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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

THE RELATIONSHIP OF THE DEVELOPMENTAL SELF-CONCEPT TO THE ACADEMIC ACHIEVEMENT OF SIXTH-GRADE ELEMENTARY STUDENTS

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

BY

JEAN McCLUNG GRAHAM

Norman, Oklahoma

1974

THE RELATIONSHIP OF THE DEVELOPMENTAL SELF-CONCEPT

TO THE ACADEMIC ACHIEVEMENT OF SIXTH-GRADE

ELEMENTARY STUDENTS

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TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	iii
LIST OF TABLES	vi
LIST OF ILLUSTRATIONS	viii
Chapter	
I. INTRODUCTION AND STATEMENT OF THE PROBLEM	1
Statement of the Problem	1
Hypotheses Tested in the Study	2
Limitations	3
Assumptions Made in the Study	4
Definition of Terms	5
II. REVIEW OF RELATED RESEARCH	7
The Measurement of Academic Achievement	9
Prediction of Academic Success	10
Biological Variables	12
Sociological Variables	14
Psycho-Social Variables	16
Psychological Variables	20
Self-Concept Measures	21
Implications of Research	25
III. PROCEDURES OF THE STUDY	28
Selection of Subjects	28
The Instruments	29
The Self-Concept Scale	29
The Instrument Used to Measure Academic Achievement	30
Method of Testing	31
Collection of Self-Concept Data	31
Collection of the Academic Achievement Data	34
Treatment of the Raw Data	35
Preliminary Analysis Procedures	35
Methods of Statistical Analysis	35

Chapter Page

IV. RESULTS OF DATA ANALYSIS 38

Null Hypothesis Number One 38
Null Hypothesis Number Two 39
Null Hypothesis Number Three 41
Null Hypothesis Number Four 43
Null Hypothesis Number Five 45
Null Hypothesis Number Six 47
Null Hypothesis Number Seven 49
Null Hypothesis Number Eight 51
Summary of Results 55

V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS . . 57

Summary 57
Conclusions 58
Recommendations 61

REFERENCES 62

APPENDIX

A. The Piers-Harris Children's Self Concept Scale: The Instrument Used to Measure the Students' Self-Concepts 68

B. Self-Concept and Academic Achievement Raw Scores and the Descriptive Statistics Computed for Each Group of Scores 75

LIST OF TABLES

Table		Page
1.	Means, Standard Deviations, K-R 20's, and Standard Errors of Measurement Computed for Sixth-Grade Students' Scores on the California Achievement Test: 1970 Edition (Level 3)	32
2.	Correlation Coefficient Computed Between the Sixth-Grade Students' Behavioral Self-Concept Scores and Their Total Reading Achievement Scores	40
3.	Correlation Coefficient Computed Between the Sixth-Grade Students' Intellectual Self-Concept Scores and Their Total Reading Achievement Scores	42
4.	Correlation Coefficient Computed Between the Sixth-Grade Students' Anxiety Self-Concept Scores and Their Total Reading Achievement Scores	44
5.	Correlation Coefficient Computed Between the Sixth-Grade Students' Happiness Self-Concept Scores and Their Total Reading Achievement Scores	46
6.	Correlation Coefficient Computed Between the Sixth-Grade Students' Behavioral Self-Concept Scores and Their Total Mathematics Achievement Scores	48
7.	Correlation Coefficient Computed Between the Sixth-Grade Students' Intellectual Self-Concept Scores and Their Total Mathematics Achievement Scores	50
8.	Correlation Coefficient Computed Between the Sixth-Grade Students' Anxiety Self-Concept Scores and Their Total Mathematics Achievement Scores	52

Table Page

9. Correlation Coefficient Computed Between the Sixth-Grade Students' Happiness Self-Concept Scores and Their Total Mathematics Achievement Scores 54

10. Summary of Results Derived from Testing the Eight Null Hypotheses 56

11. Academic Achievement and Self-Concept Scores Recorded for the Sixth-Grade Students Who Participated in the Study 76

LIST OF ILLUSTRATIONS

Figure Page

1. IBM Card Format Used to Prepare the Students' Self-Concept and Achievement Data for Statistical Analysis 36

CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

The significant question of why some students achieve well in school and others achieve poorly is a continuing one. Intelligence is a factor in school achievement, but it certainly is not the only factor. Many students have experienced greater academic success than others who have greater measured ability.

The importance of self-concept and its influence on achievement has been recognized by numerous psychologists and educators (Purkey, 1970).

The demand for usable research results has prompted some educators to make the assumption that there is only one type of self-concept measure and that this self-concept measure is related to all areas of academic achievement. The validity of this assumption is questioned, and more research concerning the relationships which exist between selected self-concepts and selected areas of academic achievement is in order, particularly for the elementary child.

Statement of the Problem

The specific problem of this study was as follows: To investigate the direction and magnitude of the

relationships which existed between each of the four (4) selected self-concept dimensions measured by the Piers-Harris Children's Self Concept Scale (PHCSCS) (Piers & Harris, 1969b) and total reading achievement scores and total mathematics achievement scores of the California Achievement Test (CAT '70). These relationships were investigated for sixth-grade students who were enrolled in and attended the Edmond, Oklahoma Public School System for the 1973-74 academic year.

