Personal and Environmental Factors Related to the Achievement of Public Secondary Students in Washington Parish, Louisiana.

Jack Warren Garon

Louisiana State University and Agricultural & Mechanical College

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PERSONAL AND ENVIRONMENTAL FACTORS RELATED TO
THE ACHIEVEMENT OF PUBLIC SECONDARY STUDENTS
IN WASHINGTON PARISH, LOUISIANA.

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PERSONAL AND ENVIRONMENTAL FACTORS RELATED TO THE
ACHIEVEMENT OF PUBLIC SECONDARY STUDENTS IN
WASHINGTON PARISH, LOUISIANA

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Education

in

The Department of Education

by

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B.S., Louisiana State University, 1951
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May, 1971
The writer wishes to express his sincere appreciation to the members of his committee for their guidance during the course of this investigation. He is deeply indebted to his Major Professor, Dr. Sam Adams, for his assistance, encouragement, and patience. He also wishes to acknowledge the helpful suggestions given by Dr. Leonard L. Kilgore, Dr. Richard A. Musemeche, Dr. Dennis P. Noah, Dr. William M. Smith, and Dr. Luther I. Wade.

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ABSTRACT

The purpose of this study was to investigate the effects of certain personal and environmental factors as they related to the achievement of secondary students in Washington Parish, Louisiana. Achievement was based upon the composite scores earned by 1,181 students on the Iowa Tests of Educational Development. Personal and environmental information was obtained from responses to a questionnaire that was given to the students during the 1968-69 academic school year.

Analysis of variance was used in testing differences in achievement among the various subgroups that were delineated by the following personal and environmental factors:

1. Socio-economic status
2. Race
3. Employment status of the mother
4. Fathers' educational level
5. Mothers' educational level
6. Residential classification
7. Student educational aspiration
8. Relationship to guardians
9. Student attitudes concerning their teachers
10. Student attitudes concerning their schools

The null hypothesis, or the hypothesis that there were no statistically significant differences in achievement among subgroups, was tested for each factor. F-ratios were computed for each factor and tested for significance at the .05 level of confidence. In addition, the influence of each
factor on the achievement of students in each grade level was tested by an interaction ratio for grade level and factor.

The following conclusions were made:

1. The effect of socio-economic status on achievement was significant. Students from middle and upper socio-economic levels had achievement scores which were significantly higher than the scores of students from the low status group. Students from the upper status group also had achievement scores which were significantly higher than scores made by students from the middle socio-economic group. In general, achievement of students increased as their status level increased.

2. Test scores of white students were significantly higher than test scores of Negro students at every grade level.

3. Student achievement was not related to the employment status of the mother.

4. Significance differences in achievement were found among subgroups of students that were derived by fathers' educational level. Scores of students whose fathers completed high school or whose fathers received post-secondary education were significantly higher than were the scores of students whose fathers'
educational levels ranged from eight to eleven grades or whose levels ranged from one through seven grades. The mean achievement score of students whose fathers had post-secondary education was also significantly higher than the mean achievement score of students whose fathers had only completed high school. No significant difference in achievement was found among students whose fathers had completed eight to eleven grades in high school and those whose fathers had achieved less than eight grades in school. In general, children whose fathers were well educated tended to have high achievement scores.

5. There was a significant relationship between mothers' educational level and the academic achievement of the student. Students whose mothers completed secondary school or whose mothers received post-secondary education had achievement scores which were significantly higher than the scores made by students whose mothers completed eight to eleven grades of school or whose mothers had attained less than eight grades in school. Students whose mothers had post-secondary education also had achievement scores which were significantly higher than the scores made by students whose mothers had only completed high school. No significant difference in
achievement was found between students whose mothers had completed eight to eleven grades of school and those whose mothers had completed less than eight grades in school. In general, children whose mothers were well educated tended to have high achievement scores.

6. Residential classification had no influence upon the achievement of students. Achievement scores of students who resided on farms, in the open country but not on a farm, or in towns and villages did not vary significantly.

7. Educational aspiration was significantly related to student achievement. Students who planned to seek schooling beyond high school had achievement scores which were significantly higher than were the scores of students who planned to terminate their education upon completion of high school.

8. No reliable differences in achievement were obtained among students who resided with both parents, with one parent and/or step-parent, or with no parent.

9. Student attitudes concerning their teachers were significantly related to achievement. Students who believed that all teachers were interested in them or who believed that most teachers were interested in them had achievement scores which were significantly higher than the scores of students who believed
that few or no teachers were interested in them. Furthermore, students who believed that most teachers were interested in them had scores which were significantly higher than scores of students who believed that all teachers were interested in them.

10. Student attitude concerning the school was significantly related to achievement. Students who rated their schools excellent or good tended to have higher achievement scores than did students who rated their schools fair or poor. Students who rated their schools good had achievement scores which were significantly higher than students who rated their schools poor.

11. On testing the interaction of each personal and environmental factor with grade level, it was found that in only two cases did a factor influence achievement differences among students by grade level. Those factors were race and the educational aspiration of students. The data revealed that the influence of race on achievement increased at each successive grade level and that white students had achievement scores which were significantly higher than the scores made by Negro students. For the educational aspiration factor, it was found that while
high educational aspiration was associated with high academic performance at all grade levels, it was most pronounced at grade twelve.
Chapter 1

INTRODUCTION

Much of the literature on the nature-nurture controversy has been directed towards the relationship of environment and intelligence. Strangely enough by comparison, relatively little has been done on the relationship between environment and achievement. Some studies in this area have indicated that the relationship between environment and achievement is actually greater than that reported for environment and intelligence. Fraser (1959:75), in a comprehensive study of adolescents in London, England, found that a child's academic performance was more closely related to certain home environmental factors than to his intelligence. Similar results have also been documented in various other studies.

During recent years numerous governmental and government-sponsored surveys have shown that adverse home conditions affect student accomplishments both in school and in later adult life. Consequently, a renewed interest concerning the effect of environmental variables on student achievement has occurred; and educators and psychologists have been actively engaged in research efforts which attempt to assess the impact of environment on student achievement.
This study was an attempt to investigate further the effect of certain environmental and personal factors on the academic achievement of secondary students in a rural parish in Louisiana. Achievement was based upon scores made on the Iowa Tests of Educational Development. Personal and environmental information was obtained from responses to a sociologically-oriented questionnaire given to all secondary students of Washington Parish, Louisiana, during the spring of 1969.

The questionnaire was developed by, and has been used extensively by, Dr. Alvin L. Bertrand, Professor of Rural Sociology, Louisiana State University. It consists of a series of structured items which require that the student respond to questions about himself, his family, his education, his home, and his educational expectations. Dr. Bertrand used this questionnaire on this particular population as part of a comprehensive school survey of Washington Parish during the 1968-69 academic school year.

The Iowa Tests of Educational Development are a battery of nine standardized tests designed to provide a comprehensive and dependable description of the general educational development of the high school pupil. The individual tests in the battery include:

1. Understanding of Basic Social Concepts
2. Background in the Natural Sciences
3. Correctness and Appropriateness of Expression
4. Ability to Do Quantitative Thinking
5. Ability to Interpret Reading Material in the Social Studies
6. Ability to Interpret Reading Material in the Natural Sciences
7. Ability to Interpret Literary Material
8. General Vocabulary
9. Uses of Sources of Information

The composite scores of students were employed as the achievement factor in this investigation; however, they were converted to standard scores for statistical treatment.

Statement of the Problem

The purpose of this study was to investigate certain personal and environmental factors as they related to achievement of secondary students in Washington Parish, Louisiana.

Questions to be answered. This investigation was designed to answer the following questions:

1. Were there differences in achievement among students of different socio-economic backgrounds? The following subgroups were used:
   a. Students whose family living scale indicated an upper socio-economic environment.
   b. Students whose family living scale indicated a middle socio-economic environment.
   c. Students whose family living scale indicated a lower socio-economic environment.

2. Was there a difference in achievement between students of different races?

3. Was there a difference in achievement between students whose mothers did not work outside the home and students whose mothers worked outside the home?

4. Were there differences in achievement among students who were grouped according to fathers' educational background? The following subgroups were used:
   a. Students whose fathers' education terminated at a grade level less than eight.
b. Students whose fathers' education terminated at a grade level between eight and eleven.

c. Students whose fathers' education consisted of twelve grades.

d. Students whose fathers' education consisted of post-secondary schooling in one or more colleges.

5. Were there differences in achievement among students who were grouped according to mothers' educational background? Subgroups were identical to those of question four.

6. Were there differences in achievement among students who were grouped according to residential classification? The following subgroups were used:

   a. Students who lived on a farm.

   b. Students who lived in the open country but not on a farm.

   c. Students who lived in a town or village.

7. Was there a difference in achievement between students who planned to terminate their education at the secondary level and students who planned to attain education beyond the secondary level?

8. Were there differences in achievement among students who were grouped according to their attitude regarding their school? The following subgroups were used:

   a. Students who believed that their school was excellent.

   b. Students who believed that their school was good.

   c. Students who believed that their school was fair.

   d. Students who believed that their school was poor.

9. Were there differences in achievement among students who were grouped according to their attitude about their teachers in their school? The following subgroups were used:
a. Students who believed that all teachers in their school were interested in them.

b. Students who believed that most teachers in their school were interested in them.

c. Students who believed that few teachers in their school were interested in them.

d. Students who believed that no teachers in their school were interested in them.

10. Were there differences in achievement among students who were grouped according to their relationship to guardians? The following subgroups were used:

a. Students who resided with both parents.

b. Students who resided with one parent and/or step-parent.

c. Students who resided with no parents.

11. What were the joint or interaction effects of grade level and each of the personal and environmental factors identified in questions one through ten?

Delimitations. This study was delimited to the 1,172 secondary students of Washington Parish, Louisiana who completed both the aforementioned questionnaire and the Iowa Tests of Educational Development. Race differences in achievement were delimited to Negro and Caucasian subjects.

Definitions of Terms

Achievement. The term "achievement" refers to the composite scores earned by students on the Iowa Tests of Educational Development.

Factor. The term "factor" refers to any one of the personal attributes or environmental conditions identified
in the statement of the problem.

**Interaction.** For the purpose of this study, the term "interaction" refers to the joint effect of a factor and grade level upon achievement.

**Subgroup.** The term "subgroup" was used to identify any of the collections of students which were delineated by a factor.

**Group.** The term "group" refers to any collection of students from the sample of this study.

**Need for the Study**

Scholars have generally agreed that environment has a profound effect upon the educational attainment of children. Bloom (1964:116-118) cited the results of several longitudinal investigations that correlated the scholastic achievement of selected groups of twins, siblings, and unrelated children. Results of those studies indicated that the correlations between achievement test scores of identical twins who were reared together were generally high and over .85; however, much lower correlations were obtained for identical twins who were reared apart. The implications of those results led the writer to conclude: "... this difference is attributable to the extent to which the environments of the separated twins were different." To further substantiate the extent to which environment affects
scholastic attainment, he reported that several studies showed the achievement correlations of nonidentical twins who were reared together were considerably higher than those correlations that were obtained between identical twins who were reared apart. Even more striking were the high correlations between siblings reared together and the relatively low correlations between those who were reared apart.

While much research has verified the influence of environment on the academic achievement of students, there has been a lack of agreement among many educators regarding the influence of specific environmental factors upon achievement. More precisely, it has not been easy to ascertain the effects of such factors as parents' educational level, student attitudes, or socio-economic levels of the family on scholastic attainment of students.

With the recent emphasis on school desegregation, and with the recognition of the many problems associated with teaching the culturally disadvantaged, numerous studies have been initiated in an attempt to identify home factors which may account for the wide variance in school achievement among students. Furthermore, many educators have agreed that such studies are essential if our educational system is to accommodate the educational needs of all students. In this respect, Bloom (1964:124) stated:
This approach to the study of the interaction between the home and the child has much promise. If supported by further research, these techniques may enable the school to analyze the home environment and to determine the best strategy for the school and the home to provide the environmental conditions necessary for school achievement.

Thus, there are implications that more research needs to be done on the relationship between environmental variability and student achievement.

Since this study encompassed most of the secondary student population of a rural parish in Louisiana, it should not only add to our current knowledge about environmental influences on achievement, but should be extremely beneficial to all educators and citizens of Washington Parish, Louisiana.

Organization of the Study

Chapter 1 provided selected background information of this study. Chapter 2 was devoted to a review of relevant research that was related to achievement of students and the ten personal and environmental variables which were identified in this investigation. Chapter 3 dealt with the plan and design of the study, and included information regarding the setting and population of the investigation, the experimental design, and the methods which were used in the collection and treatment of the data. Chapter 4 presented the analysis and interpretation of the data collected. Chapter 5 was devoted to a summary of the findings and the concluding statements.
Chapter 2

REVIEW OF RELATED LITERATURE

The purpose of Chapter 2 was to present a review of the literature that was related to academic achievement and the ten personal and environmental factors which characterized the student population of this study. This chapter was divided into six sections: (1) literature related to student achievement and socio-economic status; (2) literature related to student achievement and race; (3) literature related to student achievement and occupational status of the mother; (4) literature related to student achievement and education of parents; (5) literature related to student achievement as compared to attitudes toward teachers, attitudes toward school, and plans for further schooling; (6) literature related to student achievement as compared to residential classification and relationship to guardians. Data related to achievement by race were delimited to Negro-white differences.

