ACADEMIC ACHIEVEMENT AND INTELLIGENCE AMONG

NEGRO EIGHTH GRADE STUDENTS AS A

FUNCTION OF THE SELF CONCEPT

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DISSERTATION

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CHAPTER I

INTRODUCTION

The task of helping children to learn the skills they need in order to function adequately in today's rapidly changing world is of such magnitude that educators must facilitate learning with every possible resource. One such resource is a knowledge of the student's self concept, which is generally defined as the feelings, perceptions, beliefs, attitudes and values which one uses in describing himself.

Advocates of the self concept theory postulate that the self concept is a prime determinant of an individual's social behavior. Many studies have been conducted showing that the self concept is operative in such activities of the individual as sociometric choice (1), level of aspiration (15), conformity and non-conformity (4), occupational choice (9), adjustment (12), marriage (6), and authoritarianism (3, 14). Other studies (see Chapter II), although not as numerous as those conducted in other fields, show that the self concept is also operative in the individual's academic achievement.

Studies indicating that the self concept is a motivational factor in academic achievement do not indicate the

racial identity of the participating subjects. This omission suggests that there is a need for studies which investigate the relationships of the self concept to academic achievement, along racial lines.

Statement of the Problem

The problem of the present study was to determine the self concept of selected Negro boys and girls and to study the relationships of their self concept to their intelligence and academic achievement.

The two major objectives of this study were

1. To test the hypotheses which follow;

2. To explore further the contributions made by the variables used in the study to the subjects' academic [illegible] as measured by grade point average. (See "Definition of Terms" in this chapter.)

Hypotheses

In order to give direction to the objectives stated previously, the following hypotheses were proposed and tested.

Hypothesis I. There will be no significant difference between the self concepts of Negro eighth grade boys and those of Negro eighth grade girls.

Hypothesis II. There will be no significant difference between the intelligence test scores of Negro eighth grade boys and those of Negro eighth grade girls.

Hypothesis III. There will be no significant difference between the achievement test scores of Negro eighth grade boys and those of Negro eighth grade girls.

Hypothesis IV. The relationship between self concept and the intelligence test scores obtained for Negro eighth grade boys will not differ significantly from the relationship between self concept and the intelligence test scores obtained for Negro eighth grade girls. Similarly, the relationship between self concept and the achievement test scores obtained for Negro eighth grade boys will not differ significantly from the relationship between self concept and the achievement test scores obtained for Negro eighth grade girls.

Definition of Terms

The results of this study can be interpreted best in the light of the meanings assigned to the principal variables (self concept, intelligence, and achievement) by the makers of the instruments used to measure them in this study.

Self Concept is defined by Fitts (7) as the individual's "over-all level of self esteem." Bills defines Self Concept as the individual's "attitude toward self" (2). Both agree that the self concept reflects the individual's feelings about himself. For this study, the Self Concept is the individual's own report of his feelings about himself

as determined by the Bills' Index of Adjustment and Values, Junior High School Form, and the Tennessee Self Concept Scale for all ages twelve and above.

Intelligence (mental ability) is defined by Otis as the "thinking power or the degree of maturity of the mind" as reflected in the person's ability to demonstrate that he has acquired "certain knowledge and mental skill" appropriate to his age level (12). For the purposes of this study Intelligence was the individual's "thinking power or the degree of (his) maturity of the mind" as determined by the Otis Quick-Scoring Mental Ability Tests, Beta Test, Form A, and reflected in the individual's position in the class.

Achievement is defined by Burost and others as the extent or degree of "pupil growth . . . in the skill and content areas of the . . . junior high school curriculum" (5). For the purposes of this study Achievement was the extent or degree of the individual's growth in the skill and content areas of the junior high school curriculum as determined by the Metropolitan Achievement Tests, Advanced Battery--Complete, for Grades 7, 8, and 9, and reflected by the individual's position in the class.

Grade point average. The school system from which the subjects were drawn uses the "letter" system of grading and assigns the following values to the letters used:

"A" earns four grade points;

"B" earns three grade points;

"C" earns two grade points;

"D" earns one grade point.

No grade points are earned for a grade of "F".

Grade Point Average was defined, therefore, as the numerical average of all the subject's grades at the close of the first semester of the 1964-1965 school year and the position in the class assigned to him by this average.

Teachers' Estimate was defined as the teacher's perception of the student's self concept as determined by his completing the "Others" Form of the Bills' Index of Adjustment and Values as he thought the student would complete it for himself, and the student's resultant position in the class.

Other's Estimate was defined as the subject's perception of the self concepts of his peers as determined by his completing the "Others" Form of the Bills' Index of Adjustment and Values as he thought the "average" member of his peer group would complete it for himself, and the resultant position in the group of this "average other."

Limitations of the Study

1. The study was limited by the extent to which the subjects were aware of their true feelings about themselves at the time of being tested, and their willingness and honesty in revealing these feelings. Factors which contribute to this limitation are such variables as "response set,"

"response expectation," and "response frequency;" a tendency to over-value or under value one's self; the social desirability of certain responses to the stimulus items; the effects of responses to factors not related to the stimulus items; and the attitudes of the subjects toward the investigator.

2. The study was limited also to the extent that the instruments used in the study were valid measures of self concept, intelligence, and achievement.

3. An empirical limitation was that the results of the study would be of most value to populations most similar to that used in the study.

Summary

The self concept was defined generally as the individual's self-feelings as a result of his interaction with his perceived environment. The self concept was considered to be multidimensional because it has been known to manifest itself through many different behaviors. The self concept as a basic and primary motivational factor can prove to be of great service to educators and all those who would help children to learn, once it is understood by them.

Unfortunately, studies relating the self concept to school achievement are not as numerous as studies investigating other facets of individual behavior. This study was intended to narrow that gap somewhat, as well as to furnish

education some clue as to how the self concepts of Negro boys and girls in the eighth grade compare with their school achievement.

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CHAPTER II

SURVEY OF RELATED LITERATURE

Introduction

The purposes of this study were to measure and to compare the self concepts of Negro eighth grade boys and girls with each other; then to compare their self concepts with their intelligence and achievement test scores across sex lines. This chapter reviews how other investigators in the field have approached these same considerations and to determine the applicability of their findings to the present study.

Measuring the Self Concept

The self concept may be studied in many ways. It may be inferred from the self report of the subject, as with the Q sort (7) and rating scales (4); from the subject's behavior as observed by others; and from projective techniques such as the Thematic Apperception Test and the Rorschach Method (3).

The types of instruments used most often in inferring the individual's over-all or general level of self-regard are the rating scale, the adjective check list, and the questionnaire. Of these, the rating scale has yielded the most positive and consistent results (5).

These instruments may employ one or any combination of four general approaches in determining the self concept. The first of these approaches may be described as being direct, in that the individual simply tells how he feels about each of the stimulus items. The second approach is one in which congruences or discrepancies between self-ideal responses are noted. The differential approach makes use of ideal scores minus self scores. The fourth method of determining the self concept is one in which the individual's self report on actual self is accepted, with ideal self being inferred by the examiner (21, p. 65).

The individual's score, obtained by one of the four methods described, is evaluated along a continuum such as "good--poor," "acceptance--rejection," or "positive--negative." The position of a score above or below the mean of a particular continuum serves as the basis for inferring the nature of the individual's self concept. For example, if an individual's score is below the mean on the "positive--negative" continuum, his concept of himself is judged as being negative, while if it is above the mean, it is judged as being positive.

The findings from this survey revealed that no instrument purporting to measure the self concept was infallible. They revealed also that the worth of the contributions their use makes to understanding and helping children cannot easily be discounted.

Comparing the Self Concepts of Boys and Girls

The value of having some understanding of students' self-feelings as an aid in counseling can be enhanced by knowing whether or not girls' self-feelings differ from boys' self-feelings when all subjects are the same chronological age and are in the same grade. Research shows that there are some differences.

Amatora (1) and Ausubel (2) found that girls tended to rate themselves higher on self concept than did boys. Perkins (15), who studied 151 fourth and sixth grade children, found that girls' self-ideal congruence was significantly greater than that of boys. A similar finding was reported by Bledsoe (6) as a result of his study of 605 fourth and sixth grade children. He found that at both grade levels the girls rated themselves higher on self concept than did the boys. Klausmeier and Check (13) reported similar findings from their study of 120 fourth grade children.

The studies cited above indicate that among pre-adolescents, girls rate themselves relatively higher on self concept than do boys. In other words, the self concept of pre-adolescent girls differs in a positive direction from that of boys; and conversely, the self concept of pre-adolescent boys differs in a negative direction from that of girls.

This unusual phenomenon, of having two people placed properly on the educational ladder on the basis of age and grade, yet apparently headed in different and opposite directions in terms of personal feelings about the self, has long been an educational dilemma. Perhaps more specific and intensive applications of what is being revealed about childrens' self concepts will help to resolve the dilemma. The general explanation for this phenomenon, that girls mature more rapidly than boys (8), serves only to underscore the urgency of the situation.

Comparing the Self Concept and Intelligence

Research indicates that there is no causal relationship between the self concept and intelligence. There is some indication that a covariance may exist.

Sears (18), found that bright boys exhibited high self concepts, as compared to bright girls. However, Walsh (20), using the Driscoll Playkit, studied forty boys whose IQ's were 120 or above, found positive and negative self concepts existing within the same groups.

Hayes (12), Bledsoe (3), and Mitchell (14) reported that there was no relationship between IQ and self concept. All three of these investigators used the Bills Index of Adjustment and Values to measure their subjects' self concept.

Hayes used the Index of Adjustment and Values with the senior class of a midwestern high school. He gained a measure of mental ability from the School and College Ability Test. Two groups were matched on the basis of self concept and compared with each other. He reported no significant relationship between intelligence and the self concept of either group.

Mitchell, working with 100 college freshmen, used the Index of Adjustment and Values along with the American Council on Education Psychological Examination. Four groups were formed on the basis of their self concept, and compared with one another. His findings confirmed those of Hayes (12).

Fledoce (6) reported similar results from his study of 305 fourth and sixth grade children. His groups were formed on the basis of sex and grade. He administered the Index of Adjustment and Values and compared the self concepts of his subjects with their intelligence test scores on the California Test of Mental Maturity. He found no significant relationships between intelligence and the self concepts of his subjects.

The findings of Coopersmith (9), Klausmeier and Check (13), and Ringness (17) revealed positive relationships between self concept and intelligence.

Coopersmith (9) studied 102 fifth and sixth grade children. He administered the Self Esteem Inventory, which he developed, and formed four groups on the basis of the

students' self esteem scores and the amount of agreement between them and the ratings of their teachers. He found that the brighter children rated themselves higher on self concept than did the less bright, and that the teachers also rated the brighter children higher on self concept than they rated those children who were less bright.

Klausmeier and Check (13) worked with 40 retarded children and 80 normal children, all of whom were at the fourth grade level of achievement. After forming three groups of high, low, and average intelligence, as determined by the Weschler Intelligence Scale for Children, they compared each child's group membership with his self concept rating, which was inferred by two psychologists using a scale ranging from "poorly integrated" to "well integrated." Again, the brightest children were found to possess the highest self concepts.

Ringness (17) used the same experimental design as did Klausmeier and Check (13) except that he inferred the subjects' self concepts by use of the Child's Self Rating Sheet. His findings were similar to those cited above, with the exception that the retarded children rated themselves higher on self concept than did the average group.

Despite the relationships reported as existing between intelligence and the self concept, the literature is convincing that no causal relationship does exist between intelligence and the self concept. The literature also

reveals that while the individual's self-estimate may place him at or near the upper limits of the self concept continuum, his measured ability may place him at or near the lower limits of the ability continuum (17). To explain this phenomenon as an unrealistic self-estimate leaves unanswered this question: In whose opinion is the individual's self-estimate unreal?

Perhaps the answer to the above question is to be found in the way the individual perceives himself in relation to his perceived environment, and the degree of his desire to have others see him as a person of worth.

Comparing Self Concept and Academic Achievement

The results of studies which compare self concept and achievement are somewhat contradictory. Coopersmith (9) reported that high self-esteem and success are complementary. Drews and Teahan (10) reported that the person who earns good grades may have a poor self concept. Walsh (20) found that under-achievers manifested inadequate and crippling self concepts, while Fiedler and others (11), Turner and Vanderlippe (19), and Perkins (15) reported no relationship between self concept and academic achievement.

Fiedler and others (11), working with young adults, found no relationship between self-esteem, as measured by a 20-item version of the Semantic Differential, and the grade point averages of his subjects. Similarly, Turner and

Vanderlippe (19) found no trend toward an increase in grade point average accompanying trends toward high self-ideal congruence as measured by Butler and Haigh's 100 Q Sort Items.

Perkins (15) studied 251 fourth and sixth grade children. He inferred their self concepts from the scores obtained from Jersild's Q Sort, which he administered on a test--re-test basis. Perkins obtained achievement scores in language, reading, arithmetic, and total achievement for the sixth grade by administering the California Achievement Test.

At the end of a six-months period Perkins found a significant increase in self-ideal congruence. Sixth grade children showed greater self-ideal congruence ($r = .70$) than fourth grade children ($r = .59$). He reported also that the increases in achievement in language ($r = .09$), reading ($r = .06$), arithmetic ($r = .16$), and total achievement ($r = .08$) did not differ significantly from zero.

The studies which are noted below are more optimistic about the relationship between the self concept and academic achievement than those reported above. Positive relationships between the self concept and achievement were reported by Bledsoe (6), Coopersmith (), Hayes (12), Klausmeier and Check (13), and Ringness (17).

Bledsoe (6) studied 605 fourth and sixth grade children attending public school in a southern county. He inferred

their self concepts by administering The Self Concept Scale (adapted from Bills' Index of Adjustment and Values), the Carlson Self Description Scale, and the Children's Manifest Anxiety Scale. A random sample of 271 of these students were compared with their scores on the California Achievement Test.

