



1965

Racial Difference in Academic Achievement of White and Negro High School Students

Christopher J. Thayil
Loyola University Chicago

Follow this and additional works at: https://ecommons.luc.edu/luc_theses



Part of the [Psychology Commons](#)

Recommended Citation

Thayil, Christopher J., "Racial Difference in Academic Achievement of White and Negro High School Students" (1965). *Master's Theses*. 2040.

https://ecommons.luc.edu/luc_theses/2040

This Thesis is brought to you for free and open access by the Theses and Dissertations at Loyola eCommons. It has been accepted for inclusion in Master's Theses by an authorized administrator of Loyola eCommons. For more information, please contact ecommons@luc.edu.



This work is licensed under a [Creative Commons Attribution-Noncommercial-No Derivative Works 3.0 License](#).
Copyright © 1965 Christopher J. Thayil

RACIAL DIFFERENCE IN ACADEMIC ACHIEVEMENT
OF WHITE AND NEGRO HIGH SCHOOL
STUDENTS

By

Rev. Christopher J. Thayil, C.M.I.

A Thesis Submitted to the Faculty of the Graduate School of
Loyola University in Partial Fulfillment of
the Requirements for the Degree of
Master of Arts
February 1965

LIFE

Christopher J. Thayil was born on March 24, 1919, in Manjoor, Kerala, India.

He graduated from St. Joseph's High School, Mannanam, in 1939, and joined the Syrian Carmelite Congregation in Kerala. In 1950 he was ordained to the priesthood at the Theological Seminary Chethipuzhay, Changanacherry. Later, he took his B.A. (Hons) degree from Kerala University in 1958 where he had majored in Philosophy. He also was graduated from Marquette University in 1960 with a degree of Master's in Education.

The author entered Loyola, where he began his graduate studies in Psychology during the Fall of 1960.

TABLE OF CONTENTS

Chapter		Page
I.	INTRODUCTION.....	1
II.	REVIEW OF THE LITERATURE.....	6
III.	DESCRIPTION OF THE EXPERIMENTAL MATERIAL AND PROCEDURE.....	12
IV.	RESULTS	
	1. Statistical Analysis.....	17
	2. Interpretative Evaluation.....	22
V.	SUMMARY AND CONCLUSIONS.....	27
	BIBLIOGRAPHY.....	32

LIST OF TABLES

Table		Page
1.	ANALYSIS OF VARIANCE ON THE I.Q. POINTS OF THE THIRTY PAIRS OF WHITE AND NEGRO STUDENTS IN THE SAMPLE.....	18
11.	ANALYSIS OF VARIANCE ON THE ACHIEVEMENT SCORES OF THE SAME GROUP WITH REGARD TO RACIAL AND SOCIAL CLASS DIFFERENCE.....	19

ILLUSTRATION

Page

GRAPH SHOWING THE INTERACTION BETWEEN RACE AND CLASS WITH REGARD TO THE ACHIEVEMENT SCORES..... 21

CHAPTER 1
INTRODUCTION

The relation of racial differences in intelligence and academic achievement is often a subject of controversy among psychologists. The fact has a practical aspect, especially in contemporary American education, since therein arise problems of integration. Stallings suggests, "will not integration bring about a lowering of scholastic standards in the formerly all-white schools?"¹ The concern of psychologists has largely focused on the difference among racial groups as seen in intelligence testing. This fact is evident from the many books published on the subject in recent years, and articles appearing in various periodicals on psychology and in education in the past few years. In comparison with intelligence testing it must be said that there is a notable lack of interest in racial differences in academic achievements.

Nearly all the investigators agree in finding a mean difference in favour of the whites. "The remarkable consistency of research published over the past fifty years leaves little doubt of the existence of group differences in I.Q. between white and Negro children."² But the extent

¹Frank H. Stallings, "A Study of Immediate Effects of Intelligence on Scholastic Achievement in Louisville Public Schools," The Journal of Negro Education, XXVIII (1959), 439.

²R.T. Osborne, "Racial Differences in Mental Growth and School Achievement: A Longitudinal Study," Psychological Reports, VII (1960), 233.

to which such a difference is attributed to cultural and biological factors has always been a matter of controversy. Many of the authors attribute the difference to biological factors or the fact of race itself. On the contrary, several others bring forward environmental and socio-economic factors as a reason for the poor performances in the test results of the Negroes. Here a few words about the terms used in this work seem necessary. In this study the term race has reference only to Caucasian and Negro, and socio-economic levels are taken into consideration as they exist in the United States and in the light of studies made by the sociologists in these same United States of America.

Writers such as Pintner, Marshall, McGurk, and Schuey seem to favour the biological factors. McGurk has this to say in his study about the racial differences in intelligence:

As far as our knowledge goes, the improvements in social and economic opportunities have only increased the differences between Negroes, and the whites. This is because such improvements have been given to both racial groups, not only to the Negroes, and the whites have profited more from them...a fruitful approach to racial equality cannot follow the lines of the social and economic manipulation. There is something more important, more basic, to the race problem than differences in external opportunity.³

On the other hand, Hartman, Starch, Long and others stress the environmental factors. Hartman admits that Negroes consistently do more poorly on intelligence and achievement tests than comparable groups of whites, but he also adds that the region of like scores is very great. Then he brings forward the importance of environmental factors:

³McGurk cited by Howard Hale Long, "The Relative Learning Capacities of Negroes and Whites," Journal of Negro Education, XXVI (Spring, 1957), 121.

