A Study of reading achievement results obtained in an ability grouping situation versus reading achievement results obtained in a self-contained classroom grade five Worland Wyoming

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A STUDY OF READING ACHIEVEMENT RESULTS
OBTAINED IN AN ABILITY GROUPING SITUATION
VERSUS READING ACHIEVEMENT RESULTS OBTAINED IN A
SELF-CONTAINED CLASSROOM, GRADE FIVE, WORLAND, WYOMING

by

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B.A. University of Wyoming, 1958

Presented in Partial Fulfillment
of the Requirements for the Degree of
Master of Education

MONTANA STATE UNIVERSITY
1963

Approved by:

[Signature]
Chairman, Board of Examiners

Dean, Graduate School

AUG 2 3 1963
Date
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C.M.C.
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CHAPTER I

INTRODUCTION

Reading authorities agree that various levels of ability are found within any classroom. For example, Durrell says:

One of the chief outcomes of the use of standardized tests has been the discovery of the wide range of pupil ability. Any standard test survey of reading achievement will show the highest pupil in a given grade to be several years above the lowest pupil in that grade. The range of abilities increases in each higher grade. . . . . . The fact that a child is sitting in a grade labeled grade two, grade four, or grade six is no indication that he needs reading material of the level commonly assigned to that particular grade.

At the present time in the Worland, Wyoming, school system, little provision is made for the various ability levels found in the classrooms. Grouping of children for instruction is neither encouraged nor discouraged by the administration, hence in most intermediate grades classroom grouping is not carried on. Materials presented in the classroom are aimed at the average ability in the classroom with little provision for the slow or advanced pupils.

At the present time a comprehensive testing program is not carried out in the elementary schools. Intelligence tests are not administered and so this information is not

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available to the school. General achievement tests are administered, but for all practical purposes this information is not used by the classroom teachers.

"In order to provide the best possible education to the children whom it serves, the school must accept a child at his own level and continue instruction from that point."

This statement is a portion of the philosophy under which the Worland schools operate. This then would indicate a wider range of provision for the individual pupil than is now available.
CHAPTER II

STATEMENT OF THE PROBLEM

The purpose of this study, broadly speaking, was to compare the effectiveness of heterogeneous and homogeneous groupings for instruction in reading improvement of rate and comprehension in two separate schools.

The elementary schools in Worland are four in number. For the purposes of this study it was decided that the South Side School, referred to as Building One, and the East Side School, referred to as Building Two, would be used because of several factors.

First, the population of pupils is largely Caucasian. Second, there is an equal number of farm population represented in each. Also, the economic status of the population surrounding each of the two neighborhood schools is closely paralleled. The representation in each school is largely of the white-collar worker or the skilled laborer category.

Both of these schools lend themselves to a study of this type because each grade is represented in two classrooms. Neither school is more than six years old and their physical structure is nearly identical. Instructional supplies and materials provided to the teachers are generally the same.

The null hypothesis to be tested was: There is no significant difference in reading improvement between the
experimental group, the homogeneous group situation, and the control group, the heterogeneous group situation.

A. In this study of a homogeneous class versus a heterogeneous class in reading the following problems were defined:

1. Determining the testing program necessary to distinguish the bright and able readers from the retarded and disabled readers.

2. Provision of the same teaching materials and devices to the teachers of all four classes. This includes basic texts, supplementary texts, games and devices for improving word attack, and materials for building reading speed and comprehension.

3. The distribution of children into the various classrooms for instructional purposes.

B. In meeting these three basic problems the following procedures were followed:

1. The testing program developed to distinguish the various abilities was:

   (a) The Otis Quick-Scoring Mental Ability Tests Beta, Form 2

   (b) The Gates Reading Survey, Form 2

C. The following materials and devices were available to the teachers in the four classes:
1. The Macmillan Reading Series for the basic texts.

2. Supplementary readers from six various reading series including one high interest-low vocabulary series for corrective reading.

3. Various materials and games that are used for diagnostic and teaching aids.

D. Grouping of the children was accomplished according to the two following plans:

1. In Building One where the experimental group was located, the children were tested and divided into two groups according to their mental ability and their reading progress. They were grouped in this manner for reading instruction only.

