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THE ACHIEVEMENT OF NEGRO PUPILS IN MIXED AND NON-MIXED SCHOOLS

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THE ACHIEVEMENT OF NEGRO PUPILS IN MIXED AND NON-MIXED SCHOOLS

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A STUDY OF THE ACHIEVEMENT OF NEGRO PUPILS
IN MIXED AND NON-MIXED SCHOOLS

by

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The primary objective of this study was to compare the reading, arithmetic, and language achievement of Negro pupils in mixed and non-mixed educational situations over two year periods of time.

The students were members of the eighth and ninth grade classes in the junior high schools in Oklahoma City which are attended by Negroes. The students were equated on the bases of language and non-language intelligence.

Fisher's "t" test of significance of the differences between independent means was calculated for mean achievement gains made, in the three subject areas during the two year periods, by pupils with similar language and non-language intelligence who attend mixed and non-mixed classes.

Conclusions drawn from the study were:

(1) Combining the races in school seemed to benefit the Negro pupil through greater achievement in arithmetic and language, but lesser achievement in reading.

(2) Failure of Negroes to achieve as well in mixed reading groups as in non-mixed reading groups might be due to difficulties encountered in curricular and communicative differences when chang-

ing to a desegregated school.

(3) In general, Negroes achieve better in mixed than in non-mixed classes.

The results of this study suggest the following recommendations:

(1) Studies of this type should be made of the achievement of Negro children of other ages and in other sections of the country who attend mixed schools.

(2) Other research of this type should be planned in such a manner that the educational experiences of the pupils, during the time they are studied, will be controlled.

(3) Studies of this type should be made of white children.

(4) School desegregation should proceed so that Negroes, as a group, will be better educated and as a result, contribute more to our society.

ACKNOWLEDGMENT

The writer wishes to express his sincere appreciation to Dr. Claude Kelley, the Chairman of his Doctoral Committee, for his invaluable assistance in the development of this study. The writer is thankful also to other members of his Committee: Dr. James G. Harlow, Dr. Omer J. Rupiper, Dr. Gail Shannon, and Dr. Chester S. Williams.

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TABLE OF CONTENTS

LIST OF TABLES

Table Page

Table Page

LIST OF APPENDIXES

THE ACHIEVEMENT OF NEGRO PUPILS IN MIXED AND NON-MIXED SCHOOLS

CHAPTER I

INTRODUCTION

Since the May 17, 1954, ruling of the United States Supreme Court on the constitutionality of segregation in the American public schools, there has been much debate concerning the effects of desegregation upon the processes of education. On one side of the controversy, claims are made that school desegregation would impair the educational achievement of the Negro pupils, whereas on the other there are those who indicate that the achievement of the Negro child would be enhanced. Data which seem to support each side of the issue have been cited in the literature.

The nature of much of the information which has been used to substantiate various points of view on the effects of school desegregation might render it inappropriate for the purposes to which it has been applied. For example, inferences drawn from the performance of Negro servicemen on the tests used in the military are not necessarily applicable to children in either a segregated or desegregated educational

situation. These tests are perhaps constructed and standardized for purposes which are different from those of education.

Many people who have expressed points of view on the effects of school desegregation upon the processes of education have referred to information concerning the differences in the performance of Negroes from that of whites on commercial standardized tests. Seldom is it pointed out by the users of these tests that they were built and standardized to favor the educational opportunities, living standards, and the total culture of the majority. Extensive variations in racial backgrounds are obvious. It also seems clear that general tests cannot give sufficient consideration to such differences for their results to be employed with a high degree of specificity. Quantification of the influences which cultural differences have upon peoples' potentialities for learning is probably impossible. Therefore, tests which were built and standardized to favor one cultural background can hardly be adjusted to fairly describe the products of another.

Studying the performances of the races in separate educational situations might fail to provide reliable information concerning their performance in a mixed situation. Interaction between members of the groups under this arrangement would probably be limited. If there are effects from interracial association in class, on playgrounds, in clubs and other school-sponsored activities, they would hardly appear while the races are educated in segregated schools. The

impact of one culture upon a member of another could not be determined. Therefore, predictions concerning the effects of school desegregation upon the achievement of Negro children which are based upon information from these sources are highly questionable. Now that some states are permitting the races to attend schools together, it is needless to hypothesize about the effects; rather, they can be studied.

The progress toward school desegregation indicates that the Negro must eventually live in what is often described as a white man's society. Some people have expressed the belief that the Negro student might find increased motivation to work toward better school achievement if he could attend school with white pupils. On the other hand, others think that Negro students will have difficulty adjusting psychologically and socially in integrated schools and that this difficulty would handicap their academic achievement.

Many people have suggested that both racial groups are more comfortable in separate but truly equal schools and that both groups profit more academically in this arrangement than in segregated educational situations.

Dr. John Fisher, Superintendent of the Baltimore Schools, expressed the types of queries which have resulted from potential school desegregation when he said:

> Many people have asked, what happens to academic achievement when Negro and white children attend school together? The obvious implication is that achievement will go down. The assumptions picked up and carried along in most discussions of this matter become intertwined with misinformation, half-

> truths, and just plain confusion. Everyone familiar with the evidence knows that our achievement and intelligence measures the scores of large numbers of Negro pupils tend, in general, to be lower than those of white pupils. It is also recognized that no psychologist or anthropologist has found any research evidence to establish the inherent superiority or inferiority of either the white or the Negro race as a total group. We know also, that there is continuous discussion as to what intelligence tests actually measure. Some argue that chiefly we measure the child's absorption of white middle class culture. Other observers say that most of our tests merely measure verbal competence. Wherever the technical facts lie in this complex controversy, every teacher is aware that academic success of children correlate quite highly with the cultural background from which they come. Negro children of educated parents from homes with cultural and economic advantages tend to learn and achieve as white children from such homes do. Negro children from city slums tend to react in school as white slum children do. Children from poorly organized schools, white or Negro, or from backward rural areas with marginal schooling, differ little from one another in scholastic performance. The problem of educating all the children of all the people is not new. We have been working at it for more than a century.
>
> ...Those who claim that the school cannot serve well children of varying abilities and backgrounds without handicapping one group or another simply are not aware of what is happening in many American schools.[1]

This study is an effort to contribute a small measure to previous research designed to establish sound and reliable answers to the multiplicity of questions concerning the effects of school desegregation upon academic achievement of school children.

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[1]John H. Fisher, "The New Task of Desegregation," The Nation's Schools, LVI, (Sept., 1955), 325-327.

Statement of the Problem

The problem of this study is to compare the achievement of Negro pupils who attend mixed and non-mixed schools.

Delimitations

The study is limited to the Negro elementary and the junior high pupils in Oklahoma City. It is further limited to the pupils in the eighth and ninth grades who had complete sets of intelligence test scores for their sixth grade school year and complete sets of achievement test scores for their sixth and eighth grade school sessions.

Purposes of the Study

The purposes of this investigation were to seek answers to the following questions:

1. Does the reading achievement of boys in mixed classes differ significantly from that of boys in non-mixed classes who have comparable language intelligence?

2. Does the arithmetic achievement of boys in mixed classes differ significantly from that of boys in non-mixed classes who have comparable language intelligence?

3. Does the language achievement of boys in mixed classes differ significantly from that of boys in non-mixed classes who have comparable language intelligence?

4. Does the reading achievement of boys in mixed classes differ significantly from that of boys in non-mixed classes who have comparable non-language intelligence?

5. Does the arithmetic achievement of boys in mixed classes differ significantly from that of boys in non-mixed classes who have comparable non-language intelligence?

6. Does the language achievement of boys in mixed classes differ significantly from that of boys in non-mixed classes who have comparable non-language intelligence?

7. Does the reading achievement of girls in mixed classes differ significantly from that of girls in non-mixed classes who have comparable language intelligence?

8. Does the arithmetic achievement of girls in mixed classes differ significantly from that of girls in non-mixed classes who have comparable language intelligence?

9. Does the language achievement of girls in mixed classes differ significantly from that of girls in non-mixed classes who have comparable language intelligence?

10. Does the reading achievement of girls in mixed classes differ significantly from that of girls in non-mixed classes who have comparable non-language intelligence?

11. Does the arithmetic achievement of girls in mixed classes differ significantly from that of girls in non-mixed classes who have comparable non-language intelligence?

12. Does the language achievement of girls in mixed classes differ significantly from that of girls in non-mixed classes who have comparable non-language intelligence?

13. Does the reading achievement of boys in mixed classes differ significantly from that of girls in non-mixed classes who have comparable language intelligence?

14. Does the arithmetic achievement of boys in mixed classes differ significantly from that of girls in non-mixed classes who have comparable language intelligence?

15. Does the language achievement of boys in mixed classes differ significantly from that of girls in non-mixed classes who have comparable language intelligence?

16. Does the reading achievement of boys in mixed classes differ significantly from that of girls

in non-mixed classes who have comparable non-language intelligence?

17. Does the arithmetic achievement of boys in mixed classes differ significantly from that of girls in non-mixed classes who have comparable non-language intelligence?

18. Does the language achievement of boys in mixed classes differ significantly from that of girls in non-mixed classes who have comparable non-language intelligence?

19. Does the reading achievement of girls in mixed classes differ significantly from that of boys in non-mixed classes who have comparable language intelligence?

20. Does the arithmetic achievement of girls in mixed classes differ significantly from that of boys in non-mixed classes who have comparable language intelligence?

21. Does the language achievement of girls in mixed classes differ significantly from that of boys in non-mixed classes who have comparable language intelligence?

22. Does the reading achievement of girls in mixed classes differ significantly from that of boys in non-mixed classes who have comparable non-language intelligence?

23. Does the arithmetic achievement of girls in mixed classes differ significantly from that of boys in non-mixed classes who have comparable non-language intelligence?

24. Does the language achievement of girls in mixed classes differ significantly from that of boys in non-mixed classes who have comparable non-language intelligence?

25. Does the reading achievement of boys and girls who attend mixed classes differ significantly when they have comparable language intelligence?

26. Does the arithmetic achievement of boys and girls who attend mixed classes differ significantly when they have comparable language intelligence?

27. Does the language achievement of boys and girls who attend mixed classes differ significantly when they have comparable language intelligence?

28. Does the reading achievement of boys and girls who attend mixed classes differ significantly when they have comparable non-language intelligence?

29. Does the arithmetic achievement of boys and girls who attend mixed classes differ significantly when they have comparable non-language intelligence?

30. Does the language achievement of boys and girls who attend mixed classes differ significantly when they have comparable non-language intelligence?

Procedure

Legally, there are no segregated schools in Oklahoma City. However, because of residential patterns of the races there are three types of schools there; some are attended by only white children, some are attended by only Negroes, and some serve both Negroes and whites. For this study, pupils were selected from the latter two types. Those schools which serve only Negroes are referred to as "non-mixed" schools, while those which serve all races are referred to as "mixed" schools.

The criteria used for selecting students from the eighth and ninth grades in the non-mixed schools were:

1. That the pupils had attended only non-mixed schools.
2. That the pupils' records contained a complete set of intelligence test scores made while the pupil was in the sixth grade.
3. That the child's records contained achievement test scores for his sixth and eighth grade school terms.

Criteria number two and three apply to the pupils selected from the eighth and ninth grades in the mixed schools. In addition to these two the pupil must have attended non-mixed schools up through the sixth grade and only mixed schools during his seventh and eighth grade school years.

The investigator secured and examined the records of the members of the eighth and ninth grade pupils in order to determine those who met these criteria. The data pertinent to this study were transcribed to an analysis pad for use when students were found to satisfy the criteria.

The eighth and ninth grades were selected mainly on two bases: (1) the purposes of the study and (2) the pattern of the testing program in the Oklahoma City Schools.

In order to achieve the purposes of the study an effort was made to determine the educational gain for the two groups of students over a two-year period. This objective, coupled with the fact that achievement tests are administered on a city-wide basis to the sixth and the eighth grade pupils in this school district, determined the selection of these two grades. Session 1955-56 was the first year of school desegregation in Oklahoma City, so at this time these grades include most of the pupils on which the type of data required for this study are available.