The lack of educational opportunity early in life, broadly interpreted, seems primarily responsible for the lower performance of colored students. To treat a learner differently solely because he is a Negro, a Jew, a Slovak, or a member of any identifiable human group other than the one dominant in the community, is an erratic form of behaviour whose full explanation really belongs to the domain of psychopathology and irrational politics rather than in the field of educational psychology per se.⁴

Long also seems to support this point when he is dealing with the statement of McGurk quoted before. He says:

What a contrast with Lewis Terman, the Nestor of intelligence testing in America. No race or nationality has any monopoly on brains. The non-Caucasian representation in our gifted group would certainly have been larger than it was but for handicaps of language, environment, and educational opportunities.⁵

As in the case of intelligence there can also be difference of opinion with regard to the academic achievement because legitimately one can ask whether there may exist difference in achievement because of racial difference. In an article giving suggestions for improving the achievement scores of Negro pupils, Wiley has this to say:

The mounting data resulting from increasing use of standardized achievement tests continue to affirm the generalization that Negro pupils in the South at all levels of schooling perform relatively poorer than pupils on whom the tests were standardized and that their performance becomes progressively worse as they move from one grade to the next.⁶

⁴Hartmann as quoted by Paul Witty and Sal Garfield, "Trends in Discussions of Intelligence: Race Differences," Journal of Educational Psychology, XXXIII (November, 1942), 493.

⁵Howard Hale Long, "The Relative Learning Capacities of Negroes and Whites," Journal of Negro Education, XXVI (Spring, 1957), 122.

⁶Wiley S. Bolden, "Tasks for the Negro Teacher in Improving Academic Achievement of Negro Pupils in the South," Journal of Negro Education, XXXII (Spring, 1963), 173.

In fact, many of the studies about the racial difference in intelligence are combined with that of achievement. This is because very often the same factors which affect the results of the intelligence testing also have their influence on those of achievement. The present study, however, is concerned with racial differences in academic achievement. Here, as in the case of intelligence, cultural and socio-economic factors can have their influence on the test performances. Allison Davis refers to this when he talks about Binet's research concerning the influence of socio-economic status on test results:

First, he himself conducted a better and more conclusive research, in which he had M. Morle test on a group of children of high socio-economic status. This research also revealed that the children of low socio-economic groups did less well on Binet's tests, and that they did less well in scholastic work.⁷

Often it is assumed that children of professional men and women go farther and do better in school than do the children of laborers and tradesmen for better environments may help children of the former to learn better.

Intelligence test results and academic achievement is approximately .50 (Correlation). This degree of relationship suggests that non-intellectual factors play a large part in conditioning scholastic success.⁸

However, this disadvantage may be overcome or may be even made worse to a greater extent by school environment, especially by the influence of

⁷Allison Davis, Social-Class Influence upon Learning, (Cambridge: Harvard University Press, 1961), p. 77.

⁸Claude L. Nemzek, "The Value of Certain Non-intellectual Factors for Direct and Differential Prediction of Academic Success," Journal of Social Psychology, XIII (1940, August), 21.

teachers.

Because of the lack of parental attention that is so often found in lower class families, the academic achievement of the school beginner who comes from such a family may well be undermined if the teacher should not accept and support him.

Hence the primary question in the present study is whether there may be any racial difference in academic achievement on the basis of the investigation conducted on the group under consideration; secondly, if the social class differences have any marked influence on the achievement; and finally, whether the difference in achievement among the different classes in both racial groups follows the same pattern.

⁹Wiley S. Bolden, "Tasks for the Negro Teacher in Improving Academic Achievement of Negro Pupils in the South," Journal of Negro Education, XXXI1 (Spring, 1963), 176.

CHAPTER 11

REVIEW OF THE LITERATURE

While innumerable studies concerning the racial difference in intelligence have been made, only a few investigations with regard to racial difference in academic achievement, somewhat similar to the present study, could be located. It cannot, however, be denied that in several studies in intelligence differences, academic achievement does become the subject of consideration.

A study conducted in Nevada by Robert McQueen and Browning Churn is reported in School and Society.¹ In this study seventy-one Negro children, thirty-four male and thirty-seven female, enrolled in the first eight grades of the public schools of a western community, were matched with white children. The variables of age, sex, school grade, years enrolled in the school system and residential area were held constant. In the upper and lower grade levels testing and marking procedures were different. So the subjects were grouped into primary and elementary sections. Grades one through three were considered primary and grades four through eight elementary. The Kuhlman-Finch Intelligence test was administered. As far as the results of the intelligence testing were indicated there was only a negligible difference between the two racial groups observed. For evaluation of

¹The Intelligence and Educational Achievement of a matched group of white and Negro students, School and Society, LXXXVIII (September, 1960), 327-329.

achievement, an achievement test and the marks of the teachers were used. Although the performance of the Stanford-Binet Achievement Test showed some difference between the racial groups, the critical ratio fell below significance. The difference in teachers' marks reached significance in the case of primary students, but was less significant in the case of older children. The authors, however, conclude that they could not find any difference which could be attributed to race difference.

Another study is that conducted by Henry Bullock at Dillard University, New Orleans.² The subjects of this study were graduates of Texas high schools enrolled as freshmen in Texas Colleges for the first time in September, 1947. There were 503 white students and 1194 Negro students taking part in this experiment. The four areas composing the test for evaluation of the academic achievement were: English grammar and literature, mathematics, science, and history and social studies. It was found that while the median score of the whites was 199, that of the Negro group was 150. Further, when the socio-economic status of the family was taken into consideration, there was a tendency for the median total score to be higher on the upper end of the occupational scale.

Frank H. Stallings found that factors other than race and social status has their influence on the academic achievement because of change in

²H. A. Bullock, "A Comparison of the Academic Achievement of white and Negro high school graduates," Journal of Educational Research, XLIV (November, 1950), 179-192.

environment.³ The change in environment here is caused by integration. Integration could affect the achievement broadly in two ways, the author contends. In the first place this could mean a change in opportunities of learning afforded either or both races. Secondly, the pupils of both races could experience a change in the degree of motivation. The result of the study showed that both the white and Negro pupils showed substantial gains. The gains made by the Negro pupils were greater than those made by the white pupils. But it must be noted that though the changes in scholastic achievement for white pupils were small, they were statistically significant and were positive in direction.