2. In Building Two the pupils were grouped alphabetically with no regard for ability levels. For example, one-half of the A's would be placed in each room, as would one-half of the B's, C's, D's, etc. Grouping for instruction within the classroom was encouraged and obtained.
CHAPTER III

ASSUMPTIONS, DELIMITATIONS, LIMITATIONS, AND DEFINITION OF TERMS

In a study of this type, there are always certain assumptions to be made for all is certainly not a measurable actuality.

I. ASSUMPTIONS

A. It is assumed that the testing devices actually will:
   1. Measure mental ability.
   2. Measure reading achievement.
   3. Diagnose areas of pupil strengths and weaknesses in reading.

B. It is also assumed that the teachers in the four classrooms possessed an equal ability in the teaching of reading.

II. DELIMITATIONS

A. This study will be limited to the fifth grade classes in the South Side and East Side Schools, Worland, Wyoming.

B. The South Side fifth grade was the study group.
   East Side fifth grade was the control group.

C. Children entering school in Worland after September 30th were placed within the classrooms as their situation demanded; however, their test results were not recorded.
III. LIMITATIONS

A. A group intelligence test was administered in each fifth grade classroom since there was no qualified examiner to administer individual tests.

B. Worland elementary schools have no centrally located library and hence this source of reading material was somewhat limited.

C. It was exceedingly difficult to present similar reading materials for instructional purposes to a grouped and an ungrouped class of pupils.

IV. DEFINITION OF TERMS

The terminology set forth by Albert J. Harris in his book *How To Increase Reading Ability*\(^2\) will be used in the following definitions:

A. A **Corrective Reading Program**—a program which uses remedial activities but these activities are carried on within the framework of the regular classroom by the regular teacher.

B. A **Disabled Reader**—a reader whose development of reading skills is below the normal performance for his age or grade level but who possesses mental ability that should enable him to do considerably better work than he does.

C. **A Remedial Reading Program**—a program carried on outside the framework of the regular classroom by a special reading instructor.

D. **A Retarded Reader**—a reader whose development of reading skills is below the normal performance for his age and grade level.

E. **Achievement**—In this study, achievement was interpreted as meaning reading improvement based on the results of standardized tests. The tests used to determine the achievement were the Gates Reading Survey.

F. **An Adapted Reading Program**—a program that is slower in pace and makes use of different materials and interests than the typical reading program because of the below-average mental or reading ability of the group.

G. **Control Group**—Those pupils that were taught by the methods generally employed throughout the Worland school system.

H. **Gain**—Gain was interpreted to mean a positive change in a pupil's grade-placement score on the standardized reading tests.

I. **Heterogeneous Grouping**—For the purpose of this study, a grouping situation in which children are
placed in a classroom without regard to ability. It is assumed this situation would create a wide diversity of ability within that classroom.

**J. Homogeneous Grouping**—For the purpose of this study, homogeneous grouping will be that situation in which children are separated into groups according to high or low mental and reading abilities as determined by the testing program.

**K. Informal Testing Materials**—The materials used for diagnostic purposes. The results of these tests are not standardized nationally.

**L. Intelligence**—Intelligence was interpreted to mean a measurement of a child's innate ability to learn. The test used to determine intelligence quotients was the Otis Quick Scoring Mental Ability Tests.

**M. Phonetic Word Attack**—the attack of one syllable words employing letter sounds.

**N. Self-Contained Group or Classroom**—A class of children grouped together before the testing program with no regard to ability.

**O. Syllabication**—the breaking into pronunciation units the words containing more than one syllable.
A great quantity of literature related to ability grouping in connection with teaching has been written. Understandably, a subject such as the problem of this study is controversial, and hence the related literature displays the controversy according to the beliefs of the writer.

Reading is of utmost importance as a tool for the mastery of all other school subjects. Gray states:

A review of the history of education shows that both individual and group instruction have had a long history. Ever since the arts of reading and writing developed they have been taught individually to members of the royal family. . . . Group instruction has been used ever since, or before, the days of early Greece. By 300 B. C., it had evolved into a well-graded sequence of studies, with definite aims and work.  

The two main patterns of group instruction which are described by Gray as having a profound influence on American education are the highly organized German Volkschule of the nineteenth century and the monitorial system of group teaching developed in England.

In the German Volkschule, the pupils of a specific age were placed in one grade where they were engaged in the

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same learning activities. It was assumed these pupils would learn at the same rate and failure to do so resulted in non-promotion.

