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A Comparison of the Interclass and Intraclass Procedures of Grouping for Reading Instruction

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A COMPARISON OF THE INTERCLASS AND INTRACLASS PROCEDURES OF GROUPING FOR READING INSTRUCTION

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CHAPTER I

INTRODUCTION

Reading is one of the most valuable means of communication that man has at his disposal. In a world where man has accumulated a vast amount of information, man has found it necessary to read in order that he might become intelligently informed about the environment in which he lives. If the individual in a society is to keep abreast of the current information, as well as that of the past, he must glean much of his information from the printed page. Tinker and McCullough (33:3) relate " . . . as a means of learning, reading is indispensable."

The pupil in the classroom today is being educated on the premise that he will eventually live in a democratic society. If this democratic society is to function effectively, the citizenery will need to be able to accept the responsibility of being well informed, enabling them to make decisions regarding how that society will function. This viewpoint is well stated by McKim:

> Reading is an important aspect, in school and out. It serves many different purposes, and it calls for a wide variety of skills, attitudes and understandings. To teach children to meet the varied demands of today's world is at once a crucial task for education and an undertaking calling for a high level of skill, insight and resourcefullness on the part of the teacher (20:15).

Grouping pupils for reading has been recognized by many authorities as an organizational procedure in the school and the classroom. In the chapter on organization and administration, Tinker and McCullough (33:Ch.19) make the point clear that grouping is a part of the organizational structure of the reading program.

Numerous organizational procedures for teaching reading have been used in the past. There are thirty-two types of grouping listed in an article written by Shane (32). During the last sixty years these types of grouping have changed the emphasis on reading instruction in many ways. Tinker and McCullough (33:15) relate that this shifting emphasis has been evident since the beginning of the twentieth century. Many educators have come to realize, though, that no single organizational structure for reading will be the panacea for all reading problems.

The effective reading program should go beyond the organizational structure by considering the individual differences, and the interests and needs of the pupil. It is also the teacher, in the final analysis, who must develop, on a day to day basis, an evaluation of the procedures used in the classroom. The teacher must then adjust his instruction accordingly in order that he might more effectively communicate with the pupils. Education of youngsters as seen by Coladarci (5:391) is composed of four dimensions: the purposes or the

"defined behavior changes"; the procedures or "hypotheses about behavior changes"; the information or "data and theory about the learner and learning"; and the observations, measurements, and evaluations of the first three dimensions. These four dimensions are an integrated system that should be happening in a systematic sequence in the classroom.

I. STATEMENT OF THE PROBLEM

One purpose of this study is to compare two reading programs using the interclass procedures of grouping and the traditional intraclass plan of grouping. A second purpose is to compare the results of the reading achievement scores, of both groups, over a period of three years.

This study will be primarily concerned with a comparison of the organizational structure of the two reading programs involved in the study. The following hypothesis will either be verified or rejected as a result of the findings of this study:

> A comparison of the reading achievement test scores will indicate no significant difference between the interclass and intraclass procedures of grouping for reading instruction.

II. IMPORTANCE OF THE STUDY

In 1957, Russia launched Sputnik, its first space satellite. During this same year an article by Tunley

in the Saturday Evening Post, described why Johnny could now read in Joplin, Missouri (34). It was during this time also, that Rudolph Flesch's book, Why Johnny Can't Read (10) was being read by many people across the United States. There resulted from these events an extremely critical atmosphere toward the teaching of reading in the American schools. Powell describes this situation aptly:

> Suddenly critics cried out that something was amiss in the schools, and the charges sent educators scurrying for panaceas (27:387).

In the midst of this controversy, the Joplin Reading Plan, although not considered a panacea itself, was adopted by several schools across the United States, Floyd (11), Dominy (8), Morgan and Stucker (22). The effectiveness of this program is still not fully known due to many integral aspects that are difficult to evaluate, such as attitudes and interests toward the program. A continued study of the Joplin Reading Program is important so that an evaluation of its strengths and weaknesses can be analyzed by educators in the hope that reading instruction can be improved in the classroom.

III. LIMITATIONS OF THE STUDY

No attempt was made to evaluate the proficiency of the teachers involved in the experiment, nor was there any attempt made to control the teaching methods used with the pupils.

The amount of reading by the pupils in both the content fields and recreational reading was not controlled.

Due to the limitation of time, the scope of this study has been limited to the comparison of reading achievement test scores. The other language areas and the content fields were not evaluated in this study.

IV. DEFINITION OF TERMS

For the purposes of this study, these terms were defined as follows:

Interclass Grouping

This is an administrative procedure that places pupils with a reading teacher during a one hour period each day, enabling the child to read at his own reading level. This type of grouping will be known as the experimental group.

Joplin Reading Plan

This is a form of interclass grouping for reading instruction.

Intraclass Grouping

This is a procedure of grouping students for reading instruction within a heterogeneous classroom. The reading as well as other subjects are taught by the home room teacher. This method of grouping will be known as the

control group.

Traditional Reading Program

This is a plan of grouping youngsters on the intra-class basis. The size of the groups will vary depending on the number of students in the classroom and the range of reading abilities of the youngsters being instructed.

V. ORGANIZATION OF THE REMAINDER OF THE STUDY

The remainder of the study will enlarge upon the following material:

Chapter II will present the vertical and horizontal organizational practices of grouping in schools with emphasis on reading instruction. Also included in this chapter will be the literature relevant to interclass grouping.

Chapter III deals with the design of the study, how the two groups were equated, and a description of the experimental and control groups.

Chapter IV reports the findings of the study in table form. An analysis of each of these tables is included.

Chapter V summarizes the study and presents conclusions based on the findings. Implications relevant to the study are presented as well as suggestions for further research.

CHAPTER II

REVIEW OF LITERATURE

I. VERTICAL ORGANIZATIONAL PRACTICES OF GROUPING FOR INDIVIDUAL DIFFERENCES

How to best provide for individual differences in the American schools has plagued educators for many years.

The ideas of several European men, indirectly have affected the procedures used by many of the administrators and classroom teachers who have attempted to provide for these individual differences. One of the first men who influenced American education was Jean Jacques Rousseau. Wrightstone states:

> From the European heritage Jean Jacques Rousseau has come to be recognized as one of the first prophets with whom the philosophy and psychology of the new education originated (41:6-7).

In his book, The Education of Emile, published in 1762, Rousseau outlines how he thinks a child should be educated. Among other things, education, he says, should be a natural thing. The child should be prepared to live a responsible life, to think for himself, and be taught

through activities that provide worthwhile experiences (28).

In 1840, Nearly one hundred years after Rousseau's Emile was published, Frederick Froebel founded the German kindergarten. The philosophy that structured this institution was influenced by Rousseau's earlier works. Froebel developed his school around the nature of the child. He believed that the child should learn through creative activities (17:84-120).

During the last ten years of the 1800's and later during the first decade of the 1900's in the United States, a direct approach towards the study of human behavior was formulated. It was during this time that Stanley Hall, McKeen Cattell, Edward L. Thorndike, and others developed tests to study human behavior (41:9).

The results of these studies indicated that vast differences existed between and within children. In 1924, Washburne, realizing the value of these tests results, related:

> The widespread use of intelligence tests and achievement tests during the past few years has made every educator realize forcefully that children vary greatly as individuals and that any one school grade contains children of an astonishingly wide variety of capacity and achievement (39:X).

The influence of Rousseau, Froebel and other Europeans as well as the availability of intelligence and achievement tests, resulted in numerous organizational

plans by educators, to meet the individual differences of children in the schools.

The Lock-Step Method

The great American dream of an education for the masses, through the use of the graded school, was being realized in the early 1800's. The organizational practice of the graded school had its flaws though. It often resulted in a regimented lock-step type of curriculum. Since its origin, this method, according to Betts, has been a threat to education (3:562).