Equating the Groups

Students from mixed and non-mixed schools were equated

as far as possible on the basis of language intelligence test scores and on non-language intelligence test scores. Estimates of similarities in language and non-language intelligence scores obtained by the pupils who attend mixed and non-mixed schools were made by calculating critical ratios for the differences in means. The critical ratios for the mean language intelligence and non-language intelligence scores of the eighth grade boys in mixed and non-mixed schools were 1.06 and 1.26 respectfully. This was not significant at the .05 level of confidence. The boys were therefore similar in these characteristics. Critical ratios for the eighth grade girls' language and non-language intelligence scores were .50 and .35 respectively. These ratios failed to reach the .05 level of confidence.

The differences in the mean language and non-language intelligence scores obtained by boys in the ninth grade resulted in critical ratios of .31 and 1.38. The means were therefore similar. The ninth grade girls were not significantly different in language or non-language intelligence. Critical ratios of the differences in mean scores were .40 and .66 for language and non-language intelligence respectively. The mean achievement of the pupils at the sixth grade was compared. The t test was used in making the comparison.[1]

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[1] J. P. Guilford, Fundamental Statistics in Psychology and Education, New York, 1956. P. 220.

The formula is:

$$t = \frac{M_1 - M_2}{\sqrt{\left(\frac{\Sigma x_1^2 + \Sigma x_2^2}{N_1 + N_2 - 2}\right)\left(\frac{N_1 + N_2}{N_1 N_2}\right)}}$$

If two groups were significantly different in achievement at the sixth grade level they were eliminated. This same process was employed in comparing the pupils on the basis of non-language intelligence.

Determination of Educational Gain

In order to determine and compare the mean educational gain of pupils in the mixed and non-mixed schools, the sixth and eighth grade achievement scores were converted to grade-placement scores by using the appropriate tables published in the test manuals by the publishers of the tests. The mean gain for each group was determined by subtracting the grade placements in the sixth grades from those in the eighth grades and dividing them by the number of pupils involved. The significance of differences in group means was tested by using the above mentioned formula.

The Tests

The intelligence of the children included in this study was measured by the California Short-Form Test of Mental Maturity (1950-S Form).

> The California Short-Form Test of Mental Maturity (1950-S Form) is a part of a larger parent test called the California Test of Mental Maturity...

> The California Short-Form Test of Mental Maturity has been developed in order to secure as valid a measure of mental maturity as can be secured by a one-period group test.
>
> Selections from the parent test provide sub-tests which measure both language and non-language mental maturity and four of the major factors involved in intelligence and mental capacity, namely: spatial relations, logical reasoning, numerical reasoning, and verbal concepts which are useful in the thinking process.
>
> Because of the wide range of abilities found in most age or grade groups this test provides for measurements several grades or years above and below the particular group being tested.
>
> Although this test is primarily diagnostic and analytical, attention is called to the fact that it yields not one mental age and I.Q. characteristic as the familiar intelligence test, but three ages (language, non-language, and total) and three I.Q.'s (language, non-language, and total.[1]

Achievement Tests

The Elementary Form AA of the California Achievement Test Battery was used to measure the achievement of the pupils while they were in the sixth grade. The Intermediate Form BB of the same test was used to measure achievement while the students were in the eighth grade.

Each form

> consists of three tests, reading, arithmetic, and language. Each of these three tests is divided into two parts: the reading test consists of Reading Vocabulary and Reading Comprehension; the arithmetic test consists of Arithmetic Reasoning and Arith-

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[1] Manual, California Short-Form Test of Mental Maturity, California Test Bureau, 5916 Hollywood Blvd., Los Angeles, p. 2.

metic Fundamentals; and the language test consists of Mechanics of English, and Grammar, and Spelling.[1]

The Characteristics of the tests are stated as:

> They are instruments for accurately and objectively measuring pupil achievement in the fundamental reading, arithmetic, and language skills. They are standardized and each item has been selected for its diagnostic value in measuring achievement in eighty-nine essential elements of reading, arithmetic, and language skills sampled in the sub-test sections...
>
> In addition, these Batteries are designed not only to measure achievement, but to provide a basis for planning remedial instruction in the areas where individual pupils may be deficient...[2]

Administration of the Tests

The Oklahoma City testing program calls for all schools to administer the achievement test to their sixth and eighth grade pupils in October. The program requires that intelligence tests be administered to sixth grade students in April.

Some of the schools have people who are qualified to administer their tests. In this case one person is responsible for doing this testing. A qualified person from the Pupil Services Division of the Central Office does the testing in schools where qualified people are not available. All of these tests are scored by machine at the Central Office.

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[1]Devised by Earnest W. Teigs and Willis W. Clark, Manual, California Achievement Tests, Complete Battery, Elementary Forms, California Test Bureau, 5916 Hollywood Blvd., Los Angeles, p. 3.

[2]Ibid., p. 2

Review of Related Literature

Apparently there is a reasonable amount of literature which is indirectly related to this problem and some that is directly concerned with it. Most of the materials represent attempts to compare the intelligence and the achievement of whites and Negroes. Klineberg[1] mentions an attempt made by Stetson as early as 1897. It is reported that he compared the ability of 500 white and 500 Negro fourth and fifth grade children in Washington, D. C. to repeat four stanzas of poetry. The white children averaged 11.0 and the Negroes averaged 12.6 years of age. Out of the four stanzas used, the Negroes were superior in the first three.

Research on the intelligence of Negroes was perhaps most popular during the decade of World War I. North[2] points out that Negroes from the South made lower scores on the army tests than whites from the same region, and Negroes from the North usually scored lower than whites from that region. However, Negroes from the North scored higher than Negroes, as a group, from the South and whites from many southern states.

This and other studies raised a question about whether the Negroes who migrate to the North are more intelligent

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[1]Otto Klineberg, Characteristics of the American Negro, Harper & Brothers, New York, 1944, p. 28.

[2]Robert D. North, "The Intelligence of American Negroes," Research Report, Anti-Defamation League of B'Nai B'Rith, Vol. III, No. 2 (Nov., 1956), p. 3.

than those who remain in the South. The works of Peterson and Lanier probably provided more impetus to efforts to test this theory than any others. In studies comparing the abilities of Negroes and whites, they suggested that

> ...a useful check upon the reliability of a given race difference obtained in any locality and under any specific set of circumstances is to take what seems to be fairly representative samplings from widely different environments and to compare the various results as checks upon one another with a view to determining just which factors persistently yield differences in favor of one or the other race.[1]

Upon comparing Negro and white children test scores from Nashville, Chicago and New York, these researchers found outstanding differences between the races in Nashville, slight difference in Chicago, and no difference in New York.

McAlpin[2] studied the increase in the intelligence of Negroes in Washington, D. C. in 1932 and reported "We shall need to account for the higher average Intelligence Quotient of the children in the District by the favorable environment which they enjoyed." He used the Kuhlman-Anderson Test in the study. Scores were separated on the basis of whether the pupils were born in Washington or elsewhere.

The Cincinnati experiment in Negro education, reported by Crowley, sought to determine if there is any sig-

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[1]J. Peterson and L. H. Lanier, "Studies in the Comparative Abilities of Whites and Negroes," Mental Measurements Monographs, Vol. V (1929), pp. 1-156.

[2]A. S. McAlpin, "Changes in the Intelligence Quotients of Negro Children," Journal of Negro Education, Vol. I (April, 1932), pp. 44-48.

nificant differences in academic achievement between Negro students who receive their education in segregated schools, and Negro students who attended mixed schools in that city. The findings of the study revealed that:

1. The academic achievement of segregated school children was similar to that of Negro pupils in mixed schools of the same age, grade, and intelligence.

2. The segregated schools were as effective on the whole as were the mixed schools in their academic training of Negro children.

3. If any true difference existed between the efficiency of the segregated schools as compared with the mixed, it was with respect to functions or activities other than those of academic training.[1]

In 1934 Wilkerson made an attempt to analyze the findings of research on Negro-white differences in scholastic achievement. From his review he made the following observations:

1. In all the school systems studied, the general achievement level of the Negro children tended to be lower than that of white children.

2. The difference between the achievement of the two races tended to increase in the upper grades.

3. The rate of academic growth through the grades tended to be slower for Negro students.[2]

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[1]Mary R. Crowley, "Cincinnati's Experiment in Negro Education, A Comparative Study of the Segregated and Mixed Schools," Journal of Negro Education, Vol. I (April, 1932), pp. 25-33.

[2]Doxey Wilkerson, "Racial Differences in Scholastic Achievement," The Journal of Negro Education, Vol. III (July, 1934), pp. 88-89.

The findings of the 1929 study in New York by Peterson and Lanier attracted the attention of Otto Klineberg,[1] a member of the faculty at Columbia University. He used two approaches in an effort to explain these findings. First, studies were made of school records in three southern cities, Birmingham, Nashville, and Charleston, South Carolina, and an examination of the school marks obtained by the migrants to the North as contrasted with the non-migrants.

The second method was directed toward discovering whether the admittedly superior northern environment has any effect upon raising the intelligence scores of southern-born Negro children. If the environment has such an effect, this should show itself in a gradual improvement in test scores at least roughly proportionate to the length of time during which the superior environment has had a chance to operate. From this point of view the southern-born groups were studied according to the length of time living in New York. After nine investigations employing three of the most popular intelligence tests, the conclusion was drawn that "There is a close, though not by any means perfect relationship between test scores and length of residence in New York City."

In 1951 Everett S. Lee[2] tested the Klineberg hypothesis in Philadelphia. He found that there is an increase in the

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[1]Otto Klineberg, Negro Intelligence and Selective Migration, New York, 1935, pp. 1-209.

[2]Everett S. Lee, "Negro Intelligence and Selective Migration: A Philadelphia Test of the Klineberg Hypothesis," American Sociological Review, Vol. XVI (April, 1951), pp. 227-233.

intelligence scores of southern Negroes who migrate to Philadelphia, and that this increase is continuous as the length of residence in that city increases. The Negro children who were born in Philadelphia fail to show such increase.

Frank McGurk[1] reports that socio-economics is not an influential factor in the differences found between intelligence test scores of Negroes and whites. He said the Negro is closer to the white on culturally-weighted test materials than on other materials.

Samuels studied the achievement of Negro pupils in desegregated schools and concluded:

> It was evident that the longer the association between any particular group of white and Negro students the smaller the difference in academic achievement appears to be. It was evident that the Negro students who had been educated in mixed schools achieved as well as and sometimes better than students in the segregated program.[2]

This chapter has introduced the study and explained the procedures employed. It also included some of the literature which is related to the study. Chapter II presents the analyses of the pupils' achievement at the sixth grade. The educational gains made by the pupils from the sixth to the eighth grade are presented in Chapter III. Chapter IV is composed of the summary, findings, conclusions and recommendations which resulted from the study.

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[1]Frank C. J. McGurk, "On White and Negro Test Performance and Socio-Economic Factors," Journal of Abnormal and Social Psychology, Vol. XLVIII (March, 1953), pp. 448-450.

[2]Ivan Cordon Samuels, (unpublished doctoral dissertation, Indiana University, Bloomington, Indiana, June, 1958).

CHAPTER II

COMPARISONS OF NEGRO PUPILS' ACHIEVEMENT AT THE SIXTH GRADE LEVEL

Introduction

In order to obtain a fair estimation of the pupils' progress over the two-year periods studied, it was necessary to establish some degree of comparability in achievement at the sixth grade. This was accomplished by setting up comparable frequency distributions of the language and non-language intelligence scores obtained by the pupils in mixed and non-mixed schools and comparing the achievement at the sixth grade of the pupils in each interval of the distributions. In both cases the total ranges of intelligence scores were divided into intervals of ten. These intervals represented "intelligence groups." A pupil's intelligence score placed him in one of these groups.