Literature Related to Student Achievement and Socio-Economic Status

The relationship between socio-economic status and achievement among students has been the subject of much research during the past fifty years. Shaw (1943:197-199)
reviewed many of the studies in this area prior to 1943 and concluded that all investigations indicated the existence of a definite relationship between socio-economic status and scholastic attainment.

Engle (1934:590-598) selected three groups of high school students from different socio-economic backgrounds, and compared them on the basis of grades earned in school. He found that the privileged or upper socio-economic group earned a disproportionate amount of high grades; for example, he found that the privileged group received 49 percent A's and B's in contrast to 23 percent A's and B's earned by the unprivileged group.

Abrahamson (1952:441-450) also used school grades in relating achievement to socio-economic status. In the spring of 1950, six communities (two urban, two suburban, and two removed from urban areas) were selected, and three homeroom groups were chosen from grades seven, eight, and nine of each community school. Using Warner's Index of Social Characteristics as a measure of socio-economic status, he found that the top two status levels (upper-middle and lower-middle) earned much more than their share of high grades. Students in the lower status levels did not earn their share of high grades, and earned much more than their proportionate share of low grades.

Hillard and Troxell (1937:255-263) investigated the relations among informational background, reading readiness,
and the reading progress of primary grade children. Their subjects were subdivided into a rich background group and a meager background group, and it was reported that the rich-background group had a significant advantage in reading readiness. It was also reported "... the higher group averaged six months above the standard in reading when tested in the second grade— the lower group averaged one month below the standard."

Coleman (1940:61-63) gave the results of a comprehensive study of 4,784 seventh, eighth and ninth grade students who were chosen from forty-three states. The total group was divided into nearly equal groups; three of which were determined by the Sims Socio-Economic Score Card, and a fourth, which he identified as students whose parents had received "relief." Using the Unit Scales of Achievement Battery as his dependent variable, he computed probable errors of medians, differences between means, and critical ratios to determine the reliability of the differences between the scores made by each group. His findings included:

1. Poor readers, as a group, come with surprising consistency from children of low socio-economic status. These differences were reliable in each of the grades seven, eight, and nine.

2. The higher socio-economic group made consistently higher grades in geography, history, and problem solving than most groups.

3. No reliable differences in achievement were obtained between the middle socio-economic group and the "relief" group.
Several investigators have used a correlation technique to obtain an expression of the relationship between socio-economic status and academic achievement. Chauncey (1929:88-90) studied a group of 113 eighth grade and 130 ninth grade pupils and found that scores made on the Sims Score Card correlated positively with scores earned on the Stanford Achievement Tests. Correlations obtained were .30 for eighth grade students and .35 for ninth grade students. When the intelligence scores for the two groups were partialed out, the partial correlations were .23 and .30 respectively.

In a similar study, Bryan (1941) correlated Sims Scores with school marks and with the Metropolitan Achievement Tests scores of 169 fourth, fifth, and sixth grade students. She obtained a coefficient of .56 between school marks and socio-economic status and a coefficient of .59 between the Metropolitan scores and socio-economic status. When intelligence was held constant, the investigator obtained a partial correlation coefficient of .35 between school marks and Sims scores of socio-economic status.

In an almost identical study of 280 pupils in grades four through eight in the public schools of Iowa, Shaw (1943:199-201) reported a substantial relationship between socio-economic status and academic achievement. In that study, a correlation coefficient of .39 was obtained between the scores made on the Sims Score Card and the Stanford
Achievement Test; a correlation coefficient of .27 was obtained when intelligence was partialed out.

Gough (1946:527-540) also correlated socio-economic status with achievement test scores and found evidence for associating scholastic attainment with home background. In a study of 127 sixth grade public school children, he found "correlations between status and achievement test scores in vocabulary, arithmetic, reading, language, and health clustered near .30, with the exception of arithmetic, where the correlation was .07."

In another study of sixth grade children, Curry (1962:46-49) attempted to determine if differences in scholastic achievement were significant when the groups were of comparable intellectual ability, but different in socio-economic status. His subjects were 360 students who were randomly selected from 2,623 students in thirty-three elementary schools of a large city in the Southwest United States. The California Test of Mental Maturity was used to determine the intellectual ability of his subjects and his total group was divided into three intellectual groups: high, medium, and low. Each of the ability groups was further subdivided into three socio-economic groups (upper, middle, and lower) and were also administered the Elementary Battery of the California Achievement Tests. Within each group, t-tests were computed between the upper and middle, upper and lower, and middle and lower status groups in
reading, arithmetic, language, and total achievement. The .05 level of confidence was used to determine statistically significant differences within the various groups. The following conclusions were made:

1. Socio-economic status seems to have no effect upon the scholastic achievement of sixth grade students when the students have high intellectual ability.

2. Social and economic factors have an effect upon language achievement in the medium intellectual ability group. The upper and middle socio-economic status groups both achieve a greater amount than the lower socio-economic status group. Likewise, in total achievement, the upper socio-economic status group achieves a greater amount than the lower socio-economic status group.

3. In the low intellectual ability group, social and economic factors have an effect on achievement in reading, language, and total achievement.

4. As the intellectual ability decreases from high to low, the effect of social and economic conditions on scholastic achievement increases greatly.

5. Achievement in arithmetic seems to be relatively free from the influence of social and economic conditions since no significant differences were found within any of the intellectual ability groups.

There have been numerous studies that have dealt with the relationship between socio-economic background and achievement in one or more academic areas. McGlathery (1968:3897) investigated the relationship between socio-economic status and achievement in science. In his study, 117 children were separated into four socio-economic groups. They included: (1) a lower class pre-school group; (2) a lower class first grade group; (3) a middle class pre-school group; and (4) a middle class first grade group. Using a
three factorial analysis of variance design and the Science--
A Process Approach (AAAS) as the measure of his dependent
variable, he found that the relationship between science
achievement and the socio-economic backgrounds of his sample
indicated "... where evidence of science achievement re-
quired the student to verbalize; such as naming an object,
the lower class child did not do as well as the middle-class
child." On the other hand, "where evidence of science
achievement required the student to perform essentially non-
verbal behaviors--such as identifying an object--socio-
economic background was not a predictor of success."

Kemp (1955:66-77), in a study of children in fifty
primary schools in London, identified the relationships
between twenty-eight environmental variables and two criteria
for attainment: comprehension and rote learning. He
concluded that the socio-economic status of the student was
correlated very significantly with achievement and "... the
main factors for determining levels of attainment in for-
mal school subjects are, in decreasing order of importance;
intelligence, socio-economic status, and the size of school."

Karas (1968:5191) endeavored to associate history
and mathematics test scores of secondary students with
personality and socio-economic factors. Using the Coopera-
tive General Mathematics and the American History Test as
his achievement factors, and the American Home Scale as a
measure of socio-economic status, he found that correlations
were significant for American history, but were not significant for mathematics. He also suggested that further research should be done in this area.

One of the most comprehensive and unique studies related to the effect of environmental factors upon academic achievement was reported by Husen (1967:199-259). That investigation, called "The International Project for the Evaluation of Educational Achievement" consisted of a comparative study of the educational systems of twelve countries and the effect of sociological and economic characteristics of families, schools and societies upon the academic achievement of secondary students in mathematics. Those countries which participated in the survey included Australia, Belgium, England, Finland, France, Israel, Poland, Scotland, Sweden, Switzerland, the United States, and Yugoslavia. A total of 132,775 students from 5,348 schools were given standardized achievement tests in mathematics, and were subdivided into the following populations:

Population 1a - All pupils who were 13.0 - 13.11 years old at the time of testing.

Population 1b - All pupils at the grade level where the majority of pupils of age 13.0 - 13.11 were found.

Population 3a - Pre-university students who were enrolled in a rigorous secondary mathematics program.

Population 3b - Pre-university students who were studying mathematics as a complementary part of their studies.
The effect of home environment and home background upon the educational achievement of students was just a small part of the study. Among the many factors investigated was the socio-economic status of the student as determined by the father's occupational level. Using a correlation technique, it was reported that for Population 1a, the relationship between status and achievement in mathematics was significant in all countries, except Finland. In the United States, this relationship was significant for Populations 1b, 3a, and 3b, as well as for Population 1a. Other results of the study are referred to later in this chapter.

The use of father's occupation as a measure of socio-economic status is not uncommon. Noll (1960:119-130) calculated a socio-economic index for 313 students who were in grades two through seven by using father's occupation. The students were also given the Davis-Eells Test which purports to measure problem solving ability and claims to be equally fair to children from all socio-economic levels. Results of his study revealed that the correlation between General Intelligence or Problem Solving Ability (IPSA) and Socio-Economic Indices were small and insignificant; ranging from .05 to -.19.

Several other studies have reported little or no correlation between socio-economic status and educational attainment. Nemzek (1940:21-30) correlated the grade point
averages of 59 boys and 165 girls with the occupational status of their fathers. Using secondary students from the University High School at the University of Minnesota, he found that the father's occupational status had no significant relationship to honor points earned in mathematics, English, language, and art and vocational subjects. Likewise, Heilman (1928:35-66) concluded "... less than one percent of a student's educational age was due to the socio-economic status of the family."

There have been several longitudinal studies which investigated the relationship between home background and scholastic achievement. Anderson (1968:1223A) selected 350 children from 120 households, and found that scholastic achievement of lower socio-economic students was significantly less than children from middle socio-economic backgrounds. He attributed those results to illegitimacy, poor parental control, poor economic conditions, low educational level of parents and anti-social attitudes. He also found that under certain conditions, in a longitudinal study of paired groups (lower and middle status), there were no significant differences in the two groups; however, in a follow-up longitudinal study, in which all variables except social environment were controlled, he found a significant difference in the performance of the two groups.

In another longitudinal study, Bloom (1964:118-121) selected twenty pairs of second grade children who had
identical scores on the Chicago Reading Test, but who had attended different schools and had fathers of different socio-economic levels, as determined by their occupations. For one member of each pair, the father had an occupation which required higher education, whereas, the other member had a father whose occupation required less than a high school education. On retesting his sample at grade eight, and using a different form of the reading test, he found that the differences between the pairs averaged 2.25 grade levels. In interpreting those results, the writer said:

In other words, there was a zero correlation between reading comprehension at grade two and the occupational level of the father; however, at grade eight, the correlation between the two factors was .50. For the forty pupils involved, the correlation between reading comprehension scores at grade two and eight was .52; however, the multiple correlation between reading comprehension at grade eight and the combination of reading comprehension at grade two and father's occupation was .72.

Thus, the data indicated that much of the variability in reading comprehension was attributable to the socio-economic background of the student.

The Civil Rights Act of 1964 has done much to promote research relevant to this study. Thus, the literature reveals numerous environmental studies that were sponsored by the Department of Health, Education and Welfare and the U.S. Office of Education. An immediate consequence of the Civil Rights Act of 1964 was a federally financed survey that was conducted by Coleman (1966:20-25). In that survey, over 645,000 pupils from 4,000 of the nation's schools were
administered standardized achievement tests in verbal ability, reading comprehension, and mathematics. The sample included students in grades one, three, six, nine, and twelve. It was reported that socio-economic factors have a definite relationship to achievement; however, it was not until 1969 that Okada, Cohen, and Mayeske (1969:1-22) published the complete results of the survey's data regarding home background factors and academic achievement. The writers obtained the test results of all students in grades six, nine and twelve from this Educational Opportunity Survey, and also determined the student's socio-economic status by a weighed lineness composite of father's occupational level, mother's educational level and other home background factors. Three groups were delineated from a population of approximately 110,000 Negro and 125,000 white students. Data from the survey led the authors to make the following statements:

1. The relationship between socio-economic status and academic achievement documented in many other studies has also been demonstrated in the present chapter. In rate of achievement of the various SES levels, generally Low SES students appear to taper off much more rapidly than Medium or High SES students.

2. At grade 6, differences among the SES levels are relatively minor. By grade 9 (and increasing at grade 12), the difference in achievement levels between High SES students and Medium SES students is much greater than the difference between Medium SES students and Low SES students. The disparity in achievement level between High and Low SES students increases substantially with increase in grade. Thus, SES levels appear to assume increasing importance in school achievement for all students.
The writers also noted that the three socio-economic groups showed similar growth patterns for all tests; e.g., verbal, mathematics and reading comprehension.

Giammatteo (1967:1-13) reported to the Department of Health, Education, and Welfare the results of a study of 223 third grade children from several schools in Western Pennsylvania. The investigation involved a study of socio-economic status and its effect upon vocabulary achievement, reading comprehension, arithmetic skill, problem solving, and a composite of these variables. The author found "the correlations between socio-economic status and all variables were positive; thus strengthening the evidence that socio-economic status affects school achievement." He also noted that children from lower socio-economic groups did not overcome cultural deficiencies by the third grade.