Martin Deutsch gives the report of a three year research study of inter-relationships between social, personality, and school achievement factors for Negro school children living in the slums of a large northern city.⁴ Groups of white children in the same grades and similar socio-economic circumstances served as controls. His analysis of achievement data is said to have indicated that the experimental group (Negro children) was significantly retarded when compared with the control group (white children). He also found that coming from intact homes significantly correlated with achievement.

Longitudinal comparisons of arithmetic skills (reasoning and fundamentals) of reading skills (vocabulary and comprehension), and of mental maturity were

³Frank H. Stallings, "A Study of Immediate Effects of Integration on Scholastic Achievement in the Louisville Public Schools," Journal of Negro Education, XXVII (Fall, 1959), 140.

⁴Martin Deutsch, "Minority Group and Class Status as Related to Social and Personality Factors in Scholastic Achievement," Society for Applied Anthropology Monograph, No. 2, 1960, p. 32.

made on groups of white and Negro children by R. T. Osborne.⁵ The California Achievement and Mental Maturity Tests were administered to 815 white children and 446 Negro children in 1954, 1956, and 1958, when the children were in sixth, eighth, and tenth grades respectively. Reading and arithmetic achievement differences between the white and Negro groups seemed to increase progressively from sixth to tenth grade with the greatest difference found on non-cultural test questions. Moreover, the widening gap in achievement between the two groups was apparent on both vocabulary and comprehension subjects as well as for total reading scale. From his study conducted on the two largest all-Negro schools in villages of Newton County, Mississippi, Farr found that the rate of reading was up to and, in some cases, beyond the standard given by Monroe.⁶ The author was using Monroe's Standardized Silent Reading Test. Comprehension fell far below the standards. As to the results of the achievement test in arithmetic, the medians rose slightly from grade to grade. They do not rise in proportion to standard medians.

Bousfield's study on colored elementary school children of Keith Elementary School of Chicago, shows that the Negro children did as a whole unsatisfactorily on the achievement tests.⁷ As to the socio-economic relationship to the achievement, the author is inconclusive, since a group of children

⁵R. T. Osborne, "Racial Differences in Mental Growth and School Achievement: A Longitudinal Study," Psychological Reports, VII (1960), 233-239.

⁶T. J. Farr, "The Intelligence and Achievement of Negro Children," Education, LI (April, 1931), 493.

⁷Maudelle B. Bousfield, "The Intelligence and School Achievement of Negro Children," Journal of Negro Education, I (October, 1932), 388-395.

coming from lower social status did better and another group coming from better homes did poorly in the tests.

L. J. Willis made a comparative study of reading achievements of seventh grade white and Negro children.⁸ After a remedial program in reading he found that while both the white and the Negro children made significant gains as measured by reading tests, it was noticed that the white children made greater gains than the Negro children. However, the remedial work was effective with children of both races.

In some of the foregoing studies reported about the racial difference in achievement, the influence of socio-economic factors also had been taken into consideration. Some studies dealing only with the relationship between socio-economic status and achievement also could be located.

E. R. Harrington made a study covering twenty years and 7084 students to test the common assumption that the children of professional men and women do better in school than do the children of laborers and tradesmen.⁹ His findings did not favor the aforesaid assumption, for there were many cases in which children of non-professionals outranked those of the professionals.

Richard A. Gibbon tried to answer the question, "will the upper-middle class group achieve significantly higher scores on the Social Studies Achieve-

⁸L. J. Willis, "A Comparative Study of the Reading Achievements of White and Negro Children," Peabody Journal of Education, XVII (November, 1939), 166-171.

⁹E. R. Harrington, "Who Made That Grade in Science?" American School Board Journal, CXXIX (July, 1955), 19.

Test than the upper-lower group?"¹⁰ The author reports that the co-variance analysis indicated that the former group achieved significantly higher than the latter. Cough found a significant difference in favor of a high status group of sixth graders in vocabulary and reading when their mean scores were compared with the scores of a lower status group of sixth graders. However, the difference between the groups in arithmetic was not significant.¹¹

From a study of educational achievement Heilman concluded that probably fiftypercent of the variation in educational age was due to hereditary factors, less than thirteen percent to school training, and not more than one percent to socio-economic status of the home. The remaining thirty-six percent was attributed to other undesignated hereditary and environmental factors.¹² Nemzek found that measures of father's education, mother's education and occupational status of father had negligible value for direct and differential prediction of academic success as determined by grade point averages.¹³

¹⁰Richard A. Gibbon, "Socio-economic Status and Achievement in Social Studies," Elementary School Journal, LIX (March, 1959), 340-346.

¹¹H. G. Gough, "Relationship of Socio-economic Status to Personality Inventory and Achievement Test Scores," Journal of Educational Psychology, XXXVII (December, 1946), 527-540.

¹²T.D. Heilman, "The Relative Influence upon Educational Achievement of some Hereditary and Environmental Factors," The Twenty-Seventh Year Book of the National Society for the Study of Education, Part II, Nature and Nurture: Their Influence upon Achievement (Bloomington, Illinois: Public School Publishing Co., 1928), pp. 35-66.

¹³Claude L. Nemzek, "The Value of Certain Non-Intellectual Factors for Direct and Intellectual Prediction of Academic Success," Journal of Social Psychology, XLI (August, 1940), 24.