In the English monitorial system, the plan called for hundreds of children under the instruction of one trained teacher who had the help of many monitors. However, Gray says that, "The monitorial pattern of group instruction was introduced in America in 1806 but soon grew in disfavor." Horace Mann and Henry Barnard recommended the adoption of the graded elementary school which was best exemplified by the Volkschule.

During the decades that followed, graded elementary schools spread rapidly. The graded plan did point up to educators that a wide range of individual difference did exist in each classroom. Educators began to realize they must focus attention upon the organizational means of providing for these individual differences.

In the early 1900's homogeneous grouping was tried in comparison with the regular graded classroom. Experiments have been carried on throughout the United States in various school systems and the results have not seemed to lessen the controversy concerning the advantages of either grouping plan. Much of this controversy and experimentation is centered in the elementary schools.

4 Ibid.
McElroy lists some disadvantages of heterogeneous grouping such as:

A. The slow learner is exposed to continuous frustration.

B. The able learner may develop an "inflated ego."

C. Pressures are placed on children at home which may lead to a variety of maladjustments.

D. There is a tendency on the part of the school to gear the curriculum to the average or slow groups while the more able child is left to his own devices.⁵

On homogeneous grouping, McElroy states:

The slow learner is more relaxed and cheerful. . . . He has a distinct advantage because more time can be spent on each step of learning. Rapid learners are stimulated to make greater progress. The middle group is similar in a large number of traits so that the teacher has few group presentations and more time to diagnose difficulties and help individuals in class.⁶

She warns however:

The community may feel that homogeneous groups are a violation of democracy, especially if the members do not fully understand how the plan operates.⁷


⁶Ibid.

⁷Ibid.
Finley writes, "The same page at the same time method of teaching is about as illogical as trying to put the same size clothing on all the pupils of a class."^8

Reading programs in many elementary schools have been criticized for excessive emphasis on grouping, but in fact, many authorities state that reading cannot be taught without grouping. Olson stated:

Development is a product of nature and nurture. Reading is a culture that provides the experience, is an expression of development. Where the experience is not provided, or where the child is deprived of it, the development fails. Since rates of maturation are always a part of the equation of development, it has been impossible to make children alike by giving them either a standard prescription in reading, or by giving them an experience adjusted to their readiness. Individual differences persist under all conditions that man has thus far known how to provide for the teaching of reading.^9

Assuming that the foregoing statements are valid, it follows that there is a definite need for grouping children for reading instruction, either by the traditional method or by some other means. In either case, the broad objectives should be to increase reading ability, to stimulate interests, and to reveal new field of study to the child. The basic concept, therefore, in establishing a system for grouping children should be that of stimulating interests and


experiences that can be realized by reading. Interest in a certain activity promotes growth in that activity. So it is with reading.

Dolch pointed out, "Experience shows that we must begin somewhere near the children's present interest if we are to get any outside reading done that will help increase their reading ability."\(^{10}\)

In order to do this, it is imperative that each child read from a book that he can comprehend regardless of the grade level. No pupil gains reading power when he is struggling with material beyond his ability.

Any reading program which is established must have a set of objectives or goals. These are common to the instruction of reading under almost any plan. It is necessary to develop a program that will convince each child that there are pleasures as well as information to be gained from books. In addition, it is important for each child to learn to assume a great deal of self-direction and initiative in selecting books for his reading. There are, of course, other goals to be sought, some of which are summarized by Floyd in the following:

An integral part of the program is teaching the reading skills at the level on which the pupil is working. Much has been written about schools not

teaching phonics. Phonics are taught in our program but taught in their proper relationship to other skills. All words in the English language are not phonetic and children cannot be taught to attack all words phonetically. The structure of words, dictionary skills, syllabication, etc. are all taught in addition to the phonetic skills. Children are taught to summarize, to reach conclusions, to draw inferences, to outline, and to reason. Comprehension is vital. Reading, real reading, in our opinion, is reading with meaning and understanding and being able to evaluate the material read. It includes a reaction to what is read and brings about a change in the individual. It involves creating an interest in reading and a desire to read. It sets up needs to be met through reading. 