Bledsoe (6) reported a positive relationship between the self concept and achievement of .43 ($p < .01$) for fourth grade boys and a relationship of .39 ($p < .01$) for sixth grade boys. The relationships for the girls on these two variables were not significant, being .19 for the fourth grade and .06 for the sixth grade. The reported sex difference in the relationship between the self concept and achievement is somewhat puzzling, since Bledsoe reported in the same study that the self concepts of the girls were significantly higher than those of the boys at both grade levels.

Bledsoe's findings vary somewhat from those of Coopersmith (9), which were not reported along sex lines. Coopersmith, in his investigation, studied 102 fifth and sixth grade children (53 boys and 49 girls) whose ages ranged from ten to twelve. The subjects attended the public schools of an eastern city, and lived in or near a middle-middle to upper-middle-class neighborhood.

The subjects were administered the Self Esteem Inventory (developed by Coopersmith), and were also rated

by their principal and teachers on a Behavior Rating Scale, which Coopersmith also developed. After an interval of five weeks the Inventory was re-administered to one of the fifth grade classes.

Four groups of children were formed on the basis of the agreement or lack of agreement between the subjects' self ratings and the teachers' ratings. The resultant groups were designated as "High-High, High-Low, Low-Low, and Low-High." These group ratings on self esteem were then compared with the children's scores on the Iowa Achievement Test. The findings revealed a significant relationship between self esteem and achievement of .36 ($p < .01$).

As Bledsoe's subjects lived in a "southern county," and Coopersmith's subjects lived in an "eastern city," differences in the two sets of findings may be due in part to different environmental factors, which are known to exert an influence upon an individual's self-perceptions.

The findings of Klausmeier and Check (13), and of Ringness (17), tend to support Coopersmith's findings, as both worked with subjects across sex lines. Both studies involved working with 120 fourth grade children, 40 of whom were considered to be retarded but educable. Klausmeier and Check inferred the self concepts of their subjects from the reports of two psychologists, while Ringness used the Child's Self Concept Rating Sheet. Both used the elementary form of the California Achievement Test to measure achievement.

Ringness reported that the children with the highest self concepts were also more reliable in predicting their scores on the achievement test. Klausmeier and Check reported that emotional adjustment, achievement in relation to capacity to achieve, and integration of self concept were positively and significantly related. The correlation for boys was .49 and .52 for girls, both correlations being significant at or beyond the .05 level.

Walsh (20) divided 40 boys of 120 IQ and above into two groups of 20 under-achievers and 20 normal achievers, and studied the relationships of their self concepts to their levels of achievement. She inferred their self concepts from data obtained by the Driskoll Playkit and from the stories the children made up from the incomplete sentences she furnished them.

Walsh's findings that the bright academic under-achiever's self concept was less adequate and more crippling than that of his normal-achieving counterpart is in agreement with other findings reported here: the poorer the self concept, the lower the academic achievement; and the higher or more positive the self concept, the higher the academic achievement.

Summary

There are several approaches to the measurement of the self concept. The rating scale, the questionnaire, and the

check-list are used most often by investigators in securing a general or over-all measure of the individual's self concept. Of these measures, it is held that the rating scales yield the most consistent results.

The literature strongly suggests that the self-feelings of girls differ in a positive direction from those of boys. Different levels of maturation of boys and girls, and differences in the environmental influences they are subjected to may offer some explanation for these variations.

It was found generally that the individual's self concept did not materially affect his intelligence. However, the more intelligent persons tended to rate highest on self concept measures, and the less intelligent persons tended to rate lowest. Coupled with these findings were the reports that children lowest in intelligence tended to over-rate themselves.

The findings concerning the relationship of the self concept to achievement were somewhat contradictory. Some investigators found no relationship. Other investigators found relationships that were quite positive and very significant. However, there was general agreement that the individual's self concept does affect his academic achievement.

Generally, the studies reviewed in this section, reveal that there are differences in the way boys and girls feel about themselves, that there is no causal relationship

between the self concept and intelligence, and that the self concept is a motivational factor in academic achievement.

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CHAPTER III

METHODS AND PROCEDURES

Introduction

Facts in isolation remain facts. Facts set against the background of people and the objects in their experiences convey meanings which facilitate the understanding and interpretation of the facts themselves. Such a background is needed for the application of the meanings inferred from these facts. Therefore, in order to provide a background for the interpretation of the findings of this study, information describing the socio-economic status of the subjects, the general nature of their home life, and the educational and occupational levels of their parents or guardians is provided.

Description of the Sample

The school district from which the subjects were drawn is in a city of slightly more than 100,000 population, of which approximately 9,000 are Negroes. At the time of the study, more than 2,100 of these Negroes were enrolled in the public schools in grades ranging from one through twelve. Another group of approximately 200 children under six attended day nurseries which are operated by churches

and charitable organizations, and have no official connection with the public school system.

The 1960 census for the school district under study listed 8.9 as the median number of school years completed by the Negro population. This number compared favorably with the median number of school years completed (7.5) as reported in the 1950 census for the same school district.

The 1960 census also showed 1900 Negro families, of which 1500 were husband-wife families. Of these, 421 families had children of school age. At the time of the study, from among these families, there were more than 2,000 school age children enrolled in school.

In 1960 approximately two-thirds of all children for this school district under age 18 lived with both parents. However, of the eighth grade boys and girls under study only six out of ten children, or sixty per cent, lived with both parents; slightly more than 28 per cent lived with one parent (the mother), while slightly more than 11 per cent lived with relatives. Of the total number living with relatives, six girls and three boys lived with their grandmothers, four of each sex lived with their aunts, and one girl lived with her sister.

Of the 1900 families listed by the 1960 census for the school district under study, 1600 earned less than $5,000 per year (with both parents working), while only 27 families managed a combined income exceeding ten thousand dollars.

The median annual earnings figure for Negro males was $2,056; and for Negro women, $971. The median annual income for both sexes was $1,445.

Of the 3,100 individuals reporting the nature of their work, with some reporting more than one occupation, the great majority reported such occupations as "personal services" (barbers, beauty operators, practical nurses), "private household workers" (day workers, baby-sitters), and "building services" (janitors, elevator operators, cooks, maids). "Personal services," with 1,361 reporting, was the greatest single area of employment. Employed as "household workers" were 906 Negro males and 393 women.

These occupations were the predominant means of livelihood engaged in by the parents and guardians of the subjects under study, with a sizeable minority engaged in unskilled labor such as construction work, digging, and loading. The parents of one boy and one girl were school teachers.

Thus the children of the study were for the most part products of parents of limited education (both of whom worked), low income, and low job and social status. They lived predominantly in low-rent housing projects and barely standard homes (with few exceptions) or rent houses. They may be described as being "culturally deprived." They attended a segregated school, a fact which some contend

intensifies their cultural deprivation. The United States Supreme Court in its 1954 ruling on segregation noted the adverse effects of school segregation upon the "hearts and minds" (self concepts) of Negro boys and girls (7).

It was the self concepts of these boys and girls which were compared to their intelligence and academic achievement. Specifically, the subjects of the study were 105 Negro eighth grade boys, ages 12-15, and 102 Negro eighth grade girls, ages 12-14. They attended a segregated junior high school, which included grades 6, 7, and 8, and which was located in a medium-sized metropolitan city in the southwestern area of the United States. They comprised intact groups. No measures of the subjects' mental abilities were available at the beginning of the study.

Selection of the Instruments

No instruments were specifically designed for use in the study. Those which were selected for use are well known in the fields of psychology and education as measures of the principal variables which were studied: self concept, intelligence, and academic achievement.

The two measures selected for determining the self concepts of the subjects were constructed by two different self concept theorists who used the direct approach in different ways. Bills infers the self concept from the

individual's self-ideal discrepancy score, which he obtains from the instrument he developed: The Index of Adjustment and Values. Fitts infers the self concept from the individual's total score, which is obtained from the instrument he developed: The Tennessee Self Concept Scale.

The Index of Adjustment and Values, Junior High School Form, which was selected for use in this study, is a 35-item rating scale composed of words which (according to its author) children use in describing themselves and others. The 35 words are adjectives such as "agreeable," "alert," "studious," "kind," and "happy." Each word is to be checked on three different scales.

Scale I of the Index of Adjustment and Values is designated by its author as the "Self Concept Scale." It is titled "I Am Like This." The subjects are asked to describe themselves by checking one of three columns which are headed respectively, "most of the time," "about one-half the time," and "hardly ever" for each of the stimulus words.

Bills has designated Scale II, "The Way I Feel About Being As I Am," as the ideal-self discrepancy scale. The subjects are asked to check one of three columns which are captioned "I like it," "I neither like nor dislike," and "I dislike" for each of the stimulus words.

The author of the Index of Adjustment and Values designated Scale III as the ideal self. It is titled

"I Wish I Were," has the same column headings as Scale I, and is checked in the same manner as Scale I.

A subject who checked column one on all three scales has supplied the following information about himself in these words: "I am agreeable most of the time. I like being agreeable most of the time. I wish I were agreeable most of the time." Such a self report, if consistent for all 35 items, would reveal no discrepancy between actual self and ideal self. Discrepancies ensue when different columns are checked for the same or different stimulus words.

The Index of Adjustment and Values has a similarly constructed "Others" form containing the same trait words, which the student completes immediately after he has finished the "Self" form. He checks each item as he thinks the average "other" person would check it for himself.

The scoring is the same for both forms. If the individual's score on the "Self" form, column two is above the mean, his self concept is inferred to be positive, while if it is below the mean, his self concept is inferred to be negative. If the score on the "Others" form, column two is above the mean, the self concept of the average member of the peer group is said to be positive, while if it is below the mean, his self concept is judged as being negative.

The Tennessee Self Concept Scale, developed by Fitts, consists of 100 self-descriptive items, of which 10 yield

a "self criticism" score. The format is two-dimensional on a three-by-five scheme. Three horizontal columns allow the individual to state his Identity (Row I), Self-satisfaction (Row II), and Behavior (Row III). Five vertical columns allow the individual to reveal his perceptions of the "selfs" which constitute his self concept. Column A concerns the individual's "physical self;" Column B is concerned with his "moral-ethical self;" Column C deals with the individual's "personal self;" Column D is concerned with his "family self;" and Column E deals with his "social self." The self concept score is the total of all the above scores, which total the same both horizontally and vertically, and is designated as "Total Positive."

The directions require the individual to respond to several statements about himself and his relationships with significant others. Sample items are "I have a healthy body," "I am a decent sort of person," and "I do my share of work at home." The individual encircles on a separate answer sheet one of five choices as his response. The possible responses and their corresponding numbers are shown below.

Completely False	Mostly False	Partly False and Partly True	Mostly True	Completely True
1	2	3	4	5

Scoring is so arranged that the individual receives the same numerical score for encircling choices having the

same relative positions on either side of three. If the "Total Positive" score is above the mean, the individual earning it is judged to have a positive self concept, while if it is below the mean, his self concept is judged as being negative.

The Otis-Quick-Scoring Mental Ability Tests are well known measures of mental ability. The tests combine verbal and non-verbal reasoning items which yield a measure of general ability. Though the obtained IQ's are generally lower than those of other intelligence measures (5), the validity of this instrument for predicting school achievement compares favorably with the other tests of intelligence. The tests are available in three forms. The form selected for use in this study was the Beta Test, Form A.

The Metropolitan Achievement Test (Durost, editor) was designed in 1958 to measure the outcomes of the goals set for elementary education by various authoritative sources. The test consists of ten batteries which bear the same titles as the subjects' daily classes, with the exception of Word Knowledge. This similarity of content identification tended to minimize the test anxiety generally induced by a test which is couched in terms unfamiliar to those taking the test. The test batteries are Word Knowledge, Reading, Spelling, Language, Language Study Skills, Arithmetic Problem Solving and Concepts, Social Studies

Information, Social Studies Skills, and Science. Scores may be interpreted in terms of standard scores, stanines, percentiles, and grade equivalents. The Advanced Battery, Complete, Form B, for Grades 6, 7, and 8, was used in this study, and the standard score was used to measure the subjects' achievement.

The Procedures for Collecting the Data

The data necessary for testing the hypotheses of the study were collected in the manner described below.

1. Three teachers who taught all the subjects completed the "Others" form of Bills' Index of Adjustment and Values for each student. In compliance with the author's instructions, these teachers completed this form as they thought each student would complete it for himself. The scores obtained from column two of the Self-Ideal Discrepancy Scale were averaged to form a single Teacher's Estimate of each student's self concept. The teachers completed these forms without consultation with each other and without informing the students of this procedure.

2. The subjects completed the "Self" form of the Bills Index of Adjustment and Values. Immediately after completing this form they completed the "Others" form of the same instrument. Each student was asked to respond to the stimulus words as he thought the average member of his peer group would respond for himself.

3. The subjects were administered the Otis Quick-Scoring Mental Ability Test.

4. The subjects completed the Tennessee Self Concept Scale.

5. The subjects were administered the Metropolitan Achievement Test.

Procedures for Treating the Data

The statistical procedures listed below were employed in order to provide a generally accepted basis for interpreting the results of the study. They were used in the manner recommended by McNemar (4) and Peatman (6).

1. The means and standard deviations were computed for each of the variables included in the study in order to form a basis for comparing the typical performance of the two groups on these variables. The significance of the differences between the hypothesized performance of the two groups on the variables Self Concept, Intelligence, Grade Point Average, and Achievement, was determined by a t test.

2. Pearson's r was used to determine the coefficients of correlation between the variables of the study as a result of the subjects' performance. The Critical Ratio was used to determine the significance of any differences existing between the relationships for Self Concept and Intelligence, Self Concept and Grade Point Average, and

Self Concept and Achievement as measured by the Metropolitan Achievement Test.