If the pupils' mean achievement was not significantly different when they were tested in the sixth grade and the two types of schools have similar influences upon achievement, the differences in mean achievement progress should be insignificant two years later when the groups reach the eighth grade. When a significant difference was found be-

tween the mean achievement of any two groups while in the sixth grade, those groups were eliminated from comparisons in the eighth grade.

A difference is considered significant when the calculated t is as large or larger than the .05 level of confidence.

The results of comparing the mean achievement of the groups when they were in the sixth grade are presented in this chapter.

The tables mentioned in this chapter may be found in Appendixes A through J.

Comparisons of Eighth Grade Pupils' Achievement When in the Sixth Grade

Boys with Comparable Language Intelligence

Upon equating the eighth grade boys according to similar language intelligence and comparing their achievement in reading, arithmetic, and language, a high degree of similarity was found. These comparisons are presented in Tables 31, 32, and 33 of Appendix F.

Boys with Comparable Non-Language Intelligence

Analyses of the achievement of boys in mixed and non-mixed classes who have comparable non-language intelligence, show that all obtained differences failed to reach the .05 level of confidence. The results of comparisons made between reading, arithmetic, and language achievement scores are presented in Tables 34, 35, and 36 respectively.

Girls with Comparable Language Intelligence

The girls who are attending mixed classes performed on tests of reading, arithmetic, and language quite similar to the girls who go to non-mixed schools. Tables 37, 38, and 39 in Appendix G show that the differences found between mean achievement scores in reading, arithmetic, and language respectively, were not significant.

Girls with Comparable Non-Language Intelligence

Tables 40, 41, and 42 of Appendix G reveals that girls in mixed and non-mixed schools showed a high degree of similarity in their achievement in reading, arithmetic, and language when they were matched according to non-language intelligence.

Boys in Mixed Classes and Girls in Non-Mixed Classes with Comparable Language Intelligence

When boys in mixed classes and girls in non-mixed classes were matched on the basis of language intelligence and comparisons made of their achievement in reading, arithmetic, and language, no outstanding differences were revealed. Tables 43, 44, and 45 of Appendix H are composed of the results of the comparisons.

Boys in Mixed Classes and Girls in Non-Mixed Classes with Comparable Non-Language Intelligence

Tables 46, 47, and 48 were constructed from analyses made of the reading, arithmetic, and language achievement of boys in mixed classes and girls in non-mixed classes. No

differences were found which reached the .05 level of confidence.

Girls in Mixed Classes and Boys in Non-Mixed Classes with Comparable Language Intelligence

The girls in mixed classes and boys in non-mixed classes were about equal in their achievement at the sixth grade. The comparisons made between reading, arithmetic, and language scores are presented in Tables 49, 50, and 51 respectively. These Tables may be found in Appendix I. An observation of them will reveal that all obtained differences failed to reach the .05 level of confidence.

Girls in Mixed Classes and Boys in Non-Mixed Classes with Comparable Non-Language Intelligence

When the girls in mixed classes and the boys in non-mixed classes were matched on the basis of non-language intelligence and comparisons made of their achievement in reading, arithmetic, and language, no outstanding differences were revealed. Tables 52, 53, and 54 of Appendix I are composed of the results of the comparisons.

Boys and Girls in Mixed Classes with Comparable Language Intelligence

There were no significant differences found in the reading, arithmetic, and language achievement of boys and girls in mixed schools. Tables 55, 56, and 57 of Appendix J were constructed from the comparisons. They show that the differences found failed to reach the .05 level of confidence.

Boys and Girls in Mixed Classes with Comparable Non-Language Intelligence

Table 58 shows that one group of girls obtained a mean reading achievement score which was significantly higher than the score made by the comparable group of boys. This was the intelligence group 85-94.

The girls tended to score higher in arithmetic than boys. As an observation of Table 59 will show, only one group difference reached the .05 level of confidence. The superior score was made by girls whose intelligence ranges from 65-74.

Table 60 shows that the differences in language achievement failed to reach an acceptable level of confidence.

Comparisons of Ninth Grade Pupils' Achievement When in the Sixth Grade

Boys with Comparable Language Intelligence

Tables 1, 2, and 3 of Appendix A show that there were no significant differences in the mean reading, arithmetic, and language achievement scores made by matched groups of boys who attend mixed schools and boys who go to non-mixed schools.

Boys with Comparable Non-Language Intelligence

Table 4 shows that one group of boys attending mixed classes scored significantly higher in reading than boys who have similar non-language intelligence and attend non-mixed

schools. The non-language intelligence of this group is 100-109. These boys were discarded from further comparison.

Upon comparing the arithmetic and language achievement of boys who attend mixed classes with that of boys enrolled in non-mixed classes, no significant variations were found. Results of the analyses of arithmetic and language scores are presented in Tables 5 and 6 respectively, of Appendix A.

Girls with Comparable Language Intelligence

The achievement of girls who attend mixed schools was quite similar to that of girls who attend non-mixed schools. Tables 7, 8, and 9 in Appendix B show that all of the mean differences in reading, arithmetic and language achievement failed to reach the .05 level of confidence.

Girls with Comparable Non-Language Intelligence

From Table 10 it is seen that the girls who are presently attending mixed classes tended to score higher in reading than the matched groups who are enrolled in non-mixed classes. This trend was apparent down through the top four levels on intelligence; however, significant differences at the .05 level were obtained between only two groups.

In arithmetic, there were no significant differences shown in achievement by the girls enrolled in mixed and non-mixed classes. Table 11 contains the results of the comparisons made.

Table 12 reveals that one group of girls in mixed schools attained a mean score in language which reached the point of significance above the matched group in non-mixed schools. These girls, whose intelligence ranged from 100-109, were not included in further comparisons.

Boys in Mixed Classes and Girls in Non-Mixed Classes with Comparable Language Intelligence

A comparison of reading achievement scores obtained by boys in mixed classes with those of girls in non-mixed classes revealed that most groups of girls scored higher than boys. Table 13 of Appendix C shows that there was only one difference which reached an acceptable level of confidence. This occurred between the groups with language intelligence scores ranging from 100-109.

In the area of arithmetic, three groups of girls earned scores which were significantly higher than those secured by the boys with whom they were matched. Table 14 shows that the intelligence groups 100-109, 90-99, and 70-79 differed enough in achievement to be eliminated.

Although the differences failed to reach acceptable levels of statistical significance, the girls generally scored higher than boys on tests of language achievement. Table 15 is composed of the data related to the analyses of those test scores.

Boys in Mixed Classes and Girls in Non-Mixed Classes with Comparable Non-Language Intelligence

Tables 16, 17, and 18 show the results of comparisons

between achievement scores in reading, arithmetic, and language respectively. The only difference that reached the .05 level of confidence was found in arithmetic. Table 17 reveals that the group with intelligence scores 80-89 showed this difference.

Girls in Mixed Classes and Boys in Non-Mixed Classes with Comparable Language Intelligence

No significant differences appeared between achievement scores made in reading, arithmetic, or language by girls in mixed schools and boys in non-mixed schools. Tables 19, 20, and 21 in Appendix D were constructed to present these comparisons.

Girls in Mixed Classes and Boys in Non-Mixed Classes with Comparable Non-Language Intelligence

The mean reading scores of girls were usually higher than those made by boys at the sixth grade level. An observation of Table 22 shows that two differences reached the .05 level of confidence. As previously stated, differences at the .05 level of confidence were sufficient not to include a group in the remainder of the study. The intelligence groups 110-119 and 100-109 were, therefore, eliminated.

In arithmetic, there was one outstanding difference observed. As shown by Table 23, the difference occurred in favor of the girls whose non-language intelligence scores range was 100-109.

Comparisons of language scores exhibited one differ-

ence which was significant at the .01 level of confidence. As shown by Table 24, the girls with intelligence scores 100-109 made the superior mean score.

Boys and Girls in Mixed Classes with Comparable Language Intelligence

In Appendix E, Table 25 shows that the girls tended to obtain reading achievement scores which were superior to those secured by boys. Only one group, however, scored significantly higher than boys. This was the group with intelligence scores ranging from 100-109.

In arithmetic, one group of girls made a mean score which was significantly superior to the mean score obtained by boys. The difference was found between the 90-99 intelligence groups as evidenced by Table 26.

The comparisons failed to reveal any salient differences in the language achievement of boys and girls. In general, the mean scores secured by girls were higher, but the differences between their mean scores and the mean scores made by the boys were insignificant. The results of the comparisons may be found in Table 27.

Boys and Girls in Mixed Classes with Comparable Non-Language Intelligence

When the boys and girls who attend mixed schools were matched on the basis of non-language intelligence and comparisons made between their reading achievement scores, one group showed an outstanding difference. Table 28 of Appendix E, shows that the difference was revealed between the group

with intelligence scores in the 90-99 interval. These groups were therefore excluded.

The arithmetic scores of boys and girls were quite similar. Table 29 reveals that all differences obtained failed to reach the .05 level of confidence.

Table 30 shows that one group of girls obtained a mean score in language which was significantly higher than their matched group of boys. This was the group with intelligence scores in the 120-129 range. These groups were not compared further.

CHAPTER III

COMPARISONS OF ACHIEVEMENT GAINS MADE BY NEGRO PUPILS IN MIXED AND NON-MIXED CLASSES

Introduction

This chapter is concerned with comparisons of mean achievement gains made over a two year period by the pupils whose achievement was statistically similar during their sixth grade school terms. The same types of comparisons were made as those in Chapter II with two exceptions: (1) grade placements, rather than raw scores, were used, and (2) the mean achievement gains for the two years, rather than total achievement, were compared.

The tables referred to in this chapter may be found in Appendixes K through T.

Comparisons of Mean Achievement Gains Made by Eighth Grade Pupils

Boys with Comparable Language Intelligence

The achievement gains made in reading by boys in the two types of schools studied were similar. No trends could be observed and all the differences found between mean achievement were statistically insignificant. This is evidenced by Table 91 in Appendix P.

denced by Table 91 in Appendix P.

Analyses of gains in arithmetic failed to reveal variations which reached the .05 level of confidence. Table 92 contains the results of the analyses. It reveals that most of the superior mean gains were obtained by boys in mixed classes.

One group of boys in non-mixed classes attained a mean gain in language which was statistically significant. This may be observed from Table 93. All other differences failed to reach the .05 level of confidence, but the majority of the greater gains were made by boys in mixed classes.

Boys with Comparable Non-Language Intelligence

Table 94 shows that the reading achievement progress made by boys in mixed and non-mixed classes was similar when they were matched according to non-language intelligence.

The progress made in arithmetic by boys in mixed schools appeared to be slightly superior to that of the boys in non-mixed schools. However, Table 95 reveals that only one group made a mean gain which was significantly greater.

One prominent difference was observed as a result of analyzing the male students' progress in language. As evidenced by Table 96, this difference was in favor of the boys who attend non-mixed classes.

Girls with Comparable Language Intelligence

A high degree of likeness was revealed by the analyses

of advancements made in reading by girls. Table 97 of Appendix Q shows that obtained differences failed to reach an acceptable point of statistical significance.

While most groups of girls in mixed schools made a slightly greater advancement in arithmetic than the girls in non-mixed schools, Table 98 shows that only one group showed a significantly higher gain.

Comparisons of gains made in language by girls who attend the two types of schools failed to manifest differences which were outstandingly significant. However, the girls in mixed classes made greater mean progress. This is evidenced by Table 99.

Girls with Comparable Non-Language Intelligence

Table 100 shows that the differences in reading achievement gains made by two groups of girls reached the .01 level of confidence. The superior means were obtained by girls who attend non-mixed classes. These pupils generally showed more gain in reading than the girls who have comparable non-language intelligence and attend mixed classes.

In arithmetic, more gain was shown by girls who are enrolled in mixed classes. However, as shown by Table 101, only one group showed up significantly better than the matched group in non-mixed classes.

Comparisons of language progress failed to reveal differences which reached the .05 level of confidence. Results of the comparisons are presented in Table 102 of

Appendix Q. The Table also shows that no pattern indicating the superiority of either groups was found.