To realize these goals, Witty listed the following as advantages of the homogeneous grouping plan:

A. Pressures and tensions to meet standards of a traditional reading group are eliminated.

B. Actually, an individual program results in the reading of consistently larger amounts of material than does the traditional program.

C. Reading speed is accelerated.

D. The amount of time spent in actual reading is increased, and consequently more words are learned through the context.

E. The program tends to eliminate undesirable attitudes toward reading.

\[\text{Cecil Floyd, The "Joplin Plan" For Teaching Reading (Joplin, Missouri, Mimeographed) 1954.}\]
F. The program is flexible and provides for maximum efficiency in the use of time. The teacher has more time to spend with each child.

G. The entire reading time is devoted to the individual child, his problems, and his interests. Slow readers get results. Fast readers enjoy their reading.\textsuperscript{12}

Homogeneous grouping is not a panacea for all ills in the instruction of reading. Durrell indicated this when he stated:

When there are so many ways to group for effective instruction within the classroom, it is difficult to understand why homogeneous grouping throughout the school is thought necessary. If it is used, the need for small group work still remains.\textsuperscript{13}

Carlson and Northrup discussed advantages and disadvantages of homogeneous grouping. Some disadvantages were:

A. Inadequate book supplies may be troublesome. An inventory and scheduling of the distribution of books is advisable before starting the program.

B. Cooperation among the teachers participating in this program is necessary for success. Disagreement and friction will nullify possible benefits.


\textsuperscript{13}Donald D. Durrell, \textit{Improving Reading Instruction} (Yonkers-On-Hudson, New York: World Book Company, 1956) p. 133.
C. Strict cooperation with other subjects is difficult. . . . This again requires teacher cooperation.

D. The teacher must acquaint himself with an additional group of children and parents.\(^{14}\)

It is true that educators' minds are attracted to grouping at this time. Some feel that the practice of homogeneous grouping has only begun and will become more comprehensive. Others feel that there are better ways to attain equal results. However, nearly all share the feeling that more experimentation on the part of individual administrators is necessary to gather evidence and form a basis for further advancement. In view of this need for further evidence, this investigation was approached with the idea in mind of the practical solution of this problem in the classrooms of the local school system.

CHAPTER V

PROCEDURES

This study was made to compare the results of reading achievement in a heterogeneous group situation and a homogeneous group situation. The experiment was conducted on fifty, fifth grade pupils in the East Side School, and fifty, fifth grade pupils in the South Side School of Worland, Wyoming.

South Side School, Building One, contained the experimental, homogeneous, group. East Side School, Building Two, contained the control, heterogeneous group.

In both buildings the pupils were initially grouped for instruction as had been customary in the past. This procedure called for listing names of boys and girls on separate lists alphabetically. One-half of the A's, B's, C's, et cetera from each list were assigned to a classroom. This placed one-half of the boys and one-half of the girls, or twenty-five pupils in each classroom.

During the second week of school the Otis-Quick Scoring Mental Ability Test, Beta, form EM was administered in each of the four classrooms.

Also during the second week of school, the Gates Reading Survey, form 2, was administered to the pupils.
In Building One the pupils were regrouped for reading instruction on the basis of reading grade placement scores on the Gates test, and general school aptitude as measured by the Otis test. Children with intelligence quotients ranging from 111-131 and average reading scores of 5.2-8.4 grade placement points were placed in room 11, the high ability section of the homogeneous group. The low ability section of the homogeneous group contained children with intelligence quotients ranging from 75-110 and average reading scores of 3.2-5.5 grade placement points. These twenty-five children were assigned to room 12 for reading instruction.

In Building Two, the testing program did not affect the grouping procedure. These students remained in the room that had been assigned at the beginning of the school year.

A daily period of fifty minutes, throughout the year, was established as the portion of the schedule devoted to reading instruction. A time from 9:00 a.m. until 9:50 a.m. was the reading instruction period in both buildings.

Similar textbooks, games and instructional devices were available to the teachers in each of the four classrooms. These items included:

A. The basic textbook and accompanying preparatory workbook.
B. Supplementary textbooks from six various reading series.

C. Various materials used for diagnostic and teaching aids.

For specific titles of these textbooks and materials, consult Appendix A, page 32.

At the beginning of the program the children were tested with the Macmillan Diagnostic Test, published by the Macmillan Company, and the McKee Inventory of Phonetic Skill, published by the Houghton Mifflin Company. These informal tests were administered to show individual areas of reading strengths and weaknesses.

