relationship between the scores earned on the ability tests and the scores earned on the achievement tests.

Summary

The problem of meeting individual needs in learning in English and in arithmetic can be at least partially met through grouping procedures. Much of the learning in reading and in arithmetic is sequentially developed and can be taught efficiently to a group if the pupils in the group are ready to learn.

The findings in this study tend to support a contention that the homogeneous grouping in these areas resulted in a higher level of achievement relative to the ability level of the group in question. It may be assumed that the improved performance relative to ability as found in this study may be attributed at least in part to the fact that homogeneous grouping enabled teachers to develop techniques and select materials appropriate to the level of achievement of the group memberships.

Though progress grouping for instruction is feasible in the skills subject areas, certain learnings in the Social Studies are a result from the interchange of ideas and social relationships with with others who are both alike and different. The Social Studies test results in the study lead to this conclusion that the experimental group made significant progress in acquiring skills and information and there were sufficient opportunities to provide for individual development without grouping according to achievement and progress in this area. A COMPARATIVE STUDY OF TWO GROUPING PROCEDURES IN THE JUNIOR HIGH SCHOOL ON MEASURES OF ABILITY AND ACHIEVEMENT IN MATHEMATICS AND ENGLISH

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MILDRED EMILY SOMMERS

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CHAPTER I

ANALYSIS OF THE PROBLEM

<u>General Nature of the Problem</u>. Educational developments in this country continually have emphasized the importance of individual differences in learning. The philosophy that we must provide for as many types and degrees of ability possessed by children in our public schools as is practicable, and that we must be concerned with continuous progress in learning for all children is being promoted in the Jackson Public schools. To achieve this aim, the curriculum, the educational materials and the methods of instruction must be adjusted to meet all kinds and levels of progress in achievement. In the Jackson elementary classrooms, progress grouping for instruction in reading and in arithmetic has been used for some time as a method of adjusting to individual needs. Progress grouping is a method of arranging pupils on a level where each is purported to be ready to learn with appropriate instructional materials and methods.

Historically, the typical junior high classroom has not had this type of grouping; students in each class section represented a wide range of differences in ability and in achievement. That there should be further detailed exploration of the desirability of progress grouping at the junior high school level is the primary hypothesis of this study. At the junior high school level many skills could probably be taught efficiently to the total group if the pupils in the group are ready to learn these skills. However, sub-grouping within grouped classrooms may always be necessary where a few pupils show specific deficiencies and may need to work on the same skill. It has been found in the elementary schools that

there is need for regrouping from time to time. The pupil may need to be placed in another more appropriate group if at any time the teacher and the principal identify that he was in the wrong original placement.

It appears from practice in the elementary classrooms that grouping has been assumed to be a means for bringing about more effective instruction for children of all abilities. For example, in Jackson, Michigan, elementary teachers and principals have given increasingly more attention to grouping as they organize their class groups in the spring for the following fall. It is assumed that progress grouping should be conducive to a classroom learning situation which results in a feeling of accomplishment for the student as well as in facilitating various aspects of the instructional process for the teacher. Also it is believed that the social implications of grouping must be considered in any particular plan for grouping children for learning. Much attention has been centered on the problem of more flexible intra-class grouping in the elementary schools. Grouping within classroom units has been planned to develop skills to meet specific needs and to increase participation.

Much more needs to be done as a part of the grouping procedure to adapt the content of the curriculum and the methods and materials of instruction to the varying needs, capacities and interests of pupils. Progress grouping would have little value if the same materials and procedures were used with all kinds and levels of achievement. For example, a bright child generally needs much less drill and will profit from working independently and by exercising his own initiative and originality.

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<u>Genesis of the Program in Jackson</u>. For approximately thirty years the Jackson Public Schools maintained a few special classrooms for selected bright children at the upper elementary levels. The brighter pupils from the various attendance districts were transferred to these special centers. In the fall of 1954, the last two of these rooms were eliminated, due in part to the shortage of classroom space. Since that time teachers and administrators have been studying the problem of adjusting the curriculum for the more able pupils as a part of the broader problem of adapting a program to meet the needs, abilities, and interests of all students.

A beginning has been made in the elementary schools in Jackson to encourage and to permit each child to progress in reading and in arithmetic at his own rate of development. Each teacher who takes up a new class at the beginning of the year is given a great deal of information about the previous accomplishments of the pupils involved. For the collection and transmission of information on achievement, potential, and teacher's opinion of pupil progress, a classification procedure has been devised. (See Classification Forms - Appendix) A classification information card contains data on scholastic aptitude and achievement, teacher opinion in the form of estimated subject level at the end of the year, an evaluation of the general quality of work, and the pupil's rank within his present group. Information on how this criteria is used for actual classification appears in Chapter III. A part of the philosophy behind this program was that children should not feel they are permanently identified with a particular progress group. It is important that they meet with others of varying abilities and achievement at frequent

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intervals to exchange experiences and ideas. That there should be further detailed exploration of this procedure at the junior and senior high levels was envisioned as a part of this study.

At the elementary level the intra-class grouping tends to eliminate many of the social objections to grouping by achievement and makes possible a more fluid grouping; that is, pupils usually can be adjusted easily from one group to another within the classroom as the needs arise. Intra-class grouping in the junior high schools where the teacher is with the group for only a fifty-minute period per day is much more difficult to manage than in the elementary school where the same teacher is guiding the pupil all day. As a part of this study, teachers in sixth and seventh grades conferred to determine the best ways to ascertain and communicate opinion on ability and achievement of students. Procedures and reactions to progress grouping were communicated by various staff members. Provisions and procedures were developed for moving students among groups and for communicating the necessary information to teachers concerned.

The author feels that elementary teachers seem to be more aware than secondary teachers are of the concept of readiness for learning a specific skill at a given level of progress. For example, many teachers at the junior high level fail to recognize that a pupil who reads at the fifth grade level is not ready to use successfully seventh grade reading material. Teachers in English and in mathematics conferred with the Director of Instruction to develop curricula for the varying progress groups. Each was encouraged to develop considerable latitude and freedom. A system for communicating the ability and achievement

of students to subsequent teachers was developed also at the junior high school level.

While much of the learning in arithmetic and in reading is sequentially developed, Jackson has begun an experimental plan in its junior high schools to arrange all pupils who are going into the seventh grade into groups in English according to progress in reading and in mathematics according to progress in arithmetic. These two areas of the curriculum were selected out for this experiment because standardized test results in these areas are developmental and continuous. The membership of a high group in English has been quite different from the membership of a correspondingly high group in mathematics. These groups have been defined as homogeneous only for the time being and for instruction in the particular area of the curriculum. They have been organized to reduce the wide range of differences in achievement in those subject areas in any grade group. Through such procedures it is hoped to stimulate and permit each child to progress in sequential learnings at his own rate of development. The argument that such grouping publicizes differences in mentality, thus making the slow pupil feel inferior and the bright one superior is refuted by Broudy. He says:

By making achievement in the subject the base of our grouping rather than mental age makes sense. . There is no reason for a pupil to be in the same group for all subjects or for very long periods of time.¹

The junior high school program provides many opportunities for other groupings that cut across progress groupings in English and in

¹H. S. Broudy. <u>Building a Philosophy of Education</u>. (New York: Prentice Hall, Inc. 1954.) p. 243.

mathematics. Such opportunities for intermingling are available on the playground, in assemblies, in clubs formed out of specific interests and in other classes, such as, in fine and practical arts and in music, where there is no progress grouping. Wallin states it is well to section only in academic skills subjects and that pupils of all levels of ability can and should participate together in such areas as physical education, music and art, also that all groups should commingle in the home room.² These groups may be as valuable or more so than the progress groups in academic areas in the total development of the child. Each child is then a member of various groups and his role in each differs and he has an opportunity to relate to other children in many ways. All pupils need to learn to relate themselves in some way with those of greater and of less achievement.

Statement of the Problem. The problem is the development and evaluation of an educational program in English and in mathematics at the junior high school level, so organized that it will be properly adjusted to the varying learning abilities of pupils. It has been quite well established that pupils learn at different rates. The purpose of this study was to investigate the relationship between the grouping and the corresponding achievement of pupils at the junior high school level on the basis of progress and achievement in the fields of arithmetic and English over a two-year span. The plan of the investigation was to discover the differences, if any, in achievement among those pupils who

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²J. E. W. Wallin. "Sectioning According to Ability in 1941 and 1942." School and Society 56 (November, 1942), pp. 525-529

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had been grouped on the basis of progress and those who had been grouped heterogeneously. Many pupils learn faster than the average rate set up by the customary grade placement of reading and arithmetic materials, while others learn more slowly.

Each school activity requires a different weighing of the progress a child has made so that progress groups for reading included quite different individuals than progress groups in arithmetic. This further meant that frequent evaluation and regrouping in these areas was essential.

Every teacher who took up a new class at the beginning of the year was given a great deal of information about the previous achievement of the pupils involved. The move toward allowing more able pupils to progress rapidly made this information doubly important. The same situation applied just as well to the less able pupils whose progress during any year also should be geared to their natural rates of learning. This information must indicate where each pupil left off at the end of the previous year.

The first step for this study, then, was to find criteria for the establishment of groups with as much homogeneity in progress level in English and in mathematics as was possible. No grouping is perfect, and all groups tend to spread during any year. Accordingly, it is advisable and necessary in some cases to make shifts during a school year. (See grouping report forms in Appendix) Particularly in the junior high school scheduling problems there will be cases where conflicts will interfere with the placement of the child in his proper group. Experience has demonstrated that there are a relatively small

number of such cases.

The second step was to select one segment of the pupil population for intensive study and research. The subjects selected included:

The total group of seventh grade pupils in the fall of 1957 at Frost Junior High School as an experimental study group, and the total 1956-57 group of eighth grade pupils at Frost Junior High School for the control group.