Boys in Mixed Classes and Girls in Non-Mixed Classes with Comparable Language Intelligence

The progress made in reading by boys in mixed classes was quite similar to that made by girls in non-mixed classes. Table 103 of Appendix R shows that the comparisons of the gains made by the pupils failed to reveal differences which were significant; however, the boys tended to do slightly better.

Table 104 in Appendix R shows that two groups of boys made significantly more achievement progress in arithmetic than girls. Most of the groups of boys tended to show more advanced mean scores but these were the only conspicuous differences.

The boys and girls tended to make similar progress in language. Four out of five groups of boys showed greater mean progress but the differences did not reach the .05 level of confidence. This is evidenced by Table 105.

Boys in Mixed Classes and Girls in Non-Mixed Classes with Comparable Non-Language Intelligence

Reference to Table 106 will show that girls usually progressed more in reading than boys. However, only one group mean was significantly superior.

Tests of differences in mean gains made in arithmetic failed to reach acceptable levels of confidence. Observation

of Table 107 shows that the mean gains attained by boys were usually higher but the differences did not reach the .05 level of confidence.

Comparisons of progress in language failed to reveal any salient differences between boys and girls. However, Table 108 reveals that, out of the five matched groups, three superior means were attained by the boys in mixed classes.

Girls in Mixed Classes and Boys in Non-Mixed Classes with Comparable Language Intelligence

In Appendix S, Table 109 contains the results of analyses of the reading progress made by boys attending non-mixed schools and girls who are enrolled in mixed schools. The table shows that most of the mean gains were similar. However, one group of boys advanced significantly further than the girls.

As revealed by Table 110, variations in mean arithmetic gains failed to reach the .05 level of confidence. The girls usually showed more gain.

An observation of Table 111 in Appendix S reveals that one group of boys progressed significantly further in language than the girls who were matched with them on the basis of language intelligence. No particular trend, in favor of girls or boys resulted from the comparisons.

Girls in Mixed Classes and Boys in Non-Mixed Classes with Comparable Non-Language Intelligence

When the pupils were grouped according to comparable non-language intelligence, no significant differences in achievement advances were obtained. Tables 112, 113, and 114 in Appendix S show that similar progress was made in reading, arithmetic, and language, respectively.

Boys and Girls in Mixed Classes with Comparable Language Intelligence

Comparisons of mean achievement progress made by these pupils in reading, arithmetic, and language failed to find differences which reached an acceptable level of statistical significance. The results of the comparisons are found in Tables 115, 116, and 117, respectively, of Appendix T.

Boys and Girls in Mixed Classes with Comparable Non-Language Intelligence

Table 118 shows that boys and girls who attend mixed classes progressed at about the same rate in reading. All differences in mean achievement gain failed to reach the .05 level of confidence.

When the boys and girls were equated according to non-language intelligence and their progress in arithmetic studied, the differences found failed to appear significant. The results of the comparisons made are presented in Table 119.

Table 120 shows that two groups of girls made gains in language which were superior to the progress made by the

boys with whom they were matched. The differences in means obtained by boys and girls were significant at the .05 level of confidence.

Comparisons of Mean Achievement Gains Made by Ninth Grade Pupils

Boys with Comparable Language Intelligence

The boys who attend non-mixed classes tended to gain more in reading over the period studied than boys with comparable language intelligence scores who attended mixed classes. Table 61 of Appendix K shows that the improvement made by all except one group of boys in non-mixed classes was superior, although only two groups made gains which were significant at the acceptable level of confidence.

In arithmetic the boys who are enrolled in mixed classes did better than those who go to non-mixed classes. Table 62 reveals that only one group obtained a significantly higher achievement gain, even though most of the groups made higher mean grade placement scores.

The progress made in language constantly favored the boys in mixed schools. Observation of Table 63 shows that three out of five groups attained differences which reached the .05 level of confidence.

Boys with Comparable Non-Language Intelligence

When the boys were matched on the basis of non-language intelligence and comparisons made of their advancement in reading, the improvement made by boys attending non-

mixed schools tended to show more achievement gain. Table 64 of Appendix K shows that most of the differences were insignificant but the greater progress was constantly shown by boys in non-mixed classes.

No significant differences were observed between the progress made in arithmetic by the boys in the two types of schools. However, Table 65 shows that the boys in mixed classes secured greater mean gains in the majority of the group comparisons.

The superiority of language progress made by boys in mixed classes was quite evident. Observation of Table 66 reveals that there was only one group which failed to obtain a difference in improvement which did not reach the .05 level of confidence.

Girls with Comparable Language Intelligence

The girls in mixed and non-mixed schools exhibited a pattern of reading improvement similar to the one shown by the boys. As evidenced by Table 67 of Appendix L, the girls in non-mixed classes showed more improvement, even though only one group made a gain which was significantly different.

Table 68 shows that the girls in mixed classes generally made more achievement gain in arithmetic than those in non-mixed classes. The apparent superiority of the gains were almost constant but they failed to reach the .05 level of statistical confidence.

In language advancement, the girls in mixed classes

were superior to those in non-mixed classes. An examination of Table 69 reveals that more than one-half of the groups made mean gains which were significant.

Girls with Comparable Non-Language Intelligence

The comparisons made between achievement gains of girls with comparable non-language intelligence are presented in Tables 70, 71, and 72 of Appendix L.

In reading, the girls in non-mixed classes seemed to achieve more than girls in mixed classes. Table 70 shows that the differences failed to reach acceptable levels of statistical significance. However, they were regularly in favor of the girls enrolled in non-mixed classes.

No pattern of variation appeared in arithmetic gains made by the girls who attended the two types of schools. Most of the tests of significance approached zero. The results of the comparisons are presented in Table 71.

The language achievement gains obtained by girls in mixed classes were obviously superior to those made by girls in non-mixed classes. An observation of Table 72 shows that two-thirds of the groups which were equated on the basis of non-language intelligence showed outstanding differences in favor of girls who attend mixed classes.

Boys in Mixed Classes and Girls in Non-Mixed Classes with Comparable Language Intelligence

Upon matching the boys in mixed classes with girls in non-mixed classes according to language intelligence scores

and comparing the progress made by each group, it was found that the girls consistently showed more gain in reading. The obtained differences between two groups were significant at the .05 level of confidence. Table 73 of Appendix M reveals that all the mean advances of girls excelled those obtained by the boys.

The achievement progress made in arithmetic by matched groups of boys in mixed classes and girls in non-mixed classes were statistically similar. Table 74 shows that even though the boys usually showed more progress, the differences were statistically insignificant.

The trend revealed in comparisons between achievement gains in language was in favor of the boys. As evidenced by Table 75, only one group of boys in mixed classes made gains which were significantly higher than the girls who attend non-mixed classes.

Boys in Mixed Classes and Girls in Non-Mixed Classes with Comparable Non-Language Intelligence

Tables 76, 77, and 78 show the comparisons of mean achievement progress in reading, arithmetic and language, respectively, made by boys in mixed classes and girls in non-mixed classes. These tables may be found in Appendix M.

The differences obtained in reading achievement gain were in favor of the girls. Table 76 shows that only one group achieved outstandingly higher than the boys who had comparable non-language intelligence.

The boys in mixed schools appeared to make slightly more progress in arithmetic than girls in non-mixed schools. This is indicated only by the consistency with which the mean gains made by boys exceeded those made by girls. It is evidenced by Table 77 that all of the variations failed to reach acceptable levels of statistical significance.

Every group of boys made more progress in language than the girls with whom they were matched. Table 78 reveals that five out of seven groups gained significantly higher means scores than girls. Two of the five groups obtained differences which were significant at the .01 level of confidence.

Girls in Mixed Classes and Boys in Non-Mixed Classes with Comparable Language Intelligence

When groups of girls in mixed classes were equated with boys in non-mixed classes on the basis of language intelligence scores and comparisons made between the gains in reading achievement, the boys appeared to do better than girls. Observation of Table 79 in Appendix N reveals that two groups of the boys made mean gains in reading which were outstandingly higher than the mean progress made by the girls.

Table 80 shows that comparisons between gains made by boys and girls in arithmetic revealed a high degree of similarity.

The girls made much better progress in language than boys. As shown by Table 81, four-fifths of the groups of girls made mean achievement gains which were significantly

higher than the progress made by boys who had comparable language intelligence.

Girls in Mixed Classes and Boys in Non-Mixed Classes with Comparable Non-Language Intelligence

In Appendix N, Tables 82, 83, and 84 represent an analysis of gains made by boys in non-mixed schools and girls in mixed schools. Table 82 shows that the variations revealed in reading advances as measured by the tests, consistently favored the boys. Two of the variations were significant at the .05 level of confidence.

The progress made in arithmetic by boys and girls tended to be more alike than that made in reading. An inspection of Table 83 shows that the mean gains made by girls were slightly superior to those attained by boys. However, there were no differences which reached an acceptable level of statistical significance.

Two groups of girls manifested significantly greater gains in language than boys who had similar non-language intelligence scores. Table 84 reveals that the girls generally showed more progress over the period studied than the boys.

Boys and Girls in Mixed Classes with Comparable Language Intelligence

Appendix O is composed of tables resulting from analyses of achievement gains made by the boys and girls who are enrolled in mixed schools. Tables 85, 86, and 87 include

data for the groups which were equated according to their language intelligence scores. No significant differences were found in the progress made by the students in reading, arithmetic, or language.

Boys and Girls in Mixed Classes with Comparable Non-Language Intelligence

When the groups of pupils were matched on the basis of their non-language intelligence scores and comparisons made of their gains in reading, arithmetic, and language, no outstanding variations were observable. The data for reading, arithmetic, and language may be observed in Tables 88, 89, and 90, respectively, of Appendix O.

CHAPTER IV

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary

The primary objective of this study was to compare the reading, arithmetic, and language achievement of Negro pupils in mixed and non-mixed educational situations.

The students included in the study are members of the eighth and ninth grade classes in the junior high schools in Oklahoma City which are attended by Negroes. The pupils were equated on the basis of language and non-language intelligence as well as on achievement in the three subject areas at the sixth grade. Those groups whose achievement at the sixth grade was statistically unequal, were eliminated from further comparison.

After equating the pupils on the three bases mentioned above, efforts were made to determine the amount of achievement gain they made in the three subject areas from the sixth to the eighth grade. The gains made by groups of pupils in mixed classes were compared with those made by matched groups in non-mixed classes. Comparisons were also made between the gains made by girls and boys in mixed classes.

In determining the amount of progress made by the pupils over the period studied, the grade placement scores obtained at the sixth grade were subtracted from the scores made at the eighth grade. Mean achievement progress was calculated for groups in mixed and non-mixed classes. The differences between the mean grade placement scores obtained by matched groups of pupils in mixed and non-mixed classes were tested for significance by the *t* test for independent data.[1]

The .05 level of confidence was accepted as an indication of the existence of a true difference in the achievement progress made by the groups.

Findings

The following findings were evident from the data presented in this study:

1. The eighth grade pupils in mixed and non-mixed classes made about the same progress in reading.
2. The eighth grade pupils in mixed classes tended to make more grade placement gain in arithmetic than comparable groups of pupils in non-mixed classes.
3. The ninth grade pupils who attended non-mixed classes gained more in reading than comparable groups of pupils who attended mixed classes.
4. The ninth grade pupils who attended mixed classes gained more in arithmetic than comparable groups who attended non-mixed classes.

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[1]Guilford, *loc. cit.*

5. The ninth grade pupils who attended mixed classes made more progress in language than the pupils who attend non-mixed classes.

6. The boys and girls in the ninth grade who attended mixed classes made about the same amount of grade placement progress, during the period studied, in reading, arithmetic, and language.

7. The pupils in the two types of schools made about equal achievement gains in language.

8. The boys and girls in mixed classes made about the same progress in reading, arithmetic, and language.

9. Comparisons between groups of ninth grade pupils revealed more and greater differences in progress than those for the pupils in the eighth grade.