3. Multiple correlation was used to determine which of the remaining six variables would serve best, or be more effective in predicting Grade Point Average. The multiple correlation formula recommended by McNemar (4) for purposes of prediction was used. The significance of the multiple R was determined by the F test.

Summary

In this chapter salient facts relevant to the participants in the study were presented. Also presented were descriptions of the instruments used in the study, and of the procedures for collecting and treating the data.

The subjects of the study were described as being members of a minority group which is generally regarded as being "culturally deprived." Two hundred seven of these, who were members of an eighth grade class in a southwestern metropolitan city, actively participated in the study.

The instruments used in the study were all well known and accepted in the fields of psychology and education as measures of the characteristics they profess to assess. No special instruments or devices were constructed for use in the study.

The procedures for collecting the data involved three teachers who supplied estimates of the students' self concepts.

These estimates were averaged to form a single teachers' estimate of each student's self concept.

The appropriate statistical treatment for the testing of the hypotheses were listed and their specific purposes explained.

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CHAPTER IV

RESULTS OF THE STUDY

Introduction

The purpose of this chapter is to present the data which served as the basis for determining the relationships which existed among the self concepts of Negro eighth grade students and their intelligence and academic achievement. Also contained in this chapter are the findings showing the agreement or lack of agreement among the three methods used to measure the students' self concepts: the Tennessee Self Concept Scale, Bills' Index of Adjustment and Values, and the teachers' estimates of the students' self concepts. The extent to which these measures are, in turn, related to the students' perceptions of the average member of their peer groups is also presented. Following these presentations are the comparisons of the students' self concepts with intelligence, grade point average, and scores on the Metropolitan Achievement Test, both for the combined groups and across sex lines.

The section which follows presents specific information concerning how well the three measures used to assess the students' self concepts correlate with each other and with

the students' perceptions of the self concepts of the average members of their peer groups.

Intercorrelations Among the Self Concept Measures

The data presented in this section revealed significant correlations among the three measures used to assess the students' self concepts, both for the combined groups and for the male and female groups when studied separately. This was especially true of the data regarding the female group, which showed a coefficient of correlation of .35 between the girls' self reports on the Tennessee Self Concept Scale and their self reports on the Bills Index of Adjustment and Values. This coefficient of correlation was the same as that between the teachers' estimate of the girls' self concepts and both the Tennessee Scale and the Index. All these correlations were significant at less than the .001 level. These same correlations were less consistent for the boys' group, as they were .32 ($p < .01$) between the Tennessee Scale and the Index; .45 ($p < .001$) between the teachers' estimate and the Tennessee Scale; and a non-significant .11 between the teachers' estimate of the boys' self concepts and the Index. It is noteworthy that the correlation between the teachers' estimate and the boys' self reports on the Index was considerably less at .11 than those of the combined and female groups, which were .23 and .35 respectively. Additional information regarding these relationships is

found in Table I for the combined groups, Table II for the male group, and Table III for the female group.

TABLE I

INTERCORRELATIONS AMONG THE SEVEN VARIABLES FOR THE COMBINED GROUPS OF NEGRO EIGHTH GRADE STUDENTS

(N = 207)

Variables	TSC	BSC	IQ	EO	TE	GPA	MAT
TSC	...						
BSC	.33***	...					
IQ	.45***	.07	...				
EO	.19	.59***	.00	...			
TE	.41***	.23**	.69***	.07	...		
GPA	.48***	.21*	.77***	.04	.82***	...	
MAT	.45***	.14	.84***	-.02	.73***	.86***	...

*Significant at or beyond the .05 level.
**Significant at or beyond the .01 level.
***Significant at or beyond the .001 level.

The use of symbols to represent the variables of the study is intended to facilitate the reporting of these relationships. The variables and their corresponding symbols are Tennessee Self Concept Scale (TSC), Bills' Index of Adjustment and Values (BSC), the Teachers' Estimate (TE), the Otis Intelligence Quotient (IQ), the pupils' Estimate of Others' Self Concepts (EO), Grade Point Average (GPA), and the Metropolitan Achievement Test (MAT).

From the table it can be seen that the coefficient of correlation between TSC and BSC was .33 ($p < .001$) for the combined groups of Negro eighth grade students. This represents the degree of similarity between the self reports of the combined groups on the TSC and their self reports on the BSC.

A postulate of the self concept theorists that an individual tends to perceive others as he perceives himself was significantly confirmed by the coefficient of correlation shown in Table I between EO and BSC ($r = .59$, $p = < .001$), but only moderately confirmed by the correlation of .19 between EO and TSC. However, since the subjects' estimates of the self concepts of the average member of their peer groups were made by completing the "Others" form of the BSC, their correlation with a different self concept measure (TSC), which has no "Others" form, can be considered to be a significant one. Also of significance was the coefficient of correlation between EO and TE of .07, which left unanswered the question of whether there is any relationship between the individual's perception of others and others' perception of him, as well as revealing that the teachers' estimate of the self concepts for the combined groups differed from the combined groups' estimate of the self concepts of the average members of their peer groups. A comparison of the relationship between EO and TE with the findings of other

investigators was not possible, since the relationship as used in the present study represented an innovation not duplicated in other studies relating the self concept to academic achievment. (See Chapter II.)

A further examination of Table I revealed that TE was more similar to the combined groups' self reports on TSC ($r = .41$; $p < .001$) than to their self reports on BSC ($r = .23$; $p < .01$). The significance of the correlation between TE and TSC was enhanced because TE was secured from the "Others" form of a different self concept measure, the BSC. However, the TE correlations with both TSC and BSC tended to validate Coopersmith's (9) use of the agreement between the teachers' estimates of the pupils' self concepts and the pupils' self reports on a standardized self concept measure (the Self-Esteem Inventory) as the basis for forming self concept groups in his study of 102 fifth grade children.

The findings reported from Table I show that the method of employing the self concept measures used in the present study differed from the ways in which other investigators used different measures of the self concept. Ringness (17) used a single measure, the Child's Self Concept Rating Sheet, on a one-test basis, from which he determined the self concepts of his sample of 120 fourth grade children of low, average, and high ability; while in his study of 251 fourth and sixth grade children Perkins (15) used

Jersild's Q Sort on a Test--re-test basis, with an interval of six months between tests. Klausmeier and Check determined the self concepts of their 120 fourth grade subjects of low, average, and high ability from the reports of two psychologists, while Coopersmith (9) used the amount of agreement between the subjects' self reports on the Self Esteem Inventory with a re-test and the teachers' estimates of the subjects' self esteem on the Behavior Rating Scale to measure the self concepts of the 102 fifth grade children comprising his sample. On the other hand, Bledsoe (6) used an adaptation of the BSC in conjunction with the Michigan Picture Test to determine the self concepts of the 271 fourth and sixth grade children comprising his sample, while Walsh (20) assessed the self concepts of the 40 boys of IQ 120 and above in grades two through five by use of the Driskoll Playkit and incomplete sentences from which the boys made up stories.

In each of the instances cited, the investigators combined the results of the various means used in assessing the self concept to yield a single self concept rating for each of their subjects. This single self concept rating was then used as the basis for determining its relationships to the other variables employed in their investigations. Such procedures eliminated the need to compare the results yielded by one self concept measure with those yielded by the other(s).

The present study employed three means of determining the self concepts of the children included in the sample: The Tennessee Self Concept Scale, the Bills Index of Adjustment and Values, and the teachers' subjective estimates of the students' self concepts, which they rendered by completing the "Others" form of Bills' Index. The results yielded by each measure were treated as separate entities and comparisons between them and the other variables of the study were done on an individual basis. Such a procedure possessed the advantages of allowing comparisons to be made among the self concept measures themselves, as well as between each measure and each of the variables. The significance of the comparisons thus determined had the added advantage of furnishing clues as to which of the measures used in determining the subjects' self concepts would serve as the more effective or more reliable predictor of their academic achievement. The advantages of the ways in which the three self concept measures were used in the present study are demonstrated further in the discussion of Tables II and III.

Table II contains the intercorrelations among the variables of the study for the 105 Negro eighth grade boys who participated in the study. Table III contains the same information for the 102 Negro eighth grade girls who participated in the study.

TABLE II

INTERCORRELATIONS AMONG THE SEVEN VARIABLES OF THE STUDY FOR THE MALE GROUP OF NEGRO EIGHTH GRADE STUDENTS

(N = 105)

Variables	TSC	BSC	IQ	SO	TE	GPA	MAT
TSC	...						
BSC	.32**	...					
IQ	.56***	-.05	...				
SO	.13	.58***	-.08	...			
TE	.47***	.11	.69	.001	...		
GPA	.62***	.14	.79***	-.008	.80***	...	
MAT	.61***	.02	.86***	-.09	.70***	.85***	...

**Significant at or beyond the .01 level.
***Significant at or beyond the .001 level.

From Table II it can be seen that the coefficient of correlation between TSC and BSC is .32 for the Negro eighth grade boys. Though almost equal to, but less significant than the correlation of .33 ($p < .001$) for the combined groups, the boys' correlation is smaller and less significant ($p < .01$) than the TSC-BSC correlation of .35 for the girls' group ($p < .001$), as shown in Table III.

TABLE III

INTERCORRELATIONS AMONG THE SEVEN VARIABLES OF THE STUDY FOR THE FEMALE GROUP OF EIGHTH GRADE STUDENTS

(N = 102)

Variables	TSC	BSC	IQ	EO	TE	GPA	MAT
TSC	...						
BSC	.35***	...					
IQ	.31**	.19	...				
EO	.26*	.60***	.10	...			
TE	.35***	.35***	.68***	.14	...		
GPA	.35***	.29**	.74***	.08	.84***	...	
MAT	.30**	.25*	.83***	.05	.75***	.86***	...

*Significant at or beyond the .05 level.
**Significant at or beyond the .01 level.
***Significant at or beyond the .001 level.

Though the correlations between the instruments were not given, Walsh (20) and Bledsoe (6) used the results yielded by two self concept measures effectively in determining and comparing the self concepts of their samples. Their methods were in contrast to Ringness' (17) and Perkins' (15) use of a single measure and Klausmeier and Check's (13) use of the reports of two psychologists. Each of these methods differed from that of the present study, which treated the results of each self concept measure separately. However, this finding of greater self-ideal congruence among

girls is in line with those of Amatora (1), Ausubel (2), Bledsoe (6) and Perkins (15), who reported higher self concepts for girls than for boys (Hypothesis I).

The significance of the TSC-BSC correlations for all groups indicated that the two self concept measures dealt with the same or similar characteristics across sex lines. The greater significance of the correlation between these two instruments for the girls' group when compared to that of the boys' group raised the question of whether or not one of them might be so constructed as to favor the female sex. This possibility was shown further by the significant correlation of .26 ($p < .05$) between EO and TSC for the girls' group, which contrasted rather strongly with the non-significant correlations of .13 between EO and TSC for the boys' group, and with .19 for the combined groups. However, the determination of whether or not there does exist a sex differential within either the Tennessee Scale or Bills' Index is outside the scope of the present study.

The coefficients of correlation of .58 for the boys' group, of .60 for the girls' group, and of .59 for the combined groups between EO and BSC are in the expected direction, as the EO was secured from the "Others" form of the BSC. The significance of the correlations ($p < .001$) between EO and BSC, both across sex lines and for the combined groups, provides further support to the self

concept theorists who postulate that the individual tends to perceive others as he perceives himself.

The coefficient of correlation between EO and TE of .14 for the girls' group indicates a non-significant relationship between the teachers' perceptions of the girls and the girls' perceptions of others. This observation is underscored by the zero correlation between EO and TE for the boys' group and the correlation of .07 for the combined groups. Since the use of the subjects' estimates of the self concepts of others in a study relating the self concept to achievement is peculiar to this study, EO can not be compared to the findings reported by other investigators.

A further inspection of the tables reveals that the similarity between TE and TSC is greater for the boys (Table II) than for the girls (Table III) and for the combined groups (Table I). The coefficients of correlation between TSC and TE for the respective groups are .47, .35, and .41. This similarity between the teachers' estimate of the boys' self concepts on the BSC and the boys' self reports on the TSC assumes added importance, because each correlation is equally as significant as the others (at or beyond the .001 level). However, the similarity obtained between TE and TSC for the boys' group is completely reversed by the coefficient of correlation between TE and BSC for the girls' and the combined groups. The TE-BSC correlation for the girls of .35 is higher and more

significant ($p < .001$) than that of .23 ($p < .01$) for the combined groups and the non-significant correlation of .11 for the boys' TE-BSC. Again, the identical correlations of .35 for the girls' TSC and BSC, TE and TSC, and TE and BSC contrast sharply with the boys' correlations of .32 for TSC and BSC, .47 for the TE and TSC, and .11 for TE and BSC.

Since the computation of intercorrelations among the variables is designed to reveal the similarity between a person's performance on one criterion task and his performance on another criterion task, it is highly significant that the teachers' estimate of the pupils' self concepts (TE), made on the "Others" form of the Index of Adjustment and Values, should resemble the students' self reports on the Tennessee Self Concept Scale (TSC) more than they resemble the students' self reports on the "Self" form of the Index (BSC). This indicates some disagreement between the two self concept measures as to the nature of the self concepts yielded by their scores. Notwithstanding, the significant correlations between TE and TSC, and TE and BSC, tend to validate Coopersmith's (9) use of the agreement between the scores yielded as a self concept measure and the teachers' estimates as the basis for forming self concept groups in his sample of 102 fifth grade students.

Comparing the Self Concepts of Boys and Girls

The data presented in this section are intended to reveal evidence pertinent to Hypothesis I regarding any differences which may exist between the self perceptions of Negro eighth grade boys and girls. Of particular interest is the contradictory nature of the scores yielded by the two self concept measures (The Tennessee Self Concept Scale and the Bills Index of Adjustment and Values) and the teachers' estimates of the students' self concepts. To determine the existence of any differences between the male and female groups in regard to their self concepts, the mean scores earned by them on the various self concept measures were used.