CHAPTER 111

DESCRIPTION OF THE EXPERIMENTAL MATERIAL AND PROCEDURE

The subjects of this study are Freshman students of De La Salle High School during the school year 1961-1962. Among those students, 62 are Negroes and the rest are whites. All of them come from different parishes in various parts of the city of Chicago. Every year the school gives the Freshmen SRA High School Placement Test (HSPT). I.Q. is computed from the results of the educational ability test and achievement scores are obtained from the performance in the three achievement subtests: reading, arithmetic and language and arts.¹

In the first place, to find out whether the factor of race affects academic achievement, certain variables are to be considered. In this study the I.Q., age and socio-economic status of the chief supporter of each student's family, were held constant. Therefore, each Negro student was matched with a white for I.Q., age, and socio-economic level of their parents. In matching each pair for I.Q. a white student was selected ranging from two points below to two points above that of the Negro boy. But in matching them for age, a range of only twelve months was allowed. In fact only two pairs of the subjects in the sample have a variability between six and eleven months. The rest vary within the range between one

¹SRA High School Placement Test, Technical Report, 1962-A and 1962-K Editions, (Technical Supplement), Science Research Associates, Inc., p. 2.

and six months. To determine the socio-economic level of the family, sociologists use certain methods which are similar in their essential characteristics. In this study the method employed by A. B. Hollingshead and Frederick C. Redlich for their study: "Social Class and Mental Illness" is used.² The authors accepted occupation and education of the chief supporter of the family and the residential area as the indices of social position. Since it was found that the method they used in rating the residential area could not be applied conveniently in Chicago, this social characteristic had to be dropped. Moreover, on further investigation it was found that residential area did not have so much importance since the multiple correlation obtained for occupation and education of the parent with social class is more or less of the same magnitude as that which obtains for occupation, education and residential area with social class, given by Hollingshead and Redlich. The correlation for occupation, education, and residential area with social class is .942. The correlation for occupation and education with the social class used in the present study comes to .906.³ Again care was taken to have more control over the socio-economic status because in matching each pair of students there were two courses open. One was to add the weights of the ratings in education and occupation of the colored boy's parent and to select a white boy whose parent has the same total weight in those two social characteristics. The other was to match a

²A. B. Hollingshead and Frederick C. Redlich, Social Class and Mental Illness (New York: John Wiley and Sons, Inc., 1958), p. 389.

³Ibid., p. 394.

white one whose parents have the same ratings both in education and in occupation. The second method seemed to have more control and it was accepted. Therefore, in the present study only the occupation and education of the parents are used. For a rating scale in each of the social characteristics the classifications given by Hollingshead and Redlich are used.⁴

Because of this change new weights to each of these social characteristics had to be given. The original weights given by the authors were: nine for occupation, seven for education and three for residential area.

The new weights are calculated as follows:

1. From the original correlation matrix the B weights were determined:

$$B_2 = \frac{D_{12}}{D_{11}} = \frac{.08789}{.35016} = .2510$$

Where D_{jk} is the minor determinant of the correlation matrix.

$$B_3 = \frac{D_{13}}{D_{11}} = \frac{191644}{350155} = .5493$$

$$B_4 = \frac{D_{14}}{D_{11}} = \frac{105889}{350155} = .3024$$

2. Knowing the B weights the $\frac{S_1}{S_2}$, $\frac{S_1}{S_3}$, and $\frac{S_1}{S_4}$ were solved.

$$\frac{S_1}{S_2} = .6135, \quad \frac{S_1}{S_3} = .4915, \quad \frac{S_1}{S_4} = .6052$$

⁴A. B. Hollingshead and Frederick C. Redlich, Social Class and Mental Illness (New York: John Wiley and Sons, Inc., 1958), p. 390, 391.

3. From the matrix of correlations with residence eliminated new beta weights were determined:

1.000	.782	.881
.782	1.000	.721
.881	.721	1.000

$$B_2 = \frac{D_{12}}{D_{11}} = .3057, \quad B_3 = \frac{D_{13}}{D_{11}} = .6606$$

4. The new beta weights were multiplied by standard deviation ratio:

$$B_2 \frac{S_1}{S_2}, \quad B_3 \frac{S_1}{S_3}$$

$$X_1 = (.3057) (.6135)X_2 + (.6606) (.4915)X_3 + C$$

$$X_1 = .1875 X_2 + .3247 X_3 + C$$

5. Then the whole integers proportional to $B_2 \frac{S_1}{S_2}$, $B_3 \frac{S_1}{S_3}$ were

calculated. These were four and seven. Four is the weight given to education and seven to occupation.

The ratings for education and occupation for each family were multiplied by the respective weights to get the total weights so that the subjects in the same sample may be ranked and grouped into different classes according to their social position. The division into three social classes is to some extent arbitrary. It must be said that it corresponds in general to the upper middle, lower middle, and upper lower class determined by sociologists. Had there been any significant difference in I.Q.

with regards to racial and social groups this would also affect the final result. To find out whether such a significant difference exists in the case of I.Q., analysis of variance will be applied to the I.Q. points before the achievement scores are put to analysis of variance. If analysis of variance suggested that there are significant differences in I.Q. with regard to race and social classes, this would mean that the I.Q. differences would bias the resulting differences in achievement. Then to eliminate this influence also, analysis of co-variance would be called for. Otherwise analysis of variance would be sufficient. If the F ratio for achievement with regard to socio-economic levels became significant, it will be necessary to find out which class differs significantly from which class. In that case "t" test will have to be used.

CHAPTER IV

RESULTS

1. Statistical Analysis

As was mentioned in the previous chapter, before proceeding to test the racial and class differences in achievement, the variable of intelligence quotient had to be held constant.¹ Thus after matching each pair of boys in the sample for curriculum, age, and socio-economic position, analysis of variance was applied to their intelligence testing scores. The model of analysis of variance used is No. XVII given by McNemar in his book Psychological Statistics.² This procedure was found necessary because a range of four points in I.Q. was allowed in matching the pairs of white and Negro boys. Therefore, if there is any significant difference in I.Q. between races and among classes, the resulting difference in achievement could be attributed to I.Q. also. The result is shown in the table on page 18.