Conclusions

The findings presented above suggest the following conclusions:

1. Combining the races in school seemed to benefit the Negro pupil through greater achievement in arithmetic and language, but lesser achievement in reading.

2. Failure of Negroes to achieve as well in mixed reading groups as in non-mixed reading groups might be due to difficulties encountered in curricular and communicative differences when changing to a desegregated school.

3. In general, Negroes achieve better in mixed than in non-mixed classes.

4. Sex differences do not seem to be a significant factor in the achievement of Negroes in mixed and non-mixed schools.

Recommendations

The results of this study suggest that:

1. Studies of this type should be made of the

achievement of Negro children of other ages and in other sections of the country who attend mixed schools.

2. Other research of this type should be planned in such a manner that the educational experiences of the pupils, during the time they are studied, will be controlled.

3. Studies of this type should be made of white children.

4. School desegregation should proceed so that Negroes, as a group, will be better educated and as a result, contribute more to our society.

APPENDIXES

APPENDIX A

COMPARISONS OF THE ACHIEVEMENT AT THE SIXTH GRADE OF NINTH GRADE BOYS IN MIXED AND NON-MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 1

READING

Language Intelligence	Mixed		Non-Mixed			
	Number	Mean	Number	Mean	S.E. Diff.	t
110-119	3	112	9	92	18.18	1.100
100-109	4	88	10	94	93.75	0.064
90-99	4	82	16	84	100.00	0.020
80-89	7	73	22	71	62.50	0.032
70-79	7	70	8	70		0.00
60-69	2	56	2	48	16.91	0.473

TABLE 2

ARITHMETIC

Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
110-119	3	73	8	54	13.38	1.42
100-109	5	45	10	57	8.45	1.42
90-99	6	36	14	53	6.13	2.769
80-89	10	48	19	44	5.00	0.80
70-79	8	37	11	40	4.83	0.62
60-69	4	26	1	29	53.57	0.056

TABLE 3

LANGUAGE

Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
110-119	3	56	8	48	10.00	.80
100-109	3	46	10	46		0.0
90-99	5	46	16	44	8.33	.24
80-89	6	32	22	34	4.34	.46
70-79	7	29	8	32	5.26	.57
60-69	4	22	2	25	75.00	0.04

TABLE 4

READING

Non-Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	3	98	4	109	12.45	.883
110-119	3	111	14	87	15.55	1.5427
100-109	4	106	17	78	11.91	2.349*
90-99	4	75	16	81	10.10	.594
80-89	4	71	7	66	14.79	.338
70-79	6	64	5	72	9.80	0.816
60-69	4	71	3	75	15.74	0.2546

*Significant at the .05 level.

TABLE 5

ARITHMETIC

Non-Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	3	54	4	68	16.26	.861
110-119	6	56	14	52	10.84	.3697
100-109	6	60	15	50	8.43	1.1867
90-99	4	49	16	45	7.00	.5714
80-89	5	31	7	54	6.86	3.3508*
70-79	8	33	6	40	7.00	1.000
60-69	3	47	3	43	7.07	.565

*Significant at the .01 level.

TABLE 6

LANGUAGE

Non-Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	3	44	4	64	16.10	1.242
110-119	4	46	14	44	8.19	.244
100-109	5	48	17	39	5.74	1.566
90-99	4	32	15	40	5.38	1.485
80-89	3	28	7	29	2.00	.5000
70-79	7	31	5	35	7.81	.512
60-69	4	35	3	26	7.00	1.285

APPENDIX B

COMPARISONS OF THE ACHIEVEMENT AT THE SIXTH GRADE OF NINTH GRADE GIRLS IN MIXED AND NON-MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 7

READING

Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
110-119	8	109	7	103	4.80	1.25
100-109	7	105	15	105		0.00
90-99	12	92	24	56	24.65	1.46
80-89	6	72	18	73	6.71	.149
70-79	7	76	18	78	6.51	.307
60-69	3	32	3	61	12.30	2.357

TABLE 8

ARITHMETIC

Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
110-119	8	68	6	66	8.69	.23
100-109	7	54	15	59	6.00	.833
90-99	11	55	24	56	13.15	.076
80-89	4	40	15	46	6.00	1.00
70-79	6	37	17	47	8.13	1.23
60-69	3	17	3	23	3.17	1.89

TABLE 9

LANGUAGE

Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
110-109	3	59	7	58	5.00	.20
100-109	3	53	15	48	3.62	1.38
90-99	5	49	24	44	3.00	1.666
80-89	6	32	17	39	4.37	1.60
70-79	7	32	18	37	5.00	1.00
60-69	3	16	3	32	17.89	.894

TABLE 10

READING

Non-Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
120-129	8	109	4	104	8.77	.5698
110-119	7	110	16	93	6.32	2.6879*
100-109	10	103	13	86	7.28	2.3351*
90-99	6	98	17	86	8.48	1.4142
80-89	9	70	15	83	6.63	1.9589
70-79	7	76	8	64	10.54	1.138
60-69	2	54	9	71	11.09	1.532

*Significant at the .05 level.

TABLE 11

ARITHMETIC

Non-Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
120-129	8	73	4	64	9.79	.9185
110-119	7	68	14	63	35.01	.1428
100-109	10	66	14	55	5.92	1.856
90-99	7	43	16	50	5.65	1.237
80-89	8	38	14	47	6.08	1.479
70-79	5	38	7	37	6.71	.149

TABLE 12

LANGUAGE

Non-Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	8	58	4	57	5.74	.1740
110-119	7	52	16	45	4.35	1.6059
100-109	10	55	13	44	3.60	3.0508*
90-99	5	42	16	43	5.00	.2000
80-89	9	34	15	39	4.47	1.1180
70-79	7	35	8	37	5.56	.3592
60-69	2	26	8	34	8.36	.9562

*Significant at the .05 level.

APPENDIX C

COMPARISONS OF THE ACHIEVEMENT AT THE SIXTH GRADE OF NINTH GRADE BOYS IN MIXED CLASSES AND GIRLS IN NON-MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 13

READING

Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
110-119	3	112	7	103	6.85	1.3127
100-109	4	88	15	105	5.29	3.2126*
90-99	4	82	24	85	6.40	.4685
80-89	7	73	18	73		0.00
70-79	7	70	18	78	9.21	.8677
60-69	2	56	3	61	16.80	.2976

*Significant at the .01 level.

TABLE 14

ARITHMETIC

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
110-119	3	73	6	66	9.27	.7548
100-109	5	45	15	59	5.20	2.6457*
90-99	6	36	24	56	6.40	3.1234**
80-89	10	48	15	46	4.89	.4082
70-79	8	37	17	47	4.47	2.2360*
60-69	4	26	3	23	3.31	.9045

**Significant at the .01 level.
*Significant at the .05 level.

TABLE 15

LANGUAGE

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
110-119	3	56	7	58	6.00	.3333
100-109	3	46	15	48	4.69	.4264
90-99	5	46	24	44	4.69	.4264
80-89	6	32	17	39	4.58	1.5275
70-79	7	29	18	37	4.47	1.7888
60-69	4	22	3	32	6.92	1.4433

TABLE 16

READING

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	3	98	4	104	15.65	.3833
110-119	3	111	16	93	9.00	2.000
100-109	4	106	13	86	11.40	1.7541
90-99	4	75	17	86	9.64	1.1406
80-89	4	71	15	83	10.63	1.1288
70-79	6	64	8	64		0.0
60-69	4	71	9	71		0.0

TABLE 17

ARITHMETIC

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	3	54	4	64	15.68	.6375
110-119	6	56	14	63	10.58	.6614
100-109	6	60	14	55	8.12	.6154
90-99	4	49	16	50	6.85	.1458
80-89	5	31	14	47	5.09	3.1378*
70-79	8	33	7	37	6.08	.6575
60-69	3	47	8	43	5.47	.7303

*Significant at the .01 level.

TABLE 18

LANGUAGE

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	3	44	4	57	12.08	1.0758
110-119	4	46	16	45	6.49	.154
100-109	5	48	13	44	5.38	.7429
90-99	4	32	16	43	5.47	2.0083
80-89	3	28	15	39	5.19	2.1169
70-79	7	31	8	37	6.84	.8751
60-69	4	35	8	34	5.09	.1961

APPENDIX D

COMPARISONS OF THE ACHIEVEMENT AT THE SIXTH GRADE OF NINTH GRADE BOYS IN NON-MIXED CLASSES AND GIRLS IN MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 19

READING

Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
110-119	9	92	8	109	10.77	1.5784
100-109	10	94	7	105	7.00	1.5714
90-99	16	84	12	92	6.63	1.2060
80-89	22	71	6	72	7.94	.1259
70-79	8	70	7	76	7.28	.8241
60-69	2	48	3	32	11.57	1.3821

TABLE 20

ARITHMETIC

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
110-119	8	54	8	68	9.64	1.4517
100-109	10	57	7	54	8.71	.3441
90-99	14	53	11	55	5.29	.3779
80-89	19	44	4	40	6.85	.5834
70-79	11	40	6	39	7.55	.1324

TABLE 21

LANGUAGE

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
110-119	8	57	8	48	6.00	1.5000
100-109	6	53	10	46	5.00	1.4000
90-99	12	49	16	44	5.29	.9449
80-89	6	32	22	34	4.69	.4264
70-79	7	32	8	32		0.0
60-69	3	16	2	25	6.48	1.3873

TABLE 22

READING

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
120-129	4	109	8	109		0.0
110-119	14	87	7	110	10.39	2.2131*
100-109	17	78	10	103	7.61	3.2826**
90-99	16	81	6	98	28.23	.6021
80-89	7	66	9	70	8.94	.4472
70-79	5	72	7	76	7.61	.5252
60-69	3	75	2	54	28.42	.9147

*Significant at the .05 level.
**Significant at the .01 level.

TABLE 23

ARITHMETIC

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
120-129	4	68	8	73	10.10	.4950
110-119	14	52	7	68	8.88	1.8001
100-109	15	50	10	66	5.83	2.7439*
90-99	16	45	7	43	5.83	.3429
80-89	7	54	8	38	8.36	1.9123
70-79	6	40	5	40		0.0

*Significant at the .05 level.

TABLE 24

LANGUAGE

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	4	64	8	58	8.36	.7171
110-119	14	44	7	52	5.74	1.3926
100-109	17	39	10	55	3.87	4.1311*
90-99	15	40	5	42	4.89	.4082
80-89	7	29	9	34	6.00	.8333
70-79	5	35	7	35		0
60-69	3	26	2	26		0

*Significant at the .01 level.

APPENDIX E

COMPARISONS OF THE ACHIEVEMENT AT THE SIXTH GRADE OF NINTH GRADE BOYS AND GIRLS IN MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 25

READING

Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
110-119	3	112	8	109	4.69	.6396
100-109	4	88	7	105	5.83	2.9154*
90-99	4	82	12	92	8.60	1.1624
80-89	7	73	6	72	6.71	.1490
70-79	7	70	7	76	7.81	.7682
60-69	2	56	3	32	16.09	1.4912

*Significant at the .05 level.

TABLE 26

ARITHMETIC

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
110-119	3	73	8	68	10.10	.4902
110-109	5	45	7	54	10.67	.8429
90-99	6	36	11	55	6.92	2.7424*
80-89	10	48	4	40	7.55	1.0596
70-79	8	37	6	39	7.68	.2603
60-69	4	26	3	17	3.46	2.5980*

*Significant at the .05 level.

TABLE 27

LANGUAGE

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
110-119	3	56	8	57	3.31	.3015
100-109	3	46	6	53	4.79	1.4596
90-99	5	46	12	49	5.09	.5883
80-89	6	32	6	32		0.0
70-79	7	29	7	32	7.36	.4375
60-69	4	22	3	16	4.69	1.2792

TABLE 28

READING

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
120-129	3	98	8	109	10.95	1.004
110-119	3	111	7	110	7.07	.1414
100-109	4	106	10	103	8.77	.3418
90-99	4	75	6	98	9.53	2.4110*
80-89	4	71	9	70	14.83	.0674
70-79	6	64	7	76	9.22	1.3015
60-69	4	71	2	54	16.46	1.0326

*Significant at the .05 level.