The Institute for Social Research at the University of Wisconsin conducted a comprehensive study under the sponsorship of the U.S. Office of Education which attempted to relate family background factors to achievement of urban secondary students from different parts of the United States. Students from four secondary schools in a large northern city and from four secondary schools in a large southern city were selected as the sample for this investigation. The total number of Negro and white pupils was 2,826. While the primary purpose of the investigation was to compare achievement differences among students of northern and
southern schools, total group differences were considered. Epps (1969:100) reported that the data related to socio-economic status of the student revealed that persons from higher socio-economic levels had higher verbal ability than low socio-economic students. He also found that socio-economic status was significantly related to vocabulary performance and that students from high socio-economic levels had higher ability and aspirations than low socio-economic students. Another relatively important finding was "... socio-economic status had less influence on grades than on verbal ability."

Johnson (1966:3226A), in a study of gifted children from different socio-economic levels found that such students were more alike than different. In his study, he used seventy-six senior high school students from each of two diverse home backgrounds who had been identified as gifted on the basis of high scoring performances on the School and College Ability Test (SCAT). Socio-economic status was determined by use of the Hollingshead Index of Social Position. His hypothesis asserted that there were no significant differences between high and low socio-economic gifted adolescents in achievement in English, algebra, geometry, history, citizenship, Foreign Language, and the National Merit Qualifying Test scores. Results of his investigation led him to arrive at the following conclusions:
1. Students were more alike than different. No significant differences were found between the two groups on scholarship points in English, algebra, citizenship, or Physical Education; and on the English Usage, Mathematical Usage, and Social Studies Reading section of the National Merit Scholarship Qualifying Test.

2. Statistically significant differences, favoring the high socio-economic group, were found in scholarship points in World History, Foreign Language, the Natural Science Reading section, the Word Usage section and the selection score on the National Merit Scholarship Qualifying Test.

3. Statistically significant differences, favoring the low socio-economic group, were found with scholarship points in geometry.

Ashworth (1964:3224) conducted a similar study of gifted children who were selected from the South Park Independent School District in Beaumont, Texas. His purpose was to discover if there were differences in selected home background factors between mentally able children who achieved beyond expectancy and mentally able children who achieved below expectancy as measured by standardized achievement and mental maturity tests. His sample was composed of 178 fifth and sixth grade children who had an intelligence quotient of 120 or more but had achieved two or more years beyond expectancy (Plus Group) or two or more years below expectancy (Minus Group) on the Metropolitan Achievement Tests. The Plus and Minus Groups had median intelligence quotients of 130 and 125, and also numbered 118 and 60 respectively. Using a parent interview questionnaire for determining social background factors, he found that Plus Group students came from a higher economic level
than did the Minus Group students. Furthermore, he found that 41.7 percent more of the Plus Group's fathers earned more than $10,000 yearly and 29.3 percent more were in professional or managerial positions.

Davies (1968:2437A) used income of parents as a measure of socio-economic status in a study that was done in the Kansas City Public School System. Ninth grade students from several schools were given a Social Studies Achievement Battery, and the data indicated "... children that are representative of low-income families score significantly lower in social studies than children from high income areas."

Literature Related to Student Achievement and Race

Studies of Negro and white differences in achievement and intelligence have occupied a prominent position in educational research for at least a half-century. As early as 1934, Wilkerson (1934:453-477) reviewed and evaluated the findings of significant research related to Negro-white differences in scholastic achievement. Among his findings were:

1. The general achievement level of Negro children was lower than that of white children for all school systems studied.

2. The disparity between the two races increased with an increase in grade level.

Anderson (1956:353-359) also reviewed research related to Negro-white differences in achievement. He cited the results of a comprehensive study that was conducted by
the Alabama Educational Survey Commission in which a random sample of fifth and eighth grade white and Negro students were administered the Progress Achievement Battery. Since the tests were given at the end of the first month of school, the grade norms for grades five and eight were 5.1 and 8.1 respectively. The data indicated that the average total grade placement of the 1,961 fifth grade white pupils was 5.0; however, the grade placement of the 958 Negro pupils was one year lower, or 4.0. The average total grade placement for the 1,457 eighth grade white pupils was 7.7, while the average for the 494 Negro pupils was 6.1. It was also found that the achievement of the white pupils was approximately one-half year below national norms; the achievement of Negroes was approximately two years below the norms.

Anderson (1956:355) also gave the results of a study of Negro and white students from an Alabama county who were in grades six, nine and twelve, and who were also administered the California Achievement Battery. The data collected indicated clearly that there was a wide difference in academic achievement of white and Negro students; for sixth grade white pupils obtained an average total grade placement of 1.7 years higher than Negro pupils. Of the three sections of the test (reading, arithmetic, and language), whites exceeded Negroes from 1.5 to 1.7 grade placement years. By the ninth grade, the difference in total grade placement had grown to 2.6. In the twelfth grade, white pupils exceeded
the Negro pupils by 3.7 grade placement years with the disparity especially noticeable in arithmetic.

In a similar study of low socio-economic students in a different Alabama county, Anderson (1954:73-90) found that the average total grade placement of sixth grade white pupils was 5.5; for Negro pupils, the average grade placement was 4.1. By the ninth grade, the average achievement of white and Negro pupils was 8.1 and 6.0 respectively. In the twelfth grade, the whites obtained an average grade placement of 10.7 while the Negro students averaged 7.0 years.

Several other studies of Negro-white differences have shown that the disparity between the two races increases with an increase in grade level. In 1954, Osborne (1960:223-239) initiated a four year longitudinal study of 815 white children and 446 Negro children in an attempt to observe patterns of intellectual and school achievement growth of the two races. Achievement and mental maturity tests were given to his sample when they were in grades six, eight and ten. Longitudinal comparisons of arithmetic skills (reasoning and fundamentals), of reading skills (vocabulary and comprehension), and of mental maturity were made. Results of his investigation led him to arrive at the following conclusions:

1. The Negro-white achievement difference of almost two years at grade 6 increased steadily until at grade 10, the difference in reading level was almost 3 school years. The widening gap in achievement between the two
groups was apparent on both the vocabulary and comprehension subtests as well as for the total reading scale.

2. For arithmetic, at grade 6, white-Negro difference was just over one grade for the areas (reasoning and fundamentals) covered by the achievement test. At grade 8, the two groups maintained their relative position in arithmetic reasoning; however, on the test of arithmetic fundamentals, the Negro group was nearly two grades behind the white pupils. At grade 10, there was a difference of arithmetic achievement of over four grades between the two groups.

3. In terms of national norms, the tenth grade Negro pupils were only slightly above the sixth grade level while the white group tested at the tenth grade on the same norm group. In other words, in terms of arithmetic skills, white children in the sixth grade were not only significantly above the sixth grade Negro group, but were also equal in these skills to eighth and tenth grade Negro pupils.

Rosenfield (1968:1-16) also conducted a longitudinal study of the intellectual growth of Negro and white students. In that study, 316 Negro and 501 white students from two western cities were given achievement and intelligence tests when they were in grades five, seven, nine, and eleven; all of which were administered as a part of the Educational Testing Service's Study of Academic Growth and Prediction. Using an analysis of variance experimental design, the author made the following conclusions:

1. The main effect of race was significant.

2. Test scores of white children were significantly higher than Negro scores at grade five on all tests of SCAT (School College and Ability Tests), STEP (Sequential Tests of Educational Progress), and a measure of socio-economic status by race.

3. Test results for grade seven were essentially the same as those for grade five.
4. When analysis of co-variance was used to equate on racial differences in SCAT and STEP, whites were found not only to start out higher, but grew at a faster rate than Negroes on most battery tests.

The author also noted that his findings of increasing differences between Negro and white achievement differed from Coleman's (1966) results in metropolitan areas of the west and midwest.

In Epp's $^1$ (1969:100) study, it was found that, for northern schools, whites were significantly higher in verbal ability than Negroes. Also, for two of the eight schools which comprised the study, white students had significantly higher grades in school than did Negro students.

Harris (1968:4735A) compared the achievement of 1,161 fifth grade Negro and white students from a North Carolina school system. His null hypothesis asserted that race was not related to achievement when ability was held constant. To achieve the purpose of his study, he subdivided his sample into five groups according to intelligence scores derived from the Science Research Associates Tests of Educational Ability. Each group was further subdivided according to race; and grade equivalent comparisons were made of the social studies, science, reading, language arts, and composite scores of the SRA achievement series. Those findings which were pertinent to this study included:

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$^1$This study was discussed on page 22.
1. White pupils generally achieved better on all tests when ability was held constant.

2. At lower levels of educational ability, the achievement of Negro and white students was approximately the same.

3. At middle and upper ability levels, white performance was considerably better.

4. There was a pattern of increasing differences in achievement between Negro and white pupils in each higher level of ability.

Matzen (1965:6475) also found differences in achievement among Negro and white elementary students. In that study, he selected 1,065 pupils from the San Francisco Bay area who were in grades five or seven. Using scholastic achievement as his dependent variable, he found that, for fifth grade students, non-Negro means exceeded Negro means by an average of 1.2 years in achievement; however, for seventh grade students, non-Negro means exceeded Negro means by only .6 years in achievement.

There have been several investigations that used grade point averages in determining differences in achievement among students of different races. Sample (1969:1-9) compared the high school grade point averages of 180 Negro undergraduates at the University of Missouri with a matched sample of white students and found that Negro student averages were considerably lower than those of white students. Lessing (1968:1-28) selected 470 white and 87 Negro eighth and tenth grade pupils from integrated schools in the suburbs of Chicago, and also found that Negro students earned
a lower mean grade point average than white students. Likewise, Sherer (1968:2993A), in a study that was conducted in a junior-college in California, found that white students' grade point averages exceeded those of Negro students. He also noted that when socio-economic status was controlled, race differences disappeared.

Bullock (1950:179-192) conducted a research project which was most unique, for he attempted to compare race differences in achievement among college students by administering a secondary achievement battery to his group when they were in their first semester of college. His population consisted of 503 white and 1,194 Negro students, all of whom were graduates of public schools in Texas. For statistical purposes, he converted raw scores of the Iowa High School Content Examination to standard scores and arrived at the following conclusions:

1. Total scores of whites ranged from 105 to 322, with a median of 199; Negro scores ranged from 75 to 233, with a median of 150.

2. Ninety-eight percent of Negro students had scores which were below the median of white students and only 3.4 percent of the white students had scores which were below the median made by Negroes.

3. The median score of whites on each test (English grammar, mathematics, science, history, and social studies) was higher than the median score for Negroes.

As reported earlier in this chapter, the Civil Rights Act of 1964 did much to encourage studies which have attempted to discern factors that affect achievement among students. Consequently, the literature has yielded several
governmental studies which have related race differences to scholastic achievement. Coleman (1966:20-21) reported, in his nationwide Equality of Educational Opportunity survey, that minority group pupils generally scored distinctly lower on all tests at every level than did the average white pupil. Furthermore, the deficiency in achievement among minority groups, and in particular Negroes, was "... progressively greater at progressively higher grade levels." Data from his study also indicated that on most tests which were given to twelfth grade students, the median scores of Negroes were approximately one standard deviation below those for the white pupil. Since scores on all tests were standardized so that the median of each test was fifty, and the standard deviation was ten, the latter results implied that approximately eighty-four percent of the Negroes in his national sample had scores which were below the median of the white students.

While the Equality of Educational Opportunity survey provided much information on race differences in achievement, it was not until 1968 that more complete results of this aspect of the study were reported. Okada, Stoller, and Weinfeld (1968:1-36), in analyzing data from the survey, arrived at the following conclusions:

1. The differential rate of growth among races is startlingly large. For example, at grade 6, Negro students are already 3.0 years, 2.0 years, and 2.5 years
behind the white students in Reading Comprehension, Verbal Ability, and Mathematics respectively. By the time Negro students complete high school, they are 3.4 years, 3.8 years, and 5.5 years behind the white students in the above subject matter areas.

2. In terms of grade level accomplishments, Negro students do not attain the sixth grade ability level until grade eight for the three subject matter areas. By grade 12, Negro students are doing ninth grade ability work for Reading Comprehension and Verbal Ability and seventh grade work in Mathematics.

3. From grade 6 through grade 12, there is an ever-widening gap between Negro and white students for each of the above subject matter areas.

In a follow-up report of the same study, Okada and Stoller (1968:11) reported "white students, in every region, regardless of whether metropolitan, or non-metropolitan, had higher average scores in every type of test at every grade level."

Baughman and Dahlstrom (1968:65-82) conducted a study which was pertinent to this investigation for it involved a psychological in-depth study of children in the rural south. Four-hundred eighty white and 742 Negro children in grades one through eight were given Stanford Achievement Tests and comparisons were made by sex, race, and economic conditions, of the scores earned on each sub-test and on the composite battery median. Most of the children were classified as "culturally deprived." The following results were reached:

1. The racial gap in achievement increased with advancing age, although the differences were not the same in each achievement area.
2. For the Battery Median, Negro students fell below the national white standards at every grade level. White student scores generally fell close to national white standards.

3. In paragraph and word meaning, Negro children fell below national white standards, and by grade eight, their scores were comparable to children in grades four and five. White children's scores generally fell close to national white standards.