There were several reasons why the graded school originated. Dougherty (9:91-93) and Otto (23:166-167) claim that the graded school is justified by educators because (1) there are more pupils than there are teachers; (2) objectives of many schools indicate that the child needs to have a well-rounded experience with other children; and (3) the basic nature and interest of children brings them together in groups.

The Pueblo Plan

Preston Search, while engaged as superintendent of schools from 1888-1894, made known his opposition to the lock-step methods of teaching by initiating the Pueblo Plan. This was a flexible program that provided for individual differences. The program was geared to the student's own rate of advancement. Instead of recitation periods the

school used "laboratory methods" where the students engaged in active work. Better results were obtained from this method and pupils seemed to be more enthusiastic about their school work (31:154-170).

Platoon School

In Bluffton, Indiana, in 1900, William A. Wirt started what was to be known as the "work-study-play" or "platoon" school. The major objective of this plan was to prepare the youngsters to be responsible citizens in a democratic society.

The plan of organization provides for the pupils to be divided into two groups. While one group is in the "home room," the other group is engaged in other types of activities, i.e., wood working, etc. This method also provided for a better utilization of the school plant (23:137-141).

The Detroit Plan

The Detroit Schools began a testing program in 1910 that later revealed the vast differences within and between individuals. The administrators of the Detroit Schools felt there was a need to individualize their instructional program. The school system in 1919 adopted the "XYZ grouping by ability" plan as the organizational practice to provide for individual differences. The

total school was organized around the Platoon system, but at the same time the youngsters were grouped horizontally into the XYZ ability groups (36:398-402).

The Winnetka Plan

Frederick Burk's work in San Francisco in 1913 was aimed at breaking the lock-step procedures of organization. Burk's ideas were to later influence Carleton Washburne, who in 1920 organized an individualized program in Winnetka, Illinois. The curriculum was organized around knowledge, skill, and self expression. The materials and methods used took into account the child's own unique individual differences. Each child worked at his own pace. The oral recitations were eliminated and group and individual work took its place. The grade barriers were excluded, enabling the child to go through the school doing one project at a time before he continued on to the next project (38:77-82).

Otto summarizes the value of the Winnetka Plan by stating:

> Schools organized on this [Winnetka] plan are excellent illustrations of how organization and administration procedures may be shaped to facilitate the expression of an educational philosophy which is deemed basic to educational practice (23:142).

The Dalton Plan

This plan was another organizational procedure for meeting the child's individual needs, and was started by Helen Parkhurst. In 1920 the schools in Dalton, Massachusetts, adopted her plan.

The school was composed of laboratories instead of grade levels. The youngsters went from one laboratory to the next within the school. The time spent at each place was determined by the student's individual needs. The student was presented with certain social activities that enabled him to better cope with his environment.

The advantage of the Dalton Plan was that additional materials were needed only in small quantities. This plan was dedicated to free the child, to provide activities in group life situations, and to teach the child to effectively budget his time (24:83-94).

The Cleveland Plan

In Cleveland, Ohio, the administrators of the city schools were dissatisfied with the organizational structure as it existed. Belding states that the problem was in ". . . fitting the schools to the needs and abilities of individual pupils . . .finding a way to break away from mass education (2:88)." Thus the problem that faced the Cleveland schools was in part solved by the initiation of the Cleveland Plan under the direction of Dr. H. M. Buckley.

The curriculum was organized around levels or units of progress, rather than grades. Although the pupils were grouped on the basis of intelligence quotients, this grouping was subject to adjustment. The overall plan was based on the idea of the ungraded school. The youngsters progressed

at their own rate from one "level" to the next. Achievement tests were administered to ascertain when the child was ready to move to the next "level". This plan was used on the primary level only (2:88-90).

Homogeneous Groups By Ability Grouping

The terms homogeneous and ability grouping are often mistakenly used interchangeably. True homogeneous grouping is possible only when two or more individuals are alike in all characteristics. This, of course, would be impossible since each person is different from every other person in each existing characteristic. Ability grouping is actually a refinement of homogeneous grouping. Homogeneous grouping uses ability as one criterion for grouping. There are many ways of forming groups homogeneously besides on the basis of ability i.e., achievement, socio-economic level, etc. (23:199-203).

Research related to ability grouping. The development of the objective tests, easily administered and easily scored, revealed the differences between and within individuals. During the 1920's and 30's, educators were engaged in numerous experiments using ability grouping.

In 1920 the Detroit schools used ability grouping after they engaged in several years of extensive testing. The youngsters were divided into X, Y, and Z groups using intelligence test scores as a basis for grouping (36:398-401).

The National Society for the Study of Education devoted its 1936 yearbook, in its entirety, towards an analysis of grouping. A major portion of the book was devoted to ability grouping. In this yearbook Turney indicated that ability grouping was justified on the basis that a general ability was measured through testing procedures, and it was this general ability that enabled a student to gain insight in the subject matter taught in the schools (35:106). Many of the reports in the above yearbook according to Cornell, were steeped in confusion because the criteria for ability grouping were not consistant, and the studies were in general piecemeal, and did not give a true evaluation of the results (6:389-304).

In recent years there has been quite a decrease in homogeneous grouping by ability. Otto reports that in 1926 ninety percent of the elementary schools in cities with a population of 100,000 or more, were using ability grouping. In 1948 this percentage had dropped to fifty-three percent for the same size cities (23:151).

The Nongraded Elementary School

According to Goodlad and Anderson, the nongraded elementary school is yet another procedure of meeting the child's individual differences. The organizational structure of the nongraded school is based on eliminating

the grade barriers, thereby providing levels of achievement for the child to progress through at his own rate. The youngsters often times, though, stay with the same group of children, and the same teacher for more than one year. Most of the schools have limited this plan to the primary grades (14:Ch. 4).

Research related to the nongraded elementary school. The adoption of the nongraded school idea into practice has grown continuously since 1940. Numerous schools have adopted this plan and published research data concerning its effectiveness. In 1942, Milwaukee initiated a modified version of the nongraded plan (42:10). Later in 1947, Howard A. Lane proposed yet another modified approach to the nongraded elementary school. A team of four teachers would be responsible for each of two levels, with youngsters grouped homogeneously according to immediate needs (18:358-395). Goodlad reports that there are now many schools across the United States using the nongraded program for the primary grades (13:170-171).

Advantages and limitations of the nongraded elementary school. The advantages of the nongraded school seem to center around the principle that the child can proceed at his own rate through school, thus providing a form of individualization. Goodlad (13:170-171), and Mehl (21:391), in reference to the nongraded school,

generally agree on these points:

1. The levels of achievement enable the child to proceed at his own developmental rate.
2. If a child is absent he picks up where he left off.
3. Those of the same chronological age can remain together but yet learn at different rates.
4. The teacher becomes more familiar with the child than he would in the self-contained classroom system.

The limitations of the program seem to center around the difficulty in reporting pupils' progress and in parent-teacher understandings (42:10). Goodlad and Anderson, report that too often the child in the non-graded school is grouped by reading achievement only. This practice has the limitation of reverting the program back to the graded system or lock-step procedures. With the child placed in one of several reading groups, there is the danger of hard feelings and resentment on the part of children and parents (14:66).

Interclass Grouping

Interclass grouping is an administrative practice of providing for individual differences in reading. This

program usually involves only the intermediate grades. There are several variations of the plan but basically it consists of:

1. Administering standardized reading tests to determine the child's reading level.
2. Assigning teachers to instruct a specific range of reading levels.
3. Grouping all youngsters with similar reading grade levels or reading problems with one teacher.

The reading period is the same for all three intermediate grades, usually lasting fifty minutes. During this time the children move to their respective classrooms. There is also a special library reading period at least once a week, and sometimes more often (11).