The nature of the problem then was:

To develop procedures which would more adequately than in the past identify the gifted as well as the less able child, and to promote appropriate teacher reaction to this identification.

To construct an educational program that would be adaptable in curriculum, instructional methods, and instructional materials to meet individual differences among learners, particularly those who are more capable than average and to those who are progressing much below average.

To administer tests, the results of which would show the superiority or lack of superiority of the instructional program for the experimental group.

An education program was to be designed that would:

Offer adequate opportunity for every pupil in the experimental group to advance at his own rate of development and efficiency in learning in one or more areas without disrupting his progress, achievement or rate of development in any other area. Provide educational materials and programs of learning activities that are not restricted by grade level assignment.

The nature of the above necessitated a program that would also

provide for:

An in-service training program that would instruct, motivate and psychologically and educationally prepare teachers for an ongoing program that would enable the student to progress continually, smoothly and effectively along each continuum of subject matter learning at his natural rate.

A public relations program that would acquaint parents and citizens with the value of such a program.



The understanding and favorable attitude of the entire staff is necessary to put any desirable grouping procedure into good practice. In-service study groups among staff members should facilitate a sharing of practices and critical evaluation of various grouping procedures used. Teachers needed to become much more conscious of the necessity to develop programs which would give considerable attention to individual abilities, interests and needs. No grouping practice will be any better than the teacher with the necessary facilities and materials can make it. All criteria for grouping must be constantly evaluated for validity. A good program requires adequate guidance and testing services and provision for mobility and good articulation.

Two hypotheses were tested in this study as follows:

HYPOTHESES

1. Grouping according to achievement and progress in English and in mathematics in the seventh and eighth grades will produce a group which is higher in criterion measures than under heterogeneous grouping.

2. Grouping between classes in the junior high school may be a valid method of attaining a closer correlation between ability (I.Q.) and performance (achievement test results).

COLLECTION OF DATA

1. Differential Aptitude Tests for Verbal Reasoning and for Numerical Ability were administered to all pupils in both the control and the experimental groups.

2. Toward the close of the school year the evidence on progress grouping was gathered and studied. The following data were evaluated for all eighth grade pupils:

- a. Achievement test scores on the California Arithmetic Achievement Tests and the Cooperative English Reading Comprehension Tests.
- b. A correlation analysis was made to determine the relation of achievement in reading and in arithmetic to ability in both the control and the experimental groups.

EVALUATION

1. At specified times evidence as to achievement in the progress grouping was gathered and examined. (See forms in Appendix)

- 2. The following data were evaluated:
 - a. Achievement test scores in arithmetic and in reading (compared with data from previous years).
 - b. Teachers' opinion on progress made in the experimental group.
 - c. Social Studies Test in the fall and the spring for the experimental group.

3. Grouping procedures, methods and effects were evaluated to determine whether the hypotheses are valid or not. Included in this were whether:

- a. Learning efficiency with progress grouping was higher than learning efficiency without this grouping.
- b. The difference between achievement and ability decreased with progress grouping.

NEED FOR THE STUDY

A careful research study in the Jackson public schools indicated that a normal distribution of achievement or progress was found for the slow and average pupils, relatively equivalent to their ability; but, the more able pupils have not progressed to their potentiality to the same extent. Another problem which grouping and enrichment methods have not heretofore solved is the problem of talent in special areas; such as, in science, in social leadership, in creative ability, in mechanical aptitude, etc. Some pupils may be intellectually advanced in only one or two areas; others are advanced in several areas.

Of all the various problems to which it is necessary to give attention, the one which may well be most important is not new but has recently been brought to public attention and may be roughly delineated by the following types of critical statements:

1. The schools have failed to adjust the educational program to challenge the more able pupil.

2. The schools have failed to develop basic skills adequately for all ranges of ability.

3. The schools have failed to provide sufficient instruction in reading and in mathematics for all students at the junior high school level.

In the face of these criticisms it is worthwhile to examine the actual status of affairs in many schools. The following circumstances generally prevail:

1. In the self-contained elementary classroom, intra-class grouping for instruction in skill subjects is becoming more common. Such groupings are most common in reading and in arithmetic.

2. These groupings permit slower-learning pupils to work at a lower grade level than the "grade" (year in school beyond kinder-garten) in which they are located.

3. Generally, however, the more able groups are maintained at about grade level. The only concession to their ability to learn more rapidly is in the form of "enrichment" which is material carefully chosen not to overlap or interfere with the work of the next grade.

4. With minor exceptions, this tendency to hold back more rapid learners to grade status continues all the way through the elementary school and secondary school. Yet there are many that would agree that the more able pupils should be permitted to progress in learning at a speed and to a depth commensurate with their ability and achievement.

SCOPE OF THE STUDY

An experimental program has been undertaken in the Jackson public schools which involves homogeneous grouping for instruction in English and in mathematics for seventh and eighth grade students. This study will serve as an aid in evaluating the effectiveness of this program. There are three junior high schools in Jackson. Since it was not considered feasible to use all eighth grade students and because the Frost Junior High School afforded the greatest stability in both teacher and student personnel the study was limited to students enrolled in this school. Test scores earned by a student group previous to the adoption of the homogeneous grouping program were compared with test scores earned by a student group under the conditions of homogeneous grouping. From a comparison of these scores inferences were made concerning the effectiveness of the experimental program.

LIMITATIONS OF THE STUDY

The reader may regard the conventional controlled experiment with the comparative achievement of pupils of matched ability and
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achievement in homogeneous and in heterogeneous sections as the only valid procedure to use to determine whether or not progress of pupils in so-called "homogeneous" groups is greater than in heterogeneous groups.

This was not a designed experiment but rather a comparative study under conditions of testing pupil achievement in mathematics and in English with two different grouping procedures for adjusting the instructional program at the junior high school level to meet the needs of individuals. Administratively it would have been difficult to set up rigidly matched groups composed of suitable numbers and to maintain the careful control needed for such a study for two years due to the mobility of population and other socio-economic factors in the general population. Variables might have crept into such an experiment which could invalidate what appeared to be a carefully controlled study.

DEFINITION OF TERMS

Ability consists of whatever powers may be essential to the performance of a given task.

Grouping is the placement of students in classes.

Ability grouping is grouping formed on the basis of scores earned on standardized tests of scholastic aptitude.

Heterogeneous grouping is the practice of grouping without specific reference to age or grade, where the students have a wide range of interests, abilities and purposes.

Homogeneous grouping is the alignment of pupils into instructional groups in a manner designed to reduce the within group variability on criterion measures.

Progress grouping is bringing together pupils who will be able to work and progress together and to permit desirable individual development for each one.

Achievement is defined as the amount of knowledge assimilated and retained by the pupil.

Achievement level is established by taking into consideration standardized achievement test results.

Verbal reasoning is a measure of ability to understand concepts framed in words; to abstract or generalize and to think constructively, rather than to measure simple fluency or vocabulary recognition.

Numerical ability is a measure of the student's understanding of numerical relationships and facility in handling numerical concepts and in dealing intelligently with quantitative materials.

Individualization of instruction is the adjustment of instruction in such a manner that each child can take what is for him the next step in development at the time when he needs it, can work at its mastery in his own way and can progress at his own rate and for his own purposes.

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BRIEF OUTLINE OF THE ORGANIZATION OF THE STUDY

This study has been divided into five chapters.

Chapter I Introduction

Deals with the general nature of the problem, the genesis of the program in Jackson, statement of the problem, the need for the study, the scope of the study, the limitations of the study, the definitions of terms as used and a brief outline of the organization of the study.

Chapter II Review of Selected Literature

Includes a review of pertinent literature on grouping for instruction and learning.

Chapter III Functional Description of the Program in Jackson

Offers a description of the grouping by progress as it has been carried on in Jackson.

Chapter IV Procedures and Results

Gives the presentation and interpretation of the data.

Chapter V Summary, Observations and Conclusions

Consists of a summary of the study, observations as the study was made and presentation of conclusions and suggestions for possible future research.

Bibliography

Appendix

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CHAPTER II

REVIEW OF PERTINENT LITERATURE

Many studies have been made and considerable writing has been done on the problem of the best way to group children for educational purposes. Shortly after the beginning of the twentieth century, following the development of educational psychology and intensive studies of child growth, many experimental programs in grouping were inaugurated and reported in the literature.

The practice of homogeneous grouping and research studies related to grouping were most extensive in the period prior to 1935. Following this period the practice of ability grouping appears to have decreased.

TRENDS IN HOMOGENEOUS GROUPING

In 1932 Billett found that 2740 of 8594 secondary schools in the nation that reported were using some form of homogeneous grouping. His study also revealed that grades 7 to 9 used homogeneous grouping to a greater extent in all subject matter fields than other grade levels. He also learned that homogeneous grouping was used more extensively in academic subjects than in non-academic fields.¹

According to a survey conducted in 1949, 53 percent of the city school systems reported using ability grouping in some form in one or

Roy O. Billett. "The Administration and Supervision of Homogeneous grouping." <u>Contributions in School Administration No. 4</u>. Ohio State University, 1932.

more schools.² Among those using the plan, 24 percent stated that ability grouping was "on the way in" while 22 percent replied it was "on the way out." Thus the procedure remained a controversial one. In part this was due to the varied and somewhat contradictory results obtained in studies of the effects of ability grouping. The confusion was due to the variety of specific practices subsumed under the label of "ability grouping." The fact that the period after the middle thirties produced no studies actually focused upon the question of the classification or grouping of pupils is in itself significant in view of the large number of studies of this topic which appeared during the twenties and early thirties.