4. Negroes, in general, scored lower on the spelling, language, arithmetic reasoning, and arithmetic computation sub-tests.

5. When ability was held constant, Negro children whose intelligence quotients were below eighty had total achievement scores which were somewhat higher than that of white children of comparable ability. There was also no consistent racial difference in Battery Median scores of students whose intelligence quotients ranged between eighty and eighty-nine, and 90 and 99: however, high ability Negro students scored lower on all tests than white students of comparable ability.

Race differences in achievement among Negro and white students have been well documented. McQueen and Churn (1960:327-329) however, found that when Negro and white students were matched, achievement differences disappeared. In that study, seventy-one Negro students in grades one through eight were matched with white students on the basis of age, sex, school grade, years enrolled in the school system, residential area and father's occupation. Results of the investigation showed that while the mean grade placement of the white group averaged four-tenths of one year higher than the Negro group, the critical ratio was well below significance.
Literature Related to Student Achievement and Occupational Status of the Mother

A number of studies have compared the achievement of students whose mothers were employed with the achievement of students from homes with non-working mothers. Wade (1962:93-95) used Stanford Achievement Test scores of 355 seventh grade students from a suburban community in New York State to compare the achievement of the two groups that were delineated by the occupational status of the mother. Results of the investigation led the author to conclude "... statistically, no significance could be attached to the differences in achievement of the two groups." Furthermore, on comparing intelligence test scores of each group, it was found that the mean intelligence quotient of students from one-parent employed families was slightly higher. Thus, the investigator found "students with both parents working did just as well in school as those with only one parent employed despite a lower intelligence quotient of the former."

Nelson (1969:456-458) subdivided 312 ninth grade Caucasian students in the public schools of Minnesota into three subgroups, each of which identified the occupational status of the mother; e.g., students whose mothers worked full time, part-time, or not at all. Using analysis of co-variance as his statistical method, he arrived at the following conclusion:

Children from homes where the mothers work full time, part-time, or not at all do equally well in school achievement as evidenced by grade point averages.
Roy (1961:349) also used grade point averages in determining the effect of the employment of the mother on academic achievement of the child. In that study, he used 257 secondary students from a rural county in Washington State and found that the sons of employed mothers who resided in towns showed lower grade point medians than sons of non-employed mothers; however, the differences were not significant for those students whose mothers resided on farms or in other rural areas.

The number of years the mother was employed during the life of her child was used by Burchinal and Rossman (1961:334-340) in relating academic achievement to the employment status of the mother. The authors used 1,172 seventh and eleventh grade students and found that, with few exceptions, the employment of the mothers had no bearing on the academic achievement of students.

Frankel (1960:172-180) found that the employment status of the mothers was related to achievement differences among high ability students. In his study, he matched fifty pairs of underachieving and overachieving senior boys from the Bronx High School of Science in New York City on the basis of intelligence, school entrance examination scores, and age. Results of his investigation revealed that the underachieving high ability students had a disproportionate amount of mothers who were employed. Furthermore, the latter results were found to be significant by use of a chi-square analysis.
Baughman and Dahlstrom (1968:195) found that the employment status of the mother had little effect on the achievement of students. In that study, students were separated into two groups: (1) students whose mothers were employed outside the home, either part-time or full time, and (2) students whose mothers did not work outside the home. Data from the investigation indicated "the mean differences on the Stanford Achievement Tests at all grade levels were too small to be meaningful" and "... there is little reason to believe that a child's intellective development is adversely affected in this rural area by having a mother who works outside the home."

Fraser (1959:66), in a comprehensive study of the relationship of environmental factors to achievement, found that student achievement was not related to the employment status of the mother. She concluded: "... if there is any differences at all, it appears to be very slightly in favor of the children whose mothers go out to work, especially in the middle range of intelligence."

Epps (1969:65) found that the type of work a mother performed was more important for academic achievement than the fact of work itself, and that the effect was different for different sub-groups. For example, southern females,

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3This study was discussed on page 1.

4This study was discussed on page 22.
whose mothers worked, even at low status jobs, had higher achievements in reading comprehension than did females whose mothers did not work. That relationship, however, was not significant for southern males. An examination of such relationships for the total population enabled the author to arrive at the following conclusion:

The socio-economic status of mothers' occupation is an important determinant of the effects of mothers' employment on academic achievement. Children whose mothers have high status occupations have higher vocabulary test scores than those whose mothers have low status occupations and those whose mothers are housewives. Mothers' employment is not related to grades.

Literature Related to Student Achievement and Education of Parents

A review of the literature revealed several studies which compared the achievement of students in terms of parent educational background. Witte (1967:473A) used a sample of seventy-five college freshmen students from five rural Wisconsin counties and attempted to relate non-intellectual factors to the student's first semester academic performance. Using analysis of variance, he found that the number of years of a mother's education was significantly related to achievement; however, he also found that no one non-intellectual factor could account for differences in achievement within the sample studied.

In Epps'\textsuperscript{5} (1969:40-47) investigation, it was found

\textsuperscript{5}This study was discussed on page 22.
that for males and females in the south, the most effective socio-economic correlate was mothers' education. Correlations between mothers' education and vocational scores, English grades, and mathematics grades of girls were all significant. For boys, the correlations were positive but were not significant.

In another correlation study, Nemzek\(^6\) (1940:21-30) found that when intelligence was partialed out, neither mothers' education nor fathers' education had any significant relationship to honor points earned in mathematics, English and language.

In relating selected family variables to ability and academic achievement, Baughman and Dahlstrom\(^7\) (1968:87-90) found that the mean scores of children having better educated fathers tended to fall at or above the national norms for the Stanford Achievement Tests; however, children whose fathers were less educated tended to fall below the norms. The same general conclusions were made for mothers' education; however, the latter results were less pronounced. It was also found that parent education had less influence on the achievement of Negro students than on white students.

Fraser (1959:42-43) investigated the home environment of 408 adolescents and computed correlations among

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\(^6\)This study was discussed on page 17.

\(^7\)This study was discussed on page 36.
environmental factors, school examination marks, and intelligence. She obtained a coefficient of correlation of .423 between parents' education and intelligence, and a correlation of .490 between parents' education and the examination criterion. In referring to those results, she said:

The difference between the two correlations, though not large, is, because of the close correlation between I.Q. and the Criterion, highly significant statistically, and we may conclude that the standard of education of the parents is related to the child's school progress, quite apart from the influence of intelligence. In other words, of two children of equal intelligence, but with parents of different educational standards, the child with the better-educated parent reaches a higher standard in his schoolwork.

Several other studies have indicated a positive relationship between the parent's educational level and the academic performance of their children. In Husen's\(^8\) (1967:254) international study, it was reported that, in all twelve countries, there was a significant relationship between the parent's characteristics (educational and occupational) and the scores earned by their children on achievement tests in mathematics. In general, children whose parents were well educated tended to score higher on the achievement tests. In the United States, the correlations between mothers' education and mathematics achievement were significant for Populations 1a, 1b, 3a, and 3b (see page 16).

In a study of gifted children, Ashworth\(^9\) (1964:3224)

\(^8\)This study was discussed on page 16.

\(^9\)This study was discussed on page 23.
observed that the high achieving students had parents with higher educational backgrounds. In that study, Plus Group parents had earned more college degrees than parents of students in the Minus Group. Group differences were 38.4 percent for fathers and 29.6 percent for mothers. Furthermore, the Plus Group fathers had been awarded 22.9 percent more doctoral degrees.

In an almost identical study, Keller (1959:3328A) selected 538 gifted children and found a statistically significant difference in achievement among students who were classified by the educational level of their parents. His findings also favored those students whose parents were more highly educated.

Goldstein, et al., (1967:V-1 - V-9) reported to the Department of Health, Education and Welfare the results of a comprehensive study that was conducted in the Denmark - Versey School District of a Mid-Atlantic city. In 1963, the authors obtained selected background information and school performance records of reading achievement of the same students when they were enrolled in grades six, ten, and twelve. The sample of the study was primarily composed of Negroes. An attempt was made to answer the following question:

What are the differences between the social, cultural and personal attributes and experiences of children from a low income, racially identified city-community area who do well in school and those from the same school who do not?

Among those social factors investigated was the education
of the parents. Findings which were pertinent to this study included:

1. The data offered no support for the notion that academic ability (as measured by reading achievement tests) is affected by living in homes with better educated mothers or fathers.

2. The parents' educational level had no effect on the educational attainment of either boys or girls.

**Literature Related to Student Achievement as Compared to Attitudes Towards Teachers, Attitudes Toward School, and Plans for Further Schooling**

While numerous studies have investigated student attitudes as a predictor of academic success, a review of the literature revealed very few studies that compared the achievement of students and their attitudes about their teachers and their school. In 1965, Lavin (1965:67), under the sponsorship of the Russell Sage Foundation, reviewed research which was related to the prediction of academic success. In that report, he cited the results of a study whose findings indicated "... at both the college and high school levels, a positive attitude towards school and the opinion that education is valuable have a slight positive relation to academic performance."

In Frankel's\(^1\) (1960:172-180) study of differences in high ability underachievers and overachievers, it was reported that the underachieving group had more negative

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\(^{10}\) This study was discussed on page 35.
attitudes about their school; thus, supporting the assertion that student attitudes may have some bearing on academic performance.

Student attitudes regarding their teachers and school were two of the social factors which were considered in the Goldstein\textsuperscript{11} (1967:V-1) study. Among their tentative conclusions were:

1. Students were asked to grade their school A - F. One might expect the more capable students to be more favorably oriented to school than others, but this was not the case.

2. Among boys, there was a significant tendency for the better young boys to feel strongly positive about their teachers; only a slight tendency for older boys to feel positive. Among girls, there was no clear relationship. Furthermore, only ten percent of all subjects felt negative about their school.

In a study of student achievement in history and mathematics, Karas (1968:5191A) used the Brown-Holtzman Survey of Study Habits and Attitudes and Criticism of Education in assessing student attitudes towards their school. Results of his research indicated "... both mathematics and history test scores were associated with attitudes and study habits, with no significant differences between correlations for the two achievement tests."

Several studies have dealt with the relationship between educational aspirations and scholastic attainment. One of the hypotheses of Husen's\textsuperscript{12} (1967:250) study was:

\textsuperscript{11}This study was discussed on page 40.

\textsuperscript{12}This study was discussed on page 16.
Students who (1) plan to go on to higher education or (2) have aspirations for higher education will perform significantly better on the mathematics test than will students who do not have such plans or aspirations, even when the level of mathematics is held constant.

The results of his investigation showed clearly that educational plans and aspirations were positively related to mathematics scores in almost all countries for Populations 1b, 3a, and 3b. In the United States, correlations for those three populations were .35, .31, and .35 respectively.

Educational aspirations were among the personal factors used by Epps (1969:40) in his study of selected northern and southern secondary students. It was found that educational aspirations and expectations were moderately related to achievement as determined by grade point averages and tests of verbal ability, for coefficients of correlations ranged from .349 to .368.

Caplin (1966:979A) studied a group of elementary students using analysis of variance to support the hypothesis that level of aspiration was related to academic achievement. The writer concluded:

There is a significant difference between level of aspiration and academic achievement; that is, those children having more positive levels of aspiration have higher academic achievement.

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13 This study was discussed on page 22.
Literature Related to Student Achievement as Compared to Residential Classification and Relationship to Guardians

A number of studies have compared the achievement of students from rural and urban areas; however, very little research has been done on achievement differences among groups of children in rural areas. Dibble (1966:2769A) investigated the relationship between academic achievement, as measured by grade point averages, to the following factors: place of residence, income, intelligence, parents' status, parents' education, family size, mobility, and high school attendance area. His sample was composed of 608 public high school students from Fairfax County, Virginia. Using step-wise multiple regression equations, he found "... factors such as residence, parents' status, family size, and mothers' education had little influence on achievement."

It was also reported by Husen14 (1967:225) that place of residence had little effect on academic achievement. In that study, the student population was subdivided into six residential categories; that is, students who resided on farms, in rural villages, in small towns, in medium-sized cities, in urban centers, and in suburban areas. The author observed that large between-county variation existed; however, non-significant differences were found for place of parents' residence.

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14 This study was discussed on page 16.
In investigating the influence of family variables on achievement, Baughman and Dahlstrom (1968:105) made the following observation:

White children from farm families show better academic achievement than children from non-farm families during their initial one or two years in school, after which this relationship is reversed. . . . Again, more extensive studies of this finding need to be made.

In reviewing the literature, the writer found several comparative studies which related family disorganization patterns to achievement. In a correlation study, Sheldon (1969:2535A) compared the achievement of 82 junior high students from one-parent and two-parent homes. Among his findings were:

1. The differences in mean achievement scores of academic grade point averages between one-parent and two-parent groups was significant at the .01 level. This difference in achievement favored the two-parent group.

2. Students who experienced a broken home condition during early primary grades tended to be most adversely affected in their educational achievement.