Hypotheses Tested in the Study

The statistical significance level of .05 was chosen by the researcher because it was considered to be a reasonable risk, neither too high nor too low, for the research of the study. The following null hypotheses were tested for significance at the .05 level:

Ho_1 There is no statistically significant relationship between the students' behavioral self-concept scores and their total reading achievement scores.

Ho_2 There is no statistically significant relationship between the students' intellectual and school status self-concept scores and their total reading achievement scores.

Ho_3 There is no statistically significant relationship between the students' anxiety self-concept scores and their total reading achievement scores.

Ho_4 There is no statistically significant relationship between the students' happiness and satisfaction self-concept scores and their total reading achievement scores.

Ho_5 There is no statistically significant relationship between the students' behavioral self-concept scores and their total mathematics achievement scores.

Ho_6 There is no statistically significant relationship between the students' intellectual and school status self-concept scores and their total mathematics achievement scores.

Ho_7 There is no statistically significant relationship between the students' anxiety self-concept scores and their total mathematics achievement scores.

Ho_8 There is no statistically significant relationship between the students' happiness and satisfaction self-concept scores and their total mathematics achievement scores.

Limitations

Certain limitations were inherent within the design of the present study. The most important of these limitations were as follows:

1. The sample of students was limited to include only those sixth-grade students who were enrolled in and attended classes within the Edmond, Oklahoma Public School System for the 1973-74 academic year, for whom the California Achievement Test (CAT '70) scores were available.

2. The students' academic achievement measures were limited to the total reading achievement scores and total mathematics achievement scores derived from the administration of the California Achievement Test (CAT '70).

3. The students' self-concept measures were limited to four (4) subscores derived from the administration of the Piers-Harris Children's Self Concept Scale (PHCSCS) during the Spring semester of the 1973-74 academic year. These four (4) subscores were Behavioral Self Concept, Intellectual and School Status Self Concept, Anxiety Self Concept, and Happiness and Satisfaction Self Concept. Literature indicated that it would be profitable to investigate these specific subscores. Each of these subscale scores is explained further in the definition of terms.

Assumptions Made in the Study

In order to conduct the proposed study, the experimenter made several assumptions concerning the two (2) data-collection instruments and the sample of sixth-grade students. The primary assumptions made were as follows:

1. It was assumed that academic achievement is a legitimate concept in the educational process.
2. It was assumed that academic achievement can be quantified and objectively measured.
3. It was assumed that the self-concept is a legitimate concept in the behavioral sciences.
4. It was assumed that the self-concept can be quantified and objectively measured.
5. It was assumed that the traits measured were normally distributed in the population to be sampled.

Definition of Terms

The following explanations and definitions are given to facilitate the understanding of terms used in the present study. The definitions presented are intended to be appropriate only for the present study.

(1) Self-Concept: The personality dimensions being measured by the Piers-Harris Children's Self Concept Scale (PHCSCS) as it was administered to the sixth-grade students participating in the study.

(2) Self-Concept Scores: The numerical values derived from administering the PHCSCS to the study participants.

(3) Behavioral Self-Concept Score: A subscale measure taken from the PHCSCS which indicates the student's evaluation of his own behavior.

(4) Intellectual and School Status or Intellectual Self-Concept Score: A subscale measure taken from the PHCSCS which indicates the student's evaluation of his ability to perform academically.

(5) Anxiety Self-Concept Score: A subscale measure taken from the PHCSCS which indicates the student's perception of the level of anxiety he experiences in everyday life situations.

(6) Happiness and Satisfaction or Happiness Self-Concept Score: A subscale measure taken from the PHCSCS which indicates the student's evaluation of his most personal self (a measure of the student's level of satisfaction/dissatisfaction with himself).

(7) Academic Achievement: Level of academic proficiency as measured by a single administration of the California Achievement Test: 1970 Edition (Level 3) (CAT '70).

(8) Achievement Scores: The numerical values derived from a single administration of the CAT '70 to the study participants.

(9) Reading Achievement: A subscale measure taken from the CAT '70 which reflects the student's proficiency in vocabulary and reading comprehension.

(10) Mathematics Achievement: A subscale measure taken from the CAT '70 which reflects the student's proficiency in mathematics computation, mastery of mathematics concepts, and mathematics applications.

CHAPTER II

REVIEW OF RELATED RESEARCH

Teachers have always attempted to measure or evaluate the work of their pupils. The scanty evidence of early records indicates that this was generally done through personal observation, oral questioning, and subjective judgment by the teacher. At the same time, some responsibility for evaluating the progress of pupils has traditionally been shared by citizens other than the teachers. From the very inception of the educational system in America, it has been customary to have a school committee or lay citizens in each community who would be responsible for monitoring the school's progress. From such committees have evolved our present day school boards. One of the functions of these early school committees was to make annual inspections of the local school and to examine the pupils by asking them questions (Noll, 1965).

Horace Mann, the appointed Secretary of the Massachusetts State Board of Education, prepared written examinations for high schools in the Boston area. These examinations contained items about history, arithmetic, geography, vocabulary, grammar, natural philosophy (science), and some astronomy, and were given to students of the same age levels

and under uniform conditions (Caldwell & Courtis, 1925). A special committee scored the test papers under uniform conditions, and the results of the various schools were compared. This was probably one of the first organized attempts to conduct a standardized testing program within public schools.

Several other educators made significant contributions to the standardized testing movement during the period from 1850 to 1900. Two of the more prominent were Sir Francis Galton, who was able to identify and demonstrate individual differences among students, and J. M. Cattell who tested sensory-motor abilities in relation to intelligence (Noll, 1957).