According to William T. Gruhn there continued to be less homogeneous grouping in the junior high school in the early fifties than in the previous decades. He states:

Although elective offerings and homogeneous groupings are still widely employed in the junior high school, educators are less certain that those practices are appropriate and sufficient to individualize the instructional program. They believe that, with flexible teaching methods, much individualization can be provided for pupils in the same courses and in heterogeneous groups. The unit approach, pupil participation in planning, and experience-centered activities contribute much to the individualization of the instructional program. Consequently, there is at present a tendency to limit rather than expand the offering of elective courses, while homogeneous grouping is being applied increasingly to those pupils needing special attention rather than universally to all pupils in school.

He further states that while there continues to be emphasis on

²National Education Association. Research Division. "Trends in City School Organization, 1938 to 1949." <u>Research Bulletin</u>, 1949. pp. 4-39.

^SWilliam T. Gruhn. "The Purposes of the Junior High School after Forty Years." <u>California Journal of Secondary Education</u>. XXVII March, 1952. p. 131

the individualization of the educational program, the point of view has changed concerning the methods of implementation.

Ramey in 1956 concluded:

There is a general agreement that there can be no truly homogeneous grouping, that there can be only 'likenesses' in a few selected factors and that even these are tenuous and changing.⁴

However, he asserts that forms of ability grouping can contribute to the learning situation and have practical advantages outweighing the possible disadvantages.

BASES OF HOMOGENEOUS GROUPING

A wide variety of bases have been proposed and used for homogeneous grouping at various instructional levels. During the decades of the twenties and the early thirties the practice of grouping children on the bases of capacity as determined by mental tests, educational tests or teacher's marks or some combination of these, spread rapidly. However, McGaughy found that pupils homogeneous with respect to one trait or to the average of several traits are not homogeneous with reference to any other trait.⁵

Rankin found that teacher judgment and results of intelligence tests were of approximately equal importance in homogeneous grouping and that some progress had been made toward determining weight to be

⁴Arthur Ramey. "A New Look at Ability Grouping in the Junior High School." <u>California Journal of Secondary Education</u>. XXXI (May, 1956) p. 291

J. R. McGaughy. "Homogeneous Grouping of Pupils." Childhood Education. VI. (March, 1930) pp. 291-296

assigned to the various factors when they were utilized for a composite score.

According to Billett, as many as sixteen different criteria, singly or in combinations, have been used for grouping. No two schools used identically the same bases. He made 289 schools located in different parts of the country the subject of a special study due to the emphasis these schools placed on homogeneous grouping. According to his findings the intelligence quotient derived from group tests ranked first as the most commonly used basis for grouping; average scholarship based on combined marks in all subjects ranked second; and application, or effort ranked third.⁷

Although there has been considerable research on the matter of bases for homogeneous grouping, no significant unanimity of findings has been reported. Billett confirmed the conclusions of Rankin that of all the bases used, mental ability seemed to be the best single basis for grouping to improve educational achievement.⁸ No plan of classification has yet been devised which will eliminate the need for adapting instruction to individualized differences.

Kefauver endeavored to evaluate different bases for ability grouping by the method of correlating these bases with the success of

⁶American Education Research Association. <u>Review of Educational</u> Research I. National Education Association (1931) p. 39

Roy O. Billett. "Provisions for Individual Differences, Marking and Promotion." United States Office of Education, Bulletin No. 17 (1932)

Roy O. Billett. "A Controlled Experiment to Determine the Advantages of Homogeneous Grouping." <u>Educational Research</u> Bulletin. (April 4, 1928 - May 2, 1928.)

pupils during their first semester in junior high school. He concludes that regardless of factors used for distributing pupils to ability groups, the basis for grouping should always contain a composite of marks in the school or a rating of capacity by the teachers or both.⁹

REVIEW OF LITERATURE

CONCERNING HOMOGENEOUS GROUPING PRIOR TO 1936

Most of the significant research on homogeneous grouping was conducted in the period before 1936. By the early thirties opinion seemed to be divided as to the value of ability grouping. Arguments on both sides were given in a comprehensive summary in the Ninth Yearbook of the Department of Superintendence.¹⁰ The 500 superintendents to whom the questionnaire was addressed listed the advantages of ability grouping more frequently than the disadvantages.

Arguments in favor of homogeneous grouping included:

1. Homogeneous grouping makes differentiation of curriculum easier.

2. Slow learners in separate groups are not discouraged by the superiority of others but compete on more equal terms and develop their own leaders.

3. Homogeneous grouping placed pupils in competition with others of fairly equal ability.

4. Children having more than average ability tend to form habits of idleness, inattention and mental laziness if compelled to mark time to classes made up of average and below average ability.

⁹G. N. Kefauver. "The Validity of Bases for Forming Ability Groups." <u>Teachers College Record XXXI.</u> (1929) pp. 99-114.

^{LO}Paul T. Rankin. "Pupil Classification and Grouping." <u>Review</u> of Educational Research I. (June, 1931) pp. 220-230, 243-244. • •

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5. Homogeneous grouping enables the teacher to adapt methods of teaching to meet the needs of varying groups.

6. Homogeneous grouping facilitates the work of the teacher.

7. Competition is keener, pupils are more likely to work up to their capacities - better work results.

Arguments against homogeneous grouping included:

1. With homogeneous grouping, the slower groups lose the stimulus and the contributions of the brighter pupils.

2. Pupils put in the lower ability groups sometimes develop a sense of failure and inferiority.

3. Pupils put in the higher ability groups are apt to develop a superiority complex.

4. Homogeneous grouping is undemocratic and tends to create class distinctions in the minds of some pupils.

5. The adjustment of teachers to the various groups is difficult, particularly the lower groups.

6. With homogeneous grouping there are no outstanding leaders to inspire the slower groups.

7. It is very difficult to divide pupils into truly homogeneous groups, for a group that is more or less homogeneous in one subject may be heterogeneous in another.

Turney, Rankin and Billett made very comprehensive reviews of the literature on ability grouping prior to 1932. They generally agreed that the experimental evidence as to the achievement status of pupils under a plan of ability grouping was inconclusive.

In summarizing investigations made prior to March, 1931, Rankin concluded:

1. Evidence slightly favored homogeneous grouping as contrasted with heterogeneous grouping, especially where adaptations of methods and materials are made.

2. Most teachers prefer to work with homogeneous rather than heterogeneous groups.

3. Evidence regarding the relative merits of various bases of grouping is inconclusive.

4. Data adequate for evaluating various types of adaptation of materials and methods are not available.

5. Homogeneous grouping is most effective for dull children and least valuable, at times harmful, for bright children.

6. The particular grade levels and subjects in which homogeneous grouping is most effective have not yet been determined.

7. Data regarding the effect of homogeneous grouping upon characteristics of pupils other than skills and knowledge are subjective and inclusive.¹¹

Turney made the following conclusions based upon the litera-

ture reviewed:

Most of the studies purporting to evaluate ability grouping have proved nothing regarding ability grouping but have only added evidence bearing upon the nature and extent of individual differences.

Most of the experimental attacks upon the value of ability grouping have failed to evaluate the chief claim for it, i.e. the possibility of adapting content, method, or time.

The experimental literature indicates that more often than not pupils do better in homogeneous groups than in heterogeneous groups.

There is a fairly strong indication that when efforts are made to adapt the means and materials of instruction to the needs of different levels of ability, better achievement occurs in homogeneous than in heterogeneous groups.

In the experimental situation where there is no special effort made to adapt content or method, the average and lower groups appeared to benefit more often than the higher groups.

The true evaluation of ability grouping must be deferred until adequate experimental attacks have succeeded in measuring its alleged advantages.12

¹¹Ibid, Chapter III

¹²Austin H. Turney. "The Status of Ability Grouping." <u>Educa-</u> <u>tional Administration and Supervision</u>. XVII. (1931) pp. 21-42, <u>110-</u> 127, 122-123.

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Many writers have set forth the theoretical advantages and disadvantages of ability grouping. Turney, in his analysis, includes the following alleged advantages for ability grouping:

1. It permits pupils to make progress commensurate with their abilities.

2. It makes possible an adaptation of the technique of instruction to the needs of the group.

3. It helps to maintain interest and incentive, because bright students are not bored by the participation of the dull.

4. Slower pupils anticipate more when not eclipsed by those much brighter.

Listed among the various studies were the following disadvantages

of ability grouping:

1. Slow pupils need the presence of the able students to stimulate them and encourage them.

2. A stigma is attached to low sections, operating to discourage the pupils in these sections.

3. Teachers are unable, or do not have time to differentiate the work for different levels of ability.

4. Teachers object to the slower groups.

5. Parents complain when their children are placed in slower sections.

6. Program construction is rendered more difficult.

7. Frequent transfers necessitate more efficient office help.

Moyer compared the educational achievement of high school pupils

who were grouped according to ability with those who were in mixed classes.¹³ The achievement was measured by standardized tests and

¹³ E. L. Moyer. " A Study of the Effects of Classification by Intelligence Tests." <u>Twenty-third Yearbook of National Society for the</u> Study of <u>Education</u>. Part I. Public School Publishing Co. (1924) pp. 313-322.

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teachers' marks. When the comparisons of achievement were analyzed the following results were obtained:

1. In algebra there was no difference in achievement.

2. In Latin the bright pupils in superior segregated classes excelled the bright pupils of mixed classes.

3. In both subjects the medium pupils in superior or medium segregated classes excelled the medium pupils of mixed classes.

4. If pupils are grouped by ability those who are misplaced in higher sections profit and those who are misplaced in lower sections suffer.

Barthelmess and Boyer conducted an experiment in the Philadelphia elementary schools to determine the value of ability grouping as it pertained to educational achievement.¹⁴ They studied the results obtained by 1130 pupils paired in heterogeneous and homogeneous groups in arithmetic, English, geography and reading. The conclusions from this carefully controlled experiment were as follows:

1. There is a statistically significant difference in favor of homogeneously grouped pupils as far as the improvement of arithmetic, reading, and technical English skills are concerned.

2. Improvement was found to exist in each of the several groups, the high, the low and the medium.

3. Since ability grouping is only one of the many factors which facilitate improvement, a very small amount of superiority may be very significant.