The mean score is the result of a statistical procedure which seeks to identify the typical behavior of, or the typical nature of, a population or universe. Although there will be members of a group or population whose behavior deviates from what is considered normal for that group, the behavior of most of the group's members will conform to the norm established or revealed by the mean. The mean score is used to determine whether or not the typical self feelings of the subjects under study were positive or negative when compared to the mean score of the standardization population used by the maker of the instrument serving as the basis for comparison. The means, standard deviations, mean differences, and their

significance for the combined male and female groups are presented in Table IV.

As shown in Table IV the mean score for the combined groups on TSC was 323; it was 93 for BSC and 87 for TE. These mean scores indicate the nature of the typical self concepts of the class as a whole when compared to the publisher's norms of 346 for the Tennessee, 88 for the Index "Self" form, and 87 for the Index "Others" form. The interpretation of these comparisons reveals that the typical self concept displayed by the class as a whole was negative, because of the mean score of 323 is below the mean score of 346 earned by the TSC norms group. However, according to the BSC, the nature of the class' self concept was positive, because the class' mean score of 93 is above the mean score of 88 earned by the BSC norms group. The discrepancy between these two measures of the self concept (the TSC and the BSC) is not resolved by TE, whose mean score of 87 is equal to the mean score earned by the norms group on the "Others" form of the BSC.

Thus, the TSC indicates that the self concept of the combined groups was negative. The BSC indicates that it was positive, while TE renders no clear-cut designation, either positive or negative, for the nature of the self concept of the combined groups; it indicates that the self concept of these groups was simply "average."

TABLE IV

MEANS AND STANDARD DEVIATIONS ON EACH OF THE SEVEN VARIABLES FOR THE VARIOUS GROUPINGS OF NEGRO EIGHTH GRADE STUDENTS

	Combined (N = 207)		Males (N = 105)		Females (N = 102)		Mean Diff.	t ratio
Variables	M	SD	M	SD	M	SD		
TSC	323	31	322	31	325	31	-3.00	.68
BSC	93	11	93	11	94	11	-1.00	.44
IQ	88	13	86	14	90	12	-4.00	1.86*
EO	91	13	91	14	92	13	-1.00	.76
TE	87	16	85	17	89	15	-1.00	1.91**
GPA	2.18	.89	2.00	.87	2.37	.87	-.37	2.93****
MAT	427	71	419	69	436	73	-17.00	1.70*

*Significant at or beyond the .08 level.
**Significant at or beyond the .06 level.
***Significant approaching the .05 level.
****Significant at or beyond the .01 level.

Note: For convenience, symbols are used to represent the variables and the statistical data included in Table IV above.

TSC--Tennessee Self Concept Scale

BSC--Bills' Index of Adjustment and Values

IQ--(Pupil's estimate of his peer's self concept) Intelligence Test

EO--Pupil's estimate of his peer's self concept

TE--Teacher's estimate of the pupil's self concept

GPA--Pupil's grade point average

MAT--Metropolitan Achievement Test

M--The mean score for each of the variables

SD--The standard deviation from the mean

It must be pointed out that the term "average" is difficult to interpret in this particular situation, because the makers of the self concept measures used in this study specify that the nature of the respondent's self concept depends upon whether or not his score is above or below the mean established by the norms' group. It is also worthy of note that the tables containing the intercorrelations between the variables of the study present information showing that TE correlates more highly and more significantly with TSC than with BSC. Whether these correlations should be used in conjunction with the TE mean score of 87 to designate the nature of the combined groups' self concept as being negative in line with the TSC, is a matter for conjecture. An item of further interest is that the resolution of the discrepancies between TSC, BSC, and TE is outside the scope of this study.

The discrepancies between TSC, BSC, and TE already noted for the combined groups are duplicated when the male and female groups are studied separately. As reflected in Table IV, the TSC mean score for the boys is 322; it is 93 for BSC, and 85 for TE. Thus the boys reported their self concepts as being negative on the TSC, and as being positive on the BSC. The teachers' estimate of the boys' self

concepts (TE) in this instance agreed with the boys' TSC self report.

A further examination of the table reveals that the girls' TSC mean score is 325 and their BSC mean score is 94, which again illustrates the contradictory nature of the self reports obtained from these two self concept measures. The teachers' estimate of the girls' self concepts (TE) is in agreement with the girls' BSC self reports, which is in direct contrast to the TE-TSC agreement for the boys. However, both these phenomena can be considered to be in the expected direction when it is recalled that the coefficients of correlation between TE and TSC, and between TE and BSC, for the boys, are .47 and .11 respectively; and that these correlations for the girls' group are identical at .35, thus revealing that the TSC-TE correlation is higher for the boys than for the girls, and the TE-BSC correlation is higher for the girls than for the boys.

In the interest of completeness it is pointed out that the data in Table IV reveal an EO mean score consistently above the mean score of the norms population for the combined groups, and for the male and female groups when considered separately. This mean score of 91 indicates that the subjects who used the "Others" form of the BSC tended to perceive others as they perceived themselves as reflected by the BSC mean scores. This is in line with the high correlations between EO and BSC revealed in Tables I, II, and III.

The inspection of Table IV thus far yields no clear-cut answer as to either the nature of the boys' and girls' self concepts or as to whether they differed significantly from each other. An inspection of the mean differences between the TSC and BSC reveals whether either of the two groups rated itself significantly higher than the other on self concept.

The mean difference between the male and female TSC is 3.00, as the minus sign serves simply to indicate the direction of the difference. The mean difference between the male and female BSC is 1.00. Both these differences show that the mean scores for the girls on both TSC and BSC were higher than those of the boys. These differences were submitted to a t test of significance, with the results shown in the table. The t of .68 for the TSC difference and the t of .44 for the BSC difference both indicate that the boys' self reports on these instruments did not differ significantly from those of the girls on these same two instruments. Neither did the girls rate themselves significantly higher than did the boys. Therefore, as the evidence supports Hypothesis I, which predicted that there would be no significant difference between the self concepts of Negro eighth grade boys and those of Negro eighth grade girls, the hypothesis is retained at better than the ten per cent level of probability.

These findings contradict those of Amatora (1) and Ausubel (2), who, working separately, found that pre-adolescent girls tended to rate themselves higher on self concept than pre-adolescent boys. That there was no significant difference between the self-feelings of the Negro eighth grade boys and girls of this study also contradicts the findings of Perkins (15) and Bledsoe (6), who reported higher self concepts for girls than for boys in their samples of fourth and sixth grade children; and those of Klausmeier and Check (13) who reported similar findings for their sample of fourth grade children.

An explanation of the contradictory nature of the findings of the present study (regarding the self concepts of boys and girls) based on the grounds that the subjects of the study were culturally deprived members of a minority group who had been socially conditioned to seeing themselves as being inferior to other members of society, would be supported by the TSC mean scores, which indicate the presence of a negative self concept among these subjects, but would be denied by the BSC mean scores, which indicate the presence of a positive self concept among the members of both groups. Thus, any clear-cut explanation for the phenomenon presented here may ultimately be found by comparing the specific natures of the self concept measures themselves.

In the interest of completeness it might be pointed out that all the mean differences between the variables of the

study favored the girls' group. The mean difference between the boys' and girls' IQ was significant at the 10 per cent level of probability (accepted as the criterion for this study) and is relevant to Hypothesis II. This significance was duplicated by the MAT mean difference between the two groups (Hypothesis III). The mean difference between TE for the two groups approached the .05 level of significance, while the mean difference between GPA for the boys' and girls' groups was the most significant, being at or beyond the .01 level (Hypothesis III). In line with Cole (6), the girls' greater maturity may account for their higher GPA and MAT, and their docility may account for the higher teacher self concept ratings (10).

The Self Concept and Intelligence

The data presented in this section are intended to reveal any relationships which may exist between the self concepts and intelligence for the combined and separate groups of Negro eighth grade students (Hypotheses II and IV). The data from which the observations and comparisons are made are contained in Tables I, II, and III. For convenience, the variables and their symbols are repeated: Tennessee Self Concept Scale (TSC); Bills' Index of Adjustment and Values (BSC); the Teachers' Estimate of the subjects' self concepts (TE); the Otis Intelligence Quotient (IQ); the pupils' Estimates of Others' self concepts (EO); Grade Point

Average (GPA); and the Metropolitan Achievement Test (MAT).

The coefficients of correlation shown in Table I between the self concept and intelligence for the combined groups reveal a lack of agreement between the two self concept measures on the degree of relationship existing between these two variables. The correlation of .45 for TSC and IQ is in sharp contrast to the correlation of .07 between BSC and IQ. This contrast is heightened by the significance of the TSC-IQ correlation ($p < .001$), and the non-significant, though just barely positive, correlation of BSC and IQ.

These relationships may be accounted for by referring to the data presented in Table IV. From this table it can be seen that the mean score on IQ of 88 for the combined groups is below the mean score (100) of the norms population. In like manner, the mean score of the combined groups on TSC (323) is below that of the norms group (346), while the mean score of 93 on the BSC is above that of the norms group (88). Thus the position of the group below the mean on IQ is consistent with its position below the mean on TSC, and inconsistent with its position above the mean on BSC.

The data presented in Table IV also reveal that the mean difference of 4.00 between the boys' mean IQ score of

86 and the girls' mean IQ score of 90 is significant at a probability level equal to or less than .06. As this evidence did not support Hypothesis II, which predicted that there would be no significant difference between the intelligence test scores of Negro eighth grade boys and those of Negro eighth grade girls, Hypothesis II is rejected at a probability level equal to or less than .06.

By direct inference, the findings of this study that children of below average intelligence may rate themselves above average on self concept are in line with the findings reported by Ringness (17) from his sample of 120 fourth grade children. By indirect inference, the findings of this study support those of Perkins (15), Coopersmith (9), and Klausmeier and Check (13), that the brightest children display the highest self concepts and the children of lowest intelligence display the lowest self concepts. It is difficult to relate the findings of this study to those of Walsh (20), who found in her study of 40 bright boys that bright children may exhibit poor and crippling self concepts. In addition, the findings of this study refute those of Hayes (12) and Mitchell (14), whose samples revealed no relationship between their self concepts and their intelligence.

The high and significant correlation of .69 ($p < .001$) between TE and IQ raises the question of whether or not the teachers' estimates of the combined groups' self concepts were not in fact estimates of their abilities. The mean TE

score being exactly the same as that of the norms group, which is 87, offers no help in answering this question. However, it must be pointed out that no IQ scores were available to the teachers prior to or after they had made their estimates, and that the teachers' estimates of the subjects' self concepts were made before the students had been given any major examination such as a six-weeks' test. On this basis, it can be assumed that TSC does represent the teachers' estimates of the subjects' self concepts apart from their abilities. Such an assumption serves to emphasize the importance and significance of the teachers' estimates of the children they teach.

The discrepancies in reporting the relationship between the self concept and intelligence revealed between TSC and BSC in Table I are reflected in Tables II and III, which deal with the correlations between these two variables for the male and female groups respectively (Hypothesis IV).

By inspecting Table II it is seen that the coefficient of correlation between TSC and IQ for the boys' groups is .56 ($p < .001$), while the correlation between BSC and IQ is -.05. From Table III it is seen that the correlation between TSC and IQ for the girls' group is .31 ($p < .01$), while the correlation between BSC and IQ is .19 (p approaching the .05 level). Both the boys' and girls' correlations for self concept and intelligence support the findings of

Coopersmith (9), Gingness (17), and Klausmeier and Check (13), that self concept and intelligence correlate significantly with each other; and refute the findings of Hayes (12) and Mitchell (14), that there is no relationship between the two variables.

The high correlation between TSC and IQ for the boys' group confirms the findings of Bledsoe (6) showing a more significant relationship between these two variables for the boys of his sample than for the girls. The significant relationships between the girls' TSC and IQ, and TSC and IQ contrast with the non-significant relationships reported by Bledsoe (6). The correlations of -.05 for the boys on TSC-IQ, and the correlation of .19 for the girls on the same variables indicate that the below-average performance of the boys contrasted more sharply with their above-average self-reports on the TSC than did the below-average performance of the girls on IQ and their above-average self-reports on the TSC.

The correlations between TSC and IQ are remarkably consistent, being .69 for the combined and boys' groups, and .68 for the girls' group. This shows that the positions assigned the students on TSC were very similar to the positions above and below the mean earned by the students on IQ.

Though it is important to know that the relationships between the boys' and girls' self concepts and intelligence are significant, it is also important to know whether or

not these relationships differ significantly from each other. To determine the significance of these differences, the coefficients of correlations were substituted for by their corresponding "z" scores. The differences between these z scores (z deviates) were submitted to a test of signficiance called the "critical ratio." This procedures is shown in Table V.

TABLE V

"Z" DEVIATES BETWEEN THREE COEFFICIENTS OF CORRELATION AND THEIR SIGNIFICANCE

	Males (105)		Females (102)			
Variables	Coeff. Corr.	z Score	Coeff. Corr.	z Score	z Deviate	Critical Ratio
TSC and IQ	.56	.633	.31	.321	.312	2.21**
BSC and IQ	-.05	.005	.19	.192	-.197	1.39*
TS and IQ	.69	.848	.68	.829	.019	0.13

*Significant at or beyond the .08 level.
**Significant at or beyond the .01 level.

From the table it can be seen that the difference between the correlations between TSC and IQ favors the boys' group, and that this difference is significant at or beyond the .01 level. The data in Table V also show that the difference between the correlations between BSC and IQ favors the girls' group and is significant at or beyond the .08 level. There is no difference between TS and IQ for the two groups.