Crescimbeni (1965:4475A) conducted a two year longitudinal study which related the effect of parental death, divorce, separation, and desertion of one or more parents on the academic achievement of children in grades two through six. In that study, two groups of children (Group A and Group B) were equated on the basis of mental maturity, chronological age, and average academic ability. Group A

15This study was discussed on page 36.
students were further identified as having experienced a form of disruptive family disorganization after the initiation of the group; Group B students had not experienced any form of disruptive disorganization in their family pattern. The Stanford Achievement Test battery was also used for initial and final testing purposes in an attempt to determine the significance of differences between the achievement of the two groups. Results of the investigation led the author to arrive at the following conclusions:

1. A significant difference was found in the academic achievement of children reared in one-parent and two-parent homes. Children in one-parent homes showed a lower mean in academic achievement.

2. Significant differences were found between boys in both groups and between girls in both groups.

In Epps'\textsuperscript{16} (1969:49) study of regional differences in student achievement, pupils were categorized according to family intactness as follows: parents living together, parents separated or divorced, and others. It was reported that family intactness was significantly related to grade point averages for southern males; however, no such relationship existed for southern females. Furthermore, vocational test scores for both male and female southern students were significantly related to family intactness.

Several studies have indicated no relationship between the academic achievement of students from broken and

\textsuperscript{16} This study was discussed on page 22.
unbroken homes. Wohl (1962:933) matched groups of boys and girls from "mother-only" homes with an equal number of students from "two-parent" homes. He concluded "... achievement test scores of children from the fourth, fifth, and sixth grade are not related to the number of parents in the home."

Keller\(^\text{17}\) (1969:3327A-3328A) used "stability of the home" as a factor in comparing the achievement of selected mentally able fifth and sixth grade students. He concluded: "... the difference in achievement of students from one-parent homes (or a one-parent substitute) and those from two-parent homes (or two-parent substitutes) was not statistically significant."

In a causal-comparative study of matched and controlled groups of male secondary students, Birnbaum (1966:928A) also found no differences in achievement among students from broken and unbroken homes. Likewise, Clark (1964:3097) found no relationship between the achievement of students from broken and unbroken homes. In the latter study, the investigator used two groups of father-absent and father-present third grade boys; 22 in each group, and all from a suburban school system. In reporting test results from the California Achievement Test, the author made the

\(^{17}\) This study was discussed on page 40.
Although there were no significant statistical differences in achievement scores of father-absent and father-present boys, the individual scores indicated that father-absent boys tend to achieve more than father-present boys.

**SUMMARY**

A summary of research findings which were related to scholastic achievement and the ten personal and environmental factors identified in this study are as follows:

1. Most research indicated a definite relationship between socio-economic status of the family and academic achievement. Students from lower socio-economic levels generally achieved lower than did students from upper socio-economic levels.

2. The effect of race was generally significant for achievement differences among Negro and white students. In most cases, white student achievement was greater than the achievement of Negro students. Furthermore, the disparity in achievement increased with an increase in grade level.

3. Mothers' employment was not related to achievement differences among students.

4. Most studies revealed that education of parents was significantly related to the child's academic performance. Children whose parents were well educated tended to score higher on achievement tests.

5. Student attitudes toward their teachers and their school were only moderately related to achievement. There was a slight tendency for students with more positive attitudes to perform better than students with negative attitudes.

6. Educational aspirations were related to achievement differences among students. Generally, students who had higher educational aspirations had higher achievement scores.
7. The effect of residential classification on achievement of students in rural areas was inconclusive. Research in this area was limited, and no generalizations could be made.

8. The effect of relationship to guardians on achievement generally favored students from intact homes. Several studies revealed that students from broken homes ranked lower in educational achievement than did students from unbroken homes. However, several other studies showed no difference in achievement between comparable groups.
Chapter 3

PLAN AND DESIGN OF THE STUDY

The purpose of Chapter 3 was to present data regarding the environmental setting from which the sample was obtained and to explain the procedures which were used in conducting this investigation. For purposes of clarity, this chapter was divided into the following headings: (1) Setting and Population of the Study; and (2) Collection and Treatment of the Data.

Setting and Population of the Study

This investigation was conducted in Washington Parish, Louisiana during the 1968-69 academic school year. United States census figures for 1960 revealed that the total population of the parish was 44,015 and included 29,107 whites and 14,908 non-whites. Since students of the Bogalusa City School System were excluded from this study, those schools from which this sample was derived were located in the rural farm or rural non-farm areas, or from villages and towns whose populations were less than 3,500. Thus, the students in this sample are characterized as residents of non-urban areas.

The adult residents of Washington Parish generally earn their living by farming, by dairying, or by working as
laborers in near-by manufacturing plants. A report by the Public Affairs Research Council of Louisiana (1965) indicated that the adult residents of this parish were generally less educated and generally earned less than the typical resident of the State of Louisiana. Data from that report showed that the median school grade completed by adults was 8.8, and the median family income was $3,924.00, each of which was well below state and national averages.

The sample used in this study consisted of those secondary students of the Washington Parish Public School System who completed a questionnaire and who were also given the Iowa Tests of Educational Development. The achievement test and the questionnaire were given to secondary students during the spring of 1969. The Louisiana State Department of Education reported that the 1968-69 public secondary school population of Washington Parish for grades nine through twelve was 1,690 students. The number of students who completed usable questionnaires and who also completed the achievement test was 1,181. However, since some students did not answer all items of the questionnaire, student numbers for each of the factors considered in this study ranged from 1,114 to 1,172. Thus, the sample included approximately seventy percent of the public secondary school population of Washington Parish, Louisiana.

The data of Table 1 show a distribution of student samples in this study. It was arranged to show the number of
Table 1
Distribution of Students Involved in Study
by School and by Grade

<table>
<thead>
<tr>
<th>School</th>
<th>Year Classification</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Franklinton High School</td>
<td></td>
<td>100</td>
<td>104</td>
<td>78</td>
<td>41</td>
<td>323</td>
</tr>
<tr>
<td>Enon High School</td>
<td></td>
<td>21</td>
<td>36</td>
<td>15</td>
<td>21</td>
<td>93</td>
</tr>
<tr>
<td>Mount Herman High School</td>
<td></td>
<td>22</td>
<td>23</td>
<td>14</td>
<td>19</td>
<td>78</td>
</tr>
<tr>
<td>Thomas High School</td>
<td></td>
<td>19</td>
<td>25</td>
<td>15</td>
<td>22</td>
<td>81</td>
</tr>
<tr>
<td>Vernon High School</td>
<td></td>
<td>13</td>
<td>20</td>
<td>12</td>
<td>16</td>
<td>61</td>
</tr>
<tr>
<td>Pine High School</td>
<td></td>
<td>22</td>
<td>30</td>
<td>27</td>
<td>21</td>
<td>100</td>
</tr>
<tr>
<td>Varnado High School</td>
<td></td>
<td>27</td>
<td>16</td>
<td>18</td>
<td>8</td>
<td>69</td>
</tr>
<tr>
<td>Wesley Ray High School</td>
<td></td>
<td>38</td>
<td>42</td>
<td>46</td>
<td>22</td>
<td>148</td>
</tr>
<tr>
<td>Angie High School</td>
<td></td>
<td>13</td>
<td>10</td>
<td>4</td>
<td>7</td>
<td>34</td>
</tr>
<tr>
<td>Washington Parish High School</td>
<td></td>
<td>60</td>
<td>40</td>
<td>47</td>
<td>47</td>
<td>194</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>335</strong></td>
<td><strong>346</strong></td>
<td><strong>276</strong></td>
<td><strong>224</strong></td>
<td><strong>1181</strong></td>
</tr>
</tbody>
</table>


students by school and by grade level. Students from ten schools participated in this investigation; school samples ranged in number from 34 to 323. Totals for freshmen, sophomores, juniors, and seniors numbered 335, 346, 276, and 224 respectively. Totals for Negro and white students numbered 501 and 680 respectively.

Collection and Treatment of Data

During the 1968-69 academic school year, Adston Educational Enterprises, Inc. conducted a comprehensive survey of the Washington Parish Public School system. During the course of the investigation, a questionnaire was given to all secondary students of this parish. The questionnaire was developed by Dr. Alvin L. Bertrand, Professor of Rural Sociology, Louisiana State University. It consisted of a series of structured items which required the student to respond to questions about himself, his family, his home, his school and his life's expectations.

The personal and environmental factors which identified the independent variables in this study were obtained from responses to selected items in the aforementioned questionnaire (see Appendix A). Responses were coded and then placed on Fortran Coding Sheets together with the composite scores that were earned by students on the Iowa Tests of Educational Development. Scores on this test served as the dependent variable or achievement factor in
this investigation. The information was then referred to the Computer Research Center at Louisiana State University for key punching, and a single card was made for each student. Data which were recorded on the cards are presented in Appendix B.

An adaptation of the Sewell Family Socio-Economic Scale was used in determining socio-economic status. This was done in the following manner. Responses to items concerning parents' income, and characteristics of the home and family were assigned various point values. Consequently, each student earned a total composite score which represented a level of living score. Upper, middle and lower socio-economic status subgroups were then delineated from the total sample in the manner prescribed by this standardized level of living scale.

Multiple-classification analysis of variance was used in determining if subgroup differences in mean achievement was statistically significant. Since student samples in the various subgroups were unequal in number, the least squares technique was employed. Subgroups of students were delineated on the basis of the following personal and environmental factors:

1. Socio-economic status
2. Race
3. Mothers' employment status
4. Mothers' educational level
5. Fathers' educational level
6. Residential classification
7. Relationship to guardians
8. Student attitudes regarding their school
9. Student attitudes regarding their teachers
10. Student educational aspirations
The I.B.M. 7040 computer was used in analyzing the data in this study. Degrees of freedom, sums of squares, mean squares, mean achievements, and an F-ratio were computed for each of the groups identified above. F-ratios were also found for the interaction of grade level and each personal or environmental factor. Rejection or acceptance of the null hypothesis was dependent upon testing each F-ratio for significance at the .05 and .01 levels of confidence.

Summary

The procedures which were used in compiling and tabulating the data for this study included the following:

1. Administering a questionnaire to the sample
2. Collection and recording of composite scores of the Iowa Tests of Educational Development
3. Computations of frequency distributions of student responses
4. Analysis of variance computations
Chapter 4

PRESENTATION AND ANALYSIS OF DATA RELATED TO STUDENT ACHIEVEMENT

The purpose of Chapter 4 was to present and to analyze data related to achievement differences among students who were grouped according to the following personal or environmental factors:

1. Socio-economic status
2. Race
3. Mothers' employment status
4. Mothers' educational level
5. Fathers' educational level
6. Residential classification
7. Relationship to guardians
8. Student attitudes regarding their school
9. Student attitudes regarding their teachers
10. Student educational aspirations

Each factor was subdivided into various subgroups as identified in Chapter 1. The following null hypothesis was tested for each factor: there are no statistically significant differences in achievement among subgroups of students as measured by their composite scores on the Iowa Tests of Educational Development. F-ratios were computed for each factor and tested for significance at the .05 and the .01 levels of confidence. In addition, the influence of each factor on the achievement of students in each grade level was tested by an interaction ratio for grade level and factor.
Achievement of Students as Related to Socio-Economic Status

Table 2 presented data regarding the analysis of variance computations for five factors together with the interaction ratio of each factor with grade level. An inspection of the table revealed that the F-ratio for socio-economic status was significant at the .01 level of confidence. Furthermore, an examination of the total socio-economic means in Table 3 showed that the mean achievement of students increased as their status level increased. The mean achievements of students from lower, middle, and upper levels were 8.933, 10.086, and 10.629 respectively. On testing for significant differences between the subgroups, it was found that students from middle and upper socio-economic levels had significantly higher scores than students from the low status group. Students from the upper status group also had achievement scores which were significantly higher than scores of students from the middle socio-economic level.

The F-ratio for the interaction of socio-economic status and grade level was not significant. Thus, the data supported the null hypothesis that the influence of socio-economic status on achievement was equally distributed among the four grade levels.

Achievement of Students as Related to Race

An F-ratio of 293.941 was obtained upon testing achievement differences by race. This ratio was large enough
### Table 2

**Analysis of Variance of Achievement of Students Classified According to Socio-Economic Status, Race, Mothers' Employment Status, and Educational Levels of the Parents**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-Economic Status</td>
<td>2</td>
<td>309.750</td>
<td>154.875</td>
<td>8.353**</td>
</tr>
<tr>
<td>Race</td>
<td>1</td>
<td>5577.776</td>
<td>5577.776</td>
<td>293.941**</td>
</tr>
<tr>
<td>Mothers' Employment Status</td>
<td>1</td>
<td>35.391</td>
<td>35.391</td>
<td>1.865</td>
</tr>
<tr>
<td>Fathers' Educational Level</td>
<td>3</td>
<td>563.218</td>
<td>187.739</td>
<td>10.427**</td>
</tr>
<tr>
<td>Mothers' Educational Level</td>
<td>3</td>
<td>775.937</td>
<td>258.646</td>
<td>14.348**</td>
</tr>
<tr>
<td>Socio-Economic Status x Grade</td>
<td>6</td>
<td>68.698</td>
<td>11.450</td>
<td>0.618</td>
</tr>
<tr>
<td>Race x Grade</td>
<td>3</td>
<td>591.851</td>
<td>197.284</td>
<td>10.397**</td>
</tr>
<tr>
<td>Mothers' Employment Status x Grade</td>
<td>3</td>
<td>135.323</td>
<td>45.108</td>
<td>2.377</td>
</tr>
<tr>
<td>Fathers' Educational Level x Grade</td>
<td>9</td>
<td>179.198</td>
<td>19.911</td>
<td>1.106</td>
</tr>
<tr>
<td>Mothers' Educational Level x Grade</td>
<td>9</td>
<td>102.560</td>
<td>11.396</td>
<td>0.632</td>
</tr>
</tbody>
</table>

**Significant at the .01 level of confidence.**
<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Socio-Economic Status</th>
<th>Total Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
<td>Middle</td>
</tr>
<tr>
<td>Nine</td>
<td>7.017</td>
<td>8.525</td>
</tr>
<tr>
<td>Ten</td>
<td>8.342</td>
<td>8.992</td>
</tr>
<tr>
<td>Eleven</td>
<td>10.140</td>
<td>11.444</td>
</tr>
<tr>
<td>Twelve</td>
<td>10.231</td>
<td>11.384</td>
</tr>
<tr>
<td>Total Socio-Economic Status</td>
<td>8.933</td>
<td>10.086</td>
</tr>
</tbody>
</table>
to justify rejection of the null hypothesis at the .01 level of confidence.