The results of this study offered strong evidence that homogeneous grouping can be a factor in securing improvement in certain important skill subjects.

¹⁴H. M. Barthelmess and P. A. Boyer. "An Evaluation of Ability Grouping." Journal of Educational Research XXVI (December, 1932) pp. 284-294.

Breidenstine concluded in his analysis of accomplishment ratios of both undifferentiated and differentiated groups from grades two through nine that undifferentiated grouping resulted in very slightly superior educational achievement.¹⁵ According to some studies previously made, and again, in this investigation the conclusions seem to hold that not differentiation alone but other curricular and instructional measures together with differentiation bring desired results in educational improvement.

Purdom shows that, in six city high schools in Michigan, ability grouping on the bases of intelligence tests, school marks and teachers' opinions had no effect upon the results with any group of pupils, but that teachers like the plan because it makes their work easier. There is no evidence in Purdom's study that anyone connected with the experiment attempted to take advantage of the opportunity offered by ability grouping to differentiate the courses of study offered.

Cook conducted an experiment in grouping involving high school classes in English I, English III, plane geometry and ancient history. Pupils were sectioned on the bases of intelligence tests and marks made in the preceding semester. The teachers who participated in the study were interested but made no attempt to adapt special teaching methods. Cook concluded that it is questionable that the grouping of high school children according to ability secured any better results than random grouping.

A. G. Breidenstine. "The Educational Achievement of Pupils in Differentiated and Undifferentiated Groups." Journal of Experimental Education. V. (1936) pp. 91-135.

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Reports by Purdom and Cook were in general unfavorable to ability grouping.^{16,17} Moyer did not find conclusive evidence favoring ability grouping. Breidenstine found among differentiated groups very slightly superior results in educational achievement. Barthelmess and Boyer, however, found that pupils in grouped classes achieved better than those in heterogeneously grouped classes.

REVIEW OF LITERATURE

CONCERNING HOMOGENEOUS GROUPING SINCE 1936

The high interest in ability grouping which prevailed in educational circles between 1920 and 1936 subsided after the middle thirties. By that time ability grouping was coming to be identified with something undemocratic and very few research studies on this topic were reported.

Experimentation and research during the past two decades have emphasized grouping within the class as a means for improving instruction and for providing for individual differences. A review of the literature reveals that research since the middle thirties has shifted the emphasis to the study of the individual rather than the group.

In a study conducted during the summer of 1942 at Duke University, Wallin surveyed a group of 87 graduate students in education.¹⁸

¹⁶T. Luther Purdom. "The Value of Homogeneous Grouping. (Baltimore: Warwick and York, 1921.) 99 pp.

¹⁷R. R. Coom. "A Study of the Results of Homogeneous Grouping of Abilities in High School Classes." <u>Twenty-third Yearbook of the National</u> <u>Society for the Study of Education</u>, <u>Part I. (Bloomington, Illinois: Public</u> School Publishing Company. 1924.)

¹⁸J. E. W. Wallin. "Sectioning According to Ability in 1941 and 1942." School and Society LVI. (November, 1942) pp. 526-529

These students represented 75 school systems from 22 states and covered the entire range of education from kindergarten through senior high school. Fifty-one of the school systems reported upon used some type of sectioning; of these, 11 based the grouping on ability while the rest used composite criteria. Eighty-three percent of the teachers in the survey favored sectioning with some reservations, the rest either were opposed to it or more unwilling to comment.

Wallin concluded that sectioning is only a partial solution to the problem of educational adjustment to individual needs. Individual differences within the sections and overlapping between the sections still exist. However, the amount of homogeneity produced by abilitygrouping simplified the problems of teaching and affords a more effective learning situation provided the program of work is differentiated to meet the needs of pupils in the various sections.

In 1946 Russell contended that the problem of providing for individual differences in ability was one of the most critical faced by many classroom teachers.¹⁹ He felt that the attempt to provide a somewhat more homogeneous grouping of pupils than obtained in the regular classrooms would be a step in the direction of meeting this difficult instructional problem. He contended that the whole question of grouping was deserving of further investigation. He asserted that no group of children ever is completely homogeneous even in a narrow

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David H. Russell. "Intra-Class Grouping for Reading Instruction in the Intermediate Grades." The Journal of Educational Research. XXXIX. (February, 1946) pp. 462-470.

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academic skill; that the problem is one of reducing wide ranges of ability rather than of achieving complete homogeneity.

Russell concluded that most of the earlier studies purporting to evaluate ability grouping had provided little support for ability grouping but had added evidence bearing upon the nature and extent of individual differences.

In 1948, Daisy Jones claimed that the typical graded course of study is inadequate to solve the problem of curriculum content for the wide range of abilities and levels of achievement at any grade. She stated that there was need for a curriculum designed to meet individual needs as to level and rate of progress, and that children tend to make greater gains when they are aware of their own needs and abilities. She further maintained that grouping and adaptation to individual differences can be used as a technique to challenge children to growth commensurate with their abilities.

In 1950, in the Encyclopedia of Educational Research, the status of ability grouping was:

1. Detroit was one of the large cities which introduced ability grouping as early as 1919, since that date Detroit has experimented with several variations of the plan.

2. The fetish about ability grouping which prevailed in educational circles between 1920 and 1935 has subsided.

3. No data have been gathered during the past twenty years to

²⁰ Daisy M. Jones. "An Experiment in Adaptation to Individual Differences." <u>The Journal of Educational Psychology</u>. XXXIX (May, 1948) pp. 257-272.

show the extent to which ability grouping is practiced in elementary schools in this country; no research studies on ability grouping have been reported during the past fifteen years.

4. The interest of teachers and administrators has changed from the rather narrow issues involved in ability grouping to broader concerns for well-rounded development in which emotional, social, character, and personality development receive as much attention as scholastic development.²¹

The mere formation of homogeneous groups is, in itself, no provision for individual differences. All too often all the various groups are handled in about the same way, which makes the very formation of such groups rather pointless. Homogeneous grouping will help provide for individual differences only to the extent that such grouping facilitates differentiated instruction.²²

Weaver claimed that variations in the depth and scope of subject matter and in related instructional methods and materials were essential in making effective provisions for individual differences in arithmetic.

He further maintained that groups must not be formed on the basis of IQ alone but that such factors as achievement in arithmetic computation and in problem solving must be considered.

In 1956, Ramey advises against forming too fixed ideas on any particular system of grouping. Since there is no one right way or easy formula, he suggests that each school continuously evaluate its own grouping practices in the light of educational objectives and results and in relation to the particular needs of the situation.

Walter S. Monroe (Editor) <u>Encyclopedia</u> of <u>Educational</u> <u>Research</u>. (New York: The Macmillan Company, 1950) p. 378

²² J. Fred Weaver. "Differentiated Instruction in Arithmetic: An Overview and a Promising Trend. Education. LXXIV. (1953-54) p. 302

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Ramey further reminds us:

That under any system of grouping, we cannot expect to teach without consideration for some forms of grouping within the class and constant provision for individual differences.

There has been a realization that grouping on the basis of reading and the skills that make for success in English does not necessarily coincide with skills and achievement in arithmetic.

This type of grouping should be much more realistic in allowing pupils to be working at their own level of accomplishment and to enable them to advance at their own rate.²³

The current resurgence of interest in the gifted pupil has revived interest in grouping. In 1956 Barbe claimed that gifted children should be working with groups where they are challenged and accepted.²⁴

The two major types of problems encountered in school by gifted children are:

1. The snail's pace at which the curriculum is geared,

2. The rejection so often felt by a child who is mentally superior to other people his own age.

EFFECTIVELESS OF HOMOGENEOUS GROUPING .

The results of ability grouping cannot be evaluated apart from a consideration of the conditions under which groups are formed and of the differentiation in the treatment of different groups.²⁵

Arthur G. Ramey. "A New Look at Ability Grouping in the Junior High School." <u>California Journal of Secondary Education</u> XXXI. (May, 1956) pp. 289-291.

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W. B. Barbe. "Homogeneous Grouping for Gifted Children." <u>Educa-</u> tional Leadership XIII. (1955) pp. 225-229.

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Thirty-fifth Yearbook, National Society for the Study of Education, Part I. <u>Grouping of Pupils</u>. (Bloomington, Illinois: Public School Fublishing Company. 1936) pp. 296-297.

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It is clear that the results cannot be attributed to the single factor of grouping. Effects might be different with different purposes in grouping, with different bases of grouping and with different treatment after grouping. Much of the confusion concerning the value of ability grouping may be the result of the attempt to compare results from quite different types of classification or in the amount of readjustments made in the program.

In defense of ability grouping Cornell says:

One of the most consistent results has been the possibility of increased speed in covering a given amount of work on the part of bright children. It has been found repeatedly that bright children can do the usual work in much less time than normally allotted and can at the same time have an enriched curriculum.

Reduction in the amount of failure under a system of ability grouping compared with heterogeneous grades has also rather consistently been reported. It has sometimes been questioned whether the reductions in failure was not due to the lowering of standards.²⁶

Goodrich analyzed the replies of over 400 superintendents, principals and teachers to a questionnaire request for opinions concerning homogeneous grouping and its influence on the personality of pupils.²⁷ In general, the response favored homogeneous grouping, particularly if curriculum methods were modified and if the grouping was done on a multiple rather than a single basis.

It has frequently been the contention of opponents of homogeneous grouping that the policy causes unhappiness among children and their parents.

²⁷T. V. Goodrich. "Influence of Homogeneous Grouping on Pupil Personality." School Executive L. (February, 1931) pp. 259-263, 290.

²⁶ Ibid.