From these meager and humble beginnings, the measurement movement has developed into a multi-billion dollar business which is dominated by such giant corporations as the California Test Bureau, the Houghton-Mifflin Company, Harcourt, Brace, Jovanovich, Inc., Science Research Associates, and the Psychological Corporation. The steady and continuous growth of educational measurement can be attributed to four significant forces: (1) the necessity of devices for screening soldiers during World Wars I and II, (2) increased emphasis on the guidance movement, (3) increased demands for standardized measures of educational attainment or educable ability, and (4) increased government funds available for evaluation and testing in education (Noll, 1965).

The Measurement of Academic Achievement

The first attempts to standardize educational measurement were concerned with the area of academic achievement. As the testing movement spread throughout the United States and the fallacies of standardized tests results began to emerge, educators began to suggest other measures as possible indicators of educational (academic) achievement. One such indicator was class grades (Gerberich, Greene, and Jorgensen, 1962). Still others suggested certain types of psychological measures of mental ability, creativity, ability to perform certain mental operations, and insight to problem situations. Different types of sociological measures were also suggested such as the ability to get along with people, degree of involvement in the total academic process, ability to apply knowledge gained to actual job situations, and combinations of these measures (Ross & Stanley, 1954). However, the differences among various types of school systems, differences among educational curricula, the subjectivity of grading systems, and the lack of definitions of ill-defined terms led educators back to the more objective measures provided through standardized achievement testing with norm referenced tests. As a result of this movement to the more objective measures provided by standardized achievement tests, such test results now are used to make decisions in education more frequently than all other indicators of academic achievement combined (Ross & Stanley, 1954).

Predictors of Academic Success

It is obvious that all men do not have equal ability to achieve academic success. It is equally obvious that school systems, both public and private, do not have the financial support, personnel, time, nor inclination to optimize the educational opportunities of every student (Broudy, 1972). Whether this fact is made explicit or implicit at the local school level is irrelevant. It still remains a fact that schools must work with students who possess varied potentials for academic success. There are probably more opportunities available to the less "capable" learner today than ever before, but the schooling of the masses, the underlying philosophy of American education, prevents the success of many students. Some students are encouraged to succeed by teachers, administrators, friends, and relatives while others eke out an education in spite of their environmental circumstances and not because of them (Kurtz & Swenson, 1951; Carlton & Moore, 1966).

As educators have tried to optimize educational opportunities for the masses, they have predicted the success or failure of students using certain indicators, both subjective and objective. Perhaps the oldest, most valid, most reliable, and most used of all predictors of academic success has been intelligence quotients (IQ) or mental abilities scores. Since the development of the Stanford Revision of the Binet Scale (Terman, 1916), educators have used this test

to predict future educational success of students.

Using intelligence tests to predict academic success has posed certain problems, however. The administration and scoring of these instruments has been difficult and time consuming, and the number and type of persons used in establishing norms for the instruments have frequently resulted in improper interpretations of results. It became obvious that tests which could be given to large groups of students at the same time and which employed the same or comparable mental abilities in their completion were the only reasonable answer to the problems associated with individual intelligence tests. Arthur Otis (1918) pioneered efforts to develop such testing instruments. The instruments developed by Otis and his colleagues successfully bridged the gap in mental ability testing. While such instruments have not been generally regarded as being as valid and reliable as an individual test of intelligence, their low cost, ease of administration, and interpretability have more than compensated for any inadequacies in validity and reliability (Cronbach, 1970). Group tests of mental ability, usually referred to as mental maturity tests, academic aptitude tests, and mental ability tests, have been used extensively as predictors of academic success. Because of what is usually their high relationship (correlation) with standardized achievement test results, they have been frequently used in conjunction with achievement batteries to determine whether a student is working up

to his potential or not. When used in conjunction with other predictors, mental ability scores may be accurate in predicting academic achievement outcomes (Noll, 1965).

Biological Variables

Even though mental abilities scores may be valid and reliable predictors of academic achievement, there has been no general consensus among educators that they are the best indicators of future success in school. Most teachers and educational administrators have felt that they can predict educational outcomes more accurately from certain biological indicators (Travers, 1970). Such ideas have not been completely without empirical support, however. For instance, Piaget (1953, 1964) found that academic achievement was directly related to children's ability to perform certain types of mental operations. Their ability to perform these mental operations was, in turn, a direct function of chronological age. In a study by King (1955), age of entrance into elementary school was shown to have an effect upon achievement. Still other studies have shown that academic achievement is highly related to the student's sex. In most instances, researchers have been able to predict the future academic success of boys more accurately than girls (Campbell, 1966; Bledsoe, 1967).

Race has been studied as a predictor of academic achievement (Caplin, 1966; Heath, 1970; Kleinfeld, 1972).

The academic achievement of whites has been predicted more accurately than the academic achievement of minority groups (Carter, 1968). This is probably because of the racial and cultural bias inherent within the testing instruments used as predictors (Cattell & Cattell, 1960).

Prickett (1970) found the athletic ability (psychomotor coordination) of students to be another valid and reliable indicator of academic achievement. However, this was only true for whites and did not hold true for the minority groups.