Despite the contradictory reports yielded by the two self concept measures as to which group exhibited the more significant relationship between self concept and intelligence, both measures show that differences in this relationship did exist across sex lines. Therefore, as the evidence did not support that aspect of Hypothesis IV which predicted that the relationship between self concept and the intelligence test scores obtained for Negro eighth grade boys would not differ significantly from the relationship between self concept and the intelligence test scores obtained for Negro eighth grade girls, that aspect of Hypothesis IV is rejected at less than the 10 per cent level of significance.

Self Concept and Academic Achievement

The purpose of this section is to present the data showing the relationships which existed between the self concept and achievement for the combined groups, and the separate male and female groups of Negro eighth grade children (Hypotheses III and IV). These data are contained in Tables I, II, III, IV, and VI, found on pages 40, 45, 46, 52, and 67, respectively.

The discrepancies, noted previously, between the relationships reported as existing among the variables of the study by the TSC and the BSC are duplicated in the findings relating the self concept to achievement. As shown in Table I (p. 40), the coefficient of correlation between TSC

and GPA is .21. These correlations are significant at or beyond the .001 and .05 levels respectively. The coefficient of correlation between TSC and MAT is .45 ($p < .001$), but only .14 between BSC and MAT. These correlations compare favorably with that of Perkins (15), who reported a correlation of .08 between self concept and achievement for his sample of 251 fourth and sixth grade children, and with the findings of Coopersmith (9), who reported a relationship of .36 ($p < .05$) between self concept and achievement for his sample of 102 fifth grade pupils. These findings also refute those of Turner and Vanderlippe (19), and of Fiedler and others (11), working with young adults, who reported no relationship between self concept and grade point average.

The relationships between TE and GPA (.82), TE and MAT (.73) and between MAT and GPA (.86) are all significant at or beyond the .001 level. Such significant intercorrelations among these variables are in the expected direction, since they are so closely tied to the pupils' academic progress.

An inspection of Table II (p. 45) reveals that the correlation between TSC and GPA for the boys' group is .62 ($p < .001$). This compares favorably with Bledsoe's findings(6). He reported a correlation of .43 ($p < .01$) between self concept and achievement for his sample of fourth grade boys and a relationship of .39 ($p < .01$) for his sample of

sixth grade boys. Klausmeier and Check (13) reported a relationship of .49 for fourth grade boys ($p < .05$). The correlation between TSC and MAT of .61 ($p < .001$) is also in line with the findings of these other investigators.

The correlations between BSC and GPA of .14, and between BSC and MAT of .02, though small, still reveal that there is a positive relationship between self concept and achievement for this group of Negro eighth grade boys.

Again, the significantly high correlations between TS and GPA (.80), TS and MAT (.70), and between MAT and GPA (.85) should be noted for the boys' group, as they are all significant at or beyond the .001 level, as was the case with the combined groups.

An examination of Table III (p. 46) shows that for the girls, the coefficient of correlation between TSC and GPA is .35 ($p < .001$). The correlations between TSC and MAT of .30, between BSC and GPA, and between BSC and MAT, of .29 and .25 respectively, are all significant at or beyond the .01 level. These correlations compare favorably with those of Bledsoe (6), who reported correlations between self concept and achievement of .19 for his fourth grade sample and .06 for his sixth grade sample, both groups being comprised of girls. Though not as high as the correlations reported by Klausmeier and Check of .52 ($p < .05$) for their fourth grade girls, the relationship between self concept and

achievement for the girls of this study is more significant at $p = < .01$ to $p = < .001$.

Again, the high and significant correlations between TE and GPA (84), TE and MAT (.74) and MAT and GPA (.86), all of which are significant at or beyond the .001 level, should be noted. The consistency of these correlations for the combined groups and across sex lines underscores the relative inseparability of these variables in the teaching-learning equation. Teachers' estimates and testing are means of evaluating pupil progress as measured by grade point average, and as such are indispensable to each other.

Pertinent to the above observation is Hypothesis III, which predicted that there would be no significant difference between the achievement test scores (MAT) and those of Negro eighth grade girls. The data in Table IV (p. 52) revealed that the irls' MAT mean score of 436 was 17 points higher than the boys' mean score of 419. A *t* test of significance applied to this mean difference yielded a *t* of 1.70, which was found to be significant at or beyond the .08 level of probability. Therefore, as the evidence did not support the prediction, Hypothesis III is rejected at a probability level equal to or less than .08.

To determine the significance of any differences that might have existed between the boys and girls of this study in regard to the relationships between their self concepts and their achievement (Hypothesis IV), "z" scores were

were substituted for the coefficients of correlation between these two variables and the resulting differences ("z" deviates) were submitted to a test of significance called the "critical ratio." This procedure is shown in Table VI.

TABLE VI

"Z" DEVIATES BETWEEN SIX COEFFICIENTS OF CORRELATION AND THEIR SIGNIFICANCE

	Males (105)		Females (102)			
Variables	Coeff. Corr.	z Score	Coeff. Corr.	z Score	z Deviate	Critical Ratio
TSC and GPA	.62	.725	.35	.365	.360	2.55**
TSC and GPA	.14	.141	.29	.299	-.148	1.05
TSC and MAT	.61	.709	.30	.310	.399	2.83***
BSC and MAT	.02	.020	.25	.255	-.235	1.67*
TE and GPA	.80	1.099	.84	1.221	-.122	.87
TE and MAT	.70	.867	.75	.973	-1.06	.75

*Significant at or beyond the .1 level.
**Significant at or beyond the .02 level.
***Significant at or beyond the .01 level.

From the table it can be seen that the differences between the TSC correlations with GPA and MAT favors the boys' group, while the BSC correlations with GPA and MAT favor the girls' group. The minus signs indicate the direction of the differences where they favor the girls' group.

A further inspection of Table VI reveals that the "z" deviate of .360 between the boys and girls coefficients of correlation for TSC and GPA is significant at or beyond the .02 level, while the z deviate of .399 between TSC and MAT is significant at or beyond the .01 level. Thus according to the TSC, the relationships between the boys' self concepts and their achievement is significantly higher than that for the girls. For the girls, the z deviate of .148 for the BSC-GPA correlations is non-significant, while the z deviate for the girls' BSC-MAT correlations is only slightly significant at the .1 level. Thus it is evident that although the relationships between self concept and achievement are higher for the girls of the present study than for the boys, they are not significantly higher. However, the higher correlations for the boys as shown on the TSC correlations are significant.

To summarize briefly: the z deviate resulting from the correlation between TSC and MAT was significant at or beyond the .01 level, while the z deviate resulting from the correlation between BSC and MAT was significant at or beyond the 10 per cent level of probability. Therefore, as the evidence did not support the prediction, Hypothesis IV, particularly that aspect which predicted that the relationship between self concept and achievement test scores obtained for Negro eighth grade boys would not differ

significantly from the relationship between self concept and achievement test scores obtained for Negro eighth grade girls, was rejected at a probability level of .01 for the TSC and a level of 10 per cent for the BSC.

To recapitulate: the primary purpose of this study was to test certain hypotheses regarding the self concepts and the intelligence and achievement levels of Negro eighth grade boys and girls. Of the four hypotheses proposed and tested, only Hypothesis I was retained (p. 55). Hypotheses II (p. 59), III (p. 66), and IV (pp. 63 and 68) were rejected.

Multiple Correlation Analyses

The second purpose of this study was to "explore further the contributions made by the variables used in the study to the subjects' academic achievement as determined by grade point average" (p. 4). This purpose was achieved by the multiple correlation procedure.

By definition, multiple correlation (R) makes it possible to determine the contribution made by each of the variables to the total relationship of one of the variables (known as the criterion or dependent variable) to the remaining variables, which are known as the predictor or independent variables. Although the major concern was with the R of grade point average, the R's for the other variables were presented in order to form a "background" for

interpreting the contribution made by each predictor variable to the R of grade point average. For example, the contribution made by grade point average to the R of intelligence could be compared with the contribution made by intelligence to the R of grade point average. Such "cross references" should aid in assessing the predictive reliability of a given independent variable when it is used in computing the R for grade point average.

A schematic representation of the multiple correlation problems included is given in Table VII. The symbols used to represent the seven variables used in the study are shown in the body of Table VII, and the key to the meaning of the symbols is shown below the table. The use of symbols should facilitate the manner in which the multiple relationships are presented.

The scores used in the multiple correlation procedure have all been normalized to form standard scores. This procedure prevents scores of different sizes, drawn from dissimilar populations, or based upon different criteria, from biasing the R obtained from this process.

TABLE VII

SCHEMA SHOWING THE DEPENDENT AND THE INDEPENDENT VARIABLES USED IN THE MULTIPLE CORRELATION PROCEDURES

Dependent Variables	Independent Variables
TSC	BSC, IQ, EO, TE, GPA, MAT
BSC	TSC, IQ, EO, TE, GPA, MAT
IQ	TSC, BSC, EO, TE, GPA, MAT
EO	TSC, BSC, IQ, TE, GPA, MAT
TE	TSC, BSC, IQ, EO, GPA, MAT
GPA	TSC, BSC, IQ, EO, TE, MAT
MAT	TSC, BSC, IQ, EO, TE, GPA

Note: The symbols below represent the variables listed in the table.

TSC--Tennessee Self Concept Scale

BSC--Bills' Index of Adjustment and Values

IQ--Otis Intelligence Quotient

EO--Pupils' estimates of others' self concepts

TE--Teachers' estimates of pupils' self concepts

GPA--Grade Point Average

MAT--Metropolitan Achievement Test

The contribution made by each predictor variable to a given criterion is determined by noting the size of the Beta coefficients (standard partial regression coefficients) of all the predictor variables in conjunction with the appropriate zero order correlations between criterion

and predictor. For example, the contribution of 8 per cent made by BSC to the R of TSC, as shown in Table VIII, was obtained by multiplying the Beta coefficient of .24 by the zero order correlation of .33 between TSC and BSC (Table I, p. 40), and rounding the product to the nearest whole number. TE, by reason of its contribution of minus 2 per cent to the R of TSC, is known as a suppression variable, whose function is to suppress any variance in the other independent variables which may not be in the criterion, but might be in some other variable which otherwise correlates with the criterion.

The data presented in the ensuing tables were obtained by following this standard procedure for computing the percentage contributions of the predictor variables to the R of the criterion.

The data presented in Tables VIII, IX, and X, for the combined, male, and female groups respectively, reveal certain consistencies and inconsistencies among the Rs for the various relationships. Of great significance are the revelations that the multiple R's for GPA and MAT are the same at .91 for all three groups, while the R's for IQ of .86 for the combined groups and .88 and .84 for the male and female groups respectively, and the R's for TE of .83, .81, and .85 for the combined, male, and female groups respectively, represent little change from one group to the other. Taken together these R's attest strongly to

the interrelatedness of these variables. By contrast, the BSC R's are practically the same for all three groups, while the TSC favors the boys' group and the BSC favors the girls' group. EO, though consistent with itself as shown by all the multiple R correlations, contributes little to the variables most concerned with academic achievement (IQ, TE, and GPA), and so was eliminated from consideration in the multiple correlation procedures. Table VIII contains the results of the multiple correlation procedures for the combined groups of Negro eighth grade students.

From Table VIII it can be seen that all the R's are quite significant, since each one was at or beyond the $p = .001$ level. An inspection of the percentage contribution made by each of the predictor variables to the R (.56) of TSC reveals that BSC, IQ, and GPA, whose contributions were 8 per cent, 11 per cent, and 12 per cent respectively, contributes more to that R than does MAT (1 per cent), and TE whose contribution of minus 2 per cent, makes it a suppressor. In terms of prediction the percentage contributions for the TSC multiple R indicate that TSC could be predicted equally well from a knowledge of BSC, IQ, or TE, and that predictions based upon either MAT or TE would be unreliable.

TABLE VIII

MULTIPLE CORRELATION RESULTS FOR THE COMBINED GROUPS OF NEGRO EIGHTH GRADE STUDENTS SHOWING THE BETA COEFFICIENTS, PERCENTAGE CONTRIBUTIONS, MULTIPLE R'S AND THE F LEVELS OF SIGNIFICANCE*

Dependent Variables	Combined Groups (N = 207) Independent Variables							R	F
	TSC	BSC	IQ	EO	TE	GPA	MAT		
TSC	...	.24 8	.24 11	.04 1	-.04 -2	.25 12	.03 1	.56	15**
BSC	.20 7	...	-.32 -2	.54 32	.15 3	.11 2	.13 2	.66	26**
IQ	.09 4	-.15 -1	...	.07 0	.16 11	.05 4	.66 56	.86	95**
EO	.04 1	.61 36	.18 0	...	-.02 -.1	-.03 -.1	-.23 .4	.61	19**
TE	-.02 -1	.08 2	.20 14	-.01 -0	...	.70 57	-.04 -3	.83	74**
GPA	.07 3	.03 1	.03 3	-.01 -0	.40 33	...	.50 43	.91	154**
MAT	.01 4	.04 1	.46 39	-.07 .1	-.02 -2	.51 44	...	.91	151**
d/f 1, 200									

*The top figure of each pair is the Beta Coefficient. The second figure of each pair is the percentage contribution.

**Significant at or beyond the .001 level.

By following the same line of inspection it is seen that MAT and TE, whose percentage contributions are 43 per cent and 33 per cent respectively, contribute more significantly to the GPA multiple R of .91 than do the remaining predictor variables, while GPA (44 per cent) and IQ (39 per cent) contribute more highly to the MAT multiple R of .91 than do the remaining predictor variables. Of importance are the equal multiple R's (.91) of GPA and MAT, for they indicate nearly equal predictive reliability.