Sauvain secured reactions from parents and teachers in 16 cities regarding homogeneous grouping. Of 2310 parents 72.6 percent replied to the questions. Sauvain concluded that parents, on the whole, are favorable to homogeneous grouping. He showed that opinions are influenced by the accuracy with which pupils are classified, by the educational philosophy of those responding, by the type of community from which the children come, and by the extent of the differentiation in the courses of study. Of the 73.9 percent of 462 teachers who answered the questionnaire, more than 90% who taught both groups favored homogeneous grouping. The teachers as a whole believed that grouping improved the social attitudes of pupils and made for better work habits.²⁸

Turney and Hyde found from the reaction of junior high school pupils that the great majority of the pupils were happy or satisfied, and that they felt that homogeneous grouping was the best arrangement for them.²⁰ On a second evaluation of homogeneous grouping, Turney and Hyde learned from 29 junior high school teachers, 27 of whom taught both heterogeneous and homogeneous groups, that they strongly favored homogeneous grouping.³⁰ They were definitely of the opinion that the learning situation was better, teaching was easier, and that desirable

²⁰Walter Sauvain. "A Study of the Opinions of Certain Professional and Non-professional Groups Regarding Homogeneous or Ability Grouping." <u>Contributions to Education</u>. No. <u>596</u>. (New York: Teachers College, Columbia University, 1934) p. 151.

²⁹Austin Turney and M. F. Hyde. "The Attitude of Junior High School Pupils toward Ability Grouping." <u>School Review</u>. XXXIX (October, 1931) pp. 597-607.

³⁰ Austin Turney and M. F. Hyde. "What Teachers Think of Ability Grouping." <u>Educational Administration and Supervision</u> XXII. (October, 1936) pp. 499-511.
attitudes and happiness of pupils were more evident in the homogeneous groups.

In evaluating the effectiveness of grouping as a procedure for stimulating and facilitating learning, Sears raised questions concerning the basis and extent of homogeneity. She indicated the current philosophy of the period by her concern for the development of character and personality and not for the mastery of subjects alone. She raises the question of whether the basis for academic learning would serve adequately or be at variance with good personality development. She presumes that improvement in academic learning would be revealed in the personality; that knowledge would result in better orientation in the world and reflect increased sympathy, self-direction, personal charm and powers of leadership.

She states that the answers to the above questions require experimentation. She concludes that the experimentation with grouping should go forward since some of the results of instruction are favorably influenced by grouping children homogeneously and that it seems a reasonable possibility that such groups will not produce undesirable results.³¹

Edmiston and Benfer in commenting on the disagreements of the results of experiments based upon the measurement of achievements of homogeneous and heterogeneous groups, state:

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Jessie B. Sears. "Some Aspects of the Problems of Homogeneous Grouping." <u>Educational Administration</u> and <u>Supervision</u> XXII. (October, 1936) pp. 499-511.



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Whether these differences in opinions and experimental results are due to the bases for sectioning, variabilities in teaching, differences in adaptation of materials or methods to the groups, or failure to consider range of abilities actually existing within the various groups has not been satisfactorily indicated in the published reports.³²

Oliver insists that whether or not the school groups, according to achievement or ability, there will be pupils within any group with a variety of differences in abilities, interests, backgrounds and purposes for whom provision should be made.³³ Further, the teacher should seek to give the gifted a chance to cultivate his talents, should charge him with the responsibility for the fulfillment of his potential.

According to Wrightstone, homogeneous grouping actually produces relatively small reductions in the range of individual differences. He states that research reveals that the range of differences is reduced about 15 to 17 percent when classes are divided into three ability levels. The teacher is always confronted with the problem of adapting instruction to individual differences. He further emphasized that the organization of relatively homogeneous groups and subgroups within the class must be accompanied by other steps. He states that studies indicate that what is done with the group and how it is done and how the teacher and children feel about grouping are important considerations. The school has the

32 R. W. Edmiston and J. G. Benfer. "The Relationship Between Group Achievement and Range of Abilities Within the Group." <u>Journal of</u> Educational Research XLII. (1949) pp. 547-48.

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Albert Oliver. "The Gifted Pupil - A Challenge to Educators." Education LXXIV. (January, 195%) pp. 312-326.

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- . . . responsibility for providing effective instructional materials suited to individual interests and abilities.³⁴ Cummins assorted that much of the difficulty that educators face today in providing for individual differences is due to the gap between theory and classroom practice. She felt that individual differences could be provided for without resorting to socalled homogeneous grouping if pupils worked together on real problems and if they carried on activities suited to varying levels of intelligence.³⁵

Govan stated that homogeneous grouping should be related to the specific learning task. This will result in the child's being in many different groups and thus prevent stratification. She further stated that curriculum must be re-styled for each group, and the criteria for grouping should be readily interpreted to teachers, pupils and parents. According to Govan we have only begun to explore and evaluate the effects of homogeneous grouping. She felt that groups in English should be formed on the basis of achievement in reading and language arts and those in mathematics on the basis of arithmetic skill. She contended that broadly interpreted homogeneous grouping is democratic and desirable.³⁶

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J. Wayne Wrightstone. What <u>Research Says</u> to the <u>Teacher About</u> <u>Class Organization for Instruction.</u> (Washington: National Education <u>Association, 1977</u>) pp. 9, 14-15.

³⁵Evelyn Wood Cummins. "Grouping: Homogeneous or Heterogeneous." <u>Educational Administration and Supervision. XLIV.</u> (January, 1958) pp. 19-25

³⁶May Seagoe Gowan. "Why Homogeneous Grouping." <u>California</u> Journal of Secondary Education. XXX (January, 1955) pp. 22-28

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The data presented show relatively slight progress since early 1931 in solving problems connected with homogeneous grouping. Much has been discovered concerning the extent and practice of homogeneous grouping in the secondary levels, but the proportion of secondary schools using grouping, and the proportion of these which use it with unusual success, are small. In general, studies have upheld the conclusion that homogeneous grouping, when accompanied by differentiation of methods and materials, results in a perceptible improvement in instruction. Evidence concerning the amount of homogeneity which can be attained in grouping, and the efficacy of the various bases of grouping, remains inconclusive, though the intelligence quotient and school achievement predominate in practice. Two outcomes merit special mention: (a) a valuable body of practical information concerning the administration of homogeneous grouping has been made available, and (b) the attitudes of pupils, parents, and teachers with respect to homogeneous grouping have been shown to be much more favorable than commonly supposed.37

To get positive results methods and materials of instruction ought to be adapted to abilities. More segregation of bright pupils into homogeneous groups without adaptation may produce indifferent results. We must find techniques and materials for various abilities of pupils in homogeneous groups.

The available experimental evidence on ability grouping as a general policy in school organization is not without its contradictory aspects. Numerous early studies which appeared to support ability grouping do not justify this conclusion when subjected to critical evaluation. The results from a number of recent investigations are somewhat more encouraging due, perings, to the use of somewhat more adequate classification instruments.³⁰

One of the chief problems has been to find a suitable basis for ability grouping. Facts and figures from the studies indicate that pupils of similar abilities as measured by intelligence tests vary widely in

 ³⁷ American Educational Research Association. "School Organization." <u>Review of Educational Research</u>. IV. (October, 1934) pp. 382-389 38 Monroe, op. cit. p. 391

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their achievement in academic learning. No plan of grouping has yet been developed that makes grouping and learning in the classroom a simple matter. Whether or not the class has been "homogeneously" sectionel, the repelt will have a variety of differences in abilities, interests, backgrounds and purposes.

The experimental literature may well be evaluated in the light of the fact that the values attributed to ability grouping may be largely the result of adaptation of methods and materials of instruction, pupil motivation and other factors.

Although contradictory findings have come from the many studies, a summary of the evidence slightly favors ability grouping as contrasted to heterogeneous grouping in academic learning. Standard tests of academic achievement, particularly where adaptations of standards, materials and methods are made, show the pupils make slightly larger gains under ability grouping. The evidence for ability grouping indicates greatest relative effectiveness in academic learning for dull children, next greatest for average children and least for bright children. This conclusion must be regarded as tentative.³⁹

Again the pendulum has swung back to interest in grouping as an administrative procedure for promoting more effective education for all children. The understanding that equal opportunity implies opportunity in terms of needs and potential has brought about a re-examination of the provision of differential education as a part of the democratic ideal of education for all.

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Department of Classroom Teachers, National Education Association. <u>Class Organization and Instruction</u>. (Washington: American Educational Research Association of the National Education Association. 1957.)



CHAPTER III

FUNCTIONAL DESCRIPTION OF THE JACKSON PROGRAM

<u>In-service Education Program</u>. In the fall of 1957 a workshop type seminar was devoted to a study and discussion of the theory and current practices in grouping. This offered a valuable opportunity for teachers and administrators who were participating in the experimental program to exchange ideas. A variety of topics was selected for study and discussion, including a study of provisions being made for the more able and the slow learners. A survey was made among the various teachers of actual practices in adjusting instruction to individual pupil needs. There was considerable concern and discussion about the relation of quality of progress to level of progress reported on the group record forms that had been developed for experimental use. The members of the study group further concerned themselves about the distribution of measured ability in relation to the arithmetic and reading test scores.

Values of the seminar approach to a study of the problems seemed to be:

1. It brought together cooperatively the persons most concerned with implementing the program.

2. It allowed for interaction among members participating in the study and resulted in improved articulation concerning the program.

3. It stimulated each teacher in the seminar to work on some particular aspect of adjusting instruction to meet the needs of the individual.

4. It opened channels of communication between teachers, counselors and administrators who were all working together in



the seminar and who needed to cooperate with each other in carrying out the experimental program.

Generalized Philosophy. The study group concluded there was no one method of organizing to meet all needs; that in any one school a variety of approaches could be used successfully. It was further agreed that there should be freedom for a variety of types of organization within a school day and that every pupil should have the opportunity to be a member of many groups.