The Joplin Reading Plan, originating in Joplin, Missouri, in 1952, is probably one of the more publicized forms of interclass grouping (11).

II. HORIZONTAL ORGANIZATIONAL PRACTICES OF GROUPING FOR INDIVIDUAL DIFFERENCES

Within a given heterogeneous group of students a teacher may find a reading range of six to eight or more reading grade years. With this information as well as other differences that exist between and within youngsters the classroom instructor will need to use some procedure that will provide for these differences. Grouping youngsters within a classroom for reading instruction is one procedure that teachers can use to provide for individual differences.

A Basis For Instructional Differentiation

One of the problems of instruction is finding a method whereby a teacher can accomodate for the reading level of each child within his room. Tinker and McCullough say:

> To a large degree the success of any teacher depends upon her ability to provide for individual differences through adjustment of materials and instructional guidance to individual pupil abilities and needs (33:258).

To show just how much these differences do exist between children, Tinker and McCullough have presented a study that represents the typical range of reading

levels for each of the grades, two through six. At grade two the range is from 1.3 to 3.8 "reading grade ability." This range increases from 1.4 to 5.0 at grade three. Grade four shows a range of from 1.7 to 6.5. Grade five is 2.0 to 8.1. At grade six there is an increase in the reading range of 2.5 to 9.5 (33:259).

This study indicates that as the child gets older the range in reading ability increases, and that the better readers tend to improve while the poorer readers fall farther behind their grade level.

The Needs For Grouping

Besides the problem of differentiating instruction, the teacher is also faced with the problem of grouping youngsters in the classroom. The mere practice of just grouping youngsters " . . . does not automatically provide better learning or improve instruction (42:14)."

How the teacher handles grouping procedures determines how effective it will be. Grouping should, therefore, be a meaningful approach of providing for individual differences and should not be " . . . an end in itself but an operative technique to be used in the interest of the learners growth (9:90)." Besides providing for academic

differences, grouping is important for certain social and psychological reasons.

Social reasons for grouping. Children who differ in socio-economic backgrounds often differ in the experiences they have had. Each child, of course, perceives his environment differently due to his own unique background. All of the members of the class can benefit from the experiences that other children have to offer. A heterogeneous grouping, where each member shares with the other members of the class, can result in a worthwhile learning activity (7:50-52).

Psychological reasons for grouping. Grouping practices need to follow certain psychological principles if they are to be effective. All youngsters need to have the feeling of success. If a youngster is to participate in a classroom environment, he must feel that what he has to offer is important. Above all the teacher cannot predict with accuracy how a child will react to a group situation. Therefore, flexibility in grouping procedures is important. The placement in a group whould be determined by a number of factors: academic ability, personality, or a combination of needs (7:50-52).

A few of the needs of children placed in groups, are outlined by Dougherty. Youngsters learn the aspects of democratic living, the leadership role can be taken by individuals, a better spirit of cooperation prevails, and the children are happier if they are working in a group where they can achieve (9:90).

Criteria Used To Establish Groups

There is considerable disagreement as to how youngsters should be grouped for reading instruction. This is partly due to the variety of criteria used to form the groups and to the numerous types of groups and the number of them that are used in the classroom. Wrightstone confirms this statement by saying, "As yet there is little evidence that indicates the best approach to sub grouping. In all probability there is no one best approach (42:14)."

McKee (19:354) has used as a basis for grouping youngsters: the use of standardized tests to obtain the child's silent and oral reading ability, the use of informal tests to discover detailed weaknesses in specific reading skills, the use of observations to determine the extent of his listening vocabulary, the child's health records, and the child's interests. Dougherty (9:96) adds to this list: the use of chronological age, mental age, and social and emotional age. Finally, Petty (26:179)

includes: the working relationships between the youngsters, the personality conflicts within the room, and the sex of the child, his nationality and socio-economic level.

A teacher could possibly use one or more of these criteria for grouping within the classroom. How this is accomplished will be determined to a great extent by an analysis of the data available on each child. The teacher may want to form a special group for practice on a skill, or there might be occasion to work with one individual while others in the room are working independently. The organization within the classroom will vary from day to day (16:83-86).

Another factor that will often times determine how a teacher will group the youngsters within the classroom is the school's philosophy. What might be appropriate for one school may not work in another (21:386).

Grouping Practices For Reading Within The Classroom

Youngsters in today's schools are usually grouped for reading instruction in the classroom. This is often times accomplished by forming three groups: the upper, the middle, and the lower (3:564). There are, though, different variations on this basic form of grouping. Timker and McCullough (33:349) list eight ways a teacher

might organize the youngsters within the classroom:

1. When the entire class is one group.
2. Independent work often times warrents an organizational change in the classroom.
3. Children who are grouped for instruction by reading level.
4. Groups that are formed to fulfill the immediate needs of the youngsters.
5. Groups originated when "moral support and mutual help" is necessary among the members of the group.
6. A group that is formed when one child acts as a tutor for another youngster.
7. A group organized to accommodate the common interests of several youngsters.
8. A group that is needed to locate research information.

Betts (4:714-715) describes eleven levels or organizational patterns that are possible within the reading program. These levels start with the whole group approach, and continues by adding groups of various types to each level. At the eleventh level there are five groups with an enrichment program providing numerous activities.

Dougherty (9:101), Wagner (37:309), Betts (3:564) and Tinker and McCullough (33:438) tend to agree that reading groups should be flexible and that they should meet the interests and needs of the youngsters. The pupils should not feel that they have been labeled as a poor reader or a superior reader. This can happen because the groups have become inflexible. Frequently a group of youngsters will want to engage in a common project such as creative dramatics, or puppetry. This common interest will draw upon a variety of reading levels within the room. Giving pupils a chance to choose the groups in which they want to participate, provides a freer atmosphere in which to work in the classroom.

Wrightstone says that the grouping within the classroom for any subject should be:

> . . . a flexible kind of organization. . . Studies indicate that what is done with the group, how it is done, and how the children and the teacher feel about the group are the important considerations. Grouping demands a variety of procedures and materials and constant regrouping as the children achieve the desired goals (42:14).

III. REVIEW OF LITERATURE PERTAINING TO INTERCLASS GROUPING

Interclass grouping is an administrative procedure that groups youngsters homogeneously for reading instruction in the intermediate grades. The primary purpose of grouping the youngsters in this manner is to decrease the reading

range within the reading group. Tinker and McCullough explain the procedure this way:

> Each day during that [reading] period, all children who read at a given level will go to one teacher who teaches that level. Then if, during the year, some children progress more rapidly than others, the teacher can form more groups within her class, but at least she won't be teaching four levels at the beginning of the year and fourteen at the end (33:333).

Advantages Of Interclass Grouping

The results of several studies and evaluations by authorities in the field of reading have indicated several distinct advantages for interclass grouping.

Enthusiasm toward the reading program. Enthusiasm toward interclass grouping has been reflected in the interest demonstrated by parents, teachers, and pupils. According to Barbe (1:104) the traditional lack of attention in reading can be overcome with this program. Floyd (11:103), Barbe (1:104), and Dominy (8:17), generally agree that this added enthusiasm is due in part to the recreational reading period and partly to the favorable acceptance and additional effort on the part of the teachers and parents.

One of the dangers at this age, reports Russell (20:22), is that of restricting reading to the school texts only. Reading for interest is a very necessary part of the curriculum.

This high interest seems to prevail in many of the

schools that have adopted interclass grouping. A report on the schools in Fayettville, Missouri, where the Joplin Plan was adopted, indicates that "...there is a new emotional climate in the classroom since the program was adopted" (34:27).