¹vide supra, p. 15

²Quinn McNemar, Psychological Statistics (New York: John Wiley and Sons, Inc., 1959), p. 332.

TABLE 1
ANALYSIS OF VARIANCE SHOWING INFLUENCE OF
RACE AND SOCIAL CLASS LEVELS ON I.Q.

Source	Sum of Squares	df	Variance Estimate	F Ratio
Subjects	3253.2500	27	120.490
Socio-eco. level	316.9160	2	158.458	1.351
Race	.0166	1	.0166	.000068
Socio-eco. x Race	.9504	2	.4752	.0039
Remainder	6527.0500	27	241.7430
Total	10097.0830	59

In order that the I.Q. for the two races be different significantly the F ratio with 1/27 degrees of freedom at .05 level of confidence must be 4.21. But as it appears from the table the F ratio for racial difference is only .0039; so it is not significant. Secondly, in order to have a significant difference in I.Q. among the social classes in both races the F ratio with 2/27 degrees of freedom at .05 level of confidence must be 3.35. But as shown in the F ratio for the socio-economic classes it is only 1.351. It is not significant. Being certain about the fact that I.Q. cannot have any significant influence on the achievement with regard to race or class, the achievement scores were put to the test of analysis of variance, Case No. XVII according to McNemar.³ The findings are given in the table

³Quinn McNemar, Ibid., p. 332.

presented below:

TABLE 2

ANALYSIS OF VARIANCE SHOWING THE INFLUENCE OF
RACE AND SOCIAL CLASS ON ACHIEVEMENT SCORES

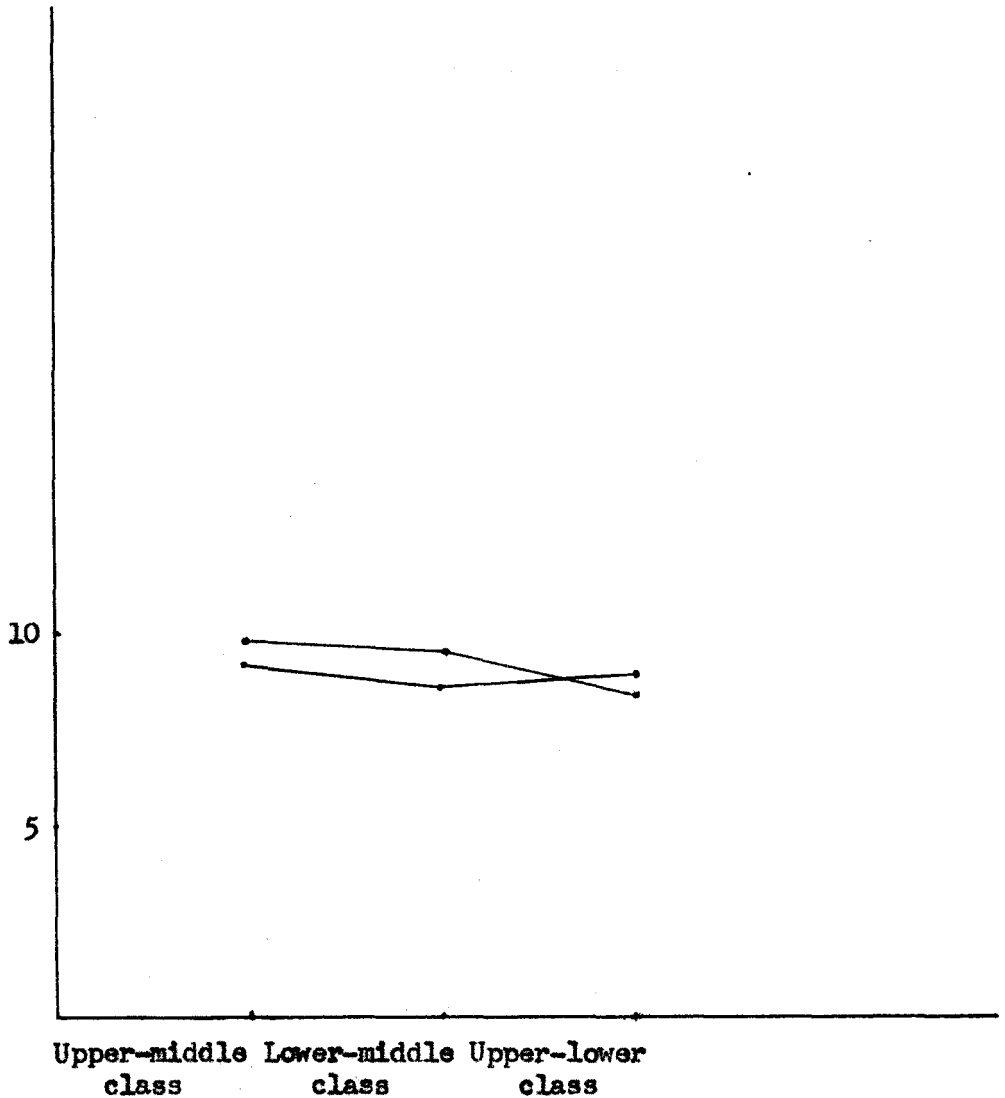
Source	Sum of Squares	df	Variance Estimate	F Ratio
Subjects	12174.450	27	450.906
Socio-eco. level	346.033	2	173.017	.383
Race	40.167	1	40.167	.507
Socio-eco. level x Race	224.083	2	112.042	2.826
Remainder	2140.250	27	79.269
Total	14924.883	59