Progress grouping was visualized as a means of moving pupils along in developmental learnings at their individual rates of speed. This method of grouping was further seen as a means of giving the more able students a broader and deeper education and slow students more careful attention in keeping with their needs. Differentiated instruction must be corollary to the acceptance of individual differences in learning rate and ability. Grouping in this fachion would tend to decrease traditional grade level restrictions to individual progress.

The philosophy was generally accepted that the development of grouping on the basis of continuous progress must not be cause for pressure upon the teacher or upon pupils for accelerated progress beyond the natural rate of pupil's learning abilities.

Some of the observations to be made in this study were (1) whether there was any evidence to indicate that progress grouping was upgrading teaching or learning effectiveness, (2) the effectiveness of learning when pupils were not sectioned in so-called progress groups.

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Initial Activities. Frior to the beginning of this study a start had been made to organize classes for seventh grade English instruction into groups on the basis of achievement in reading at the end of the sixth grade year. Reading report forms for the transmission of information on potential and progress in reading had been in use in the elementary grades for some time. In the field of arithmetic, grouping procedures had lagged and the tendency had been to teach the same arithmetic work to the entire class with some adjustments for individuals. A small number of elementary teachers had found it feasible to carry on some grouping procedures for the teaching of arithmetic.

As sixth and seventh grade teachers met together they concluded that the transition between the elementary and the junior high school would be facilitated through the use of a classification card describing the progress and potentiality of each pupil at the close of the sixth grade. These data would be given to the junior high principal at the end of the school year and would serve as a basis for seventh grade groupings in reading and arithmetic.

The Classification Information Card. The classification card included the following information: (1) the estimated subject level at the end of the year, (2) the indication of the place within the present group, and (3) the general quality of work. The estimated level at the end of the year indicated approximately how far the pupil had advanced through the fifth, sixth or seventh grade work in the subject area. The indicated place within the group was checked (1) high, (2) average, or (3) low, as follows:

(1) High: if the pupil was tending to push ahead of the group and the teacher believed he could go faster.

(2) Average: if the pupil was neither pushing ahead of the group nor holding it back.

(3) Low: if the pupil seemed to be holding the group back or seemed to be hard pressed to keep up with the group.

The general quality of work was indicated by a letter grade (A, B, C etc.) A space headed Remarks was used to refer to problems of attention span, industry, special difficulties, etc.

<u>Progress Grouping Defined</u>. The grouping in the Jackson program was an experimental departure from traditional grouping by chronological age or ability. Since it was found that some children of high potential in the elementary grades did not achieve to expected levels indicated by their potentialities, grouping was based on the level of progress achieved rather than on level of ability. All through the elementary grades most of the pupils in the experimental group had been sectioned within classrooms according to the progress they had made in arithmetic and in reading. Thus, a pupil may have been in a top group in reading and in a middle group in arithmetic. This grouping brought together individuals of similar levels of progress with the expectation that more effective learning would be possible through a closer adjustment of teaching methods and curriculum content to the needs of the student in a given class.

Establishment of Progress Levels. Decision on the placement of pupils in progress groups was made by teachers and the principal. This decision was determined by:



(1) How far the pupil had moved along in the established curriculum sequence in reading and in arithmetic.

(2) How thoroughly the pupil had covered the material. The degree of thoroughness of learning was determined by teacher observation and results of teacher made tests.

(3) How the pupil had scored on standardized achievement tests. The resulting estimate of progress and achievement has been used as the basis for grouping at entrance into the seventh grade. Its suitability as a criterion has remained open to question.

This grouping procedure would permit the more able pupil to progress through more than a "year's" work in one school year while the less able pupil may not do a "year's" work in one school year. This procedure allowed the more able pupil to go into the curriculum of the next grade when he was ready and permitted the adjustment of the curriculum for the less able to the level at which he could perform successfully. It was hoped that such grouping would minimize traditional grade level restrictions; and that the development of grouping procedures as herein outlined would not cause unwise pressure on the teacher, parent or pupil for accelerated progress. It was not assumed that acceleration would be accomplished by the elimination of enrichment activities. Therefore it was deemed desirable that the use of supplementary materials should be continued.

<u>Procedures for Principal and Counselors</u>. For the experimental group, classification information cards in language arts and arithmetic were sent from sixth grades to the junior high schools. Using progress levels as a criterion, the total group of seventh grade pupils was divided into the required number of classes. When progress levels were ALL THE THE PARTY OF THE PARTY

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the same, additional criteria of quality of achievement and pupil potential were employed. At the eighth grade level the groups were realigned using, in addition to the above criteria, such information as teacher observation of interest, study habits and motivations.

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CHAPTER IV PROCEDURES AND RESULTS

The control group in this study included 236 eighth-grade students for the year 1956-57, and the experimental group included 291 eighth-grade students for the year 1958-59 at the Frost Junior High School, Jackson, Michigan. The 1958-59 eighth-grade enrollment at Frost Junior High School included a segment of the city which represented a considerably lower socio-economic group than had been included in the 1956-57 enrollment. These samples included all students in the eighth-grade classes except those who did not complete all parts of the testing program employed in this study. The number of students who did not complete the full battery of tests and were thus eliminated was 43 in 1956-57 and 50 in 1958-59.

There was no effort made to obtain homogeneous grouping with respect to achievement in the control group. Students were placed in the individual section in a manner designed to provide a balance of ability levels in each section insofar as scheduling problems permitted. In the experimental group an attempt was made to classify students homogeneously with respect to progress level as estimated from teacher judgment and scores on the California Achievement Tests in reading and in arithmetic which were administered during the spring semester of the sixthgrade year.

A small number of students who entered the Frost Junior High School from outside the Union School District during their seventh-and-

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eighth-grade years were considered to be part of the experimental group. These students were given a battery of tests before assignment to sections in English and in mathematics. They were placed in the progress groups which most nearly approximated the progress level of the incoming students as indicated from past school records, results of the battery of tests and, for some pupils, a personal interview by guidance personnel.

Testing Procedures

In order to make comparisons between the two types of groupings it was necessary to have measures of the ability and the performance levels of both the experimental and the control groups. For this purpose a series of standardized tests was selected from which the ability and achievement levels were inferred.

Ability levels were inferred from:

Differential Aptitude Test (DAT) New York: The Psychological Corporation.

Verbal Reasoning section Numerical Ability section

Individual student achievement in English was inferred from:

Cooperative English Test CI: <u>Reading Comprehension</u>. Princeton: Cooperative Test Service

Subdivided as follows:

Part I: Vocabulary

Part II: Speed and Comprehension Level of Comprehension

Individual student achievement in arithmetic was inferred from:

California Arithmetic Achievement Test. Los Angeles: California Test Eureau



Subdivided as follows:

Arithmetic Reasoning Arithmetic Fundamentals

To further validate the study, members of the experimental group who had not been sectioned homogeneously for Social Studies were tested in September and again in May for achievement in Social Studies through the use of:

<u>Cooperative</u> <u>Social</u> <u>Studies</u> <u>Test</u>. Princeton, N. Y.: Cooperative Test Service.

Subdivided as follows:

Informational Background Terms and Concepts Comprehension and Interpretation Total Score

Statistical Procedures

In order to determine the group levels of performance on the ability and achievement measures and to obtain an estimate of the variability within these groups the mean percentile scores and standard deviations for the experimental and the control groups were computed on each of the criterion variables.

To determine if the differences between the levels of functioning in the two groups represented real rather than chance differences, the t test for the significance of the differences between means was employed.¹

The degree of relationship between the pairs of variables was determined by computing the Pearson Product Moment correlations between each pair of variables for both the experimental and control groups. To

Quinn McNemar. Psychological Statistics. (New York: John Wiley and Sons, Inc. 1955) p. 37.

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determine if these correlations were significantly different from zero, the t test for correlation significance was employed.² The objective was to determine whether differences between correlations earned by the experimental and control groups on the same variables differed significantly. Since **r** is not normally distributed, an **r** to **z** transformation was accomplished and the differences in **r** inferred from the differences found in z.³

RESULTS

Table I presents the number of students, the mean percentile scores and the standard deviations earned by both the experimental and control groups for each of the criterion variables.

TABLE I

	Experime (N =	Experimental Group (N = 2)1)		Control Group (N = 236)	
	11	ទី២	Ъ	SD	
DAT Verbal Reasoning	55.12	26.07	59.4	25.35	
COMPARATIVE ENGLISH Vocabulary Speed Comprehension	64.31 63.91 65.71	24.40 30.49 28.49	54.11 69.31 63.39	24.22 28.24 28.01	
DAT Numerical Ability	61.37	27.67	68.07	23.73	
CALIFORMIA ARITHETIC Reasoning Fundamentals	71.99 70.03	23.58 20.00	75.60 59.14	24.77 28.04	

MEAN PERCENTILE SCORES AND STANDARD DEVIATIONS FOR EXPERIMENTAL AND CONTROL GROUPS

Did. p. 147

²Ibid. p. 146

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From the examination of Table I, it can be seen that the mean ability scores in verbal reasoning and in numerical ability earned by the control group are higher than the mean ability scores earned by the experimental group. This difference in ability may be partially attributed to the addition of a sector of the city with a considerably lower socio-economic level to the Frost Junior High School district.

Since the mean ability scores of the experimental group are lower than the mean ability scores of the control group, it might be anticipated that assuming no difference in effect between the two grouping procedures, the mean achievement scores of the control group would be higher than the mean achievement scores of the experimental group.

A comparison of the mean percentile scores earned by the experimental and control groups on the achievement measures reveals a mixed pattern. The experimental group earned higher mean percentile scores on the vocabulary and comprehension sections of the Cooperative English Test and on the fundamentals section of the California Arithmetic Achievement Test than the control group. The control group earned higher mean percentile scores on the speed section of the Cooperative English Test and on the reasoning section of the California Arithmetic Test than the experimental group. Thus, the expected higher scores for the control group did not occur in all areas.