Several other biological variables have been used successfully to predict academic achievement on limited populations of students. Indicators that have been studied include the student's present state of health (Roessler & Greenfield, 1958), level of physical fitness (Sparks, 1972) and physical measurements (McCandless, 1970), and the birth order of the sibling (Wolf, 1967).

For the most part, biological variables have not been found to be as valid and reliable as many other predictors of academic achievement probably because many of the biological states can be altered almost at will. The review of literature revealed that there has been a declining use of biological variables in predicting academic achievement in all areas except physical education and recreation.

Sociological Variables

Some attempts have been made to predict academic achievement from selected sociological variables. As in the case of biological variables, researchers have experienced some measure of success in using such variables to determine students' possibilities of failing or passing academic courses. Haider (1971) reported that there is strong evidence that a child's academic achievement is strongly influenced by his family background. Coleman, et al. (1966) pointed out that variations in family background account for far greater variations in academic achievement than do variations in school characteristics. (Harris (1961), in discussing family background, made the following statement:

> The best assurance a boy may have of being properly equipped and motivated to get the most from our educational system is the possession of parents and grandparents of a socioeconomic group which places a high value on education. (p. 13)

Most studies conducted which were concerned with the relationship of socioeconomic background and/or family life to academic achievement have generally supported the proposition that a child's life is likely to have more completeness, and therefore more success in academic achievement, if both his parents are present in the home. For example, Sprey (1969) stated that a survey of research findings on the single-parenthood phenomenon leaves little doubt that the simple fact of the absence of one parent affects family functioning in a wide variety of ways. Herzog and Sudia (1968)

concluded that other things being equal, it is evident that a two-parent home is far better for a child's educational experience than a one-parent home. Moynihan (1968) pointed out that the Coleman study showed a tendency for academic achievement to decline in homes where the father was not present. Pecot (1970) concluded that the child enrolled in school may find it difficult or almost impossible to devote full energies to the learning process if he is preoccupied with the loss of one or both parents.

Koch (1961) investigated the influence of the broken home on the anxiety test scores of preshool children. She concluded that children from broken homes were much more likely to have adjustment difficulties than children from homes where both parents were present. She further concluded that these adjustment difficulties usually were made manifest in the form of academic achievement failures.

Wohl (1962) studied the effects of mother-only homes on the academic achievement and adjustment of elementary grade children. Using two matched groups of thirty students, he concluded that achievement test scores of children from the intermediate grades were not related to the number of parents in the home. On the other hand, Wohl reported that the adjustment of children from two-parent homes was rated superior to one-parent homes by their teachers.

Crescimbeni (1964) studied the effects of parental divorce, death, separation and desertion of one or both

parents on the academic achievement of students in grades two through six over a period of two years. He reported a significant difference in the academic achievement among children from one-parent homes as compared to children from two-parent homes. Sixty-one pupils from the one-parent homes scored lower on the Metropolitan Achievement Test than a matched group from two-parent homes.

Lawton (1971) used scores recorded for 832 suburban school children in grades 5-11 to study the relationships between the students' peer acceptance, peer acceptability, and mathematics achievement. Lawton found that both peer acceptance and peer acceptability were related to the students' mathematics achievement beyond the .01 level. He concluded that sociometric variables do have an important effect on the academic achievement of public school students.

Certain sociological variables such as the number of parents living at home, type of family atmosphere, and socioeconomic status may be closely related to academic achievement. It should be pointed out, however, that such predictors of academic achievement have not been consistently valid and reliable because of the American family's ability to change its socioeconomic status and parental structure easily.

Psycho-Social Variables

Another group of indicators which have been used to predict academic achievement may be classified as psychosocial

variables. Such variables have included peer expectations, the expectations of significant others, role expectations, the pressures of interpersonal relationships, and other purely sociological measures.

A number of researchers have reported that expectations of significant others influence a person's behavior (Davidson & Lang, 1960; Farls, 1967; Engle & Syzperski, 1970). Janis (1954) conducted a series of studies on prestige-suggestions, which showed that people believe or do what prestigious sources suggest. Roethlisberger and Dickson (cited in Biehler, 1971) coined the term "Hawthorne effect" for the fact that people who feel that they are especially selected to show an effect will tend to show such an effect. Sundberg & Tyler (1962) talked about the "Hello-Goodbye" effects in psychotherapy, in which patients who merely have contact with a prestigious medical authority improve significantly over persons who are on a waiting list and almost as much as those who get prolonged therapy. Rosenthal & Jacobson (1968a) demonstrated that experimental subjects often did what an experimenter wanted them to do, even though neither he nor they knew he was trying to influence them. Kausler (1959), on a series of studies on goal setting, showed that setting goals for a person particularly in the name of prestigious authorities like science or research improved performance. Finally, parent-child studies (Shaw, 1964; Haider, 1971) indicated that parents who set higher

standards of excellence for their sons were more likely to have sons with high achievement needs and equally high achievement.

One of the classic studies demonstrating the power of teacher expectations on student performance was conducted by Rosenthal and Jacobson (1968b). They began by administering an intelligence test to all students of an elementary school (grades one through six). Next, they randomly chose a certain number of students to serve as an experimental group, and informed the teachers that the results of the intelligence test indicated that these students (experimental group) would make unusual strides in intellectual development during the coming year. The teachers had previously been informed that the intelligence test had been developed to predict forth-coming "spurts" in intellectual growth. The intelligence test was then re-administered to the children after a semester, after one year, and again after two years. The major finding of the study was that the experimental children on the average increased in performance 12.2 IQ points during the year, while the undesignated children (control group) showed an increase of only 8.4 IQ points. The difference between the experimental and control groups, however, was greatest during the first two years of school.