In order to have a racial difference in achievement with 1/27 degree of freedom at .05 level of confidence, the F ratio must be 4.21. But as it appears from the table it is only .507. So the difference seen in the achievement scores of the students of both races does not seem to be significant. This seems to be contrary to the findings of some investigators. We shall deal with it in the discussion.⁴ Next the influence of socio-economic level comes into consideration. In order that difference in scores with regard to social class may be significant at .05 level of confidence with 2/27 degrees of freedom, the F ratio should be 3.35. But in the group

⁴vide, pp. 22, 23

tested the F ratio is only .383. Therefore, the socio-economic levels do not seem to have an important influence on the academic achievement. Finally, it should be examined whether the difference in scores between the social classes follow the same pattern in both races. For this purpose the F ratio of the interaction between socio-economic levels and races must be examined. In order that it may be denied that the difference in both races occurs in the same way, the F ratio must be 3.35 at .05 level of confidence with 2/27 degrees of freedom. But in the case of the present study the F ratio for the interaction between socio-economic class and race is only 2.826. Therefore, it must be said that there is evidence that the difference in scores with regard to social classes follows the same pattern in both races as shown in the graph.

MEAN ACHIEVEMENT SCORES OF STUDENTS ACCORDING TO DIFFERENT SOCIAL CLASSES.



- Negro

- White

GRAPH SHOWING THE INTERACTION BETWEEN SOCIAL CLASSES AND RACES ACCORDING TO THE ACHIEVEMENT SCORES.

2. Interpretative Evaluation

As is apparent from the review of the materials, the findings and opinions of the investigations examined are not unanimous about the influence of race and socio-economic status on academic achievement. Thus, some research findings support the idea that the factors, race, and social class position of the parents cause difference in the achievement score of pupils. Others, on the contrary, do not admit this. The results of the study of McQueen agree with that of the present study to a greater extent because he did not find any significant difference in achievements of the two racial groups when the standard achievement test results were under consideration. But as far as the teachers' marks were concerned there was significant difference between the two groups.

Stallings' finding that after integration the gain made by ten Negro children was great also suggests that the difference is brought about more by environmental conditions other than racial and social factors. Those were changes in opportunities in learning and motivational factors.⁵ But the results of the investigations made by Bullock, Deutsch, Osborne, Bousfield, and Willis described in the review of the literature⁶ do not agree with the findings of the present study. This fact of disagreement gains weight when

⁵Frank Stallings, "A Study of Immediate Effects of Integration on Scholastic Achievement in Louisville Schools," Journal of Negro Education, XXVIII (Fall, 1959), 439-444.

⁶vide supra, pp. 7, 8, 10.

we note that Deutsch obtains the racial difference even after he had controlled the socio-economic status of his subjects in both groups, for he says that groups of white children in the same grades and similar socio-economic circumstances served as controls. The same may be said about the remark made by Osborne that reading and arithmetic achievement differences between the white and Negro groups seemed to increase progressively with the greatest difference found in non-cultural test questions.

In the present study also the socio-economic status of the students was controlled. It was described in the previous chapter that certain other variables like age and I.Q. also were controlled in this study. As it is evident that I.Q. is correlated with achievement, control over I.Q. can bring considerable change in achievement test results. I.Q. is an important factor which affects results of the academic achievement tests. For instance, Nemzek gives the correlation between intelligence test results and academic achievement as .50.⁷ It is possible that this type of control over the I.Q. in the present study has brought about disagreement with the results of previous studies which found the racial difference in achievement. These studies do not seem to have controlled the variable of mental age or intelligence quotient.

As far as the influence of socio-economic level is concerned, the findings of Gibboney contradict the results of the present study. Moreover,

⁷Claude C. Nemzek, "The Value of certain Non-Intellectual Factors for Direct and Differential Prediction of Academic Success," Journal of Social Psychology, XII (August, 1940), 21.

Deutsch's findings that the children's coming from intact homes correlated with achievement also points to the same direction. But the findings of Heilman, Nemzek, and Harrington agree with the result of the present study. Harrington's study shows that there can be better achievers among the children of non-professionals than professionals. The disagreement of the findings of Gibbonney⁸ with those of the present investigation may be also because of the control over the variable I.Q. For it is already said that there is no significant difference in I.Q. with regard to the different social classes in the present study.

The sample in the present study may be said to be a selected group. To a certain extent it is true. They are all from a Catholic school where they are sent by parents who can afford to meet the expenses of a private institution. All the social classes are not represented. However, it must be said that the subjects in the study represent the student population of the place to a great extent, though not perfectly. Although the upper and lower classes are not represented, the upper-middle, lower-middle, and upper-lower classes are represented. But it must be admitted that the division into these classes is a little arbitrary, for, when the students were grouped into these classes according to the total weights of social characteristics, the classes did not agree completely with the model given by Warner and others. But the control over socio-economic status to test the influence of the variable race is very strict. For each member of a pair of students was

⁸Richard A. Gibbonney, "Socio-economic Status and Achievement in Social Studies," Elementary School Journal, LIX (March, 1959), 340-346.

matched with the other member in ratings both for education and occupation of the chief supporter of the family.

Another kind of selectivity may be possible in the domain of mental ability. But in the present study that does not seem to have occurred. In the first place, according to the philosophy of education of the Christian Brothers, every student should be provided with the opportunity for education, i.e., students with all levels of intelligence quotients should be accepted. So the test given to them before admission to the school is not a selection examination but only a placement test used for homogeneous grouping according to their mental ability.

As far as the locality from which the subjects come is concerned, they come from different parishes located in various parts of the southern section of the city where they had completed their elementary education. Yet it cannot be claimed that all influences other than those of social and race are taken into consideration. Only age and grade (ninth) are controlled. So it is difficult to say whether any other factors have their influences in counterbalancing those of race and social class. There are authors who bring forward the influences of kindergarten training which some students happen to undergo,⁹ personality of the teacher,¹⁰ intact

⁹J.D. Heilman, "The Relative Influence upon Educational Achievement of some Hereditary and Environmental Factors," The Twenty-Seventh Year Book of the National Society for the Study of Education, Part 11 (Bloomington, Illinois: Public School Publishing Co., 1928), p. 46.