Provisions made for individual differences. Floyd (11:102) indicates that the child in the reading group formed by interclass grouping is better able to understand what he has read. The child is placed in a group where the range of reading grade levels is much less than the average heterogeneous classroom. Therefore, the teacher has more time to provide for the individual differences within the classroom because she has fewer daily reading lesson plans to prepare. With this arrangement the superior student as well as the average and the poor reader can be challenged commensurate with his abilities. These points are generally agreed upon by Russell (29), Peterson (25), Morgan and Stucker (22:72), and Dominy (8).

In providing for the individual child, a factor that contributes directly to his success in reading is the provision of a non-threatening atmosphere. Morgan and Stucker (22:72), indicated in their study, that the older children did not lose face when reading with younger children at their own reading level. In addition,

it was indicated that the authors had in part substantiated the hypothesis that a non-threatening group atmosphere allows for a maximum positive feed-back from readable materials. It was further noted that there was possibly an increase in reading achievement due to homogeneous grouping for reading instruction.

Disadvantages Of Interclass Grouping

Lack of integration between reading and other subjects. In 1946, one of the earlier plans for interclass grouping was established in the San Francisco Public Schools. To determine the effectiveness of this program, the administrators sent out questionaires to forty-seven principals in the school district. The one disadvantage that was listed most often was, that reading was too isolated and lacked proper integration with the other subjects. (29:470)

Tinker and McCullough (33:334), Whipple (40:161), and Peterson (25:172) remind the reader that the child's development in reading is closely associated with his development in other subject areas.

The reading teacher's unfamiliarity with the needs and interests of the children. Reading growth is not limited to the reading period. There are numerous occasions throughout the day when the needs and interests

of the children will bring them together, i.e., in social studies for a creative dramatics experience.

During a busy school day it would be difficult for a reading teacher to accommodate these interests, with youngsters from two or three different grade levels. In this connection, Tinker and McCullough state:

> Reading growth can occur outside the reading period as well as within it...when a child writes or tells a story... How can the teacher who has the child for the rest of the day be aware of these possible relationships and make the most of them (33:334)?

Investigations Related to Interclass Grouping

One of the first studies that evaluated the effectiveness of interclass grouping for grades four, five, and six in the San Francisco city schools is reported by Russell (29:462-470). A comparative study was made between 278 youngsters in an experimental group (interclass grouping), and 248 youngsters in a control group (intraclass grouping). The test results at the end of two years indicated that there were no significant gains for the interclass grouping over the original heterogeneous grouping within a single classroom.

Several years later in 1952, a form of interclass grouping called the "Joplin Reading Plan" (11) was started in Joplin, Missouri. This plan created a great deal of interest in interclass grouping. In 1954, Floyd reported the results of this reading program. The pupils

were tested at the beginning of the school year, and again six months later. The Iowa Every-Pupil Test of Basic Skills, Test A, Silent Reading Comprehension Form L, was the test used. Test results showed the average mean gain in grade reading months to be 6.5 at the fourth grade level, 8.7 at the fifth grade level and 13.5 for the sixth grade. These results indicate that the older youngsters benefited the most from the program and the younger children the least (11:99-103).

At the University of Chattanooga, Barbe (1:102-104) reports the results of the Joplin Plan in the Highland Park Schools in Chattanooga. Standardized tests were administered in the fall of the school year and again in the spring. There were 180 pupils in grades four through six and six teacher participated in the study. The results revealed an increase of .9 reading grade years in the fourth grade, 1.2 reading grade years in the fifth grade, and .9 reading grade level years for the sixth grades. This study was similar to Floyd's (11) in that the older youngsters seemed to make the most gains.

In the fifth and sixth grades of a rural school, Morgan and stucker (22:69-73) equated a control and experimental group by using I.Q. and the average of two reading achievements tests. The experimental group used the Joplin Plan and the control group was taught reading

in the self-contained classroom. The test results at the end of one year indicated significant gains in reading achievement for the experimental group.

Dominy (8:16-17) reported the results of the Joplin Reading Plan as it was used in a Texas school. Standardized test results indicated an average gain of 7.2 reading grade months for a period of time, covering four months, for all youngsters involved in the study.

A comprehensive study that used grades four through six in four elementary schools is reported by Green and Riley (15:273-278). Pupils in the control and experimental groups respectively were matched according to sex, I.Q., parental occupation, and intial reading score. Over a period of six months, test results showed significant mean gains of 3.2 to 6.9 months in favor of the experimental group.

Two schools, one using the Joplin Plan (experimental group) and the other group, the self-contained classroom (control group) to teach reading, were compared by Powell (27:387-392). The two groups were matched by parental occupation, reading achievement and mental ability. Other controlling factors were class size, availability of material, extent of recreational reading, and teacher experience. The pupils were compared statistically on achievement in reading and the content fields.

This was done by comparing the entire group and the high and low achievers separately. There were no statistically significant differences in achievement in any areas except in science which was significant at the .01 level of confidence in favor of the control group. "The results of this study suggest that it takes more than physical grouping arrangements to affect reading achievement (27:391)."

IV. SUMMARY OF CHAPTER

The review of literature pertaining to the organizational structure of grouping has dealt with vertical and horizontal grouping in the schools. In this chapter the literature pertaining to interclass grouping was also presented.

Numerous studies on vertical practices of grouping for individual differences have been reviewed, and the advantages and disadvantages of a few of these plans have been noted.

The review on horizontal organizational procedures of grouping were concerned with grouping for reading instruction within the classroom. Horizontal grouping was analyzed by studying the basis for instructional differentiation, the social and psychological reasons for grouping, the criteria used to establish groups, and a

few of the grouping practices that teachers can use within the classroom. The available literature has shown that a number of organizational patterns of grouping can exist within the classroom simultaneously, but the principles of flexibility, meeting the needs and interests of the youngsters, and providing for individual differences are important aspects in grouping youngsters for reading instruction.

As indicated in this chapter the advantages for interclass grouping are the enthusiasm of the children and teachers toward reading, and the provisions made for the individual difference in reading. On the other side the disadvantages cited were the lack of integration between the reading period and the content subjects and other language areas, and the reading teacher's unfamiliarity of the students' daily needs and interests. A summary of investigations pertaining to interclass grouping was presented.

CHAPTER III

PROCEDURES USED IN THE STUDY

I. DESIGN

The study was conducted in the Wenatchee School District No. 241. The experimental group was at Washington Elementary School where the interclass procedure of grouping has been used since the 1957-58 school year. Columbia Elementary School, also in the Wenatchee School District, was host to the control group where the traditional intraclass procedure of grouping was used.

The size of the population was limited to forty students in each of the experimental and control groups, resulting in a total of eighty pupils. Twenty girls and twenty boys were randomly picked from each of the two groups and both groups were equated by using matched pairs based on sex, I.Q., and initial reading grade level scores taken from the test that was administered in 1962. The socio-economic level was approximately the same for both schools.

Test data used in the statistical analysis was obtained from the individual school records of the sixth grade pupils enrolled during the 1964-65 school year.

The test scores used for these sixth graders included those for the 1962-63, 1963-64, and the 1964-65 school years. As indicated by the above dates, the test scores for the pupils in this study have been analyzed over a period of three years.

The reading and I.Q. tests that were administered to the students were those already in use in the school district. Following is a resume of the tests administered by the teachers, and the dates when given.

During the fall of 1962, when the students in the experimental and control groups were in the fourth grade, the California Achievement Test, Form AA, was administered. For purposes of evaluating the interclass grouping plan the experimental group was given the California Achievement reading test in May, 1963 and May, 1964. The I.Q. scores for both groups were obtained from the Otis Mental Ability Test, Form B, given during September, 1963. Due to a change in tests used in the school district in 1964, the reading achievement scores were obtained from the Iowa Test of Basic Skills (Form 1). These test results, however, were not used in the study. The final set of reading scores used in the study were those taken from the California Achievement Test (Form AA), administered in 1965 during the last week in March to the control group, and the second week in April to the

experimental group. It was assumed that the difference between these two dates would be negligable and would not effect the final outcome of the study. All of the students in both groups have been enrolled in their respective schools for the three-year duration of the study.