Rosenthal and Jacobson further reported that students who do not conform to teacher expectations may be in for serious problems. The teacher evaluations of the students

in the control groups indicated that such children were considered to be less well adjusted, less interesting, and less affectionate than students who were in the experimental groups. This fact remained true even though many of the control students made higher gains in intellectual development than students in the experimental groups. On the other hand, students in the experimental groups who gained intellectually were very favorably evaluated. When children who were not expected to develop intellectually did so, they seemed either to show accompanying undesirable behavior or at least were perceived by their teachers as showing undesirable behavior. This was especially true for children placed in the lower-ability category.

Family size, birth order, and age of mother have also been studied in relation to academic achievement. However, each was found to be a poor predictor of academic achievement since each effect was dependent upon other variables and on social class (Secord & Backman, 1965).

Jones (1973) was able to show a relationship between the teacher-student interpersonal relationships and measures of the students' academic achievement. Using 300 fifth- and sixth-grade students as experimental and control subjects, she showed that teachers had much better interpersonal relationships with high achieving students than they did with low achieving students. Jones further concluded that there was a significantly higher correlation between the girls'

academic achievement scores and their teacher-pupil interpersonal relationship scores than the correlation computed between these same measures for the male students. She concluded that the nature of the teacher-student interpersonal relationships had a significant effect upon the academic achievement of the student.

Psychological Variables

Perhaps the most valid and reliable family of indicators of academic achievement are the psychological measurements. This may be attributed directly or indirectly to their almost universal stability. Some of the more widely used psychological predictors are student attitudes, need patterns, personality traits, achievement motivation, projective test scores and self-concept/self-esteem measures.

Scott (1973) studied the effects of students' attitudes upon their academic achievement in elementary school. He studied the effects of student attitudes on standardized achievement test results for 511 second-, fourth-, and sixth-grade students in elementary school. Scott found that academic achievement was significantly related to student attitudes, and fluctuations in attitude were traced to changes in academic achievement.

Atkinson and Feather (1966) studied the effects of achievement motivation, as determined by two administrations of the Thematic Apperception Test (TAT), on the academic achievement test scores of 320 public school students. They

found that achievement motivation was a valid and reliable indicator of student's performance on standardized achievement test batteries, and that such scores were the best predictors of achievement for underachievers, girls, whites, and middle class students.

The relationship of expressed needs to academic achievement has been studied. Several researchers have used the Edwards Personal Preference Schedule (EPPS) to predict the academic success and/or academic achievement scores of high school and college participants. Corah, et al. (1958) reported the Achievement Need scale of the EPPS was related to academic achievement scores of high school and college students.

The use of psychological variables as predictors of academic success has increased in popularity within the past decade. This has been especially true in the areas of attitudes, motivation, and self-concepts of the students in public schools.

Self-Concept Measures

Any observant teacher will testify to the strong relationship between the student's self-concept and his academic performance. Those students who have good opinions of themselves are more likely to succeed than those who have poor opinions of themselves. Since 1960 there has been an ever increasing amount of research concerning the nature of the

relationship(s) which exist between self-concept and academic performance (Brookover, et al., 1965). For the most part, the primary emphasis of these studies has been along one of three different veins: (1) the relationship between the self-concept and academic success, (2) how the academically successful student views himself, and (3) how the student who is unsuccessful academically views himself. More recent efforts, however, have expanded such research to include several other social, psychological, and biographical variables.

Research evidence has clearly indicated a persistent and significant relationship between the self-concept of student participants and their academic achievement. However, this has appeared to be more evident for male students than for female students. Both Campbell (1966) and Bledsoe (1967) found a stronger relationship between the self-concept and achievement in boys than in girls. Sex differences seemed to influence the relationship between self-concept and academic achievement.

Farls (1967) conducted a similar study concerning the self-concept of students and its relationship to their mental abilities and academic achievement. From the results of his data analysis, he drew the following conclusions:

(1) The high achieving groups of boys and girls had significantly higher self-concept scores than the low achieving groups of boys and girls.

(2) There was no relationship between the level of achievement and peer acceptance for either the high achieving or low achieving groups of boys and girls (p. 1205-A).

Shaw, Edson, and Bell (1960) conducted a study to determine the relationships between the student's self-concept, level of academic achievement, and sex. They concluded that the high achieving boys had significantly higher self-concept scores than the low achieving boys, but no such conclusion could be drawn for the high and low achieving girls.

Fink (1962) studied the relationship between academic achievement and under-achievement between two groups of ninth-grade students. He concluded that there was a significant relationship between self-concept and academic under-achievement, and that this relationship appeared stronger in boys than in girls.

Campbell (1966) used the Coopersmith Self-Esteem Inventory to determine the relationship between self-concept and academic achievement of fourth-, fifth-, and sixth-grade students. From the results of testing six null hypotheses, he concluded that:

(1) There was a strong relationship between the self-concept scores and the academic achievement scores of the whole group.

(2) There was a significant relationship between

the students' school-related self-concept and academic achievement.

(3) There was a significant non-linear relationship between self-concept scores and grade levels.

(4) The relationships between self-concept and academic achievement were significantly stronger for boys than for girls.