The mean achievements of Negroes and whites by grade level are presented in Table 4. The data showed that the total mean achievement of white students was 14.092; the total mean achievement of Negro students was 5.207. Thus, the data revealed that white students had achievement scores which were significantly higher than the scores made by Negro students.

On testing achievement differences among Negro and white students at various grade levels, it was found that the F-ratio (10.397) for interaction of race and grade was also significant at the .01 level of confidence. White mean achievement scores for grades nine, ten, eleven, and twelve were 11.431, 12.568, 16.187, and 16.184 respectively; Negro mean achievement scores were 4.232, 4.998, 5.907, and 5.702. Since the null hypothesis, that the magnitude of the effect of race on the achievement of students was constant at all grade levels had to be rejected, a graph of the achievement means by grade level was used to show the joint effects of the two variables. The graph of the data (Figure 1), revealed that the curves are non-additive or non-parallel. Since parallel curves imply no significant influence of one variable upon another, and convergent or divergent curves imply an influence of a variable upon another, the data revealed that the influence of race on
Table 4
Least Squares Mean Achievement of 1139 Students Classified According to Race and Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Race</th>
<th>Total Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negro</td>
<td>white</td>
</tr>
<tr>
<td>Nine</td>
<td>4.232</td>
<td>11.431</td>
</tr>
<tr>
<td>Ten</td>
<td>4.998</td>
<td>12.568</td>
</tr>
<tr>
<td>Eleven</td>
<td>5.907</td>
<td>16.187</td>
</tr>
<tr>
<td>Twelve</td>
<td>5.702</td>
<td>16.184</td>
</tr>
<tr>
<td>Total Race</td>
<td>5.207</td>
<td>14.092</td>
</tr>
</tbody>
</table>
Figure 1

Graph of Negro and White Mean Achievement Scores by Grade Level
achievement increased at each successive grade level. In other words, the disparity in achievement among races was significantly related to the grade level of the student.

Achievement of Students as Related to Mothers' Employment Status

The effect of mothers' employment status on achievement of students was the third factor to be tested. Total mean achievement scores of the two subgroups for this factor are given in Table 5. While the total mean achievement (9.834) of students whose mothers were employed was greater than the mean achievement score (9.465) of students in the non-employed subgroup, the F-test for this factor was not significant. The interaction ratio for mothers' employment status and grade level was also not significant.

Achievement of Students as Related to Parents' Educational Background

The mean achievement scores of the subgroups related to fathers' educational level is given in Table 6. The total mean achievement scores of the two subgroups of students whose fathers had not completed secondary school were relatively low and approximately equal. However, mean achievement scores for the subgroups, children whose fathers had completed secondary school or children whose fathers had post-secondary education were relatively high and not equal.
Table 5
Least Squares Mean Achievement of 1139 Students Classified According to Mothers' Employment Status and Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Mothers' Employment Status</th>
<th>Total Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employed</td>
<td>Not Employed</td>
</tr>
<tr>
<td>Nine</td>
<td>7.975</td>
<td>7.688</td>
</tr>
<tr>
<td>Ten</td>
<td>8.772</td>
<td>8.784</td>
</tr>
<tr>
<td>Eleven</td>
<td>11.838</td>
<td>10.256</td>
</tr>
<tr>
<td>Twelve</td>
<td>10.752</td>
<td>11.135</td>
</tr>
<tr>
<td>Total Mothers' Employment Status</td>
<td>9.834</td>
<td>9.465</td>
</tr>
</tbody>
</table>
Table 6
Least Squares Mean Achievement of 1114 Students
Classified According to Fathers' Educational
Level and Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Fathers' Educational Level</th>
<th>Total Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less than 8 grades</td>
<td>8-11 grades</td>
</tr>
<tr>
<td>Nine</td>
<td>7.062</td>
<td>7.339</td>
</tr>
<tr>
<td>Ten</td>
<td>8.198</td>
<td>8.583</td>
</tr>
<tr>
<td>Eleven</td>
<td>10.382</td>
<td>10.349</td>
</tr>
<tr>
<td>Twelve</td>
<td>11.113</td>
<td>9.575</td>
</tr>
<tr>
<td>Total Fathers' Educational Level</td>
<td>9.189</td>
<td>8.963</td>
</tr>
</tbody>
</table>


The total mean achievement scores for the four subgroups were 9.189, 8.963, 9.820, and 11.645. The F-ratio for this factor was 10.427 and was significant at the .01 level of confidence. T-test analyses of the achievement mean differences for the four subgroups revealed the following relationships:

1. The subgroups of students whose fathers completed high school or whose fathers received post-secondary education had mean achievement scores which were significantly higher than the subgroups of students whose fathers' educational levels ranged from eight to eleven grades or whose fathers' levels ranged from one through seven grades.

2. There was no significant difference in achievement between the subgroup of students whose fathers had completed eight to eleven grades in high school and those whose fathers had achieved less than eight grades in school.

3. The mean achievement score of students whose fathers had post-secondary education was significantly higher than the mean achievement score of students whose fathers had only completed high school.

Since the F-ratio for the interaction of fathers' educational background and grade level was only 1.106, it was not significant.

The last of the factors to be analyzed in this section was the educational background of the mothers in relationship to achievement differences among students. The data of Table 7 showed the mean achievement of students whose mothers completed less than eight grades of school was 8.563 while the mean achievement of students whose mothers completed eight through eleven grades of school was 9.267.
Table 7

Least Squares Mean Achievement of 1149 Students
Classified According to Mothers' Educational
Level and Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Mothers' Educational Level</th>
<th>Total Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less than 8 grades</td>
<td>8-11 grades</td>
</tr>
<tr>
<td>Ten</td>
<td>7.400</td>
<td>8.594</td>
</tr>
<tr>
<td>Twelve</td>
<td>10.521</td>
<td>10.322</td>
</tr>
<tr>
<td>Total Mothers' Educational Level</td>
<td>8.563</td>
<td>9.267</td>
</tr>
</tbody>
</table>
The subgroup achievement means for students with mothers who had completed secondary school and for students whose mothers had attained post-secondary education were 9.695 and 12.227 respectively. The F-ratio (14.348) for this factor was statistically significant at the .01 level of confidence.

T-tests between the various subgroups revealed the following relationships:

1. Students whose mothers completed secondary school or whose mothers received post-secondary education had mean achievement scores which were significantly higher than students whose mothers completed eight through eleven grades of school or whose mothers had attained less than eight grades in school.

2. The mean achievement difference between students whose mothers had completed less than eight grades of school and those whose mothers had completed eight through eleven grades of school was not statistically significant.

3. Students whose mothers had post-secondary education had a mean achievement score significantly higher than the mean achievement score of students whose mothers had completed only high school.

The F-ratio for the interaction of mothers' educational background and grade level was not significant.

**Achievement of Students as Related to Residential Classification**

Table 8 presented data regarding the analysis of variance computations for five factors together with the interaction ratio of each factor with grade level. An inspection of the table revealed that the F-ratio (2.318) for residential classification was not significant. Such results were interpreted to mean that any differences in the
Table 8

Analysis of Variance of Achievement of Students Classified According to Residential Classification, Educational Aspirations, Relationship to Guardians, and Attitudes About Schools and Teachers

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Classification</td>
<td>2</td>
<td>88.199</td>
<td>44.099</td>
<td>2.318</td>
</tr>
<tr>
<td>Educational Aspirations</td>
<td>1</td>
<td>1096.572</td>
<td>1096.572</td>
<td>63.319**</td>
</tr>
<tr>
<td>Relationship to Guardians</td>
<td>2</td>
<td>31.055</td>
<td>15.528</td>
<td>0.819</td>
</tr>
<tr>
<td>Attitude About School</td>
<td>3</td>
<td>156.081</td>
<td>52.027</td>
<td>2.793*</td>
</tr>
<tr>
<td>Attitudes About Teachers</td>
<td>3</td>
<td>295.045</td>
<td>98.348</td>
<td>5.340**</td>
</tr>
<tr>
<td>Residential Classification x Grade</td>
<td>6</td>
<td>224.830</td>
<td>37.472</td>
<td>1.970</td>
</tr>
<tr>
<td>Educational Aspirations x Grade</td>
<td>3</td>
<td>168.439</td>
<td>56.146</td>
<td>3.242*</td>
</tr>
<tr>
<td>Relationship to Guardians x Grade</td>
<td>6</td>
<td>209.194</td>
<td>34.866</td>
<td>1.840</td>
</tr>
<tr>
<td>Attitudes About School x Grade</td>
<td>9</td>
<td>258.272</td>
<td>28.697</td>
<td>1.540</td>
</tr>
<tr>
<td>Attitudes About Teachers x Grade</td>
<td>9</td>
<td>135.038</td>
<td>15.004</td>
<td>0.815</td>
</tr>
</tbody>
</table>

*Significant at the .05 level of confidence.

**Significant at the .01 level of confidence.
mean achievement scores of subgroups of students who resided on farms, in the open country, or in towns or villages were due to chance factors. The mean achievement scores of those three subgroups by grade level are presented in Table 9. The data of that table showed that the total mean achievement scores of students who resided on farms or in the open country were 9.241 and 9.789; the mean achievement score of students who resided in villages or towns was 10.021.

The F-ratio for the interaction of residential classification and grade level was also not significant. Thus, the data indicated that the influence of residential classification on achievement of students did not vary significantly among the different grade levels.

Achievement of Students as Related to Educational Aspirations

The mean achievements of students who were classified according to their educational aspiration by grade level are presented in Table 10. The total mean achievement score of the subgroup of students who planned to terminate their education at the secondary level was well below the total mean achievement score for that subgroup of students who planned to attain post-secondary education. Total achievement means for the two subgroups were 7.658 and 10.303. Since the F-ratio (63.319) for this factor was significant at the .01 level of confidence, the data showed
### Table 9
Least Squares Mean Achievement of 1140 Students
Classified According to Residential Classification and Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Residential Classification</th>
<th>Total Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farm</td>
<td>Open Country</td>
</tr>
<tr>
<td>Nine</td>
<td>7.941</td>
<td>7.705</td>
</tr>
<tr>
<td>Ten</td>
<td>8.023</td>
<td>9.272</td>
</tr>
<tr>
<td>Twelve</td>
<td>10.530</td>
<td>11.516</td>
</tr>
<tr>
<td>Total Residential Classification</td>
<td>9.241</td>
<td>9.789</td>
</tr>
</tbody>
</table>

### Table 10
Least Squares Mean Achievement of 1161 Students
Classified According to Educational Aspirations and Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Educational Aspirations</th>
<th>Total Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High School Only</td>
<td>Post-Secondary</td>
</tr>
<tr>
<td>Nine</td>
<td>6.442</td>
<td>8.424</td>
</tr>
<tr>
<td>Ten</td>
<td>7.377</td>
<td>9.384</td>
</tr>
<tr>
<td>Eleven</td>
<td>9.407</td>
<td>11.469</td>
</tr>
<tr>
<td>Twelve</td>
<td>7.407</td>
<td>11.936</td>
</tr>
<tr>
<td></td>
<td>7.658</td>
<td>10.303</td>
</tr>
</tbody>
</table>
that students who planned to seek schooling beyond high school had achievement scores which were significantly higher than the scores of students who planned to terminate their education upon completion of high school.

The F-ratio (3.242) for the interaction of educational aspirations and grade level was found to be significant at the .05 level of confidence. A graph of the interaction effects is presented in Figure 2. The graph showed that the curves were additive and approximately parallel for grades nine through eleven; however, they were non-additive and divergent at grade twelve. Thus, the data showed that while high educational aspiration was associated with high academic attainment at all grade levels, it was even more pronounced at grade twelve. In other words, the magnitude of the effect of educational plans on achievement was constant or the same for grades nine through eleven, but was different and greater at grade twelve.