The means and standard deviations were computed on the reading achievement test scores for reading grade level, and on comprehension, vocabulary and composite raw scores. To substantiate or reject the null hypothesis of no statistical significant difference between the mean scores of the experimental and control groups, a t-test was used. (12:Ch. 9)

II. EQUATING THE TWO GROUPS

The experimental and control groups were equated by using matched pairs on the basis of sex, I.Q., and reading achievement grade level scores. The socio-economic level was similar for both schools. The coded students were designated by a numeral and a (C) for control or (E) for experimental.

The means and standard deviations were computed for the I.Q. and reading grade level scores to determine

how closely the two groups had been equated. Some adjustments were necessary to adequately match these two groups.

The intelligence quotients were obtained by using the Otis Mental Ability Test (Form B). The teachers in the classroom had previously administered this test during September, 1963. Due to minor inconsistencies in the intelligence quotients of the students, the scores were matched using a plus or minus of five points.

The reading grade level scores used for matching purposes were taken from the California Achievement Test. This test had been given to the students in September, 1962 when they were in the fourth grade. When the reading scores were matched a tolerence of .6 reading grade years was allowed.

Table I, located on page 37, shows how the females and males in the experimental and control groups were equated by intelligent quotients and reading grade level scores.

TABLE I

DATA FOR MATCHING FEMALES AND MALES IN EXPERIMENTAL AND CONTROL GROUPS

FEMALE			MALE	
CODED STUDENT	I. Q.	READING GRADE LEVEL	I. Q.	READING GRADE LEVEL
C-1	128	5.9	128	5.7
E-1	124	5.7	129	6.3
C-2	123	5.4	122	5.1
E-2	123	5.9	117	5.5
C-3	120	7.2	120	6.0
E-3	120	7.4	117	6.4
C-4	116	6.8	120	5.0
E-4	120	6.2	117	5.4
C-5	119	7.0	112	5.5
E-5	119	6.7	110	5.1
C-6	117	5.3	110	6.9
E-6	119	5.7	114	6.8
C-7	115	6.7	109	5.8
E-7	115	6.3	111	5.8
C-8	114	5.4	109	5.4
E-8	116	5.9	108	5.8
C-9	113	5.6	108	6.0
E-9	112	5.5	112	6.3
C-10	109	6.1	108	4.9
E-10	110	5.8	106	4.5
C-11	108	4.5	107	4.2
E-11	109	5.0	106	3.8
C-12	106	5.4	107	6.0
E-12	106	5.7	110	6.0
C-13	105	5.3	107	5.4
E-13	104	4.8	104	5.1
C-14	104	4.6	104	5.0
E-14	103	4.5	105	4.7
C-15	100	3.8	102	5.1
E-15	102	3.4	99	4.4
C-16	103	5.0	98	5.1
E-16	101	4.6	96	4.4
C-17	101	4.9	98	5.0
E-17	101	5.0	96	4.5
C-18	101	5.2	97	4.6
E-18	101	5.0	100	4.0
C-19	99	4.0	97	4.7
E-19	99	4.1	100	3.8
C-20	97	4.3	87	3.2
E-20	92	4.2	88	3.6

Table I shows the matched pairs of females by I.Q. and reading grade level scores. The range of the I.Q. scores was from 97 - 128 for the girls in the control group and 92 - 124 for the girls in the experimental group. This same table shows that the range of the reading grade level scores for the control girls was 4.0 - 7.2, and the experimental girls to be 4.1 - 7.4.

The means and standard deviations on these same scores for the females is shown on Table II, located on page 39. As noted on this table, the mean I.Q. for the females was 110 for both the control and experimental groups. Table II further indicates the standard deviation on the I.Q. scores was 10 for the control girls and 9 for the experimental girls. When the reading grade level scores were equated there was a mean of 5.3 for the control girls and 5.4 for the experimental girls. The standard deviation of these same scores was .8 and .9 for the control girls and experimental girls respectively.

Table I shows how the males were matched by I.Q. and reading grade level scores. The range for the I.Q. scores was from 87 - 128 for the control boys and 88 - 129 for the experimental boys. The reading grade level shows a range of 3.2 - 6.9 for boys in the control group and 3.6 - 6.8 for the boys in the experimental group.

TABLE II

MEANS AND STANDARD DEVIATIONS ON INTELLIGENCE QUOTIENTS AND READING GRADE LEVEL TEST SCORES FOR MALES AND FEMALES FOR CONTROL AND EXPERIMENTAL GROUPS

GROUP TESTED	OTIS MENTAL MATURITY TEST		READING GRADE LEVEL CALIFORNIA ACHIEVEMENT TEST	
Control	Mean	S.D.	Mean	S.D.
Males	107	10	5.3	.8
Females	110	10	5.3	.8
Experimental				
Males	108	9	5.2	.9
Females	110	9	5.4	.9

Both groups in Table III are compared by using I.Q. and reading grade level scores.

TABLE III

MEANS AND STANDARD DEVIATIONS ON INTELLIGENCE QUOTIENTS AND READING GRADE LEVEL TEST SCORES FOR CONTROL AND EXPERIMENTAL GROUPS

GROUP TESTED	OTIS MENTAL MATURITY TEST		READING GRADE LEVEL CALIFORNIA ACHIEVEMENT TEST	
Control	Mean	S.D.	Mean	S.D.
	109	10	5.3	.8
Experimental				
	109	9	5.3	.9

Table II indicates the means and standard deviations on the above tests for the males. The I.Q. test shows a mean of 107 for the control boys while the experimental boys had a mean of 108. As with the mean I.Q. scores, there is also a close relationship between the standard deviations on I.Q. results, as indicated by 10 for the control boys and 9 for the experimental boys. The reading grade level column in Table II depicts a mean of 5.3 for boys in both the control and experimental groups, and a standard deviation of .8 and .9 reading grade years for the control and experimental boys respectively.

Table III shows that both total groups have a mean I.Q. score of 109, and a mean reading grade level score of 5.3. The overall reading grade level scores seem to be higher than the average found in most schools. As indicated by Tinker and McCullough (33:259), the average range in reading scores for the fourth grade is 1.7 - 6.5 reading grade years. As indicated in Table I, located on page 37, the reading range of 3.2 - 5.7 for the males in the control group is the lowest reading range in both the experimental and control groups. This tends to indicate that the two groups of youngsters are somewhat above the average range of 1.7 - 6.5 reading grade years mentioned above by Tinker and McCullough.

III. EXPERIMENTAL GROUP

The investigator did not teach any classes in the school where the experimental group was located. All classes were taught by the regularly employed teachers.

Washington Elementary School, where the experimental group was located, began using a modified version of the "Joplin Reading Plan" during the 1957-1958 school year. There were several reasons that prompted the use of this program. First was the increased attention given to reading in the elementary schools across the nation. The magazine article, "Johnny Can Read in Joplin," in the October 1957 issue of the Saturday Evening Post by Tunley (34), and the book, Why Johnny Can't Read, by Rudolph Flesch (10), were but two of the many articles that added to the flames of controversy concerning the reading programs in the schools across the United States.

Second, an awareness of this controversy prompted several of the teachers to find out more about reading in general. After reading articles on the "Joplin Reading Plan," the teachers, with the help of the principal, decided to evaluate the reading program at their school. As a result of the evaluation, the following areas were found to be a source of dissatisfaction:

1. There was usually a range of from five to eight years difference in reading ability in a given classroom. The teachers felt they could do a more effective job of teaching if the range in reading abilities were decreased.
2. The reading program, as it existed, used a great deal of the teacher's time to provide for individual differences, especially in the preparation of materials for several different reading levels.
3. The teachers felt that the sequence, for the development of reading skills, was not as effective as it could be.
4. The quantity of recreational reading was quite low.
5. There was a concensus of opinion among the teachers that too often the reading skills of comprehension, word analysis, context clues and dictionary use were being taught in the content subjects and not in the organized reading period where these skills should be taught.