¹⁰W. S. Bolden, "Tasks for the Negro Teacher in Improving Academic Achievement of Negro Pupils in the South," Journal of Negro Education, XXXII (Spring, 1963), p. 179.

homes of the pupil,¹¹ and the like. In his study Heilman attributes 35% of the results of achievement scores to environmental conditions which could not be identified.¹²

With so much representation of the student population and control over the variables, age, I.Q., and socio-economic levels, the present study shows that there does not seem to be any significant difference between races or specified social classes with regard to academic achievement. It seems that whatever might be one's race or class, these variables do in no way prevent one from achieving better results in the school work, provided one makes use of the opportunities given. At the same time it cannot be denied that some of the conditions concomitant to the lower classes, such as poor home environment, poor nutritional status, lack of parental support and the like will retard the achievement. These factors, as Harrison points out, may lower the achievement motivation of lower class students,¹³ but it is hoped that given the same opportunities, these may not be a sure impediment in the case of all lower class individuals.

¹¹M. Deutsch, "Minority Group and Class Status as related to social and Personality factors in Scholastic Achievement," Society for Applied Anthropology Monograph, No. 2, 1960, p. 27.

¹²Footnote No. 9.

¹³F. C. Harrison, "Achievement Motivation Characteristics of Negro College Freshman," Personal and Guidance Journal, XXXVII (October, 1959), p. 126.

CHAPTER V

SUMMARY AND CONCLUSIONS

The achievement scores of students differ from individual to individual in their school work. This difference can be attributed to several influences. The current study was designed to investigate the influence of race and socio-economic status on achievement scores of a group of high school freshmen belonging to the Caucasian and Negro race and to three different social classes, viz., upper-middle class, middle class, and lower class. As far as racial difference in intelligence is concerned, it remains a controversy among psychologists. More evidence, however, was obtained from intelligence test results in favor of the white race. Even now it is not clear whether this difference is solely due to the fact of race or not. Many investigators bring forward the influence of environmental factors, especially of social and economic conditions, as the reason. In the same way achievement scores also may be influenced by various factors. Therefore, the present investigation is made to determine whether the fact of race and economic status make any significant difference in achievement scores of the pupils in the group of subjects involved. It was also the aim of this study to see whether the difference in achievement scores follows the same pattern in both racial groups or if there is any difference in pattern showing the interaction between race and socio-economic levels.

The materials concerning the above-mentioned information were obtained

from the office records of De La Salle High School . Socio-economic status was inferred from the statements of these students answering a questionnaire given to them. The intelligence test scores and achievement scores were obtained from the SRA educational ability test and achievement tests given to the students at the beginning of the school year. The test results are used for grouping the students according to their abilities for educational and guidance purposes.

The subjects of the present study were the Freshman group of 1961-1962 at De La Salle High School. There were boys belonging to Caucasian and Negro races. But the number of Negro students was comparatively smaller. An attempt was made to match each Negro student to a white one in age, I.Q., and socio-economic status. In matching the pairs with regard to socio-economic status, special care was taken to get individuals equal in the social characteristics: occupation, and education of the parent separately. For example, if a colored boy's parent had the rating five in education and four in occupation, a white boy whose parent has the same rating in education and occupation respectively was selected for matching the pair. With these factors under consideration for matching, several individuals were necessarily eliminated, and as a result the size of the sample finally reached was thirty pairs of white and Negro pupils.

In matching the pairs of students according to intelligence test results, some deviations in I.Q. points had to be allowed. For it was difficult in many cases to get two individuals having equal test scores. Therefore, it was necessary to make sure that the I.Q. points did not differ significantly either with regard to race or class. So analysis of variance was applied to

the I.Q. of the students in the sample. As a result it was found that there was no significant difference in I.Q. as far as race or classes were concerned.

Thus after controlling the variables: age, I.Q., and socio-economic status the achievement scores were put to analysis of variance. Because it was a three way classification of analysis of variance, the influence of race and socio-economic status could be tested at the same time.

The results of the statistical operations showed that the F ratio for racial difference in achievement was .507 with 1/27 degrees of freedom. And the F ratio for socio-economic status was .383 with 2/27 degrees of freedom. The F ratio for the interaction of races and socio-economic status was also examined. This was 2.826 with 2/27 degrees of freedom and reached no commonly accepted level of confidence. As far as the achievement scores are concerned there was no evidence that the factors of race and class had any significant influence on it. Since the F ratio for interaction is not significant, the various social classes tend to follow the same pattern for both racial groups.

The result of the study as far as the influence of race is concerned, does not agree with the majority of the studies mentioned in the review of literature given above. With regard to the socio-economic status, fewer studies disagree with the results of the present investigation. This may be due to the fact that in the present research the variable I.Q. was strictly controlled and social classes in the sample are not so completely representative and not so distinct from each other.

These results point to the possibility of improving the achievement scores of pupils of races other than those of Caucasian and of those belonging to lower classes, if other environmental conditions are taken care of, though

it is not so easy in many cases. This would seem to be in conformity with what Bolden says:

While the task of bringing about substantial improvement in the academic achievement of pupils requires the elimination of most if not all, of the conditions that contribute to the problem, and this, in turn, requires the participation of many individuals, groups, and institutions at local, and national levels, teachers come in for an important share of the job. Indisputably, they are a powerful influence in the learner's environment and, as such, are crucial determiners of the quantity and quality of his achievement.¹

It must be admitted that there are several limitations and imperfections in the present study. The students used as subjects in this investigation were not in the same educational environment immediately before the tests were given because they were undergoing their training in different schools. Again, even though the socio-economic status was controlled there could be other variables which might have affected the scores. For writers bring forward factors like early kindergarten training,² personality of the teacher,³ intactness of home,⁴ and the like. It may be difficult to see which factor affects the scores of which student and in what race or social class. As

¹Wiley S. Bolden, "Tasks for the Negro Teacher in Improving Academic Achievement of Negro Pupils in the South," Journal of Negro Education, XXXI (Spring, 1963), 173.