(5) The girls showed significantly higher self-concept scores than boys (p. 1536-A).

All studies which have been conducted on the relationships between the student's self-concept and his academic achievement have made some contribution to the overall body of knowledge concerning the subject. In-depth analysis of any one study will tend to present a fragmented picture of the relationships which exist, however (Wylie, 1967). An overall synthesis of previous research done by Purkey (1970) concerning the relationship of the self-concept and academic success, has facilitated the continuation of self-concept studies and cited specific weaknesses and strengths of previous research efforts--the failure of behavioral scientists to implement research findings into the public school curriculum. His criticism of the failure to implement such results may have been a bit premature, however.

Implications of Research

The preceding review of literature establishes the need for this study. There are still two basic issues which must be resolved before measures of self-concept and academic achievement can be effectively utilized in the educational process. The first basic issue is as follows:

> Are there various subtypes of self-concept measures which can be isolated and quantified (measured) in lieu of the overall self-concept measure currently being used in most research studies?

In other words, can the self-concept measure recorded by most data collection instruments be studied in a more molecular fashion by using data collection instruments which can reduce the self-concept to several sub-dimensions for more detailed study?

The second basic issue to be resolved is a natural result of the first. It is as follows:

> If student self-concepts can be quantified and studied in a more detailed fashion than that currently being used in research, what will be the relationships among the various subtypes of self-concept and the academic achievement of students?

The crux of this issue is to determine if relationships exist among the various types of self-concept measures and the students' academic achievement. This issue may be further expanded for research purposes by trying to determine if relationships which exist among the various types of self-concept measures and the individual subareas of the achievement

test battery being used to measure academic achievement.

The resolution of these two basic issues seems paramount to any efforts to structure curricula which would facilitate the enhancement of students' self-concepts. For example, it would be futile to revamp mathematics curricula in hopes of enhancing the students' self-concept, if preliminary studies had shown that none of the subtypes of self-concept were significantly related to the students' mathematics achievement scores. Results of a study showing the relationships among the subtypes of self-concept and the various areas of academic achievement could also be used for the following purposes: (1) to indicate the types of activities which would be most instrumental in enhancing a particular type of self-concept, (2) to indicate possible reasons for academic success or failure in certain academic areas, (3) to predict academic performance for persons with a type of self-concept, (4) to predict changes in academic performance resulting from changes in self-concept, and (5) to predict changes in self-concept resulting from changes in academic performance.

It can be said that academic achievement, as measured by standardized achievement test batteries, has been found to be related to the student's self-concept scores. Research efforts have also shown that certain other variables are related to the student's self-concept such as sex, level of academic achievement, birth order in the family, age of

mother, race, family structure, grade level, intelligence, type of curriculum, expectations of others, and many more sociological, psychological, and biological variables. However, researchers have been conducting extensive studies as an attempt to identify all those variables which are related to self-concept and academic achievement, while some efforts should have been made to conduct intensive research on the various types of self-concept and their possible relationships with various areas of academic achievement. The demand for usable results from current research efforts has prompted many educators to make the assumptions that there is only one type of self-concept measure and this self-concept measure is related to all areas of academic achievement. This may not be a valid assumption to make, and more research concerning the relationships which exist between the various types of self-concept measures and the different areas of academic achievement is certainly in order. The researcher will attempt to provide empirical evidence concerning these relationships in the current study.

CHAPTER III

PROCEDURES OF THE STUDY

This investigation involved four major functions: (1) the selection of the subjects, (2) the selection of appropriate instruments, (3) the method of testing, and (4) treatment of the raw data.

Selection of Subjects

The subjects for the study were the sixth-grade pupils enrolled in and attending classes in the Edmond, Oklahoma Public School System during the Spring semester of the 1973-74 academic school year, for whom the California Achievement Test (CAT '70) scores were available. Three hundred seventy-four of these pupils had CAT scores on record. From this population, sixty percent (224 pupils), were selected through the use of a table of random numbers to test the relationships which existed between four (4) types of self-concept as measured by the Piers-Harris Children's Self Concept Scale (PHCSCS) and the total reading achievement scores and the total mathematics achievement scores of the California Achievement Test (CAT '70).

There was a total of eighteen sixth-grade classes from seven elementary schools in the Edmond Public School System who participated in the study. Each class was under the supervision of a certified teacher.

The Instruments

The Self-Concept Scale

The Piers-Harris Children's Self Concept Scale (PHCSCS) is made up of eighty first-person declarative statements of the type "I am a happy person," the child responds "yes" or "no" to each statement. Half of the items are worded to indicate a positive self-concept and half to indicate a negative self-concept. Negative terms such as "don't" are not used as they can be confusing to young children.

The PHCSCS scale was standardized on 1,183 children in grades 4-12 of a Pennsylvania school district. There appear to be no consistent sex or grade differences in means. The internal consistency of the scale ranges from .78 to .93 and retest reliability from .71 to .77. Correlations with similar instruments are in the mid-sixties, and the scale possesses teacher and peer validity coefficients on the order of .40. Care was taken that the scale not correlate unduly with social desirability, and reasonable success was achieved. The scale possesses sufficient reliability and validity to be used in research, as recommended by the authors (Buros, 1972).