In December, an informal test was again given. The test used was the Trouble Shooters Checklist, published by the Webster Publishing Company.

In March, the McKee Inventory of Phonetic Skill was again administered to the children in each building. The results of this test were used by the teachers to check the progress of the youngsters and to show areas of needed concentration.

During the last week of the school year the Gates Reading Survey, form 3, was administered to all pupils so that reading grade placement gains could be measured.
Grouping was encouraged and obtained within the framework of each classroom. The ability of the group was the basis the teachers used to establish the difficulty of the material used to begin the years instruction in reading.

In this experiment, no limitation was placed upon the amount, or type, of supplemental materials used in instruction other than the supply available.

Details concerning textbooks, materials and devices utilized are reported in Appendix B, page 35.

For statistical treatment of the data, seventeen matched pairs were formed from the fifty individual cases available in both the control and experimental groups. These pairs were matched according to intelligence quotients and reading achievement on the initial test.

A pair was established when no more than two points difference existed between intelligence quotients and no more than .3 of a grade placement point difference existed between the initial reading test scores.

I. REPORTING THE DATA

Formulas used in computing the statistics in this study were taken from Garrett.¹⁵

Table I, page 22, shows the differences that existed between the experimental and control groups on the Otis

### TABLE I

SUMMARY OF RESULTS, OTIS QUICK SCORING MENTAL ABILITY TESTS, INITIAL, AND FINAL GATES READING SURVEY SCORES, EXPERIMENTAL AND CONTROL GROUP, FIFTH GRADE, WORLAND, WYOMING, 1960 - 1961

| Student | Experimental Group | | | | | Control Group | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | | 1' | 2' | 3' | 4' | | | | | |
| 1 | 128 | 8.2 | 9.5 | 1.3 | | 127 | 8.3 | 9.2 | .9 | | | | | |
| 2 | 126 | 7.4 | 8.9 | 1.5 | | 126 | 7.6 | 8.7 | 1.1 | | | | | |
| 3 | 122 | 7.3 | 8.7 | 1.4 | | 123 | 7.4 | 8.9 | 1.5 | | | | | |
| 4 | 121 | 7.1 | 8.8 | 1.7 | | 121 | 7.1 | 8.9 | .4 | | | | | |
| 5 | 120 | 7.0 | 8.4 | 1.6 | | 120 | 6.7 | 7.8 | 1.1 | | | | | |
| 6 | 118 | 6.1 | 7.4 | 1.3 | | 118 | 5.9 | 6.7 | .8 | | | | | |
| 7 | 116 | 6.4 | 7.6 | 1.2 | | 116 | 6.5 | 7.8 | 1.3 | | | | | |
| 8 | 115 | 5.9 | 7.3 | 1.4 | | 115 | 5.7 | 6.9 | 1.2 | | | | | |
| 9 | 114 | 5.8 | 6.8 | 1.0 | | 114 | 5.9 | 6.6 | .7 | | | | | |
| 10 | 113 | 5.5 | 6.1 | .6 | | 113 | 5.6 | 5.7 | .1 | | | | | |
| 11 | 113 | 5.6 | 6.8 | 1.2 | | 113 | 5.4 | 6.1 | .7 | | | | | |
| 12 | 109 | 5.1 | 6.1 | 1.0 | | 109 | 5.2 | 5.0 | -.2 | | | | | |
| 13 | 108 | 5.3 | 6.7 | 1.4 | | 108 | 5.1 | 6.0 | .9 | | | | | |
| 14 | 107 | 5.1 | 7.0 | 1.9 | | 107 | 5.0 | 6.8 | 1.8 | | | | | |
| 15 | 106 | 5.1 | 7.3 | 2.2 | | 106 | 5.0 | 5.9 | .9 | | | | | |
| 16 | 104 | 5.1 | 6.3 | 1.2 | | 103 | 5.1 | 6.3 | 1.2 | | | | | |
| 17 | 88 | 3.8 | 4.6 | .8 | | 86 | 3.7 | 3.4 | -.3 | | | | | |

| N | 117 | | | 119 | 21.5 | | | | | 114.3 | 13.6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | 113.47 | 5.99 | 7.31 | 1.32 | | 113.11 | 5.95 | 6.75 | .8 | | | | | |

\[ \frac{\sum x}{N} \]

\[ \sqrt{\frac{\sum x^2}{N} - M^2} \]

1-1' Otis intelligence scores
2-2' Gates test initial
3-3' Gates final
4-4' Gain
Mental Ability Test and the initial and final Gates Reading Survey Test. Note the small differences that existed on the initial tests.