Achievement of Students as Related to Their Relationship to Guardians

Table 11 presented data concerning mean achievements by grade of those subgroups of students who were classified according to their relationship to guardians. Mean achievement totals for students who resided with both parents, with one parent and/or step-parent, or with no parent were 9.438, 9.913, and 9.389 respectively. While the total mean achievement of the subgroup of students from the one-parent home was
Figure 2

Graph of Mean Achievement Scores by Plans for Further Schooling and Grade Level
slightly higher than the total mean achievements of the other two subgroups, the F-ratio (0.819) was not significant. The F-ratio for the interaction of relationship to guardians and grade level was also not significant.

Table 11
Least Squares Mean Achievement of 1164 Students Classified According to Relationship to Guardians and Grade Level

<table>
<thead>
<tr>
<th>Relationship to Guardians</th>
<th>Resides with one-parent and/or step-parent</th>
<th>Resides with no parent</th>
<th>Total Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Level</td>
<td>Resides with both parents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nine</td>
<td>7.538</td>
<td>7.448</td>
<td>8.117</td>
</tr>
<tr>
<td>Ten</td>
<td>8.863</td>
<td>8.493</td>
<td>7.423</td>
</tr>
<tr>
<td>Eleven</td>
<td>10.607</td>
<td>10.930</td>
<td>11.850</td>
</tr>
<tr>
<td>Twelve</td>
<td>10.742</td>
<td>12.781</td>
<td>10.163</td>
</tr>
<tr>
<td>Total Relationship to Guardians</td>
<td>9.438</td>
<td>9.913</td>
<td>9.389</td>
</tr>
</tbody>
</table>

Achievement of Students as Related to Attitudes About Teachers

Data concerning the mean achievements of subgroups of students who were grouped according to attitudes about teachers were presented in Table 12. Four student subgroups were delineated from this factor. It was found that the total mean achievements of subgroups of students who felt that all teachers were interested in them or who felt that
Table 12
Least Squares Mean Achievement of 1144 Students
Classified According to Attitudes About Teachers and Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Attitudes About Teachers</th>
<th>Total Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Interested</td>
<td>Most Interested</td>
</tr>
<tr>
<td>Eleven</td>
<td>10.595</td>
<td>11.968</td>
</tr>
<tr>
<td>Total Attitude About Teachers</td>
<td>9.355</td>
<td>10.289</td>
</tr>
</tbody>
</table>
most teachers were interested in them were higher than the total mean achievements of the two subgroups of students who had less favorable attitudes about their teachers. Those total mean achievements were 9.355, 10.289, 9.048, and 8.930.

The F-ratio (5.340) for attitudes about teachers was significant at the .01 level of confidence. T-test analyses of the various subgroup achievement differences revealed the following relationships:

1. The subgroup of students who felt that all teachers were interested in them or who felt that most teachers were interested in them had total mean achievement scores which were significantly higher than the scores made by the subgroups of students who believed that few or no teachers were interested in them.

2. The total mean achievement score of students who believed that most teachers were interested in them was significantly higher than the mean achievement score of students who believed that all teachers were interested in them.

3. There was no statistically significant difference in achievement between the subgroup of students who believed that few teachers were interested in them and those who believed that no teachers were interested in them.

The F-ratio for the interaction of attitude about teachers and grade level was not significant.

Achievement of Students as Related to Their Attitudes About Their Present School

Students' responses to a question concerning the quality of their schools enabled the writer to identify four
subgroups from the school attitude factor in this investigation. Those subgroups, and their total mean achievements by grade level were presented in Table 13. Subgroups of students who rated their school excellent or good tended to have higher total mean achievement scores than subgroups of students who rated their school fair or poor. Total mean achievement scores for those subgroups of students who rated their school excellent or good were 9.561 and 10.143 respectively; total mean achievement scores for the subgroups of students who rated their school fair and poor were lower—9.244 and 9.498 respectively. While the pattern of means was inconsistent, the F-ratio of 2.793 for this factor was significant at the .05 level of confidence. T-test analyses of the mean difference between various subgroups revealed that students who rated their school good had scores which were significantly higher than scores made by students who rated their school fair. Other subgroup comparisons showed no significant difference between mean scores.

The F-ratio for the interaction between attitudes about school and grade level was not significant.

Summary

The null hypothesis, or the hypothesis that there were no statistically significant differences among subgroups of students as measured by composite scores of the
Table 13
Least Squares Mean Achievement of 1166 Students Classified According to Attitudes About School and Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Student Attitudes About School</th>
<th>Total Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Excellent</td>
<td>Good</td>
</tr>
<tr>
<td>Nine</td>
<td>8.156</td>
<td>8.099</td>
</tr>
<tr>
<td>Twelve</td>
<td>10.952</td>
<td>11.046</td>
</tr>
<tr>
<td>Total</td>
<td>9.561</td>
<td>10.143</td>
</tr>
</tbody>
</table>
Iowa Tests of Educational Development, was rejected for seven of the ten personal and environmental factors identified in this study. Significant differences in achievement were found on comparing the various subgroups which were delineated by socio-economic status, race, fathers' educational background, mothers' educational background, educational aspirations of students, student attitudes about school, and student attitudes regarding their teachers. Non-significant differences in achievement were found on comparing those subgroups of students who were identified by either mothers' employment status, relationship to guardians, or residential classification. On testing factor and grade level interaction, it was found that in only two cases did a factor influence achievement differences among grade levels. Those factors were race and the educational aspirations of students.
Chapter 5

SUMMARY AND CONCLUSIONS

Summary

During the past decade, much research has been directed towards identifying the effects of environmental factors upon the scholastic achievement of students. Scholars generally agree that poor home conditions have an adverse influence upon student achievement; however, there is no general agreement concerning the effects of specific environmental factors upon scholastic attainment. This study was an attempt to relate selected personal and environmental factors to the achievement of students in a rural parish in Louisiana. More specifically, this study was designed to answer the following questions:

1. Were there differences in achievement among students of different socio-economic backgrounds?

2. Were there differences in achievement among white and Negro students?

3. Was there a difference in achievement between students whose mothers did not work outside the home and students whose mothers worked outside the home?

4. Were there differences in achievement among students who were grouped according to father's educational
background?

5. Were there differences in achievement among students who were grouped according to mothers' educational background?

6. Were there differences in achievement of students who were grouped according to residential classification?

7. Was there a difference in achievement between students who planned to terminate their education at the secondary level and students who planned to attain education beyond the secondary level?

8. Were there differences in achievement among students who were grouped according to their attitudes regarding their school?

9. Were there differences in achievement among students who were grouped according to their attitudes about their teachers in their school?

10. Were there differences in achievement among students who were grouped according to their relationship to guardians?

11. What were the joint or interaction effects of grade level and each of the personal and environmental factors identified in questions one through ten?

The sample used in this investigation consisted of 1,181 secondary students from the public schools of
Washington Parish, Louisiana. Personal and environmental information was obtained from responses to a sociologically oriented questionnaire which was administered to students during the 1968-69 academic school year. The achievement factor in this study was dependent upon the composite scores earned by students on the Iowa Tests of Educational Development. Since some students did not return usable questionnaires, or did not complete the achievement test, the sample in this study represented approximately seventy percent of the public secondary population of Washington Parish, Louisiana.

Multiple classification analysis of variance was used in treating the data in this investigation. An F-ratio was computed for each personal and environmental factor and for the interaction of factor and grade level. Rejection or acceptance of the null hypothesis was dependent upon testing each F-ratio for significance at the .05 level of confidence.

Conclusions

An analysis of the data of this study enabled the writer to make the following conclusions:

1. The effect of socio-economic status on academic achievement was significant. Students from middle and upper socio-economic levels had significantly higher achievement scores than students from the low status
group. Students from the upper status group also had achievement scores which were significantly higher than the scores made by students from the middle socio-economic level. In general, achievement of students increased as the status level increased.

2. Test scores of white students were significantly higher than the test scores of Negro students at every grade level.

3. Student achievement was not related to the employment status of the mother.

4. Significant differences in achievement were found among subgroups of students that were derived from fathers' educational level. Students whose fathers completed high school or whose fathers received post-secondary education had achievement scores which were significantly higher than scores of students whose fathers' educational levels ranged from eight through eleven grades or whose levels ranged from one through seven grades. The mean achievement score of students whose fathers had post-secondary education was also significantly higher than the mean achievement score of students whose fathers had only completed high school. No significant difference in achievement was found among students whose fathers had completed eight to eleven grades in high school and those whose fathers had achieved less than eight grades in school. In general,
children whose fathers were well educated tended to have high achievement scores.

5. There was a significant relationship between mothers' educational levels and academic achievement. Students whose mothers completed secondary school or whose mothers received post-secondary education had achievement scores which were significantly higher than scores of students whose mothers completed eight to eleven grades of school or whose mothers had achieved less than eight grades of school. Students whose mothers had post-secondary education also had achievement scores which were significantly higher than scores of students whose mothers had only completed high school. No significant difference in achievement was found between students whose mothers had completed eight to eleven grades of school and those whose mothers had completed less than eight grades in school. In general, children whose mothers were well educated tended to have high achievement scores.

6. Residential classification had no influence upon the achievement of students. Achievement scores of students who resided on farms, in the open country, or in towns or villages were approximately the same and did not vary significantly.

7. Educational aspirations were significantly related to student achievement. Students who planned to
seek schooling beyond high school had achievement scores which were significantly higher than the scores of students who planned to terminate their education upon completion of high school.

8. No reliable differences in achievement were obtained among students who resided with both parents, with one parent and/or step-parent, or with no parent.

9. Student attitude toward the teachers was significantly related to achievement. Students who believed that all teachers were interested in them or who believed that most teachers were interested in them had achievement scores which were significantly higher than the scores of students who believed that few or no teachers were interested in them. Furthermore, students who believed that most teachers were interested in them had scores which were significantly higher than the scores of students who believed that all teachers were interested in them. No statistically significant difference in achievement was found between students who believed that few or no teachers were interested in them.

10. Student attitude concerning the school was significantly related to achievement. Students who rated their schools excellent or good tended to have higher achievement scores than did students who rated their schools fair or poor. Students who rated their schools good had scores which were significantly higher than students who rated their schools poor.
On testing the interaction of each personal and environmental factor with grade level, it was found that in only two cases did a factor influence achievement differences by grade level. Those factors were race and the educational aspiration of students. The data revealed that the influence of race on achievement increased at each successive grade level and that white students had achievement scores which were significantly higher than the scores of Negro students. For the educational aspiration factor, it was found that while high educational aspirations were associated with high academic achievement, at all grade levels, it was most pronounced at grade twelve.


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Osborne, R. T. "Racial Differences in Mental Growth and School Achievement: A Longitudinal Study," Psychological Reports, 7 (October, 1960), 223-239.


Dear Student:

This survey is an attempt to get a better picture of the problems young people face in choosing their life's occupation, and the problems that are being faced by our schools today. By carefully filling out this questionnaire you will help us to gain a better understanding of how these problems look from where you stand. This information will be of great value in developing the program being planned for Washington Parish. For this reason we are anxious to have you answer the questions on this form to the best of your ability.

PLEASE FOLLOW THE DIRECTIONS:

1. Read each item carefully. Answer to the best of your knowledge.

2. Be sure to answer each question. Where there are brackets, fill in an "X". Be sure that your "X" is squarely in the proper bracket, before your choice. Where only a space is left, enter the word or figures called for. If you cannot answer the question, write "I do not know."

3. There are several questions which refer to your parents. If for any reason you are not living with your parents, answer for the person who acts as your parent or guardian.

4. If you have any comments to make, if you do not understand any item, if your attitudes differ from those given, or if you have problems which we failed to mention, write them in the margin close to the items to which they relate.

I. ABOUT MYSELF

1. MY AGE (to nearest birthday) IS:_________________________

2. MY SEX IS: ( ) male ( ) female

3. MY RACE IS: ( ) Negro ( ) white
4. I MAKE MY REGULAR HOME WITH:
( ) my own parents.
( ) a parent and a step-parent.
( ) one parent only.
( ) my grandparents.
( ) an uncle or aunt.
( ) other (specify) ____________________________________.

5. THE NAME OF MY HIGH SCHOOL IS: __________________________

6. THE NUMBER OF YEARS I HAVE ATTENDED THIS HIGH SCHOOL IS
   __________________________.

7. THE KINDS OF EXTRA CURRICULAR ACTIVITIES IN WHICH I
   PARTICIPATE ARE:

   (Check the ones in which you participate regularly, and
    add to the list if necessary.)

   ( ) athletics  ( ) annual
   ( ) band  ( ) student government
   ( ) chorus-vocal  ( ) hobby club
   ( ) dramatics  ( ) other __________________________
   ( ) debates  ( ) __________________________
   ( ) 4-H or FFA  ( ) __________________________
   ( ) school paper  ( ) __________________________

8. I LIVE:

   ( ) on a farm
   ( ) in the open country but not on a farm
   ( ) in a village under 2,500
   ( ) in a town of 2,500 - 10,000
   ( ) in a city over 10,000

II. ABOUT MY EDUCATION

1. I AM NOW IN THE ______________ GRADE.

2. I HAVE REPEATED __________________________ GRADES IN SCHOOL.

3. I LIKE THE FOLLOWING SUBJECTS BEST IN SCHOOL. (List in
   rank order)
   1. ______________  2. ______________  3. ______________

4. I LIKE THE FOLLOWING SUBJECTS LEAST IN SCHOOL. (List in
   rank order)
   1. ______________  2. ______________  3. ______________
5. I PLAN TO:

( ) drop out of school before finishing high school.
( ) to get a high school education only.
( ) get more education after high school.