The Instrument Used to Measure Academic Achievement

The instrument chosen to measure the academic achievement of the sixth-grade students was the California Achievement Test: 1970 Edition (Level 3). The California Achievement Test (CAT '70) has subsections of Reading, Language, and Mathematics. However, students' scores from the Language section were not used in the present study. The CAT '70 generally measures the following (Tiegs & Clark, 1970b):

> (1) the ability to understand the meaning of the content material presented,
>
> (2) the performance of the student in applying rules, facts, concepts, conventions, and principles to solve problems in the basic curricular material, and
>
> (3) the level of performance of the student in using the tools of reading, mathematics and language in progressively more complicated situations (p. 5).

The Reading Test is comprised of two subsections; the Vocabulary section and the Comprehension section. The Vocabulary section tests the meaning of words in context. The Comprehension section tests ability to use reference materials and to understand reading passages.

The Mathematics Test is comprised of four subsections; Mathematics Computation, Mathematics Concepts, Mathematics Problem Solving, and Fractions. The total grade-equivalent scores taken from these four subsections were used in the present study.

The standardization of the CAT '70 was designed to provide national norms based upon a sample of the entire

national school population. This sample contained 203,684 students in Grades 1-12 from public and Catholic schools in 36 states in the nation. The CAT '70 was administered in 1970 during the period February through April. Sixth-grade students' scores taken from this administration yielded the statistical data shown in Table 1.

The data presented in Table 1 show that the reliability of the CAT '70 Level 3 ranged from a low of .912 to a high of .958. These reliability coefficients are more than adequate for the present study (Tiegs & Clark, 1970a).

Buros (1972) reported the concurrent validity of the CAT '70 (Level 3; Form A) as ranging from a low of 0.603 for the Usage section of the Language subtest to a high of 0.813 for the Vocabulary section of the Reading subtest. The lowest concurrent validity index reported for the Reading and Mathematics subtests was 0.635 on the Problem Solving section of the Mathematics subtest. These data indicated that the CAT '70 (Level 3; Form A) was a valid and reliable instrument for measuring the reading and mathematics achievement of the sixth-grade students who participated in the study.

Method of Testing

Collection of Self-Concept Data

The PHCSCS was administered by the researcher to the subjects within their own classrooms or in a familiar setting

TABLE 1

MEANS, STANDARD DEVIATIONS, K-R 20'S, AND STANDARD ERRORS OF MEASUREMENT COMPUTED FOR SIXTH-GRADE STUDENTS' SCORES ON THE CALIFORNIA ACHIEVEMENT TEST: 1970 EDITION (LEVEL 3)

Skills Areas and Normed Sections	Number of Items	Number of Students	Mean	Standard Deviation	K-R 20* (Correlation)	Standard Error of Measurement
READING	82	384	57.12	16.77	r = 0.958	3.45
Vocabulary	40	385	29.16	8.91	r = 0.934	2.30
Comprehension	42	384	27.92	8.61	r = 0.912	2.55
MATHEMATICS	108	373	78.39	17.64	r = 0.953	3.84
Computation	68	373	49.37	11.48	r = 0.929	3.05
Concepts & Prob.	40	385	28.42	7.95	r = 0.916	2.30
LANGUAGE	121	380	71.52	21.00	r = 0.952	4.59
Mechanics	80	381	47.35	16.74	r = 0.954	3.59
Usage & Struc.	41	390	23.98	5.47	r = 0.738	2.80
Spelling	32	387	22.05	6.82	r = 0.899	2.16
BATTERY	343	359	231.89	55.37	r = 0.983	7.31

*The Kuder-Richardson formula 20, an index of internal consistency, which is an estimate of the reliability of the test section. It is basically a split half technique where one half of the test section is compared to the other half. More specifically, it represents the mean of all possible combinations of items which can form halves of the section.

such as the cafeteria. The tests were given at such times during the school day that they did not correspond closely to lunch or recess periods.

Before distributing the scale, the researcher talked to the students about the value of finding out how boys and girls really feel about themselves. The researcher emphasized the fact that this was not a test, that there were no right or wrong answers, that results would not affect their school grades, and that results would be kept confidential.

After distributing the scale, the researcher took special care to note that each child had a pencil and that the class knew where and how to fill out the identifying data. The students were then told to turn to the instructions which were read aloud by the researcher.

Care was taken to stress to the students that they should have no omissions and no double circles, even if some items were hard to decide. The classroom teacher checked the students to make sure the students were marking the items correctly and keeping pace with the testing time schedule.

After a brief period of time, the researcher could usually determine the pace of the students in that particular group. There were no time limits on the scale, but an effort was made not to go so slowly that second thoughts and distractions would occur. A few moments were allowed at the end for slower members to finish.

Collection of the Academic Achievement Data

The California Achievement Test: 1970 Edition (CAT '70) was administered to the sixth-grade students within their own classrooms by homeroom teachers and/or school guidance counselors. All tests were administered by using the directions given in the Examiner's Manual (Tiegs & Clark, 1970b) which accompanies the CAT '70 test booklets.

The CAT '70 Examiner's Manual (Tiegs & Clark, 1970b) contains a set of specific directions to be used in administering all or part of the achievement battery. Those persons responsible for the test administrations were given the following instructions:

(1) Become familiar prior to testing with the tests, the directions for completing student identifying data, marking answer sheets, and administering the tests.

(2) Assemble all materials for quick distribution.

(3) Establish a classroom atmosphere free of tension and concern and use the "Do Not Disturb" sign on the door to help eliminate interruptions.