TABLE 29

ARITHMETIC

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
120-129	3	54	8	73	12.45	1.5261
110-119	6	56	7	68	13.07	.9176
100-109	6	60	10	66	6.92	.8660
90-99	4	49	7	43	7.34	.8164
80-89	5	31	8	38	8.66	.8082
70-79	8	33	5	38	5.47	.9128

TABLE 30

LANGUAGE

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	3	44	8	58	5.91	2.3664*
110-119	4	46	7	52	6.40	.9370
100-109	5	48	10	55	5.09	1.3728
90-99	4	32	5	42	8.83	1.1322
80-89	3	28	9	34	9.69	.6188
70-79	7	31	7	35	6.92	.5773
60-69	4	35	2	26	10.53	.8542

*Significant at the .05 level.

APPENDIX F

COMPARISONS OF THE ACHIEVEMENT AT THE SIXTH GRADE OF EIGHTH GRADE BOYS IN MIXED AND NON-MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 31

READING

Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	4	108	10	112	4.24	.9428
95-104	4	82	20	92	17.95	.5570
85-94	7	82	23	90	6.63	1.2060
75-84	9	57	11	61	8.30	.4815
65-74	2	56	12	60	12.16	.3288

TABLE 32

ARITHMETIC

Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
105-114	4	70	10	73	10.72	.2797
95-104	7	53	22	60	5.38	1.2998
85-94	7	54	21	51	5.91	.5070
75-84	12	41	13	35	4.89	1.2247
65-74	2	47	11	39	12.53	.6384

TABLE 33

LANGUAGE

Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
105-114	4	54	4	52	7.48	.2672
95-104	4	40	10	53	36.19	.3592
85-94	7	36	21	42	10.81	.5546
75-84	11	28	23	38	40.00	.2500
65-74	3	23	12	27	3.07	1.2998

TABLE 34

READING

Non-Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
105-114	5	95	11	93	10.49	.1906
95-104	7	85	17	88	8.66	.3464
85-94	6	62	15	84	13.34	1.6489
75-84	5	73	12	79	7.14	.8401
65-74	2	58	11	70	7.00	1.7142

TABLE 35

ARITHMETIC

Non-Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
105-114	7	55	11	63	7.93	1.0078
95-104	7	53	17	54	8.57	.1166
85-94	6	46	14	49	7.21	.4160
75-84	5	46	14	44	2.38	.8401
65-74	2	30	10	44	77.00	.1818

TABLE 36

LANGUAGE

Non-Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	6	45	11	41	6.32	.6324
95-104	6	39	17	41	4.00	.5000
85-94	6	33	16	37	5.56	.7184
75-84	5	30	13	34	5.91	.6761
65-74	2	30	11	34	7.14	.5601

APPENDIX G

COMPARISONS OF THE ACHIEVEMENT AT THE SIXTH GRADE OF EIGHTH GRADE GIRLS IN MIXED AND NON-MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 37

READING

Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	6	104	14	102	7.87	.2540
95-104	7	102	19	102		0.0
85-94	12	90	23	87	3.05	.9830
75-84	7	71	26	69	6.55	.3049
65-74	2	67	6	67		0.0

TABLE 38

ARITHMETIC

Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
105-114	7	71	15	63	8.54	.9363
95-104	6	66	19	66		0.0
85-94	12	58	23	58		0.0
75-84	7	44	28	41	5.09	.5883
65-74	2	45	7	38	6.55	1.0681

TABLE 39

LANGUAGE

Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
105-114	6	48	15	51	5.00	.6000
95-104	6	51	19	50	3.46	.2886
85-94	12	43	24	40	3.46	.8660
75-84	6	33	27	32	3.00	.3333
65-74	2	29	7	30	5.38	.1856

TABLE 40

READING

Non-Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
115-124	2	103	7	97	3.71	1.6138
105-114	9	99	16	94	7.00	.7142
95-104	8	86	14	96	8.40	1.1904
85-94	9	94	25	80	7.61	1.8382
75-84	5	91	15	76	9.84	1.5230
65-74	2	72	7	87	15.71	.9544

TABLE 41

ARITHMETIC

Non-Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
115-124	2	68	7	57	13.78	.7980
105-114	8	68	16	68		0.0
95-104	8	54	16	59	5.76	.8676
85-94	10	61	25	49	6.16	1.9466
75-84	6	58	16	45	7.61	1.7069
65-74	2	49	7	52	16.40	.1829

TABLE 42

LANGUAGE

Non-Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
115-124	2	52	7	50	11.42	.175
105-114	8	50	16	45	5.30	.9433
95-104	9	45	15	47	4.38	.4566
85-94	9	42	25	39	4.13	.7256
75-84	5	39	16	36	5.19	.5773
65-74	2	33	7	35	10.49	.1906

APPENDIX H

COMPARISONS OF THE ACHIEVEMENT AT THE SIXTH GRADE OF EIGHTH GRADE BOYS IN MIXED CLASSES AND GIRLS IN NON-MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 43

READING

Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	4	108	14	102	9.32	.6432
95-104	4	86	19	102	8.66	1.8475
85-94	7	82	23	86	7.07	.5656
75-84	9	57	26	69	7.07	1.6970
65-74	2	56	6	67	7.55	1.4569

TABLE 44

ARITHMETIC

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	4	70	15	63	10.67	.6556
95-104	7	53	19	66	6.92	1.8763
85-94	7	54	23	58	5.74	.6963
75-84	12	41	28	41		0.0
65-74	2	47	7	38	9.59	.9383

TABLE 45

LANGUAGE

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	4	54	15	51	5.91	.5070
95-104	4	40	19	50	41.23	.2425
85-94	7	36	24	40	4.12	.9701
75-84	11	28	27	32	24.49	.16329
65-74	3	23	7	30	4.58	1.5275

TABLE 46

READING

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	5	95	16	94	10.91	.0916
95-104	7	85	14	96	9.05	1.2147
85-94	6	62	25	80	10.72	1.6785
75-84	5	73	15	76	10.77	.2785
65-74	2	56	7	87	15.81	1.9596

TABLE 47

ARITHMETIC

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	7	55	16	70	9.48	1.5811
95-104	7	53	16	59	11.40	.5262
85-94	6	46	25	49	7.48	.4008
75-84	6	46	16	45	6.85	.1459
65-74	2	30	7	52	16.43	1.3388

TABLE 48

LANGUAGE

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	6	45	16	45		0.0
95-104	6	39	15	47	4.79	1.668
85-94	6	33	25	39	4.11	1.459
75-84	5	30	16	36	4.90	1.224
65-74	2	30	7	35	10.58	.4724

APPENDIX I

COMPARISONS OF THE ACHIEVEMENT AT THE SIXTH GRADE OF EIGHTH GRADE BOYS IN NON-MIXED CLASSES AND GIRLS IN MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 49

READING

Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	10	112	6	104	4.31	1.885
95-104	20	92	7	102	7.36	1.357
85-94	23	90	12	90		0.0
75-84	11	61	7	71	6.08	1.643
65-74	12	60	2	68	15.26	.5240

TABLE 50

ARITHMETIC

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	10	73	7	71	8.83	.2264
95-104	22	60	6	66	6.24	.9607
85-94	21	51	12	58	4.58	1.527
75-84	13	35	7	44	5.74	1.566
65-74	11	39	2	45	12.00	.500

TABLE 51

LANGUAGE

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	10	53	6	48	3.46	1.443
95-104	21	42	6	51	4.58	1.963
85-94	23	38	12	43	3.00	1.666
75-84	12	27	6	33	5.19	1.154
65-74	11	30	2	29	6.48	.1543

TABLE 52

READING

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
115-124	11	97	2	103	13.23	.4535
105-114	11	93	9	99	6.63	.9045
95-104	17	88	8	86	8.71	.2294
85-94	15	84	9	94	9.22	1.084
75-84	12	79	5	91	11.58	1.036
65-74	11	70	2	72	15.56	.1285

TABLE 53

ARITHMETIC

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
115-124	11	71	2	68	11.96	.2508
105-114	11	63	8	68	6.63	.7537
95-104	17	54	8	54		0.0
85-94	14	49	10	61	6.63	1.809
75-84	14	44	6	58	8.42	1.661
65-74	10	44	2	49	9.95	.5025

TABLE 54

LANGUAGE

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
115-124	11	47	2	52	8.06	.6201
105-114	11	41	8	50	4.69	1.918
95-104	17	41	9	45	4.58	.8727
85-94	16	37	9	42	4.79	1.042
75-84	13	34	5	39	6.16	.8111
65-74	11	34	2	33	7.14	.1400

APPENDIX J

COMPARISONS OF THE ACHIEVEMENT AT THE SIXTH GRADE OF EIGHTH GRADE BOYS AND GIRLS IN MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 55

READING

Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	4	108	6	104	4.89	.8164
95-104	4	86	7	102	10.63	1.505
85-94	7	82	12	90	5.83	1.371
75-84	9	57	7	71	11.18	1.252
65-74	3	56	2	68	11.38	1.0540

TABLE 56

ARITHMETIC

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	4	70	7	71	7.87	.1270
95-104	7	53	6	66	9.85	1.319
85-94	7	54	12	58	4.79	.8340
75-84	12	41	7	44	3.46	.8660
65-74	2	47	2	45	16.65	.1201

TABLE 57

LANGUAGE

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	4	54	6	48	3.87	1.549
95-104	4	40	6	51	5.55	1.621
85-94	7	36	12	43	4.36	1.6059
75-84	11	28	6	33	4.14	1.2060
65-74	3	23	2	29	4.00	1.5000

TABLE 58

READING

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	5	95	9	99	9.53	.4193
95-104	7	85	8	85		0.0
85-94	6	62	9	94	14.30	2.2377*
75-84	5	73	5	91	11.92	1.5105
65-74	2	58	2	72	12.24	1.1437

*Significant at the .05 level.

TABLE 59

ARITHMETIC

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
109-114	7	55	8	68	8.44	1.540
95-104	7	53	8	54	7.35	.1360
85-94	6	46	10	61	8.12	1.846
75-84	6	46	6	58	7.74	1.549
65-74	2	30	2	49	4.00	4.7500*

*Significant at the .05 level.

TABLE 60

LANGUAGE

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	6	45	8	50	6.63	.7537
95-104	6	39	9	45	5.29	1.133
85-94	6	33	9	42	7.00	1.285
75-84	5	30	5	39	4.36	2.064
65-74	2	30	2	33	2.45	1.224

APPENDIX K

COMPARISONS OF MEAN GRADE PLACEMENT GAINS OF NINTH GRADE BOYS IN MIXED AND NON-MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 61

READING

Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
110-119	3	1.40	9	2.40	.9000	1.111
100-109	4	1.45	10	3.10	1.752	3.1378**
90-99	4	2.30	16	2.15	.936	.1601
80-89	7	2.15	22	2.61	.426	1.0327
70-79	7	1.37	8	3.15	.662	2.6869*
60-69	2	1.40	2	2.90	.761	1.9695

*Significant at the .05 level.
**Significant at the .01 level.

TABLE 62

ARITHMETIC

Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
110-119	3	2.80	8	2.53	.667	.4045
100-109	5	1.74	10	2.16	.475	.8838
90-99	6	2.71	14	1.30	.390	3.6147*
80-89	10	1.95	19	1.39	.336	1.6640
70-79	8	1.36	11	1.34	.010	2.000

*Significant at the .01 level.

TABLE 63

LANGUAGE

Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
110-119	3	2.06	8	.5	.627	2.4855*
100-109	3	2.96	10	.62	.698	3.3486**
90-99	5	.92	16	.47	.490	.9176
80-89	6	1.88	22	.47	.513	2.7456*
70-79	7	1.50	8	.47	.600	1.7149

*Significant at the .05 level.
**Significant at the .01 level.