²J.D. Hedlma, "The Relative Influence upon Educational Achievement of some Hereditary and Environmental Factors," The Twenty-Seventh Year Book of the National Society for the Study of Education, Part II, Nature and Nurture: Their Influence upon Achievement, Bloomington, Illinois; Public School Publishing Co., 1928. p. 46.

³Vide No. 1, p. 177

⁴Martin Deutsch, "Minority group and Class Status as Related to Social and Personality Factors in Scholastic Achievement," Society for Applied Anthropology Monograph, No. 2, 1960, p. 27.

far as the social classes in the present study are concerned, the divisions are not completely representative. For there is no upper class or 'lower--lower class' in the group. In dividing the group into three classes some overlapping of weights with regard to the social characteristics had to be allowed, though this occurred only in very few cases. For only few individuals could be found in different class groups because of control over other variables. In other words, control over one variable brings some inconvenience in controlling some other variable.

What is said above may be taken as a suggestion for further research. The present findings and the results of related investigations indicate the need for more studies of this nature, with more representative samples and necessary controls.

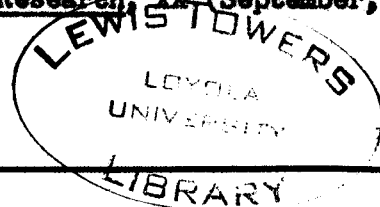
BIBLIOGRAPHY

BOOKS

- Davis, Allison. Social Class Influence upon Learning. Cambridge: Harvard University Press, 1961.
- Hollingshead, August B. Social Class and Mental Illness. New York: John Wiley and Sons, 1958.
- McClelland, David C., A. L. Baldwin, Urie Bronfenbrenner, and Fred L. Strodbeck. Talent and Society: New Perspectives in the Identification of Talent. Princeton, New Jersey: D. Van Nostrand Co., 1958.
- Shuey, Andre M. The Testing of Negro Intelligence. Lynchburg, Virginia: J. P. Bell Co., 1958.

ARTICLES AND PERIODICALS

- Bolden, Wiley S. "Tasks for the Negro Teacher in Improving Academic Achievement of Negro Pupils in the South," Journal of Negro Education, XXXII (Spring, 1963), 173-179.
- Boasfield, Maudelle B. "The Intelligence and School Achievement of Negro Children," Journal of Negro Education, I (October, 1932), 388-395.
- Broom, M. E. "A Study of Race and Sex Differences in Reading Comprehension," Journal of Educational Research, XXXIV (April, 1941), 587-593.
- Bullock, H. A. "A Comparison of the Academic Achievement of White and Negro High School Graduates," Journal of Educational Research, XLIV (November, 1950), 179-192.
- Carson, Arnold S. and A. I. Rolin. "Verbal Comprehension and Communication in Negro and White Children," Journal of Educational Psychology, LI (April, 1960), 47-51.
- Chauncy, Martin R. "The Relation of the Home Factor to Achievement and Intelligent Test Scores," Journal of Educational Research, XX (September, 1929), 88-90.



- Curti, Margaret Wooster. "Intelligence Tests of White and Colored School Children in Grand Cayman," Journal of Psychology, LVII (September, 1960), 13-27.
- Deutsch, Martin. "Minority Group and Class Status as Related to Social and Personality Factors in Scholastic Achievement," Society for Applied Anthropology Monograph, No. 2 (1960), 1-32.
- Dreger, R. M. and K. S. Miller. "Comparative Psychological Studies of Negroes and Whites in United States," Psychological Bulletin, LVII (September, 1960), 361-402.
- Ferr, T. J. "The Intelligence and Achievement of Negro Children," Education, LI (April, 1931), 490-495.
- Gibbory, Richard A. "Socio-economic Status and Achievement in Social Studies," Elementary School Journal, LIX (March, 1959), 340-346.
- Gough, H. G. "Relationship of Socio-economic Status to Personality Inventory and Achievement Test Scores," Journal of Educational Psychology, XXXVII (December, 1946), 527-540.
- Harrington, E. R. "Who Made that Grade in Science?" American School Board Journal, CXXIX (July, 1955), 19-20.
- Harrison, F. C. "Achievement Motivation Characteristics of Negro College Freshman," Personal and Guidance Journal, XXXVII (October, 1959), 146-149.
- Long, Howard Hale. "The Relative Learning Capacities of Negroes and Whites," Journal of Negro Education, XXVI (Spring, 1957), 121-134.
- McQueen, Robert and Churn Browning. "The Intelligence and Educational Achievement of a Matched Sample of White and Negro Students," School and Society, LXXXVIII (September, 1960), 327-329.
- Nemzek, Claude L. "The Value of certain Non-Intellectual Factors for Direct and Differential Prediction of Academic Success," Journal of Social Psychology, XII (August, 1940), 21-30.
- Stallings, Frank H. "A Study of Immediate Effects of Integration on Scholastic Achievement in Louisville Public Schools," Journal of Negro Education, XXVIII (Fall, 1959), 434-444.
- Willis, L. J. "A Comparative Study of the Reading Achievement of White and Negro Children," Peabody Journal of Education, XVII (November, 1939), 166-171.

APPROVAL SHEET

The thesis submitted by Reverend Christopher J. Thayil, C.M.I. has been read and approved by three members of the Department of Psychology.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

8/3/64
Date

Vincent U. Hershey
Signature of Adviser