IF PLANNING TO GET MORE EDUCATION:

1. THE NAMES AND LOCATIONS OF THE SCHOOLS (COLLEGE, UNIVERSITY, VOCATIONAL OR TECHNICAL) I AM THINKING ABOUT ATTENDING ARE:

<table>
<thead>
<tr>
<th>Name of School</th>
<th>Location of School</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
</tr>
<tr>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td>(3)</td>
<td></td>
</tr>
</tbody>
</table>

2. THE COURSES OF STUDY I AM THINKING ABOUT TAKING ARE:

(1) ______________________
(2) ______________________
(3) ______________________

3. AS FAR AS I KNOW NOW, THE HIGHEST DEGREE, DIPLOMA, CERTIFICATE, ETC. I HOPE TO EARN IS:

( ) none
( ) bachelor's degree
( ) master's degree
( ) doctor's degree
( ) other degree, certificate, etc. ___________________

III. ABOUT MY CHOICE OF A LIFE'S OCCUPATION

1. THE OCCUPATIONS WHICH I HAVE THOUGHT ABOUT GOING INTO ARE:
   (name in order of preference)

<table>
<thead>
<tr>
<th>Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
</tr>
<tr>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td>(3)</td>
<td></td>
</tr>
<tr>
<td>(4)</td>
<td></td>
</tr>
</tbody>
</table>
2. OF THE JOBS YOU HAVE THOUGHT ABOUT GOING INTO, WHICH IS THE BEST ONE YOU ARE REASONABLY SURE YOU CAN GET WHEN YOUR SCHOOLING IS OVER? ________________________________

(If girl also give best job you are reasonably sure your future husband can get when his schooling is over? ________________________________)

3. OF THE JOBS YOU HAVE THOUGHT ABOUT WHICH IS THE BEST ONE YOU ARE REASONABLY SURE YOU CAN HAVE BY THE TIME YOU ARE 30 YEARS OLD? ________________________________

(If a girl also give best job you are reasonably sure your future husband could have at the time he is 30 years old? ________________________________)

4. OF THE JOBS YOU HAVE THOUGHT ABOUT, WHICH IS THE BEST ONE YOU WOULD CHOOSE TO HAVE WHEN YOU ARE AT THE PEAK OF YOUR WORK CAREER, IF YOU WERE FREE TO HAVE ANY JOB YOU WISHED? ________________________________

(If a girl also answer best job you would like for your future husband to have at the peak of his career?)

IV. ABOUT A MODEL SCHOOL PROGRAM

1. I CONSIDER MY PRESENT HIGH SCHOOL TO BE: ( ) excellent ( ) good ( ) fair ( ) poor.

2. OF THE TEACHERS IN MY SCHOOL, I FEEL THAT: ( ) all of them ( ) most of them ( ) a few of them ( ) none of them ARE INTERESTED IN THE STUDENT.

3. OF THE TEACHERS IN MY SCHOOL, I FEEL: ( ) all of them ( ) most of them ( ) a few of them ( ) none of them ARE GOOD AND FAIR TEACHERS.

4. I have ( ) have not ( ) ATTENDED CLASSES WITH NEGRO/WHITE STUDENTS.

5. THE COLUMN CHECKED REFLECTS MY FEELINGS ABOUT:

<table>
<thead>
<tr>
<th></th>
<th>I APPROVE</th>
<th>I AM UNDECIDED</th>
<th>I DISAPPROVE</th>
<th>I STRONGLY DISAPPROVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Attending classes with Negroes/whites</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Playing on athletic teams with Negroes/whites</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I APPROVE</td>
<td>I AM UNDECIDED</td>
<td>I DISAPPROVE</td>
<td>I STRONGLY DISAPPROVE</td>
</tr>
<tr>
<td>---</td>
<td>-----------</td>
<td>----------------</td>
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<td>-----------------------</td>
</tr>
<tr>
<td>C. Having a Negro/white school teacher</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>D. Eating in the school cafeteria with Negro/white students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Having Negro/white members in my school clubs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. THE COLUMN CHECKED REFLECTS MY FEELINGS ABOUT THE FOLLOWING STATEMENTS:

<table>
<thead>
<tr>
<th></th>
<th>AGREE</th>
<th>DISAGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Having Negro/white students together will lower the standards of a high school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Having Negro and white students participate together in athletics and band will improve the teams and bands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. A student should be judged on the basis of his performance rather than on the basis of his race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Negro and white students in a high school will seldom become good friends</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. I WISH I COULD HAVE TAKEN THE FOLLOWING COURSES WHICH ARE NOT OFFERED IN MY HIGH SCHOOL:
   ( ) none
   1._________________
   2._________________
   3._________________
8. I FEEL THAT MY HIGH SCHOOL is ( ) is not ( ) TRAINING ME ADEQUATELY FOR THE LIFE CAREER I WISH: Explain _______________________________________________

9. I FEEL A MODEL HIGH SCHOOL COULD BE AN IMPROVEMENT OVER MY PRESENT SCHOOL BY: (List three ways)
   (a) _____________________________________________________
   (b) _____________________________________________________
   (c) _____________________________________________________

V. ABOUT MY PARENTS AND FAMILY

1. MY PARENTS ARE:
   ( ) both living together
   ( ) both dead
   ( ) father is dead
   ( ) mother is dead
   ( ) divorced
   ( ) separated

2. MY MOTHER:
   ( ) has no job outside the home
   ( ) has a part-time job outside the home
   ( ) has a full-time job outside the home

3. MY FATHER'S OCCUPATION IS: (or was, if dead or retired)
   (Specify the kind of work he does and not where he works)

   IF FATHER IS A FARMER
   MY FATHER IS: ( ) owner ( ) renter ( ) laborer
   THE NUMBER OF ACRES MY FATHER OPERATES IS:___________

4. MY FATHER CONSIDERS HIS OCCUPATION TO BE:
   ( ) completely satisfactory
   ( ) fairly satisfactory
   ( ) good enough
   ( ) not very good
   ( ) very poor
5. MY MOTHER CONSIDERS MY FATHER'S OCCUPATION TO BE:

(  ) completely satisfactory
(  ) fairly satisfactory
(  ) good enough
(  ) not very good
(  ) very poor

6. MY FATHER'S EDUCATION CONSISTED OF:

(  ) less than 8 grades
(  ) 8 grades
(  ) 9-11 grades
(  ) 12 grades
(  ) some college
(  ) college degree

7. MY MOTHER'S EDUCATION CONSISTED OF:

(  ) less than 8 grades
(  ) 8 grades
(  ) 9-11 grades
(  ) 12 grades
(  ) some college
(  ) college degree

8. I BELIEVE MY FATHER'S EDUCATION IS:

(  ) completely satisfactory
(  ) fairly satisfactory
(  ) good enough
(  ) not very good
(  ) very poor

9. MY FATHER THINKS THAT THE EDUCATION HE OBTAINED IS:

(  ) completely satisfactory
(  ) fairly satisfactory
(  ) good enough
(  ) not very good
(  ) very poor

10. IN COMPARISON TO THE INCOME OF THE PARENTS OF OTHER STUDENTS IN THE HIGH SCHOOL, THE INCOME OF MY PARENTS IS:

(  ) one of the highest
(  ) higher than average
(  ) just average
(  ) less than average
(  ) one of the lowest incomes
11. MY PARENTS ARE CONSIDERED BY MOST PEOPLE IN THE COMMUNITY TO BE:

( ) very important people
( ) rather important people
( ) just average people
( ) of less than average importance
( ) not at all important

12. AS TO CONTINUING MY EDUCATION BEYOND HIGH SCHOOL, MY FATHER:

( ) has strongly encouraged me to continue
( ) has given me some encouragement to continue
( ) has never said much about it
( ) he feels that I would be better off going to work after high school
( ) feels that I should quit high school and go to work

13. AS TO CONTINUING MY EDUCATION BEYOND HIGH SCHOOL MY MOTHER:

( ) has strongly encouraged me to continue
( ) has given me some encouragement to continue
( ) has never said much about it
( ) feels that I would be better off going to work after high school
( ) feels that I should quit high school and go to work

14. AS TO ANY FURTHER HELP FROM MY FOLKS IN GETTING A START OR IN CONTINUING MY SCHOOLING AFTER HIGH SCHOOL, MY PARENTS WOULD BE:

( ) financially able to help me a great deal
( ) financially able to give me some help
( ) financially able to give me no help

15. I HAVE __________ BROTHERS, __________ SISTERS WHO ARE STILL AT HOME.

VI. ABOUT MY HOUSE

1. OUR HOME IS: ( ) owned ( ) rented

2. THE NUMBER OF PERSONS WHO LIVE AT OUR HOUSE IS: __________

3. THE NUMBER OF ROOMS IN OUR HOUSE IS: __________. (Do not include basements, bathrooms, porches, closets, halls.)
4. THE CONSTRUCTION OF OUR HOUSE IS:

( ) brick
( ) unpainted frame
( ) painted frame
( ) other (specify) __________________________

5. THE LIGHTING IN OUR HOUSE IS:

( ) oil lamps
( ) electric
( ) gas, mantle, or pressure lamps
( ) other or none

6. THE KIND OF REFRIGERATOR WE HAVE IS:

( ) ice
( ) mechanical (gas or electric)
( ) other or none

7. WE HAVE A DEEP FREEZE LOCKER AT OUR HOME:

( ) yes ( ) no

8. WE HAVE RUNNING WATER IN OUR HOUSE: ( ) yes ( ) no

9. WE TAKE A DAILY NEWSPAPER: ( ) yes ( ) no

10. WE HAVE A POWER WASHING MACHINE: ( ) yes ( ) no

11. WE HAVE A RADIO: ( ) yes ( ) no and TELEVISION:

( ) yes ( ) no

12. WE HAVE A CAR (other than truck): ( ) yes ( ) no

13. WE HAVE A TELEPHONE: ( ) yes ( ) no

14. I ATTEND CHURCH:

( ) regularly
( ) occasionally
( ) never

IF ATTEND, WHERE:__________________________

15. MY FATHER ATTENDS CHURCH:

( ) regularly
( ) occasionally
( ) never
16. MY MOTHER ATTENDS CHURCH:

( ) regularly
( ) occasionally
( ) never

IF ATTENDS, WHERE: ________________________________

NAME _______________________________________

SCHOOL _______________________________________

IF ATTENDS, WHERE: ________________________________
APPENDIX B

CARD LAYOUT

<table>
<thead>
<tr>
<th>Columns</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4</td>
<td>Student Identification Number</td>
</tr>
<tr>
<td>5-6</td>
<td>School</td>
</tr>
<tr>
<td>7</td>
<td>Student Grade Level</td>
</tr>
<tr>
<td>8</td>
<td>Mother's Employment Status</td>
</tr>
<tr>
<td>9</td>
<td>Race</td>
</tr>
<tr>
<td>10</td>
<td>Father's Educational Level</td>
</tr>
<tr>
<td>11</td>
<td>Mother's Educational Level</td>
</tr>
<tr>
<td>12</td>
<td>Residential Classification</td>
</tr>
<tr>
<td>13</td>
<td>Student's Educational Aspiration</td>
</tr>
<tr>
<td>14</td>
<td>Student's Attitude Regarding His School</td>
</tr>
<tr>
<td>15</td>
<td>Student's Attitude Concerning His Teachers</td>
</tr>
<tr>
<td>16</td>
<td>Relationship to Guardians</td>
</tr>
<tr>
<td>17</td>
<td>Socio-Economic Status</td>
</tr>
<tr>
<td>18-19</td>
<td>Composite Score on I.T.E.D.</td>
</tr>
</tbody>
</table>
VITA

Jack Warren Garon was born in Alexandria, Louisiana, on August 19, 1929. He was educated in the public schools of Louisiana and graduated from Simmesport High School in 1947. He attended the University of Southwestern Louisiana from 1947 to 1949 and then entered Louisiana State University where he received the Bachelor of Science degree in 1951. After teaching one year in the Tensas Parish Public School System and serving two years in the United States Navy, he resumed teaching in the public schools of Calcasieu Parish.

During the period 1958-1963, he taught three years in the East Baton Rouge Parish Public School System and attended Louisiana State University for two years, where he received the Master of Education and the Master of Arts degrees. In 1963, he was appointed Supervisor of Mathematics at the Louisiana State University Laboratory School.

He is married to Shirley Ann Honeycutt Garon. They are the parents of four children, Mark Wesley, Lisa Anne, Jack Warren, Jr., and Mary Michelle.
Candidate: Jack Warren Garon

Major Field: Education

Title of Thesis: Personal And Environmental Factors Related To The Achievement Of Public Secondary School Students In Washington Parish, Louisiana

Approved:

[Signatures]

Major Professor and Chairman
Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]

Date of Examination:
March 22, 1971