Because of the dissatisfaction concerning the existing reading program, the faculty decided to study the Joplin Plan for possible future adoption. A copy of the Joplin Plan

was obtained from Joplin, Missouri. After an evaluation of the available literature, a modified version of the Joplin Plan was adopted.

A set plan of procedures was then used to initiate the reading plan. The plan was presented to, and was favorably accepted by, the members of the community. The boys and girls were prepared for the program. A reading consultant met with the teachers to help them evaluate their own weaknesses in reading instruction, and to provide literature pertaining to reading development and instruction.

The principal indicated that a key factor in the success of the program was the placement of teachers at the reading instructional level where they had either had previous experience or an interest for teaching reading. This policy has remained in effect since the program originated.

Procedures Used To Group Experimental Students

Each students' reading grade level was determined by the California Reading Achievement test, teachers' records, and previous school records. The child was then placed in one of the eight reading levels as shown in Table IV, located on page 44. If a child was working below his tested ability and he later improved, he could be changed to the next higher reading level. Adjustments to a lower level could also be made. It was found though, that these changes were seldom needed during the school year.

TABLE IV

GRADE PLACEMENT RANGE FOR READING GROUPS FOR SCHOOL YEAR 1964-65

	GRADE PLACEMENT RANGE			
Level	Sixth Grade Students Only	Fifth & Sixth Grade Students	Fourth Grade Students Only	Number of Students
1			3.2 - 4.1	18
2			4.2 - 4.7	27
3		4.8 - 5.1	5.0 - 5.5	31
4		5.2 - 5.6	5.6 - 6.0	29
5		5.7 - 6.1	6.3 and up	29
6		6.2 - 6.9		30
7		7.0 and up		29
8	7.2 and up			29
			Total	222

Table IV indicates the total number (222) of students, grades four through six, enrolled in the Joplin Reading program, even though the study has used only forty students from the two sixth grade classes. The organizational structure of the interclass grouping could not adequately be depicted by displaying only, the breakdown of the sixth grade grouping.

Table IV depicts the level numeral, the range in grade placement for each reading group, and the number of pupils in each group. The level numeral is an arbitrary designation and does not relate in any way to the reading level of the child. It should be noted that Table IV relates to how the organizational structure of grouping existed during the school year 1964-65. This grouping plan could possibly change during the next school year due to differences between students. Previous grouping plans were not readily available for the 1962-63 and 1963-64 school years. The table further shows that five is the highest level at which a fourth grader can be placed, and that for a fifth grader, the highest level is the seventh. While the sixth grader alone is at the eighth level. Reading from left to right on Table IV, one can readily perceive that there were in actuality, fourth graders only at levels one and two; a mixture of fourth,

fifth, and sixth grade students at levels three, four, and five; fifth and sixth graders at levels six and seven; and at level eight a group of sixth graders. The teachers found that the sixth grade youngsters could be placed at a lower reading level with younger students and that they responded enthusiastically toward reading. The fourth grade child though, was not placed beyond the fifth level as shown on Table IV, because the teachers felt that he had not as yet acquired the more advanced reading skills and techniques indigenous to the sixth grades and above.

There were eight teachers participating in the reading program, one teacher for each level. During the school day, other than the reading period, the sixth grade students used for this study were equally divided between two classrooms. The reading period lasted for approximately one hour each day.

Material Used

A variety of materials were used by the teachers. The Allyn-Bacon basal reading series had been purchased by the school district prior to the initiation of the reading program. Therefore, a new series of reading texts was not deemed necessary. In addition to the basal series, the Houghton-Mifflin text was used with the sixth grade

students who were reading on the seventh and above reading levels. The Science Research Associates reading material was used at levels three, four and six only. A variety of current news media was used in all classrooms. Other activities, such as creative dramatics, were used occasionally.

Use of library books. One of the areas of dissatisfaction that was noted during the evaluation of the previous traditional reading program, was the lack of interest in the reading of recreational materials. A special period of approximately thirty or forty minutes was set aside each week for this type of reading. The books used for the recreational reading came from the school library and a city library near by. Most of the youngsters were given time to go to the school library to check out books on a "need basis". The more mature sixth graders performed the duties of a librarian. The teachers found it advisable to pick up the library books for the pupils reading at levels one and two (1 and 2) shown on Table IV, page 44.

Each child had marked on his or her report card, the number of library books read during a particular reporting period. These reports, on number of books read, were not available to the writer but a report by the principal indicated an increase in the number of library books read by the students.

Besides the book count, the child's level of achievement, his effort towards reading, his progress in reading skills and his interests were evaluated. (See Appendix A)

IV. CONTROL GROUP

The study of the control group has involved the analysis of test data over the same three year period as that of the experimental group. It was assumed that the temporal reliability of the study would be improved by a period of three years.

As would normally be expected, the students in the control group have had a different teacher each school year. All of the reading classes were taught by these regular classroom teachers.

The forty youngsters in the control group were taken from a total of one-hundred sixth grade students located in three classes with an average class load of thirty-three. A random sampling of twenty girls and twenty boys was picked from all three classes with the assumption that this method would decrease the effect of the teacher variable.

The number of reading groups within a classroom varied throughout the three year period. This variability in subgroups depended on the class load, the range of reading

levels in any one classroom, and the teacher's methods of grouping.

Many aspects of the material used for both groups were similar. The Allyn-Bacon basal reading series was used, as well as additional texts to provide for differentiation in classroom instruction. Enrichment reading materials in the form of weekly newspapers, the SRA reading material, library books, reference books and numerous other sources of material as well as such activities as creative dramatics have been used over the three year period. A one hour reading period each day was comparable to that of the experimental group reading period.

Besides having access to the city library, a school library was used one hour each week during the 1964-65 school year. Information pertaining to library use, prior to the above school year, could not be determined.

The report cards for the students in the control group did not contain an additional evaluation sheet, as was the case with the student's reports in the experimental groups.

V. SUMMARY OF CHAPTER

The purpose of Chapter III was to present the procedures used in the study. The scope and sequence was outlined in the design of the study. The two groups were equated by matched pairs on the basis of sex, I.Q., and reading achievement grade level scores. The socio-economic level was also considered. The experimental and control groups were explained.

CHAPTER IV

FINDINGS OF THE STUDY

The California Achievement Test (Form AA) was given to the control group during the last week in March, 1965, and to the experimental group during the second week in April, 1965. The means and standard deviations were computed for each of the parts of the test. These included the composite, comprehension, and vocabulary raw scores, and the reading grade level scores converted from the raw scores. A t-test was applied to the mean differences to determine the statistical significance at the .05 level of confidence.

Composite Raw Scores

Mean differences between total groups. Table V presents the mean differences between composite raw scores for the control and experimental groups.

TABLE V

COMPOSITE RAW SCORE MEAN DIFFERENCES FOR CONTROL AND EXPERIMENTAL GROUPS

Group	N	Obtained Mean	σ_M	σ_{DM}	Obtained t	Required t
Control	40	117.75	7.50	1.80	.28	2.65
Experimental	40	117.25	8.55			

As noted in Table V, there was a .50 difference between the means. The obtained t-score of .28 was not statistically significant at the .05 level of confidence.

Mean differences between control and experimental boys. Table VI depicts the mean differences between composite raw scores for control boys and experimental boys.