TABLE 64

READING

Non-Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	3	1.60	4	2.10	.741	.6741
110-119	3	1.50	14	3.00	.700	2.1428*
90-99	4	1.60	16	2.66	.624	1.6973
80-89	4	1.90	7	3.00	.108	1.0126
70-79	6	1.80	5	2.90	.574	1.9148
60-69	4	2.40	3	2.80	.114	.3494

*Significant at the .05 level.

TABLE 65

ARITHMETIC

Non-Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	3	2.40	4	1.40	.104	.9534
110-119	6	2.60	14	1.97	.584	1.0776
100-109	6	2.00	15	1.78	.612	.3592
90-99	4	1.50	16	1.70	.806	.2480
70-79	8	2.30	6	1.40	.793	1.1338
60-69	3	1.80	3	.66	.761	1.4969

TABLE 66

LANGUAGE

Non-Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
120-129	3	2.70	4	1.52	.167	.7046
110-119	4	1.80	14	.43	.391	3.5000**
100-109	5	2.00	17	.41	.397	4.0000**
90-99	4	2.00	15	.34	.632	2.6231*
80-89	3	2.60	7	.38	.800	2.7717
70-79	7	1.60	5	1.06	.161	3.7142**
60-69	4	1.40	3	.76	.179	3.5683

*Significant at the .05 level.
**Significant at the .01 level.

APPENDIX L

COMPARISONS OF MEAN GRADE PLACEMENT GAINS OF NINTH GRADE GIRLS IN MIXED AND NON-MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 67

READING

Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
110-119	8	2.16	7	3.00	.237	.3535
100-109	7	1.38	15	2.56	.259	4.5433*
90-99	12	1.49	24	2.70	.691	1.7500
80-89	6	1.83	18	2.80	4.85	2.000
70-79	7	1.70	18	2.40	.353	1.9798
60-69	3	3.10	3	2.10	.242	.4421

*Significant at the .01 level.

TABLE 68

ARITHMETIC

Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
110-119	8	2.45	6	2.45		0.0
100-109	7	2.30	15	2.00	.177	.1690
90-99	11	1.88	24	1.77	.550	2.000
80-89	4	1.37	15	1.37		0.0
70-79	6	1.36	17	1.28	.499	.1601
60-69	3	1.40	3	1.56	.100	1.6000

TABLE 69

LANGUAGE

Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
110-119	8	1.88	7	0.0	.507	3.7033**
100-109	6	2.01	15	.54	.638	2.3015*
90-99	12	1.50	24	.49	.391	2.5819*
80-89	6	1.65	17	.23	.707	2.0083
70-79	7	.80	18	0.0	.186	.4285
60-69	3	1.66	3	.6		

*Significant at the .05 level.
**Significant at the .01 level.

TABLE 70

READING

Non-Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
120-129	8	1.90	4	2.80	.943	.9539
90-99	6	1.05	17	2.38	.812	1.6378
80-89	9	1.88	15	2.46	.463	1.2510
70-79	7	1.78	8	3.01	.615	2.000
60-69	2	2.30	9	2.61	.813	.3810

TABLE 71

ARITHMETIC

Non-Language Intelligence	Mixed Number	Mixed Mean	Non-Mixed Number	Non-Mixed Mean	S.E.Diff.	t
120-129	8	2.51	4	2.12	.109	.3563
110-119	7	2.28	14	2.28		0.0
100-109	10	1.68	14	1.85	.701	.2425
90-99	7	1.88	16	1.99	.770	.14285
80-89	8	1.68	14	.99	.462	1.4924
70-79	5	1.48	7	1.55	.383	.1825

TABLE 72

LANGUAGE

Non-Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	8	2.25	4	0.0	.920	2.4444*
110-119	7	2.54	16	.63	.492	3.8783**
90-99	5	1.44	16	1.58	.865	1.6180
80-89	9	1.33	15	.73	.261	2.2980*
70-79	7	1.84	8	1.12	.235	3.0532**
60-69	2	1.65	8	.58	.114	.9325

*Significant at the .05 level.
**Significant at the .01 level.

APPENDIX M

COMPARISONS OF MEAN GRADE PLACEMENT GAINS OF NINTH GRADE BOYS IN MIXED CLASSES AND GIRLS IN NON-MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 73

READING

Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
110-119	3	1.43	7	3.0	.555	2.8284*
90-99	4	2.30	24	2.70	.648	.6172
80-89	7	2.15	18	2.82	.547	1.2247
70-79	7	1.37	18	2.42	.481	2.1821*
60-69	2	1.40	3	2.10	.800	.8750

*Significant at the .05 level.

TABLE 74

ARITHMETIC

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
110-119	3	2.80	6	2.45	.816	.4288
80-89	10	1.95	15	1.37	.334	1.7320
70-79	8	1.36	17	1.28	.376	.21231
60-69	4	.90	3	1.56	.420	1.7500

TABLE 75

LANGUAGE

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
110-119	3	2.06	7	0.0	.734	2.8062*
100-109	3	2.96	15	.54	.399	6.0633**
90-99	5	.92	24	.49	.568	.7559
80-89	6	1.88	17	.23	.434	3.8013**
70-79	7	1.50	18	0.0	.600	2.5000*
60-69	4	1.65	3	.60	.273	3.8333*

*Significant at the .05 level.
**Significant at the .01 level.

TABLE 76

READING

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	3	1.6	4	2.8	.136	.8775
110-119	3	1.5	16	3.3	.707	2.5455*
100-109	4	1.6	13	2.5	.692	1.2990
90-99	4	1.6	17	2.3	.757	.9237
80-89	4	1.9	15	2.4	.682	.7330
70-79	6	1.8	8	3.0	.574	2.0889
60-69	4	2.4	9	2.6	.640	.3123

*Significant at the .05 level.

TABLE 77

ARITHMETIC

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	3	2.40	4	2.12	.164	.1698
110-119	6	2.60	14	2.27	.837	.3939
100-109	6	2.00	14	1.85	.396	.3779
90-99	4	1.50	16	1.99	.746	.6565
70-79	8	2.30	7	1.50	.559	1.4288
60-69	3	1.80	8	1.20	.616	.9733

TABLE 78

LANGUAGE

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	3	2.70	4	0.0	.150	1.7960
110-119	4	1.80	16	.61	.475	2.5021*
100-109	5	2.00	13	.66	.478	2.8014
90-99	4	2.00	16	1.58	.147	2.8460*
80-89	3	2.60	15	.73	.631	2.9634**
70-79	7	1.60	8	1.12	.153	3.1277**
60-69	4	1.46	8	.58	.702	1.1669

*Significant at the .05 level.
**Significant at the .01 level.

APPENDIX N

COMPARISONS OF MEAN GRADE PLACEMENT GAINS OF NINTH GRADE BOYS IN THE NON-MIXED CLASSES AND GIRLS IN MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 79

READING

Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
110-119	9	2.42	8	2.16	.130	2.000
100-109	10	3.14	7	1.38	.528	3.3281**
90-99	16	2.15	12	1.49	.220	3.000**
80-89	22	2.61	6	1.83	.397	1.9611
70-79	8	3.15	7	1.74	.923	1.5275
60-69	2	2.90	3	3.10	.190	1.0504

**Significant at the .01 level.

TABLE 80

ARITHMETIC

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
110-119	8	2.47	8	2.47		0.0
100-109	10	2.16	7	2.30	.218	.6396
90-99	14	1.30	11	1.88	.252	.2294
80-89	19	1.35	4	1.35		0.0
70-79	11	1.34	6	1.36	.101	.1961

TABLE 81

LANGUAGE

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
110-119	8	.50	8	1.88	.335	4.1177**
100-109	6	.62	10	2.01	.278	5.000**
90-99	12	.47	16	1.50	.424	2.4253*
80-89	6	.47	22	1.65	.377	3.1277**
70-79	7	.47	8	.80	.267	1.2344

*Significant at the .05 level.
**Significant at the .01 level.

TABLE 82

READING

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
120-129	4	2.10	8	1.90	.714	.2800
100-109	17	2.38	10	1.49	.327	2.7136*
90-99	16	2.66	6	1.05	.613	2.6231*
80-89	7	3.04	9	1.88	.632	1.8333
70-79	5	2.94	7	1.78	.646	1.7179
60-69	3	2.80	2	2.30	.147	.3394

*Significant at the .05 level.

TABLE 83

ARITHMETIC

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
120-129	4	1.40	8	2.51	.781	1.4200
110-119	14	1.97	7	2.28	.685	.4522
90-99	16	1.70	7	1.88	.396	.2773
80-89	7	1.44	8	1.68	.459	.5222
70-79	6	1.40	5	1.48	.738	.1084
60-69	3	.66				

TABLE 84

LANGUAGE

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
120-129	4	1.52	8	2.25	.983	.7419
110-119	14	.43	7	2.54	.471	4.4772**
90-99	15	.34	5	1.44	.774	1.4200
80-89	7	.38	9	1.33	.775	1.2247
70-79	5	1.00	7	1.84	.258	3.2549**
60-69	3	.76	2	1.65	.454	1.9595

**Significant at the .01 level.

APPENDIX O

COMPARISONS OF MEAN GRADE PLACEMENT GAINS OF NINTH GRADE BOYS AND GIRLS IN MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 85

READING

Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
110-119	3	1.43	8	2.16	.353	2.0655
90-99	4	2.30	12	1.49	.485	1.6681
80-89	7	2.15	6	1.83	.864	.9701
70-79	7	1.37	7	1.74	.616	.6000
60-69	2	1.40	3	3.10	.648	2.6231

TABLE 86

ARITHMETIC

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
110-119	3	2.80	8	2.47	.913	.3611
100-109	5	1.74	7	2.30	.528	1.0606
80-89	10	1.95	4	1.35	.730	.8219
70-79	8	1.36	6	1.36		0.0
60-69	4	.90	3	1.40	.400	1.2500

TABLE 87

LANGUAGE

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
110-119	3	2.06	8	1.88	.642	.2800
100-109	3	2.96	6	2.01	.651	1.4586
90-99	5	.92	12	1.50	.626	.9258
80-89	6	1.88	6	1.65	.306	.7500
70-79	7	1.50	7	.80	.692	1.0103
60-69	4	1.65	3	1.65		0.0

TABLE 88

READING

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
120-129	3	1.60	8	1.90	.888	.3375
110-119	3	1.50	7	.99	.114	.4437
100-109	4	1.60	10	1.40	.105	.1887
80-89	4	1.90	9	1.90		0.0
70-79	6	1.80	7	1.80		0.0
60-69	4	2.40	2	2.30	.141	.07071

TABLE 89

ARITHMETIC

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
120-129	3	2.40	8	2.50	.010	.1000
110-119	6	2.60	7	2.20	.953	.4195
100-109	6	2.00	10	1.60	.874	.4574
90-99	4	1.50	7	1.80	.627	.4780
80-89	5	1.90	8	1.60	.821	.3651
70-79	8	2.30	5	1.48	.165	1.0886

TABLE 90

LANGUAGE

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
110-119	4	1.80	7	2.50	.755	.9271
100-109	5	2.00	10	.78	.120	1.8299
90-99	4	2.00	5	1.40	.115	.5183
80-89	3	2.60	9	1.30	.774	1.6782
70-79	7	1.60	7	1.80	.632	.3162
60-69	4	1.40	2	1.60	.768	.2603

APPENDIX P

COMPARISONS OF MEAN GRADE PLACEMENT GAINS OF EIGHTH GRADE BOYS IN MIXED AND NON-MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 91

READING

Language Intelligence	Mixed		Non-Mixed			
	Number	Mean Diff.	Number	Mean Diff.	S.E.Diff.	t
105-114	4	2.30	10	1.40	.609	1.3127
95-104	4	.80	20	1.80	.489	2.0412
85-94	7	1.60	23	1.70	.400	.2500
75-84	9	1.80	11	2.10	.244	1.2247
65-74	2	2.20	12	1.20	.774	1.2909

TABLE 92

ARITHMETIC

Language Intelligence	Mixed Number	Mixed Mean Diff.	Non-Mixed Number	Non-Mixed Mean Diff.	S.E.Diff.	t
105-114	4	2.00	10	1.70	.380	.7878
95-104	7	1.10	22	1.30	.424	.4714
85-94	7	1.50	21	1.00	.374	1.3362
75-84	12	1.30	13	.88	.332	1.2649
65-74	2	.70	11	.70		0.0

TABLE 93

LANGUAGE

Language Intelligence	Mixed Number	Mixed Mean Diff.	Non-Mixed Number	Non-Mixed Mean Diff.	S.E.Diff.	t
105-114	4	2.20	4	2.20		0.0
95-104	4	.60	10	1.77	.436	2.6833*
85-94	7	1.85	21	1.70	.187	.2672
75-84	11	1.40	23	1.40		0.0
65-74	3	1.30	12	.55	.556	1.3471

*Significant at the .05 level.