Column 1 and I 1' show intelligence quotients for the two groups. The experimental group ranged from 88-128 and had a mean intelligence score of 113.47. Standard deviation was computed at 12.88 points. The control group ranged in intelligence quotients from 86-127, had a mean intelligence score of 113.11, and a standard deviation of 10.91 points.

Column 2 and 2' show the initial Gates Reading Survey results. The experimental group ranged from 3.8-8.2 grade placement points, had a mean reading score of 5.99 grade placement points, and a standard deviation of 1.12 grade placement points. The control group ranged from 3.7-8.3 grade placement points, had a mean score of 5.95 grade placement points and a standard deviation of 1.15 grade placement points.

Table I also shows in Columns 3 and 3' the test results for the final reading test. The experimental group ranged from 4.6-9.5 grade placement points, had a mean score of 7.31 grade placement points, and had a standard deviation

\[\text{\textsuperscript{16}Ibid., p. 27.}\]

\[\text{\textsuperscript{17}Ibid., p. 53.}\]
of 1.24 grade placement points. Reading achievement in the control group ranged from 3.4-9.2 grade placement points, had a mean score of 6.75 grade placement points, and a standard deviation of 1.47 grade placement points.

Columns 4 and 4' show the amounts of individual gain with the mean gain being 1.32 grade placement points in the experimental group, while the mean gain for the control group was .8 of a grade placement point.

The difference between the mean scores of the experimental group and the control group was .56 of a grade placement point.

The t-test was applied to determine whether the difference was statistically significant. The formula used in applying the t-test was:

\[
t = \frac{M_{EF} - M_{CF}}{(S.E_{MEF})^2 + (S.E_{MCF})^2 - 2 \times \rho_{EC} \times S.E_{EF} \times S.E_{CF}}
\]

- \( M_{EF} \) Mean Experimental Final
- \( M_{CF} \) Mean Control Final
- \( S.E_{MEF} \) \( \frac{M_{EF}}{N} \)
- \( S.E_{MCF} \) \( \frac{M_{CF}}{N} \)

\[
t = \frac{7.31 - 6.75}{(1.77)^2 + (1.64)^2 - 2 \times 1.77 \times 1.64}
\]

\[
t = 4.0
\]

\[18\text{Ibid., p. 223-232.}\]
II. ANALYSIS OF THE DATA

To establish it is necessary to compute the degrees of freedom prior to entering the table listing the value of $t$. In the case of seventeen matched pairs, the degrees of freedom equal the number of matched pairs minus one. Thus degrees of freedom equal sixteen.

Consulting Garrett, Table D, with sixteen degrees of freedom at the 5% level of confidence $t = 2.12$. A $t$ of 2.92 would be needed at the 1% level of confidence.

In this study $t = 4.0$. Thus the difference between the experimental and control group would be significant beyond the 1% level of confidence. Therefore, there is reason to reject the null hypothesis. The null hypothesis being:

There is no significant difference in reading improvement between the experimental group, the homogeneous group situation, and the control group, the heterogeneous group situation.

Since one rejects the null hypothesis, one accepts the hypothesis that there are significant differences between the experimental and control groups. The indications are the grouping program was beneficial in achieving reading results.

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19Ibid., p. 449.
This study was concerned with comparing reading achievement results of the experimental group, the homogeneous group situation, with the control group, the heterogeneous group situation.

Fifty, fifth graders in the experimental group and fifty, fifth graders in the control group were involved in the study.

The experimental group was divided for reading instruction into a high ability class and a low ability class according to intelligence scores and reading achievement. The control was not divided for reading instruction, but remained in their original classroom.

At the end of the reading program, differences between mean reading achievement scores were computed. These differences were subjected to the t-test.

Differences beyond the 1% level of confidence were found and these differences were in favor of the experimental group, the homogeneous group situation.