It is worthy of note that although TE contributes highly (33 per cent) to the R of GPA, it contributes relatively little and often times negatively to the multiple R's of the other variables when each is held constant. Of note also, is the almost total contribution made by GPA (57 per cent) to the TE multiple R of .83, as these two observations show the interrelatedness of TE and GPA.

The contribution made by IQ (1 per cent) to the GPA multiple R of .91 constrasts sharply with its contribution of 39 per cent to the MAT multiple R of .91, while the contributions made by MAT to the R of GPA and the contribution made by GPA to the R of MAT, being 43 per cent and 44 per cent respectively, are interchangeable. The TE contribution of 33 per cent to the GPA multiple R of .91 is in sharp contrast to its negative contribution of minus 2 per cent to the MAT multiple R of .91. For these combined groups it would seem that IQ and GPA predict MAT better

than TE, and that TS and MAT predict GPA better than IQ. Finally, it may be observed that the EO multiple R of .61 depends more on BSC (36 per cent) than it does on the remaining predictor variables.

These observations which have been noted for the combined groups of Negro eighth grade students from the R's presented in Table VIII may be made in like manner for the male and female groups separately, from the R's presented in Tables IX and X respectively.

From Table IX it can be seen that all the multiple R's are significant. The EO multiple R is least significant, being at or beyond the .01 level, while the other R's are significant at or beyond the .001 level. As was true of the combined groups, the R's for GPA and MAT are equal to each other, and are the same (.91) as the R's for GPA and MAT for the combined groups.

An examination of the percentage contributions of the predictor variables reveals that BSC (9 per cent), IQ (11 per cent) and GPA (19 per cent) make the major contributions to the TSC multiple R of .70, and that EO and TSC contribute most to the R of .67 for BSC. As was true of the combined groups, TE (30 per cent) and MAT (38 per cent) contribute most to the GPA multiple R of .91; IQ (42 per cent) and GPA (37 per cent) contribute most to the MAT multiple R of .91, and GPA (57 per cent) and IQ (16 per cent) contribute most to the multiple R of .81 for TE.

TABLE IX

MULTIPLE CORRELATION RESULTS FOR THE MALE GROUP OF NEGRO EIGHTH GRADE STUDENTS SHOWING THE BETA COEFFICIENTS, PERCENTAGE CONTRIBUTIONS MULTIPLE R'S AND THE F LEVELS OF SIGNIFICANCE*

	Male Group (N = 105)							R	F
	Independent Variables								
Dependent Variables	TSC	BSC	IQ	EO	TE	GPA	MAT		
TSC	...	.30 9	.20 11	-.00 -0	-.13 -6	.30 19	.27 16	.70	16***
BSC	.32 10	...	-.36 2	.51 30	.08 1	.19 3	-.05 -0	.67	13***
IQ	.09 5	-.15 1	...	.05 -0	.15 10	.10 8	.62 54	.88	56***
EO	-.00 0	.60 35	.15 .1	...	-.00 -0	-.04 0	-.19 .1	.60	9**
TE	-.09 -4	..05 0	.22 16	-.00 -0	...	.71 57	-.05 -3	.81	31***
GPA	.11 7	.06 1	.08 6	-.01 0	.37 30	...	.45 38	.91	74***
MAT	.09	-.02	.48	-.05	-.02	.43	...	.91	77***
d/f 1, 98									

*The top figure of each pair is the Beta Coefficient. The second figure of each pair is the percentage contribution.

**Significant at or beyond the .01 level.

***Significant at or beyond the .001 level.

The contributions of GPA and IQ to the male R for TE are seen to be almost identical to their contributions to the TE multiple R for the combined groups, while the relatively small contributions made by TE to the other predictor variables when each served as the criterion variable for the combined groups are duplicated for the male group.

In terms of prediction the percentage contribution for the predictor variables indicate that for the TSC multiple R, GPA and BSC would predict equally as well, while EO would predict best for BSC, and BSC, in turn, would predict best for EO. MAT would predict best for the IQ multiple R; MAT and TE rank first and second, in that order, in predicting GPA, while IQ and GPA rank first and second, in that order, in predicting MAT.

Again, the small contribution made by IQ to the multiple R of GPA, and the negative contribution made by TE to the multiple R of MAT, should be noted, as representing a duplication of the pattern first noted for the combined groups. It should also be observed that the EO multiple R of .60 depends more on BSC (35 per cent) than it does on the remaining predictor variables.

The most notable observation to be made from Table X is that the multiple R for BSC is larger for the girls' group than is the multiple R for TSC. This is noteworthy, because for the male group the TSC multiple R was larger than the BSC multiple R. This tendency, noted here and

elsewhere, of the TSC to yield higher correlations for the boys than for the girls, and of the SSC to reverse this process, raises the question of a possible sex differential between the two self concept measures. This question, though admittedly outside the scope of this study, is pertinent to it. For all conclusions derived from this study which involve the self concept must be prefaced with "according to," followed by the name of the instrument on which the particular conclusion is based. Thus, as already demonstrated, clear-cut, precise conclusions are seldom possible.

The contributions made to the R of the dependent variables by the independent variables maintain their same relative importance for the girls' group as for the combined and boys' groups. An examination of the percentage contributions of the predictor variables reveals that SSC (7 per cent), IQ (4 per cent), and GPA (7 per cent) make the major contributions to the TSC multiple R of .45, and that IQ (33 per cent) and GPA (9 per cent) contribute most to the R of .68 for SSC while MAT (60 per cent) is by far the major contributor to the IQ multiple R of .84. Similarly, IQ (37 per cent) and MAT (46 per cent) are the major contributors to the R of .91 for GPA, while GPA (47 per cent) and IQ (36 per cent) contribute most to the R of .91 for MAT. GPA and IQ (58 per cent and 10 per cent respectively) are the major contributors to the R of .85 for TSC.

TABLE X

MULTIPLE CORRELATION RESULTS FOR THE FEMALE GROUP OF NEGRO EIGHTH GRADE STUDENTS SHOWING THE BETA COEFFICIENTS, PERCENTAGE CONTRIBUTIONS, MULTIPLE R'S AND THE F LEVELS OF SIGNIFICANCE*

Dependent Variables	Female Group (N = 102) Independent Variables							R	F
	TSC	BSC	IQ	EO	TE	GPA	MAT		
TSC	...	.20 7	.15 4	.10 3	.07 2	.20 7	-.11 -3	.45	4**
BSC	.13 5	...	-.23 -4	.55 33	.25 9	-.01 .2	.19 5	.68	14****
IQ	.05 2	-.12 -2	...	.11 1	.16 11	-.01 -1	.73 60	.84	37****
EO	.08 2	.62 37	.22 2	...	-.03 -.4	-.06 -.4	-.24 -1	.63	10***
TE	.02 1	.12 4	.14 10	-.01 -.2	...	.69 .58	-.00 -.1	.85	42****
GPA	.04 2	-.00 -0	-.01 -1	-.02 -.1	.44 37	...	.53 46	.91	77****
MAT	-.02 -1	.06 1	.43 36	-.07 -.3	-.00 -0	.54 47	...	.91	75****
d/f 1, 95									

*The top figure of each pair is the Beta Coefficient. The second figure of each pair is the percentage contribution.

**Significant at or beyond the .05 level.

***Significant at or beyond the .01 level.

****Significant at or beyond the .001 level.

In terms of prediction for the female group, percentage contributions of the predictor variables indicate that for the TSC multiple R, BSC and GPA would predict equally as well, while EO would predict best for BSC and BSC would predict best for EO, MAT would predict best for the R of IQ, and GPA would predict best for TE. MAT and TE continue to be important predictors of GPA, while GPA and IQ continue to be important predictors of MAT.

Again, the small contribution made by IQ to the multiple R of GPA, and the absence of any contribution made by TE to MAT should be noted. It should also be noted that the EO multiple R of .63 depends more upon BSC (37 per cent) than it does on the other predictor variables.

As Grade Point Average (GPA) is the criterion by which academic success is measured, and since the title of this study requires that some consideration be given to the relative merits of the variables included in the study as predictors of academic achievement, grade point average will be treated as the criterion variable throughout the remainder of this presentation of multiple R. Attention will be given first to the two self concept measures used in the study. Following this, the other factors most closely associated with GPA-intelligence (IQ), the teachers' estimate of the pupil (TE), and the obtained scores on the achievement tests (MAT)--will serve as the predictor variables.

The multiple correlation procedure to be followed herein involves beginning with the simple correlation between the dependent variable (GPA) and one of the independent variables. Next, each variable, in turn will be "added on" to the original correlation in order to complete the multiple correlation procedure. This "adding on" reveals the percentage contribution made by each successive variable to the multiple R of that relationship. The data presented in Table XI illustrate this procedure for the combined groups.

TABLE XI

A COMPARISON OF THE SIMPLE AND MULTIPLE CORRELATIONS AMONG THESE VARIABLES FOR THE COMBINED GROUPS OF NEGRO EIGHTH GRADE STUDENTS (N = 207)

Coeff.	Dependent Variable	Independent Variables	Correlation	(C.R.) or F	P
r	GPA	TSC	.48	6.79	< .001
r	GPA	BSC	.21	3.02	< .05
R	GPA	TSC, BSC	.486	31.57	< .001
		.46* .06*			
		22** 1**			
d/f 2, 204					

*Beta Coefficients.
**Percentage Contributions.

An Inspection of Table XI reveals that the simple coefficient of correlation between GPA and TSC is .48,

as compared to .21 between GPA and BSC for the combined groups. By holding GPA constant throughout the multiple correlation procedure and adding on BSC to TSC, it can be seen that the multiple R of .486 is not significantly different from the simple r of .48 between GPA and TSC.

An inspection of the percentage contributions shows to be 22 per cent for TSC and 1 per cent for BSC. This comparison reveals immediately that the "adding on" of BSC to TSC contributed relatively little to the multiple R correlation. Therefore, of the two independent variables in the multiple correlational procedure with GPA, TSC is a better predictor of the subject's future performance on GPA than is BSC. A prediction based upon the simple r between GPA and TSC ($p < .001$) would be more reliable than a prediction based upon the simple r between GPA and BSC ($p < .05$), and equally as reliable as a prediction based upon the multiple R ($p < .001$).

The data presented in Table XII permit similar observations to be made with reference to the male group.

It is seen from the table that the simple r between GPA and TSC is .62, as compared to .14 between GPA and BSC for the male group. After adding on BSC to TSC it can be seen that the multiple R of .624 does not differ significantly from the simple r of .62 between GPA and TSC.

TABLE XII

A COMPARISON OF THE SIMPLE AND MULTIPLE CORRELATIONS AMONG THREE VARIABLES FOR THE MALE GROUP OF NEGRO EIGHTH GRADE STUDENTS (N = 105)

Coeff.	Dependent Variable	Independent Variables	Correlation	(C.R.) or F	P
r	GPA	TSC	.62	6.28	$< .001$
r	GPA	BSC	.14	1.37	$< .1$
R	GPA	TSC, BSC .64* -.07* 40** -1**	.624	32.51	$< .001$
d/f 2, 102					

*Beta coefficients.

**Percentage contributions.

An examination of the percentage contributions reveals them to be 40 per cent for TSC, as compared to minus 1 per cent for BSC. Thus, it can be seen at once that the adding on of BSC to TSC contributed negatively to the multiple R correlation. Consequently, of the two independent variables in the multiple correlational procedure with GPA for the male group, TSC is a better predictor of the boys' future performance on GPA than is BSC. Alternately, a prediction based upon the simple r between GPA and TSC ($p < .001$) would be more reliable than a prediction based upon the simple r between GPA and BSC ($p < .1$), and equally as reliable as a prediction based upon the multiple R ($p < .001$).

The data presented in Table XIII reveal a break in the pattern of interpretation established for GPA, TSC, and BSC by the combined and male groups.

TABLE XIII

A COMPARISON OF THE SIMPLE AND MULTIPLE CORRELATIONS AMONG THREE VARIABLES FOR THE FEMALE GROUP OF NEGRO EIGHTH GRADE STUDENTS (N = 102)

Coeff.	Dependent Variable	Independent Variables	Correlation	(C.R.) or F	P
r	GPA	TSC	.35	3.49	< .001
r	GPA	BSC	.29	2.88	< .02
R	GPA	TSC, BSC .28* .19* 10** 5**	.39	8.80	< .001
d/f 2, 99					

*Beta coefficients.

**Percentage contributions.

It may be seen from Table XIII that the simple r between GPA and TSC is .35, as compared to .29 between GPA and BSC. After adding on BSC to TSC it can be seen that the multiple R of .39 does not differ significantly from the simple r of .35 between GPA and TSC, as the z deviate does not yield a significant critical ratio (see Table VI, p. 67). However, an inspection of the percentage contributions reveals them to be 10 per cent for TSC and 5 per cent

for BSC. This means that BSC contributed one third of the the total to the multiple R of GPA, TSC, and BSC. This is in dramatic contrast to the non-significant contributions made by BSC to the multiple R's for the combined and male groups. Despite this change in the importance of the BSC addition to the multiple R's for the combined and male groups. Despite this change in the importance of the BSC addition to the multiple R of GPA, TSC would be a better predictor of GPA for the girls than would BSC, although BSC would predict far better for the girls than for the combined and male groups. The simple r for GPA, TSC ($p < .001$) would predict GPA equally as well as the multiple R ($p < .001$), and better than the simple r for GPA-BSC ($p < .02$).

In summary, then, of the two self concept measures TSC would be better predictor of GPA for the combined and separate groups of Negro eighth grade students than BSC, although BSC would predict more reliably for the girls than for the boys.

The focus of the study will now be centered upon determining which of the independent variables IQ, TE, or MAT would be the most reliable predictor of GPA for Negro eighth grade students. The relevant data for the combined groups are presented in Table XIV. The simple r's for the variables are included in parentheses, as are the critical ratios derived from them. The asterisks denote the degrees

of freedom involved in determining the significances of the F levels. The top figure in each pair is the Beta coefficient. The second figure in each pair is the percentage contribution made by that variable to the R of the correlational procedure.