TABLE 94

READING

Non-Language Intelligence	Mixed Number	Mixed Mean Diff.	Non-Mixed Number	Non-Mixed Mean Diff.	S.E.Diff.	t
105-114	5	2.10	11	1.70	.169	.2357
95-104	7	2.00	17	1.96	.383	1.0425
85-94	6	2.00	15	1.52	.715	.6708
75-84	5	1.20	12	1.77	.522	1.0910
65-74	2	2.00	11	1.89	.381	.2886

TABLE 95

ARITHMETIC

Non-Language Intelligence	Mixed Number	Mixed Mean Diff.	Non-Mixed Number	Non-Mixed Mean Diff.	S.E.Diff.	t
115-124	2		11	1.5		
105-114	7	1.60	11	1.30	.400	.7500
95-104	7	1.70	17	.85	.352	2.4121*
85-94	6	1.20	14	1.20		0.0
75-84	5	.60	14	1.20	.374	1.6025
65-74	2	2.10	10	1.09	.494	2.0412

*Significant at the .05 level.

TABLE 96

LANGUAGE

Non-Language Intelligence	Mixed Number	Mixed Mean Diff.	Non-Mixed Number	Non-Mixed Mean Diff.	S.E.Diff.	t
105-114	6	1.90	11	1.80	.469	.2132
95-104	6	1.60	17	1.60		0.0
85-94	6	.80	16	1.70	.500	1.800
75-84	5	.70	13	1.70	.264	3.7795*
65-74	2	1.50	11	1.30	.640	.3123

*Significant at the .01 level.

APPENDIX Q

COMPARISONS OF MEAN GRADE PLACEMENT GAINS OF EIGHTH GRADE GIRLS IN MIXED AND NON-MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 97

READING

Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean Diff.	Number	Mean Diff.		
105-114	6	2.10	14	1.70	.608	.6575
95-104	7	1.40	19	1.30	.331	.3015
85-94	12	1.60	23	1.80	.282	.7071
75-84	7	1.40	26	1.60	.848	.2357
65-74	2	1.60	6	1.40	.648	.3086

TABLE 98

ARITHMETIC

Language Intelligence	Mixed Number	Mixed Mean Diff.	Non-Mixed Number	Non-Mixed Mean Diff.	S.E.Diff.	t
105-114	7	1.50	15	1.50		0.0
95-104	6	1.80	19	1.20	.412	1.4552
85-94	12	1.20	23	.50	.223	3.1304*
75-84	7	.90	28	.70	.200	1.000
65-74	2	1.30	7	.70	.663	.9045

*Significant at the .01 level.

TABLE 99

LANGUAGE

Language Intelligence	Mixed Number	Mixed Mean Diff.	Non-Mixed Number	Non-Mixed Mean Diff.	S.E.Diff.	t
105-114	6	2.20	15	1.70	.547	.9128
95-104	6	1.10	19	1.20	.346	.2886
85-94	12	1.40	24	1.30	.387	.2581
75-84	6	1.70	27	1.30	.387	1.0327
65-74	2	1.30	7	.80	.509	.9805

TABLE 100

READING

Non-Language Intelligence	Mixed Number	Mixed Mean Diff.	Non-Mixed Number	Non-Mixed Mean Diff.	S.E.Diff.	t
105-114	9	2.00	16	3.18	.240	4.8989*
95-104	8	1.70	14	3.09	.243	5.7154*
85-94	9	1.10	25	1.74	.423	1.5118
75-84	5	1.80	15	1.65	.636	.2357
65-74	2	1.00	7	.77	.629	.3651

*Significant at the .01 level.

TABLE 101

ARITHMETIC

Non-Language Intelligence	Mixed Number	Mixed Mean Diff.	Non-Mixed Number	Non-Mixed Mean Diff.	S.E.Diff.	t
105-114	8	1.60	16	1.37	.304	.7559
95-104	8	1.60	16	1.27	.245	1.3416
85-94	10	1.20	25	.70	.223	2.2360*
75-84	6	.80	16	.80		0.0
65-74	2	.80	7	.54	.636	.4082

*Significant at the .05 level.

TABLE 102

LANGUAGE

Non-Language Intelligence	Mixed		Non-Mixed		S.E.Diff.	t
	Number	Mean Diff.	Number	Mean Diff.		
105-114	8	2.30	16	2.30		0.0
95-104	9	1.50	15	2.30	.574	1.3926
85-94	9	1.90	25	1.27	.332	1.8973
75-84	5	1.90	16	1.35	.466	1.1785
65-74	2	.20	7	1.32	.651	1.7179

APPENDIX R

COMPARISONS OF MEAN GRADE PLACEMENT GAINS OF EIGHTH GRADE BOYS IN MIXED CLASSES AND GIRLS IN NON-MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 103

READING

Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean Diff.	Number	Mean Diff.		
105-114	4	2.30	14	1.70	.700	.8571
95-104	4	.80	19	1.30	.479	1.0425
85-94	7	1.60	23	1.80	.400	.5000
75-84	9	1.80	26	1.60	.223	.8944
65-74	2	2.20	6	1.40	.458	1.7457

TABLE 104

ARITHMETIC

Language Intelligence	Boys Number	Boys Mean Diff.	Girls Number	Girls Mean Diff.	S.E.Diff.	t
105-114	4	2.00	15	1.50	.714	.7001
95-104	7	1.10	19	1.20	.435	.2294
85-94	7	1.50	23	.50	.282	3.5355**
75-84	12	1.30	28	.70	.223	2.6832*
65-74	2	.70	7	.70		0.0

*Significant at the .05 level.
**Significant at the .01 level.

TABLE 105

LANGUAGE

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	4	2.20	15	1.70	.692	.7216
95-104	4	.60	19	1.20	.424	1.4143
85-94	7	1.80	24	1.30	.447	1.1180
75-84	11	1.40	27	1.30	.264	.3779
65-74	3	1.30	7	.80	.591	.8451

TABLE 106

READING

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	5	2.00	16	3.18	.643	1.8333
95-104	7	2.10	14	3.09	.313	3.1622*
85-94	6	2.00	25	1.74	.229	1.1338
75-84	5	1.20	15	1.65	.503	.8944
65-74	2	2.00	7	.77	.156	.7844

*Significant at the .01 level.

TABLE 107

ARITHMETIC

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	7	1.60	16	1.37	.325	.7071
95-104	7	1.70	16	1.27	.215	2.000
85-94	6	2.00	25	.70	.114	1.1338
75-84	6	.60	16	.78	.348	.5163
65-74	2	2.10	7	.54	.761	2.0486

TABLE 108

LANGUAGE

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	6	1.90	16	2.26	.492	.7303
95-104	6	1.60	15	2.30	.608	1.1507
85-94	6	.80	25	1.27	.376	1.2500
75-84	5	.70	16	1.35	.382	1.6977
65-74	2	1.50	7	1.32	.679	.2649

APPENDIX S

COMPARISONS OF MEAN GRADE PLACEMENT GAINS OF EIGHTH GRADE BOYS IN NON-MIXED CLASSES AND GIRLS IN MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 109

READING

Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	10	1.40	6	2.10	.608	1.1507
95-104	20	1.82	7	1.40	.363	1.1547
85-94	23	1.70	12	1.60	.346	.2886
75-84	11	2.10	7	1.40	.316	2.2135*
65-74	12	1.20	2	1.60	.948	.4216

TABLE 110

ARITHMETIC

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	10	1.78	7	1.50	.417	.6708
95-104	22	1.30	6	1.80	.400	1.2500
85-94	21	1.00	12	1.20	.300	.666
75-84	13	.90	7	.90		0.0
65-74	11	.67	2	1.30	.535	1.2510

TABLE 111

LANGUAGE

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	10	2.20	6	2.20		0.0
95-104	21	1.77	6	1.10	.287	2.3333*
85-94	23	1.70	12	1.40	.331	.9045
75-84	12	1.40	6	1.70	.583	.5144
65-74	11	.55	2	1.30	.535	1.4000

*Significant at the .05 level.

TABLE 112

READING

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	11	1.70	9	2.00		.6882
95-104	17	1.96	8	1.70	.335	.7745
85-94	15	1.50	9	1.30	.435	.4588
75-84	12	1.80	5	1.80		0.0
65-74	11	1.89	2	1.00	.568	1.5666

TABLE 113

ARITHMETIC

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	11	1.30	8	1.60	.374	.8017
95-104	17	.85	8	1.60	.386	1.9414
85-94	14	1.20	10	1.20		0.0
75-84	14	1.20	6	.80	.360	1.1093
65-74	10	1.00	2	.80	.583	.3429

TABLE 114

LANGUAGE

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	11	1.80	8	2.30	.479	1.0425
95-104	17	1.60	9	1.50	.360	.2773
85-94	16	1.70	9	1.90	.374	.5345
75-84	13	1.70	5	1.90	.264	.7559
65-74	11	1.30	2	.20	.574	1.9148

APPENDIX T

COMPARISONS OF MEAN GRADE PLACEMENT GAINS OF EIGHTH GRADE BOYS AND GIRLS IN MIXED CLASSES WITH COMPARABLE LANGUAGE AND NON-LANGUAGE INTELLIGENCE

TABLE 115

READING

Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	4	2.30	6	2.10	.500	.4000
95-104	4	.80	7	1.40	.538	1.1141
85-94	7	1.60	12	1.60		0.0
75-84	9	1.80	7	1.40	.331	1.2060
65-74	3	2.20	2	1.60	.509	1.1767

TABLE 116

ARITHMETIC

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	4	2.00	7	1.50	.692	.7216
95-104	7	1.10	6	1.80	.565	1.2374
85-94	7	1.50	12	1.20	.316	.94867
75-84	12	1.30	7	.90	.360	1.1093
65-74	2	.70	2	1.30	.538	1.1141

TABLE 117

LANGUAGE

Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	4	2.20	6	2.20		0.0
95-104	4	.60	6	1.10	.509	.9805
85-94	7	1.85	12	1.40	.490	.9176
75-84	11	1.40	6	1.70	.479	.6255
65-74	3	1.30	2	1.30		0.0

TABLE 118

READING

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	5	2.10	9	1.70	.500	.8000
95-104	7	2.00	8	1.30	.435	1.6059
75-84	5	1.20	5	1.80	.670	.8944
65-74	2	2.00	2	1.00	.479	2.0851

TABLE 119

ARITHMETIC

Non-Language Intelligence	Boys Number	Boys Mean	Girls Number	Girls Mean	S.E.Diff.	t
105-114	7	1.70	8	1.60	.412	.2425
95-104	7	1.20	8	1.20		0.0
85-94	6	1.60	10	1.60		0.0
75-84	6	.60	6	.80	.480	.5163

TABLE 120

LANGUAGE

Non-Language Intelligence	Boys		Girls		S.E.Diff.	t
	Number	Mean	Number	Mean		
105-114	6	1.60	8	1.50	.574	.1740
95-104	6	.80	9	1.90	.435	2.5235*
85-94	6	1.90	9	2.30	.692	.5773
75-84	5	.70	5	1.90	.500	2.4000*
65-74	2	1.50	2	.20	.114	1.1401

*Significant at the .05 level.

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