With the exception of the fundamentals section of the California Arithmetic Test, the standard deviations of the percentile scores carned by the experimental group were higher than the standard deviations of the percentile scores reached by the control group.

The numerical differences between the mean percentile scores earned by the experimental and control groups on ability measures are greater than the numerical differences between the mean percentile scores earned by the two groups on any achievement measure with the exception of the fundamentals section of the California Arithmetic Test. In order to determine which of these differences could be attributed to chance deviation and which probably represented real differences, the t test for the significance of the difference between the means was employed.

Table II presents the differences between the mean percentile scores earned by the experimental and control groups together with the t ratios and levels of significance associated with these scores.

TABLE II

	Differences Between the Means $\frac{\eta''}{\eta''}$	t Ratios	
DAT Verbal Reasoning	- 4.23 *	1.84	
COOPERATIVE ENGLISH Vocabulary Speed Comprehension	+ 0.20 - 2.40 + 2.32	< 1 < 1 < 1	
DAT Numerical Ability	- 6.20 **	2.79	
CALIFORNIA ARITIMETIC Reasoning Fundamentals	- 3.61 +10.94 **	1.56 4.50	

DIFFERENCES BETWEEN MEAN PERCENTILE SCORES EARNED BY EXPERIMENTAL AND CONTROL GROUPS

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- # Positive sign indicates higher mean score earned by the experimental group.
- * A difference as large as this would occur by chance fewer than ten times in a hundred. (10% level) While this is not significantly higher, it is worthy of note.
- ** A difference as large as this would occur by chance fewer than one time in one hundred. (1% level)

From the examination of Table II it can be seen that the mean ability score in numerical ability earned by the control group is significantly higher than the mean ability score in numerical ability earned by the experimental group, ($p \lt 0.01$) while the mean ability score in verbal reasoning for the control group is not significantly higher than the mean ability score in verbal reasoning for the experimental group, the higher mean score of the control group is worthy of note. On none of the achievement measures did the control group earn significantly higher scores than the experimental group. The mean percentile score earned by the experimental group on the fundamental subtest of the California Arithmetic Test was significantly higher than the mean percentile score earned by the control group, probably less than .01. Among the remaining mean test scores (all of which are achievement measures) there are no significant differences between the mean percentile scores of the experimental and the control groups.

It may be inferred from the lack of higher achievement by the control group and from the superiority of performance by the experimental group in certain areas that the grouping for instruction employed in the experimental group resulted in an improved performance by that group.
To determine the relationships between the various test scores earned by each group and to afford a comparison between these relationships from the experimental to the control group the Pearson Product Moment correlations between each pair of variables were computed for both the experimental and control groups. These correlations for both groups are presented in Table III.

TABLE III

						· · ~ · · · · · · · · · · · · · · · ·	
Test		Vocab.	Speed	Comp.	DAT. Numer.	Reas.	Fund.
DAT Verbal	Exper. Control	•75 [*] •75	•74 •65	.78 .60	.60 .54	.68 .57	.63 .53
Vocabulary	Exper. Control		.71 .64	•84 •59	•49 •50	.60 .55	.б0 .45
Speed	Exper. Control			•96 •86	•52 •53	•ύ5 •55	.62 .48
Comprehension	Exper. Control			`	•54 •52	.ර7 .48	.62 .45
DAT Numerical	Exper. Control					•76 •69	•75 •69
Reasoning	Exper. Control						•85 •74

CORRELATIONS AMONG CRITERION VARIABLES FOR EXPERIMENTAL AND CONTROL GROUPS

* All correlations shown in this table have significant differences from zero at the 1% level.

Table III reveals consistently high correlations among the criterion variables. Generally, the correlations among the scores earned by the experimental group are higher than the scores earned by the control group. All the correlations between the pairs of variables in Table III are significantly different from zero (p $\langle 0.01 \rangle$). The correlations among the subtests of the cooperative English test vary from .59 to .86 in the control group and from .71 to .96 in the experimental groups. The correlations between the parts of the California Arithmetic Test were .74 for the control group and .85 for the experimental group. These show a generally higher correlation between the variables in the experimental group. As expected the DAT verbal correlates highest in both groups with the three parts of the Cooperative English test while the DAT numerical sections correlate most highly with the California Arithmetic test.

A comparison of the correlations earned by the experimental group with the correlations earned by the control group for each variable revealed that the correlations earned by the experimental group were almost uniformly higher.

Many of these correlations were highly significant. The higher correlations between the predicator variables (verbal and numerical DAT scores) and the criterion variables (Cooperative English and California Arithmetic scores) demonstrate that in the experimental group there was a closer relationship between the scores earned on the ability tests and the scores earned on the achievement tests. While this would not necessarily imply more effective instruction in the experimental group, it does afford strong suggestion of superior instructional techniques.

In order to make it possible to determine if the higher correlations among the variables noted in the experimental group could be chance

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المان بالم المان الم المان بالم المان الم المان الم المان الم المان ال المان الم المان الم deviations, a statistical comparison was made between each pair of correlations (r to z transformation and t test for the significance of the differences between z's). Table IV presents the t values and levels of significance of the differences between correlations among the variables earned by the experimental and control groups.

TABLE IV

Tests	Vocab.	Speed	Comp.	DAT Numer.	Reas.	Fund.
DAT Verbal	0+	1.96**	3.94***	< 1	2.11**	1.79*
Vocabulary		1.41	6.04***	< 1 [#]	. <1	< 1
Speed			5.98***	< ¹ [#]	1.78*	2.34**
Comprehension				< 1	3.21***	2.60 ^{***}
DAT Numerical					1.54	1.30
Reasoning						3.36***

t VALUES AND LEVELS OF SIGNIFICANCE OF DIFFERENCES BETWEEN EXPERIMENTAL AND CONTROL GROUP CORRELATIONS

Higher correlation in control group.

- + Correlations of experimental and control groups are equal.
- * A difference as large as this would occur by chance fewer than ten times in a hundred.
 (10% level)
- ** A difference as large as this would occur by chance fewer than five times in a hundred. (5% level)
- *** A difference as large as this would occur by chance fewer than one time in a hundred. (1% level)

Table IV shows that correlations between the DAT Verbal ability scores and the achievement scores on the speed and comprehension sections of the Cooperative English tests and the reasoning section of the California Arithmetic test for the experimental group were significantly higher than the correlations for the control group. Also, the correlations between vocabulary and comprehension sections and between speed and comprehension subtests of the Cooperative English tests were significantly higher for the experimental group. The correlation between scores earned on the comprehension subtests of the Cooperative English and the reasoning and fundamental sections of the California Arithmetic test were significantly higher in the experimental group. Likewise there was a significantly higher correlation between reasoning and fundamental subtests in the California Arithmetic test for the experimental group.

Table V shows the growth in achievement made in one year in the area of Social Studies by the experimental group which was heterogeneously grouped for this subject. In this area no attempt was made to section pupils by achievement and ability. Here it was assumed that differences in learning could be adequately provided for by working as individuals or by grouping within the classroom structure.

TABLE V

MEAN PERCENTILE SCORES AND STANDARD DEVIATIONS FOR FALL AND SPRING TESTING OF THE EXPERIMENTAL GROUP ON COOPERATIVE SOCIAL STUDIES TEST

Test	Fall To (N = 2	esting 291)	Spring (N = 2	Testing 291)	
	М	S.D.	М	S.D.	
COOPERATIVE SOCIAL STUDIES					
Informational Background	39•57	28.53	53.85	30.21	
Terms and Concepts	42.78	28.37	60.50	27.28	
Comprehension and Interpretation	52.68	29.51	54.91	30.17	
Total grade	43.20	29.06	62.08	30.07	

Attainment in Social Studies for the experimental group was measured by achievement tests in the fall and in the spring. The results of these tests show that substantial gains were made in informational background learnings and in understanding of terms and concepts used. There was a slight improvement in comprehension and interpretation skills.

Many teachers believe that learning in this area can be effective when pupils with wide variations in abilities contribute to the group in knowledge of the subject and to growth in social skills. They believe that individual differences and needs can be identified and cared for in heterogeneous groups through pupil-teacher planning and problem-centered learning. Teachers have tried to find opportunities to capitalize on children's individual interests and aptitudes as resources to the whole group and to vary the learning experiences so that different needs will be met. They feel that pupils at all levels of achievement can be provided a variety of materials and activities somewhat commensurate with their abilities. They assume that the more able pupils can be motivated to reach out to broader, deeper and higher levels of understanding and achievement than those with less ability.

A study was made to evaluate the growth in Social Studies of the total eighth-grade experimental class over a one-year span to identify whether these conclusions were valid. As can be observed from Table V, this group made the greatest gain in learnings in informational background and in understanding of terms and concepts used while a small improvement was made in ability to comprehend and interpret social studies content materials.

CHAPTER V

SUMMARY, OBSERVATIONS AND CONCLUSIONS

This study was undertaken to investigate the relationship between the grouping of pupils at the junior high school level on the basis of progress and achievement in the fields of arithmetic and reading over a two-year span. The plan of the investigation was to discover the difference, if any, in achievement among those pupils who have been grouped on the basis of progress and those who were not so grouped. The investigator has studied the results of the study by using a correlation technique. It was expected that, if a student was motivated to do his best through improved grouping procedures and if the materials and methods were properly adjusted, the correlation between ability and achievement in English and in mathematics would be high.

Summary

An examination of the hypotheses of the study will serve to summarize the findings.

Hypothesis 1

Grouping according to achievement and progress in English and in mathematics in the seventh and eighth grades will produce a group which is higher in criterion measures than under heterogeneous grouping.

Since the experimental group did not achieve exactly higher mean percentile scores on all criterion variables than did the control group, it cannot be firmly stated that this hypothesis has been proved. It may, however, be inferred that because of the superior ability level of

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the control group the findings of this study tend to support a contention that the homogeneous grouping resulted in a higher level of achievement relative to the ability level of the group in question.