TABLE XIV

RESULTS OF SIMPLE AND MULTIPLE CORRELATIONS INVOLVING THREE PRINCIPAL DETERMINANTS OF ACADEMIC ACHIEVEMENT AS MEASURED BY GRADE POINT AVERAGE

Dependent Variables	Combined Groups (N = 207) Independent Variables			(r) or R	(C.R.) or F	P
	IQ	TE	MAT			
GPA	.77			(.77)	(7.73)	< .001
GPA		.69		(.69)	(6.99)	< .001
GPA			.84	(.84)	(8.52)	< .001
GPA	.38* 29	.56* 46		.87	304	< .001
GPA	.16* 12		.72* 62	.86	288	< .001
GPA		.42* 35	.55* 47	.90	455	< .001
GPA	.04** 3	.42** 34	.52** 45	.90	303	< .001

d/f *2, 204
**3, 203

From the table it is seen that the simple r's for GPA and IQ, GPA and TE, and GPA and MAT are .77, .69, and .84 respectively. When TE is added to IQ, the resulting multiple R for GPA is .87. The percentage contributions are 29 per cent and 46 per cent for IQ and TE respectively. These percentages show that TE contributed more to the R of GPA than did IQ. Next, TE was deleted and MAT was added to IQ in the multiple correlation procedure, producing an R of .86 for GPA. The percentages for this correlation reveal that MAT (62 per cent) contributed five times as much to the GPA multiple R as did IQ (12 per cent). When IQ was deleted and TE added to MAT the resultant R was .90. The percentages show that of this R, MAT contributed 47 per cent and TE contributed 35 per cent. In the final stage of the "adding on" procedure IQ, TE, and MAT were all included in the multiple R of GPA which is seen to be .90. In this procedure MAT contributed 45 per cent to the R of .90, while TE contributed 34 per cent and IQ contributed only 3 per cent.

The procedures for determining the Rs between GPA and the variables already listed for the male and female groups followed the pattern outlined above. The resulting data are contained in Table XV, for the male group and Table XVI, for the girls' group.

TABLE XV

RESULTS OF SIMPLE AND MULTIPLE CORRELATIONS INVOLVING THREE PRINCIPAL DETERMINANTS OF ACADEMIC ACHIEVEMENT AS MEASURED BY GRADE POINT AVERAGE

Dependent Variables	Male Group (N = 105) Independent Variables			(r) or R	(C.R.) or F	P
	IQ	TE	MAT			
GPA	.79			(.77)	(7.834)	> .001
GPA		.69		(.69)	(6.99)	> .001
GPA			.86	(.86)	(8.72)	> .001
GPA	.44* 35	.50* 40		.86	150	> .001
GPA	.21* 17		.66* 56	.85	138	> .001
GPA		.41* 33	.56* 48	.90	211	> .001
GPA	.07** 6	.40** 32	.51** 43	..90	140	> .001

d/f *2, 102
**3, 101

The data presented in Table XV show that the simple r for the boys' group between GPA and IQ was a .79, as compared to .69 for TE and .86 for MAT. When TE is added to IQ, Multiple R is shown to be considerably larger (.86) than the simple r between GPA and TE, while being equal to the simple r of .86 between GPA and MAT. All the other multiple R's are larger than the simple r's, with the GPA,

R of .90 with TE and MAT being equal to its R of .90 with IQ, TE, and MAT.

In terms of prediction, TE and MAT together would be better predictors of GPA than any other combination of the predictor variables. However, the significant contributions made by TE in any combination of the predictor variables leads to the conclusion (at least for this sample) that TE would be the most consistent and reliable predictor of GPA, since MAT (also a significant contributor), which represents achievement test scores, is not as routinely a fact of the teaching-learning process as is the fact of the teacher's daily confrontation with his pupils.

The data presented in Table XVI include the contributions made by each predictor variable to the R of GPA for the female group. The simple r for this group between GPA and IQ is shown to be .74, as compared to .84 and .86 for the simple r's between GPA and TE and MAT respectively. When TE is coupled with IQ, the multiple R of .87 is larger than the simple r of .74 between GPA and IQ, but practically the same as the simple r's between GPA and TE, between GPA and MAT. The same observation is true when TE is deleted from the GPA multiple R and MAT is added to IQ. However, the identical multiple R's of .91 for GPA, when TE is coupled with MAT, and when IQ is added to TE and MAT are higher than each of the simple r's between these variables.

TABLE XVI

RESULTS OF SIMPLE AND MULTIPLE CORRELATIONS INVOLVING THREE PRINCIPAL DETERMINANTS OF ACADEMIC ACHIEVEMENT AS MEASURED BY GRADE POINT AVERAGE

Dependent Variables	Female Group (N = 102) Independent Variables			(r) or R	(C.R.) or F	P
	IQ	TE	MAT			
GPA	.74			(.74)	(7.36)	> .001
GPA		.84		(.84)	(8.52)	> .001
GPA			.86	(.86)	(8.72)	> .001
GPA	.31* 23	.63* 53		.87	154	> .001
GPA	.08* 6		.79* 68	.86	144	> .001
GPA		.44* 37	.53* 46	.91	238	> .001
GPA	-.003** -.2	.44** 37	.53** 46	.91	158	> .001

d/f *2, 99
**3, 98

In terms of prediction, TE and MAT taken together would be better predictors of GPA than any other combination of the other predictor variables. However, the consideration given to TE's contributions to the multiple R's, as well as to its significance as a single predictor, leads to the conclusion that TE is the most consistent and reliable predictor of grade point average for this group.

Certain conclusions may be reached from the data presented regarding the two self concept measures and the multiple correlation procedures, with GPA held constant. Of the two self concept measures, TSC would be a better predictor of GPA than BSC, for all groups. Of the remaining variables, TE would be the best single predictor of GPA for all groups. The ever decreasing contributions made by IQ to the various multiple R's indicate that IQ may be less important to academic achievement than TE, which has been shown to be a teacher's estimate of the students' self concepts. The important place occupied by MAT in predicting GPA shows the importance of a well planned and conscientiously executed testing program in the school.

Discussion and Summary

The findings of this study regarding the relationships between boys' and girls' self concept, and the relationships between the self concept and intelligence, and the self concept and academic achievement agreed with some of the findings reported in the survey and disagreed with others. The question whether or not boys' self concepts differ from girls' self concepts yielded contradictory reports from the literature, as well as from this study. The question of how reliably the instruments purporting to assess the self concept actually do what they profess, was accented by this study, as shown by the consistently contradictory results

yielded by each of the instruments used in this study on the same variables.

Amatora (1) and Ausubel (2), working separately, found that pre-adolescent girls tended to rate themselves higher on self concept than did pre-adolescent boys. Perkins (15) reported similar findings for fourth and sixth grade children, as did Bledsoe (5), while Bluumeier and Check (13), working together, noted the same tendency among fourth grade children. These findings were not true for the subjects of this study, as both boys and girls reported negative self-feelings on the TSC and positive self-feelings on the BSC. Instead, the findings of this study either confused the issue as to which sex tended to rate itself more highly on self concept, or raised the question of which of the two instruments reported more reliably. The significant correlations between TSC and BSC serve only to highlight this question, as the coefficients of correlation between them of .33 for the combined groups and .35 for the girls' group were significant at better than the .001 level, while the correlation between them of .32 for the boys's group was significant at better than the .01 level.

On the relationship of intelligence to the self concept, the findings of this study were as contradictory in nature as were those reported in the literature. Sears (16) found that bright boys exhibited higher self concepts than bright girls. Hayes (12), Bledsoe (5), and Mitchell (14), working

separately and using the B-C in their studies, reported no relationship between IQ and self concept. On the other hand, Coopersmith (9), using the Self Esteem Inventory, reported positive relationships between IQ and self concept. Similar relationships were reported by Klausmeier and Check (13), who inferred the self concepts of their subjects from the reports of two psychologists, and by Ringness (17), who used the Child's Self Rating Sheet with his subjects.

For the Negro eighth grade subjects of this study, the T-C reported significantly positive relationships between self concept and intelligence, which were in sharp contrast to those reported by the B-C. The significance levels for the T-C were better than .001 for the combined and male groups, and better than .01 for the female group. However, the B-C coefficient of correlation with IQ was positive (.07) but not significant for the combined groups, negative (-.05) for the boys' group, while moderately positive (.19), and approaching the .05 level of significance, for the girls' group.

Perhaps a clue to the resolution of the contradictory reports of the T-C and IQ and the B-C and IQ may be found in the following observations. The positive self reports on the T-C of the combined and separate groups were in the opposite direction from the below-average mean score of the groups on the Otis test of intelligence, while the negative

self reports on the TSC were in the same direction as the mean scores of the groups on the same test. Viewing the scores of the individual members of the groups on the BSC, TSC, and the Otis as indicators of their relative positions in the group, then the various relationships between the instruments reveal that the members reversed their positions as indicated by IQ on the BSC, and maintained their positions as indicated by the IQ on TSC. Add to this, Ringness' (17) finding that below-average fourth grade students rated themselves higher on self concept than did average fourth grade students, and some of the confusion regarding the relationship of self concept to intelligence is removed.

However, Walsh's (20) findings--that boys of IQ of 120 and above, in grades two through five, exhibited both positive and negative self concepts--indicate that whatever relationship may exist between IQ and self concept is of a correlational rather than causal nature. Intelligence may enhance the self concept, but it is doubtful whether the self concept enhances intelligence.

With regard to the relationship of self concept to academic achievement, this study revealed that the coefficients of correlation between TSC and GPA, and TSC and MAT, were significant at better than the .001 level for the combined and male groups, as well as being better than .001 for the girls on GPA and better than the .01 level for MAT. Contrariwise, the coefficient of correlation

between BSC and GPA were significant at the .05 level for the combined groups, not significant for the male group (r = .14), and significant at the .01 level for the female group; while the correlations between BSC and MAT were not significant for either the combined or male group, whose correlations were .14 and .02 respectively. The BSC-MAT correlation for the female group was significant, however, at better than the .02 level. In substance then, this study revealed positive and significant relationships between self concept and academic achievement.

Thus the findings reported in this study confirm the positive and significant relationships between self concept and academic achievement reported by Bledsoe, (6) Coopersmith (9), Hayes (12), Klausmeier and Check (13), and Ringness (17), and contradict the reports of no relationship by Fiedler and others (11), Turner and Vanderlippe (19), and Perkins (15). The findings of this study also lend some support to those of Drews and Teahan (10) that students with poor self concepts and high ability may earn <u>good</u> grades, and to Walsh's (2) report that students with poor self concepts and high ability may earn <u>poor</u> grades.

The possibility of predicting academic standing from a knowledge of the self concept was touched on in the survey Coopersmith (9) and Ringness (17) had their subjects estimate their positions in class as a result of their scores earned on a standardized test. Their findings--that

the subjects with the highest self concepts predicted (and earned) the highest scores on the test--have implications for the predictive validity of the self concept. However, this high correlation between prediction and attainment leaves unanswered the question of whether the students based their predictions on a knowledge of their self concepts or on a realistic appraisal of their abilities as compared to the abilities of the students taking the test with them. A more important question, however, is whether another person knowing the students's self concept could predict that student's academic standing.

The findings of this study revealed that for the group under study, if the teacher had before him TSC and BSC scores, he could predict the student's academic standing (GPA) better from TSC than from BSC. The findings also revealed that when TSC and BSC are considered in the multiple correlation procedures, their predictive validity shows a steady and significant decrease (although TSC continued to contribute more than BSC to the multiple R of GPA), while TE shows a steady increase, thus being revealed as the best single predictor of GPA. The combination of variables found to be most effective in predicting GPA were TE and MAT. When TE was combined with MAT (scores on the achievement test), the multiple R was .90 for the combined and male groups, and .91 for the female group. The F levels were 454, 211, and 238 for the combined, male, and female

groups respectively, and all were significant at better than the .001 level. It should be noted, however, that the teachers' estimate (T) for this study was not an estimate of the student's ability, but of his self concept.

A dramatic finding for these subjects was the relatively insignificant contribution made by IQ to the multiple R of GPA. The impact of this revelation is heightened by an inspection of the mean scores on the various measures. The mean scores of all the groups (combined, male, and female) are below the means established by the norms groups except GPA (school system mean of 2.00) and ESC, which has a mean of 88. The boys' mean GPA of 2.00 equals that of the school system, while the combined mean of 2.18 is above that of the school system, and the girls' mean GPA is even higher. Thus the anomaly is, that students judged to be of below-average intelligence by the Otis test of intelligence, performed at the average or above-average level on GPA. Part of the answer to this anomaly (T) was supplied by the results of this study. The other part of the answer must be supplied by determining whether or not the reasons for the discrepancies between the below-average performances of the subjects on IQ and MAT and the above-average performances on GPA reside in the natures of the intelligence and achievement tests used in the study.

Of the four hypotheses tested, only Hypothesis I was retained. Hypotheses II, III, and IV were rejected.

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CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine the relationships which might exist between the self concepts of Negro eighth grade students and their intelligence and academic achievement. A secondary purpose was to explore the contributions made by the variables used in the study to the subjects' academic achievement as defined by grade point average. Hypotheses were proposed (and tested) for the first of these purposes, but not for the second. The subjects included in the study were 207 Negro children ranging in age from 12 to 15 years. The ages of the 105 male subjects ranged from 12 to 15, while the ages of the 102 female subjects ranged from 12 years to 14 years. These students attended a segregated junior high school located in the southwestern area of the United States.