I. RECOMMENDATIONS

This study was limited to eight and one-half months of one school year. It is recommended that:
A. An extended study be made. This should be of longer duration and involve more students. One school year is not enough time to properly establish a new program.

B. The study should be extended to insure proper representation of low ability children, as well as the average and above average ability children in matched pairs. It will be noted that in Table 1, page 22, the cases involved in the data of this study were above 100 I.Q. with only one exception.
BIBLIOGRAPHY

A. BOOKS


B. PERIODICALS


C. UNPUBLISHED MATERIAL

APPENDIX A

BASIC TEXT, SUPPLEMENTAL TEXTS, AND DIAGNOSTIC TEACHING AIDS AND GAMES

A. Basic Text:


B. Supplemental Textbooks:

1. Fourth Grade Level of Difficulty

2. Sixth Grade Level of Difficulty
3. Seventh Grade Level of Difficulty

4. Corrective Reading - American Adventure Series

C. Diagnostic Teaching Aids and Games:

   a. Basic Sight Vocabulary Cards
   b. Group Sounding Game
   c. The Syllable Game
   d. Take

2. Phonics Workbook:
3. Webster Materials:
Fifty minutes per day was allotted for reading instruction. In the Experimental Group, fifteen minutes each Monday, Wednesday, and Friday were devoted to work in the phonics workbook or the practice readers in the high and the high-average ability sections of the homogeneous group.

In the low-average section, ten minutes daily were allotted for work in the phonics workbook or the practice readers. The low section worked fifteen minutes daily in the phonics workbooks.

In the control group, pupils in the high, high-average, and average groups in each classroom devoted fifteen minutes work on each Monday, Wednesday and Friday to work in the phonics workbook or practice readers. The low group in each classroom devoted fifteen minutes daily to work in the phonics workbook.

No specific time allowance was scheduled for the students to use the Dolch materials. These were used when the teachers had time available and when the students had leisure time.

Generally speaking, from thirty-five to fifty minutes per day was utilized in reading in basic or supplementary texts.
I. USE OF TEXTBOOKS AND MATERIALS

A. Building One, Room 11, high ability section, 11 pupils
   1. Basic Text
   2. Supplemental Texts
   3. Diagnostic Teaching Aids and Games

B. Building One, Room 11, high-average section, 14 pupils
   1. Basic Text
   2. Supplemental Texts
   3. Diagnostic Teaching Aids and Games
C. Building One, Room 12, low-average ability section, 
16 pupils

1. Basic Text

2. Supplemental Text

3. Diagnostic Teaching Aids and Games
   a. Phonics We Use, Book C, September through October, 1960.
   d. Webster Charts, used for reference throughout the year.

D. Building One, Room 12, low ability section, 9 pupils

1. Basic Text
   a. World I Know - This group did not use the basic textbook.

2. Supplemental texts
   a. Chief Black Hawk, September through October, 1960.
3. Diagnostic Teaching Aids and Games


d. Webster Charts, displayed for reference throughout the year.

e. Dolch Games—Group Word Teaching Game and Syllable Solitaire, available throughout the year.

E. Building Two, Room 11, Group A, high and high-average ability group, 13 pupils.

1. Basic Text,


2. Supplemental Texts


3. Diagnostic Teaching Aids and Games


F. Building Two, Room 11, Group B, average ability group, 7 pupils
1. Basic Text
2. Supplemental Texts
3. Diagnostic Teaching Aids and Games

G. Building Two, Room 11, Group C, low ability group, 5 pupils
1. Basic Text
2. Supplemental Texts
   a. *Friday the Arapaho Indian*, September through October, 1960.
3. Diagnostic Teaching Aids and Games

c. Phonics We Use, Book D, February through April, 1961.


H. Building Two, Room 12, Group A, high and high-average group, 9 pupils

1. Basic Text

2. Supplemental Texts
   a. The New People and Progress, February through April, 1961.

3. Diagnostic Teaching Aids and Games

I. Building Two, Room 12, Group B, average ability group, 10 pupils

1. Basic Text
2. Supplemental Texts

3. Diagnostic Teaching Aids and Games
   a. *Phonics We Use*, Book 1, September through December, 1960.

J. Building Two, Room 12, Group C, low ability group, 6 pupils

1. Basic Text

2. Supplemental Texts

3. Diagnostic Teaching Aids and Games