TABLE VI

COMPOSITE RAW SCORE MEAN DIFFERENCES FOR BOYS IN CONTROL AND EXPERIMENTAL GROUPS

Group	N	Obtained Mean	σ M	σ DM	Obtained t	Required t
Control	20	116.75	9.75	3.15	.15	2.71
Experimental	20	116.25	10.20			

As indicated in Table VI, the differences between the two means for the boys was .50 which was identical to that between the total control and experimental groups. The obtained t of .15 was not statistically significant.

Mean differences between control and experimental girls. Table VII shows the mean differences between the composite raw scores for control and experimental girls.

TABLE VII

COMPOSITE RAW SCORE MEAN DIFFERENCES FOR GIRLS IN CONTROL AND EXPERIMENTAL GROUPS

Group	N	Obtained Mean	σ_M	σ_{DM}	Obtained t	Required t
Control	20	118.70	5.25	1.93	.25	2.71
Experimental	20	118.25	6.90			

As shown on Table VII, the mean difference between the girls in the control and experimental groups on the total raw scores was .50. The obtained t of .25 was inadequate to be of statistical significance at the .05 level of confidence.

Comprehension Raw Scores

Mean differences between total groups. Table VIII presents the mean differences between the comprehension raw scores for the control and experimental groups.

TABLE VIII

COMPREHENSION RAW SCORE MEAN DIFFERENCES FOR CONTROL AND EXPERIMENTAL GROUPS

Group	N	Obtained Mean	σ_M	σ_{DM}	Obtained t	Required t
Control	40	34.89	4.86	.99	2.48	2.65
Experimental	40	37.35	4.02			

Table VIII indicates that the mean for the control group was 34.89 and for the experimental group was 37.35 leaving a difference between the means of 2.46. The two groups show a greater difference between comprehension mean scores than was indicated on the composite raw scores. Although there was an obtained t of 2.48 this was not statistically significant at the .05 level of confidence.

Mean differences between control and experimental boys. Table IX shows the mean differences between the comprehension raw scores for the control boys and the experimental boys.

TABLE IX

COMPREHENSION RAW SCORE MEAN DIFFERENCES FOR BOYS IN THE CONTROL AND EXPERIMENTAL GROUPS

Group	N	Obtained Mean	σ_M	σ_{DM}	Obtained t	Required t
Control	20	34.53	6.18	1.77	2.92	2.71
Experimental	20	39.70	5.01			

Table IX indicates that the boys in the control group had a mean comprehension score of 34.53 and the experimental boys had a mean score of 39.70, resulting in a mean difference of 5.17. As indicated in Table IX the required t was 2.71. The obtained t of 2.92 therefore is statistically significant in favor of the experimental group.

Mean differences between control girls and experimental girls. Table X depicts the mean differences between the comprehension raw scores for the control girls and experimental girls.

TABLE X

COMPREHENSION RAW SCORE MEAN DIFFERENCES FOR GIRLS IN THE CONTROL AND EXPERIMENTAL GROUPS

Group	N	Obtained Mean	σM	σDM	Obtained t	Required t
Control	20	35.25	3.54	1.03	.23	2.71
Experimental	20	35.00	3.03			

Unlike the mean differences of 2.46 between the control and experimental groups on comprehension scores, the girls, as indicated in Table X, show a slight mean difference of .25 in favor of the control girls. A t-score of .23 therefore, did not indicate a statistically significant difference between the control girls and the experimental girls on the comprehension scores.

Vocabulary Raw Scores

Mean differences between total groups. Table XI presents the mean differences between the vocabulary raw scores for the control and experimental groups.

TABLE XI

VOCABULARY RAW SCORE MEAN DIFFERENCES FOR CONTROL AND EXPERIMENTAL GROUPS

Group	N	Obtained Mean	σ_M	σ_{DM}	Obtained t	Required t
Control	40	83.30	3.93	1.11	.003	2.65
Experimental	40	83.00	5.88			

Table XI depicts the obtained means as being 83.30 and 83.00 for the control and experimental groups respectively. The vocabulary scores did not indicate as great a difference between the means as did the comprehension scores. The difference between the mean is .30. The obtained t of .003 was not statistically significant.

Mean differences for control and experimental boys. Table XII presents the mean differences between the vocabulary raw scores for the control boys versus the experimental boys.

TABLE XII

VOCABULARY RAW SCORE MEAN DIFFERENCES FOR BOYS IN CONTROL AND EXPERIMENTAL GROUPS

Group	N	Obtained Mean	σ_M	σ_{DM}	Obtained t	Required t
Control	20	82.40	5.13	1.70	.00	2.71
Experimental	20	82.35	5.64			

Table XII on page 56, indicates a very slight mean difference of .05 between the obtained means for the vocabulary scores. Since the obtained t is 0 there was not a statistically significant difference between the boys in the control and experimental groups on vocabulary scores.

Mean differences between control and experimental girls. Table XIII depicts the mean differences between the vocabulary scores for the control girls as compared with the experimental girls.

TABLE XIII

VOCABULARY RAW SCORE MEAN DIFFERENCES FOR GIRLS IN CONTROL AND EXPERIMENTAL GROUPS

Group	N	Obtained Mean	σM	σDM	Obtained t	Required t
Control	20	84.20	2.73	1.50	.003	2.71
Experimental	20	83.65	6.12			

As indicated on Table XIII on this page, there is a slight mean difference of .55 for the girls in the control and experimental groups. With a required t of 2.71, the obtained t .003 is negligable and denotes no statistically significant difference.

Reading Grade Level Scores

Mean differences between total groups. Table XIV presents the mean differences between the reading grade level scores for the control and experimental groups.

TABLE XIV

READING GRADE LEVEL MEAN DIFFERENCES FOR CONTROL AND EXPERIMENTAL GROUPS

Group	N	Obtained Mean	σM	σDM	Obtained t	Required t
Control	40	7.71	1.13	.78	.15	2.65
Experimental	40	7.59	1.10			

Table XIV indicates that there was a reading grade level mean of 7.71 for the control group, and a mean of 7.59 for the experimental group, resulting in a mean difference of .12. Even though the control group had the higher mean, the t score of .15 indicates the difference to be statistically insignificant.

Mean differences between control and experimental boys. Table XV presents the mean differences between the reading grade level scores for the boys in the control group and the boys in the experimental group.

TABLE XV

READING GRADE LEVEL MEAN DIFFERENCES FOR BOYS IN THE CONTROL AND EXPERIMENTAL GROUPS

Group	N	Obtained Mean	σ M	σ DM	Obtained t	Required t
Control	20	7.50	1.20	.37	.05	2.71
Experimental	20	7.52	1.13			

Table XV depicts the difference between the boys in the control and experimental group on reading grade level scores. With an obtained mean of 7.50 for the control boys and 7.52 for the experimental boys, there is a slight mean difference of .02. The obtained t of .05 proves to be statistically insignificant at the .05 level of confidence.

Mean differences between control and experimental girls. Table XIV depicts the mean difference between the reading grade level scores for the control girls and the experimental girls.

TABLE XVI

READING GRADE LEVEL MEAN DIFFERENCES FOR GIRLS IN THE CONTROL AND EXPERIMENTAL GROUPS

Group	N	Obtained Mean	σ M	σ DM	Obtained t	Required t
Control	20	7.90	1.13	.33	.61	2.71
Experimental	20	7.70	1.00			

As indicated in Table XVI on Page 59 the girls in the control group have a slight advantage over the girls in the experimental group on reading grade level scores. The difference between the obtained means was .20. The obtained t of .61 was not statistically significant when compared to the required t of 2.71.

CHAPTER V

SUMMARY AND CONCLUSIONS

I. SUMMARY

The purpose of this study was to compare the reading achievement results between the interclass and intraclass procedures of grouping for reading instruction.