Hypothesis 2

Grouping between classes in the junior high school may be a valid method of attaining a closer correlation between ability (I.Q.) and performance (achievement test results.)

Table IV (p. 53) shows that the correlation between the ability measures and the criterion variables are significantly higher for the experimental group than for the control group.

The following observations were made by the writer as the study progressed:

Observations

If the inference in Hypothesis 1 is valid, then it may be assumed that the improved performance relative to ability may be at least in part attributed to the fact that homogeneous grouping enabled teachers to develop techniques and to select materials which were more appropriate to the level of achievement of the group membership. It was further observed that the reduction of the wide range of individual differences within the individual classroom enabled the teacher to direct more effectively the learning of the class as a whole for a considerable portion of the class time.

Much of the learning in reading and in arithmetic is sequentially developed. Each pupil was encouraged and permitted to progress in those subject areas at his own rate of development. Since the more able students needed less time for routine drill and moved through the



required work more rapidly, they had time for advanced work. Some of the most able eighth grade pupils in the experimental group were successfully pursuing algebra in the spring.

Teachers have found only a limited amount of time to provide for small group or individual needs by means of intra-class grouping in the junior high schools where the teacher is with the group for only a fifty-minute class period. They found they could usually give at least some attention to individual needs through instruction in the progress sectioned groups within the limits of the class period.

It is assumed that grouping in only two subjects will not affect the normal social and psychological development of the students. Teachers found that members of a group which was relatively homogeneous in progress in arithmetic and in reading worked together well toward mutually accepted goals. Also, the students related to each other with comparative ease in helping and accepting help from one another. A pupil was not caused to feel he would be permanently identified with a single group. His progress and needs determined the length of time he remained with a specific group for instruction in reading and in arithmetic. Thus it was not necessary for him to be in the same group for a very long period of time. Pupils also had opportunities to be members of several kinds of groupings in which they commingled with pupils of varying abilities and skills for the exchange of experiences and ideas.

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There are sufficient opportunities to provide for individual differences in the field of Social Studies without grouping according to achievement and progress. Growth in achievement in this area as shown in Table V (p. 55) reinforces this observation. Among the pupils who had been grouped according to progress for instruction in reading and in arithmetic, there was a wide diversity of interests, values, self-perceptions and motivations. Social Studies teachers in the experimental group used a variety of materials to meet varying reading needs and purposes. Also sub-grouping in Social Studies allowed pupils opportunities to work with others who were both alike and different. Many of the Social Studies teachers have a deep concern for the recognition of the uniqueness of the individual as well as a devotion to the concept of living and working together to achieve some common ends and purposes.

Conclusions

Since there is generally a wide spread of achievement in every age group, the problem of meeting individual needs is at least partially met through grouping procedures. Much can be taught efficiently to a group if the pupils in the group are ready to learn. One kind of grouping, however, will meet only certain of the pupil's needs. Other kinds of grouping are necessary if other needs are to be met. Grouping pupils

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together for instruction who are at somewhat the same level of achievement in arithmetic or in reading has helped teachers to adapt the content of courses and the methods of instruction to learning capacity and achievement. Grouping on the basis of specific progress levels in an academic area and for common instructional needs contributes to a good learning situation.

A group which looks homogeneous on paper is actually heterogeneous in many respects. A so-called homogeneous group formed on the basis of one or more criteria of similarity will show wide variability among individuals in other respects. All that can be accomplished by such grouping is to reduce the wide range of differences for a particular learning task. A group which is relatively homogeneous in achievement encourages interaction among members. Not only can the pupils relate to each other with more ease, the teacher in the limited class period can adjust the material to meet their needs with greater precision.

As hypothesized, progress grouping did encourage teachers to develop techniques and to select materials which were appropriate to the level of achievement of the group membership. The more able pupil was encouraged to move ahead at his own speed, also enrichment activities were provided for him. The pupil of limited ability was permitted to move more slowly toward more realistic objectives.

No grouping practice will be any better than the teacher with the necessary facilities and materials can make it. The manner in which

the adopted textbooks are used, the availability of reference and supplemental books and other teaching aids can have a positive or negative influence on group instructional procedures. Many of the teachers in this study have reported that they have been challenged to use various methods and techniques conducive to learning with differing groups. They admit that they have had to make extra effort to teach different groups at different levels. Although this procedure has added to the number of preparations many of them now must make, they report that they feel their teaching is more effective and each class is also easier to teach. By and large they agree that the advantages outweigh the disadvantages.

Based upon the conclusions summarized above, the following implications would seem to be worthy of consideration:

It is questionable whether any organizational plan will help assure that each pupil will work in accordance with his capacity.

There is no one method of organizing for instruction to meet the varying interests, needs and achievement levels of all pupils. In any one school system a variety of approaches may be used successfully.

Every pupil should have the opportunity to be a member of several groups, both large and small. There should be freedom for participation in a variety of groupings within a school day.

Grouping must be kept flexible and pupils shifted when it is indicated that a better adjustment can be made.

Grouping between classes at the junior high school level makes it possible for pupils to move forward at varying rates. Such grouping tends to minimize traditional grade level restrictions.

Pupils who need special consideration in group placement should be brought to the attention of the principal or counselor.



Teachers and pupils need to learn how to work effectively and efficiently in groups.

Faculty workshops that deal with grouping methods, group process techniques and procedures for individualizing instruction can be effective.

A procedure must be worked out for making school policy and practices in grouping clear and acceptable to pupils, teachers and parents.

If homogeneous grouping is to be done, it should be completed within the context of a carefully planned instructional program. The following suggestions are made for possible future consideration:

A rather comprehensive grouping procedure for the junior high school should be adopted if each pupil is to have the opportunity for optimum development of his capabilities.

Grouping procedures and practices need to be continually evaluated to find effective techniques for providing continuity in learning for all children.

The curriculum at the junior high school level should be carefully evaluated with attention to needed changes in teaching methods and materials as related to individual capacity and achievement.

Continued study and experimentation in curriculum adjustment must be carried on to insure adequate learning opportunities for all levels of abilities.

Critical evaluation of various grouping procedures and curriculum adjustment to meet individual needs ought to be included as a part of the in-service study program for teachers.

Teacher education institutions should give attention to the problem of assisting all junior high school teachers to be more knowledgeable in the development of an educational program to meet individual needs.

Administrators must recognize their responsibility in providing the needed stimulation, encouragement and means for the implementation of a program which gives considerable attention to individual abilities, interests and needs.





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APPENDIX

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NAME	FIRST	NAME AND IN	ITIAL	DATE OF	BIRTH	_	
	GRADE	KDG.	-	8	8	4	
	TEACHER						
STABLISHED 1	IEVEL IN JUNE						
GINN							
SILVER-BUR	RDETT						
SUPPLEMEN	VTARY						
OTHER							
OTHER							
PLACE WIT	FHIN GROUP -A" FOR AVERAGE OR LOW						
GENERAL QUA	ALITY OF WORK						
VERBAL I. 9	2. PERCENTILE						
ION-VERBAL I.	. Q. PERCENTILE						
	REASONING						
PERCENTI	LE FUNDAMENTALS						
	TOTAL						
	REABONING						
GRADE	FUNDAMENTALS						
EQUIVALE	TOTAL TOTAL						
DAT	TE OF TEST						


Figure III - Mathematics Classification Card - Grades 6 through 9.

DOE		иноц		240	06 29 POTENTIAL - 48
32146			FIRST NAME EST. LEVEL		
		⊂0⊃ ⊂1⊃⊂1⊃	нібн —		LANGUAGE ARTS CLASSIFICATION CARD
	⊂2⊃ ⊏ 2⊃	⊂2⊃		⊂∎⊃	JACKSON PUBLIC SCHOOLS JACKSON, MICHIGAN
E	⊂3⊃⊂3⊃	⊂3⊃	LOW O	C•⊃	REMARKS:
E PEN	⊂4⊃€4⊃	⊂4⊃	PLACE WITHIN		e finantico in entertain ed it man or i anno 1
SENS	⊂5⊃≠=5⊃	⊂5⊃	PRESENT CLASS	CED	sector, or rescal Lengels, Doright Sales of
N.	⊂6⊃≠⊂6⊃	⊂6⊃		CFD	allen ban an aparta te alerta Ca alerta Ca
USE	⊂7⇒⊂7⊃	⊂7⊃		GENERAL	
	⊂8⊃⊂8⊃	⊂8⊃		OF	
	⊂9⊃⊂9⊃ GRADE MONTH				SECTION
	EST. SUBJ. LEVEL	THIS YEAR			IBMG16479

Figure IV - Language Arts Classification Cards - Grades 6 through 9.

* "Class" on these forms should be interpreted by the Sixth grade teacher as "group" on the elementary classification form.

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10.00772222

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Form 822

Jackson Public Schools

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GROUP OR CLASS ANALYSIS AND PROGNOSIS

			Group Number		
School	Teacher	Subje	ct		
Names of pupils in group as originally formed:	The pupil have show date as i Very rap Rapid Average Slow Very slo	Ls in this group m progress to .ndicated: pid	The potential of this group is con- sidered to be: Very high High Average Low Very low		
	The begingroup, or may be of The estiment of the Remarks classifi	The beginning level of progress for this group, on the basis of previous work, may be considered as The estimated level for this group at the end of this year should be approximately: Remarks by Principal (regarding pupils whose classification is uncertain or items, such as			
	impaired deviatio for whice	impaired hearing, impaired vision, personality deviations, or special learning difficulties, for which teacher should be alerted):			
	Pupi	(Add extra pages 1	Notes f necessary)		
		(Add extra pages 1	r necessary)		

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ROOM USE ONLY 31371 St. d191 JUL 25 FEB 27 n MAY JUE AUG AUG 2 0 1988 1 MAY APR 2 100 TAR 19 USE OMY 15 2110 on 412/7 TA