The subjects were administered two self concept measures, the Bills' Index of Adjustment and Values and the Tennessee Self Concept Scale from which their self concepts were inferred. Teachers also submitted an estimate of the subjects' self concepts, and the subjects, themselves, submitted an estimate of the self concept of the average

member of their peer group. The subjects were also administered the Otis Quick-Scoring Tests of Mental Ability and the Metropolitan Achievement Test.

The scores obtained from these instruments and from the teachers' and students' estimates were analyzed and interpreted through the use of the statistical mean, Pearson's Product Moment, and Pearson's Multiple Correlation Procedures. Both the t and F tests of significance were applied to the relationships and differences which were revealed among the variables of the study. The principal use made of the multiple correlation process was to determine which of several variables--intelligence, scores on the Tennessee Self Concept Scale, the Index of Adjustment and Values or the Metropolitan Achievement Test, or the teachers' estimate of the student--was the most effective predictor of academic achievement in the terms of grade point average.

The data obtained through the statistical procedures used to achieve purpose number one yielded the following results.

1. There was no significant difference between the self concept of Negro eighth grade boys and that of Negro eighth grade girls.

2. Negro eighth grade girls ranked significantly higher in intelligence as measured by the Otis test than Negro eighth grade boys.

3. The achievement test scores of Negro eighth grade girls were significantly higher than those of Negro eighth grade boys.

4. The relationship of Negro eighth grade boys' self concept to their intelligence test scores differed significantly from the relationship of Negro eighth grade girls' self concept to their intelligence test scores.

5. The relationship between Negro eighth grade girls' self concept and their achievement test scores was significantly higher than the relationship of Negro eighth grade boys' self concept to their achievement test scores.

The data obtained through the multiple procedures used to achieve purpose number two yielded the following results.

1. Of the two self concept measures employed in the study, the Tennessee Self Concept Scale offered a more reliable basis for predicting the grade point average of the subjects than did the Bills Index of Adjustment and Values.

2. The subjects' intelligence contributed more highly to the subjects' scores on an achievement test than it did to their grade point averages.

3. By virtue of being a routine part of the teaching-learning situation, as opposed to the infrequently used achievement tests, the teacher's estimate of the pupil proved to be the best single predictor of the subjects' grade point average.

4. The teacher's estimate of the pupil and the pupil's score on an achievement test proved to be the best combined predictors of the subjects' grade point average.

5. Of three variables considered together (the teacher's estimate, the pupil's score on an achievement test, and his intelligence), intelligence was found to be the least reliable as a predictor of the subjects' grade point average.

Conclusions

Many factors should enter into the presentation of conclusions based upon the results of an investigation. Such factors as the age and grade levels of the subjects, their levels of maturation, their socio-economic status, as well as other significant factors in their perceived environments, should be considered along with the "facts" revealed by the investigation. The importance of such considerations increases when the subjects of a study are members of a minority race, as were the subjects of the present study. These considerations exerted a direct influence upon the conclusions and recommendations which follow.

The findings from the multiple correlations that the teachers' estimate of the pupil, while contributing heavily to his academic standing (grade point average), contributed very little to the pupil's score on an achievement test (MAT).

The same procedure showed that the student's intelligence contributed little to his academic standing, while making the principal contribution to his score on an achievement test. These findings, taken together, lead to the conclusion that the disproportionate contributions made by these two variables to the measures most often used in assessing academic progress can have detrimental effects upon the student himself. This conclusion, coupled with the finding that the teacher's estimate of the student was the most effective single predictor of academic achievement, has far-reaching implications for teacher-pupil relationships as the student seeks to climb the educational ladder.

In the first place, this conclusion implies that the teacher's opinion of the student should be sought, and then given earnest consideration, in every circumstance involving the student's personal welfare, grade placement, or advancement. This, in turn, places upon the teacher an awesome necessity to take every precaution to insure that his estimate of the student is more an appraisal of the student's abilities than a reflection of his own personal attitude toward the student. This will not be easy, for public school teachers generally rate the docile, conforming student as the good student, and the individualistic, non-conforming boy or girl as the poor student. In other words, the classroom of the public schools are scaled-down

replicas of a society which extols individuality while rewarding conformity. As girls most generally fit into the latter category, they are judged by teachers to have the more positive self concepts and are given the best grades. This was certainly true for this study. (See Table IV, p. 52.)

Secondly, the teacher should be fully aware that he is a significant factor in the formulation of the student's self concept, and that many students make satisfactory academic progress until somebody either tells them that they do not have the ability to do so, or "helps" them to make this amazing discovery for themselves through counseling. Such "realistic appraisals" of the student's ability, whether made by the teacher, or by the student himself, are detrimentally incomplete, unless they are coupled with "realistic appraisals" of the student's self concept. In other words, in rendering his estimate of a student, the teacher should consider both the student's ability and his motivation, to the latter of which he has been a most significant contributor.

If teachers will take the precautions listed above, then not only will the teacher's estimate of the pupil be the most effective predictor of academic achievement, but it will be the most equitable as well.

The negative self-reports of the students on the Tennessee Self Concept Scale, their positive self-reports on the Index of Adjustment and Values, and their below-average

performances on the Otis Quick-Scoring Tests of Mental Ability and the Metropolitan Achievement Test lead to the conclusion that the students' self concepts were the motivational factors which determined their academic achievement as shown by their above-average performances with regard to their classroom subjects.

This conclusion might lead to many speculations, one of which might be that the Tennessee Self Concept Scale reflected the inferior self-feelings of a minority group socially conditioned to feel inferior, while the Index of Adjustment and Values reflected their aspirations to see themselves and to be seen by others as persons of worth. Another speculation might be that the Otis Quick-Scoring Tests of Mental Ability and the Metropolitan Achievement Test do not test adequately the experiences most common to culturally disadvantaged minority groups, while good teachers generally adapt subject matter content and teaching methods to the experiences and levels of understanding of their students. A final speculation might be one that considers the place of the "halo effect" in the teacher's assessment of the student's academic standing.

Despite these speculations, and a further speculation concerning the validity of these speculations, there remains the finding of the present study that students who were judged by three of four standardized measures to be less than average in the areas tested by them, were found to be

more than average in meeting the educational tasks assigned them daily by their teachers. This finding affords a dramatic climax in the case of the boys, who were, for all practical purposes, rated below average even by the teachers (see Table IV), in addition to being so rated by three of the four standardized measures, thus finding the odds four to one against them, yet bolstered only by their own positive self-reports on the Index of Adjustment and Values managed to perform satisfactorily in their classrooms.

Again, the import nce of knowing the student's self concept is indicated, and this observation leads to the final conclusion that if one of the two self concept measures used in this study is to be used in assessing the student's self concept, then the Tennessee Self Concept Scale would serve as a better predictor of academic achievement than would Bills' Index of Adjustment and Values.

Recommendations

The first conclusion noted the disproportionate contributions made by the teacher's estimate of the pupil and the student's own intelligence to his academic standing and his scores on an achievement test. Obviously, some means of equalizing these contributions are needed. Therefore it is recommended that schools not already having them should institute well planned and conscientiously implemented testing programs which will provide for the judicious use of

standardized measures of ability and achievement along with the teacher's methods of pupil-evaluation.

It is further recommended that the scores obtained from the achievement testing be combined with the teacher's evaluation of the pupil to yield a single grade point average for the student. Such a composite indication of a student's final academic standing would have the salutary effect of giving due recognition to both the teacher's evaluation of the student and the student's own innate abilities. Two by-products should result from such an innovation: improved teacher-pupil relationships, and a higher level of pupil-motivation.

The second conclusion contained a speculation that standardized tests (previously recommended as an integral part of a school's testing program) might discriminate against minority groups. That such discrimination might exist is the present claim of many eminent educators who have proposed the use of "culture free" tests for minority groups as an antidote to this discrimination. However, since "culture free" tests, if adopted for every culture, and for every minority and disadvantaged group, could result in the nullification of any universal standards of pupil evaluation, it is felt that the present methods of constructing standardized tests should be retained and continuously refined--as is already the practice.

Therefore, since the test makers, who as educators, are equally as eminent as those who oppose their tests, feel that the values and experiences which they set before the student in the test situation are of optimum worth to him and to the society of which he is a part, it is recommended that the values and experiences set forth in the tests be made available to the student prior to the time of testing.

This could be done through creative and imaginative teaching, making optimal use of dramatics, reading, story-telling, real life illustrations, art, music, and the audio-visual aids available to teachers. Such teaching should be supplemented by contrived experiences, purposeful homeroom and assembly programs, and well-planned and implemented field trips. In addition, the creative potential of the child himself offers an often untapped reservoir for broadening the experiences and educational horizons of the child.

Running like a connecting thread through the conclusions and other observations entered here has been the pervasive importance of the self concept to the student's academic achievement. Thus, the recommendations which follow are intended to suggest ways of helping the student to formulate a more positive self concept. Particular reference will be to four observations gleaned from the "Description of the Sample" as recorded in Chapter III.

1. An estimated 200 children under six attended church-operated and publicly-operated day nurseries, having no official connection with the public school system.

2. The 1960 census for the school district under study listed 8.9 as the median number of school years completed by the Negro population.

3. The median annual income for both sexes (Negro adults) was 1,445 dollars, according to the 1960 census.

4. The subjects of the study lived predominately in low-rent housing and barely standard homes (with few exceptions) or rent houses.

With reference to observation number one, it is recommended that pre-school counseling be engaged in with the parents of children whose ages range from two and one-half years to four, for the purpose of acquainting the parents with what they can do toward preparing their children for entry into school. Parents could be given help in understanding the importance of school, and providing reading and speaking experiences for their children.

It is further recommended that the school system establish a liason with the day nurseries for the purpose of directing their curricula more effectively toward preparing their pupils for public school entry.

It is further recommended that the public schools establish kindergartens for the four- to six-year-old children, with the purpose of giving them orientation

experiences. Socialization experiences across race lines would be helpful if provided for a stated period during the summer months, as well as during the regular school year.

With reference to observation number two, it is recommended that an attempt be made to change parents' attitudes toward education through informal adult education classes in reading, writing, arithmetic, and current events, with opportunities provided for family recreation and the learning of adult hobbies. To do this, the schools could remain open until nine p. m. Monday through Friday, and from nine a.m. until twelve noon Saturdays. In addition, the schools could encourage the churches to devote one period weekly to a group discussion among their members on some such topic as "The Religious Implications of Contemporary Events." Such a topic is broad enough to permit the discussion to center on local, state, national, or international events. The enlightened citizenry which might result from this double-pronged approach could be a boon to all elements of society.

With reference to observation number three, it is recommended that schools include in their curricula courses and experiences geared toward vocational and technical training for students who prefer not to attend college. Every effort should be made to prevent such courses from being regarded as special provisions for the slow student.

This is a crucial addition to the school's curriculum, for it has been estimated that the adult skilled worker will change jobs at least three times because of the rapid advances now being made in technology and industry. To provide children with basic training which would enable them to change easily from one type of skill to another, would help to insure them jobs which pay living wages over a longer period of time.

With reference to observations number three and four, it is recommended that schools make available to low-income families the services of a "Home Consultant." This individual would assist these families in budgeting the weekly or monthly income, in low-cost "do-it-yourself" interior decorating, and home and lawn beautification. The efforts of this consultant could be augmented by gearing the programs of the industrial arts and home arts courses in the schools themselves toward these same objectives. This would require coordinating the efforts of the "Home Consultant" with those of the industrial arts teacher and the homemaking teacher. The Home Consultant could also work with the librarian in suggesting reading materials for the family, and with the music and art teachers in creating an appreciation of the aesthetic values of life.

The above recommendations should have the net effect of improving the self concepts of the "significant others" in the child's life, and thereby improving his own

self concept. The child's self concept can be further improved by counseling and guidance services offered by the school.

Specifically, it is recommended that guidance services of a concentrated nature should begin in the first grade or earlier. Through dramatics, arranged for a purpose, story-telling, sociometric devices, group therapy, and play therapy, children can begin the long journey toward understanding of self and of others. They can begin to learn what to expect of self, and the all-important lesson, not often learned, that not all "selfs" can do the same things, but that each "self" can do something that no other "self" can do, and do it well. By implication, all elementary school teachers should be trained to help children in these ways.

It is further recommended that as the child grows older and more able to put his self-feelings into words, he should have the opportunity to have direct, personal contact with a trained teacher-counselor. At all times he should have available to him the services of trained psychologists and school nurses. Parent conferences based on these various contacts with the child should be the rule, rather than the exception. Teacher conferences with the principal and other teachers should revolve around the child's growth as a person, as well as whether or not he is passing or failing in his subjects.

It is further recommended that full-time counselors of both sexes be available on the junior high school level. Few services could be more valuable to the pre-adolescent experiencing "growing pains" and trying so hard to understand what is happening to him. This impulsive, multi-motivated, curious, plastic being needs the type of help which only trained counselors can give. As an aid to rendering this kind of help, the counselors could initiate seminars in self-understanding.

A further recommendation is that full-time counselors be employed on the high school level. This period in the child's life need not be a time of "stresses and strains." Through appropriately organized homeroom guidance programs and personal counseling, the counselor can help the adolescent toward self-understanding, educational planning, career choices, and interpersonal relationships as he struggles to attain selfhood and self-reliance.

For the subjects of this study, and for similar groups, it is recommended that, in addition to the various services already recommended and in many cases now being provided, schools include in their teaching of American history the contributions made to that history by the various racial groups and cultures, and that these racial groups be identified. A concomitant recommendation is that the same procedures be followed in the study of contributors to

contemporary events. This practice should result in improving the self concepts of all racial groups, and in helping these groups to appreciate the richness of the diversity that makes of these fifty states "one nation, under God, [and] indivisible."

Finally, to the extent that educators make use of the knowledge relevant to the role of the self concept as a motivational factor in academic achievement, to that same extent will they be able to perform their task of helping children learn to adapt to the changes occurring with such rapidity in today's world.

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