The study was conducted in the Wenatchee School District No. 241, during the school year 1964-65. Reading achievement test scores for students in both the control and experimental groups were statistically evaluated for a period of approximately three school years, from September, 1962 to April, 1965.

The control and experimental groups were equated by matched pairs of students according to sex, I.Q., and reading achievement scores. Socio-economic level was also considered.

To evaluate the growth in reading, the experimental and control groups were compared on the basis of reading achievement. The California Achievement Test (Form AA), was administered to both groups during the spring of 1965,

and the mean differences between the two groups, on composite, comprehension, and vocabulary raw scores, and on reading grade level scores were analyzed. A t-test was applied to the mean differences to determine the statistically significant difference at the .05 level of confidence.

Following is a resume of the findings for each part of the reading achievement test.

Composite Raw Scores

The mean differences on the composite raw scores for the control compared with experimental groups, the control boys compared with the experimental boys, and the control girls compared with experimental girls, was slight with less than a .50 mean difference for each comparison. The t-scores were insufficient to warrent any statistically significant difference between the control and experimental groups on composite raw scores.

Comprehension Raw Scores

The largest measurable difference between the obtained means was that found for the comprehension raw scores. Although not statistically significant, it does appear that the experimental group with a mean of 37.35 had a tendency to achieve higher on comprehension than the control group, which had a mean of 34.89. The mean difference for the two groups was 2.46

A comparison of the girls in the control and experimental groups revealed a very slight mean difference of .25 in favor of the girls in the control group. The mean difference was not statistically significant.

The control and experimental boys though, when compared using comprehension raw scores, depicted a statistically significant difference between the means in favor of the experimental boys.

Vocabulary Raw Scores

The vocabulary mean differences for the control versus experimental groups, the control boys versus experimental boys and control girls versus experimental girls, were slight and revealed no statistically significant difference between any of the comparisons.

Reading Grade Level Scores

The control and experimental groups, as well as the boys in both groups, and the girls in the two groups were compared using the reading grade level scores. The obtained means are all approximately the same with the greatest difference between the means being .20.

The t-test indicated no statistically significant difference at the .05 level of confidence.

II. CONCLUSIONS

When the interclass and intraclass procedures of grouping were compared using reading achievement, there was no statistically significant difference in the mean achievement of either group.

These findings tend to substantiate the original hypothesis that:

> There will be no statistically significant difference between the control group using intraclass grouping and the experimental group using interclass grouping.

Although the null hypothesis of no difference between the two forms of grouping was statistically substantiated, it should be noted that the experimental boys did achieve a statistically significantly higher comprehension mean score than did the control boys. This would seem to indicate that the interclass procedure of grouping for reading instruction has fostered a more advantageous environment for reading comprehension for the experimental boys.

The reading grade level means indicate that the control and experimental groups on the whole, have been reading approximately one grade level beyond that which they were assigned. For instance, when the control and experimental groups were in the fourth grade in 1962-63, the reading grade level means for both groups was 5.3.

At the end of the study when the control and experimental groups were in the sixth grade, the reading grade level means were 7.71 for the control group and 7.59 for the experimental group.

It is interesting to note that the control and experimental girls' scores for all parts of the reading achievement test, except comprehension, appear to be higher than the scores for the boys in the control and experimental groups.

It would seem that the interclass form of grouping, although not statistically superior to the intraclass plan, could possibly be considered a valid organizational procedure based on the premise that it seems to provide a narrower range of reading levels within any one reading group, thus providing fewer reading levels for which the classroom teacher has to prepare, and as indicated in the review of literature, the interclass plan has, in some instances, increased enthusiasm for reading on the part of both the teacher and the student.

Even though it was not statistically analyzed, the reading grade level mean gain differences, for the reading achievement tests given to the control group in September, 1962 and March, 1965, is only 2.4 reading grade years, somewhat lower than would be expected for a three-year study. The experimental group was approximately the

same with a difference between the two tests of 2.3 reading grade years. Possibly a reading achievement test administered later in the school year of 1964-65 would change this difference.

Although this study attempted to evaluate the reading achievement of the control and experimental groups, there were other variables of reading such as attitudes toward reading, and the quantity and quality of recreational reading accomplished by students, that were not measured. Further research would possibly determine the effects that interclass and intraclass grouping have on these aspects of reading.

Future studies need to be undertaken to answer these questions:

1. What effect does interclass grouping have on the content subjects?
2. How does interclass grouping affect the psychological development of the individual child?
3. What effects do instructional methods, as used by teachers, have on the student's reading achievement when interclass versus intraclass procedures are used for grouping?

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APPENDIX

PUPIL_____ READING Reading Teacher_____

Reading Level _____

EXPLANATION OF MARKS

ACHIEVEMENT

Achievement marks are based on what is expected of a pupil in his level.

A - Excellent
B - Very Good
C - Average
D - Below Average
E - Unsatisfactory

EFFORT

Effort marks are an indication of how the pupil applies himself to his reading assignments.

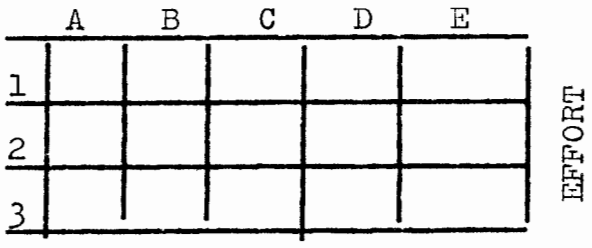
1 - Strong
2 - Satisfactory
3 - Unsatisfactory

A mark in the appropriate box of the graph indicates your child's achievement and also shows his degree of effort in relation to his capacity. To determine your child's academic achievement, read from left to right on each graph. To determine your child's effort and application, read from top to bottom.

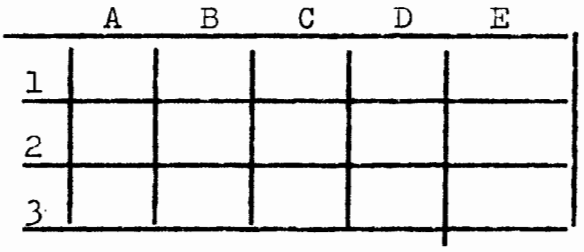
Checks in the section listing skills and interests are based on the degree of skill and the extent of knowledge appropriate for each level.

First Report

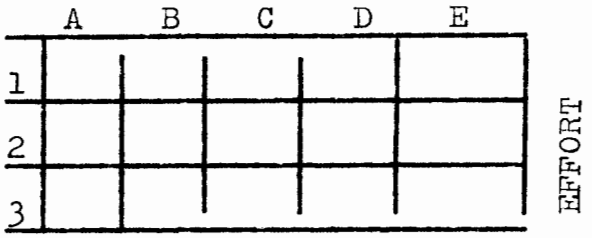
Achievement



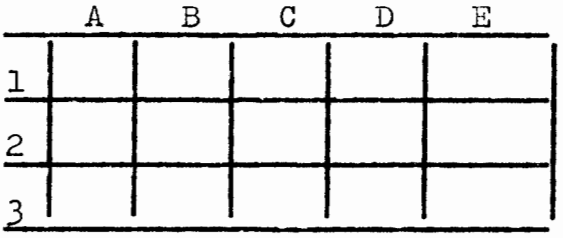
Second Report



Third Report



Fourth Report



	First Report	Second Report	Third Report	Fourth Report
Book Reports	_____	_____	_____	_____

Improvement needed in the reading skills and interests checked:

Report Period	1st	2nd	3rd	4th
Reading silently with understanding (comprehension)				
Learning basic vocabulary.				
Using phonics and other word recognition skills ...				
Reading with reasonable speed				
Reading well to others				
Developing interest in library reading				
Developing appreciation for good books				
Completing work on time				
Developing study habits and attitudes				
Other:				

Parent's signature _____ _____ _____