(4) Follow the instructions in the Examiner's Manual precisely, reading verbatim those sections preceded by the word SAY.

(5) Make sure the students understand the task, allowing time for questions before giving the signal to BEGIN.

(6) Observe time limits exactly by using a stop watch or timepiece with a second hand.

(7) Limit assistance to students at all times to mechanical aspects of marking answers, clarifying directions, and finding the right place on answer sheets and guard against indicating a correct answer or pointing out the rationale of an item.

(8) Monitor the students to ensure that each student marks his answers properly and erases discarded responses completely (p. 10).

The CAT '70 achievement battery was administered during the several settings suggested by the test publishers. All time limits were observed carefully at each setting.

TREATMENT OF THE RAW DATA

The third major area of methods and procedures was the data analysis procedures. These procedures began as soon as the data were collected and terminated when the data had been analyzed and the hypotheses tested. The data analysis procedures were divided into the following two areas: (1) preliminary analysis procedures and (2) methods of statistical analysis.

Preliminary Analysis Procedures

The first phase of the data analysis procedures was to code the self-concept and achievement test scores and enter the codes on IBM cards. The particular card format used for entering the data is presented in Figure 1.

Methods of Statistical Analysis

The second phase of the treatment of the raw data was the statistical calculations needed to test the hypotheses. In making these calculations, a binary digital computer was used to compute several Pearson's Product-Moment Correlations. Testing each of the hypotheses stated in

Figure 1

IBM CARD FORMAT USED TO PREPARE THE STUDENTS' SELF-CONCEPT AND ACHIEVEMENT DATA FOR STATISTICAL ANALYSIS

Student Information Entered	Card Columns	Possible Range of Values
(1) Student's Number.	1-3	001-224
(2) Total Reading Achievement Grade Equivalent.	4-8	01.1-12.9
(3) Total Mathematics Achievement Grade Equivalent.	9-13	01.1-12.9
(4) Behavioral Self-Concept Score.	14-15	01-25
(5) Intellectual Self-Concept Score.	16-17	01-25
(6) Anxiety Self-Concept Score.	18-19	01-25
(7) Happiness Self-Concept Score.	20-21	01-25

Chapter I required the calculation of a Pearson Product-Moment Correlation Coefficient (Downie & Heath, 1965). These correlation coefficients were then checked for significance at the .05 level. The results of the statistical calculations are presented in Chapter IV.

CHAPTER IV

RESULTS OF DATA ANALYSIS

During the 1973-74 academic year the researcher administered the Piers-Harris Children's Self Concept Scale (PHCSCS) to and obtained the available California Achievement Test Scores: 1970 Edition (CAT '70) for 224 sixth-grade students enrolled in the Edmond, Oklahoma Public School System. Behavioral, intellectual and school status, anxiety and happiness and satisfaction self-concept scores were correlated with reading and mathematics achievement test scores by using a Pearson's Product-Moment Coefficient. These statistical calculations tested eight null hypotheses which had been stated earlier. This chapter contains the results of testing these hypotheses.

First, the null hypothesis being tested is stated. This is followed by a short explanation of the procedures used to test the hypothesis, the tabled results, and a brief explanation of the results.

Null Hypothesis Number One (Ho_1)

The exact form of the null proposition tested in hypothesis number one was as follows:

Ho_1 There is no statistically significant relationship between the sixth-grade students' behavioral self-concept scores and their total reading achievement scores.

The first null hypothesis was tested by computing a Pearson's Product-Moment Correlation Coefficient between the students' behavioral self-concept scores, taken from the Piers-Harris Children's Self Concept Scale, with their total reading achievement scores (grade equivalents), taken from the California '70 Achievement Test. The results of the computations are presented in Table 2. This table also contains the means and standard deviations of the raw data used in the calculations and the significance level of the computed correlation.

The results of testing the first null hypothesis, presented in Table 2, show that the correlation coefficient was not significant ($r = 0.114$, $df=222$, $p > .05$). These statistical results would not allow the researcher to reject the first null hypothesis and it was concluded that there was not a significant relationship between the sixth-grade students' behavioral self-concept scores and their total reading achievement scores.

Null Hypothesis Number Two (Ho_2)

The exact form of the null proposition tested in hypothesis number two was as follows:

TABLE 2

CORRELATION COEFFICIENT COMPUTED BETWEEN THE SIXTH-GRADE STUDENTS' BEHAVIORAL SELF-CONCEPT SCORES AND THEIR TOTAL READING ACHIEVEMENT SCORES

Source of Data	Mean Value	Standard Deviation	Correlation Coefficient	Significance Level
Behavioral Self-Concept Scores	14.178	3.595		
			r = 0.114	> .05
Total Reading Achievement Scores (Grade Equivalents)	6.838	1.938		

Ho_2 There is no statistically significant relationship between the sixth-grade students' intellectual and school status self-concept scores and their total reading achievement scores.

The second null hypothesis was tested by computing a Pearson's Product-Moment Correlation Coefficient between the students' intellectual and school status self-concept scores, taken from the Piers-Harris Children's Self Concept Scale, with their total reading achievement scores (grade equivalents), taken from the California '70 Achievement Test. The results of the computations are presented in Table 3. This table also contains the means and standard deviations of the raw data used in the calculations and the significance level of the computed correlation.

The results of testing the second null hypothesis, presented in Table 3, show that the correlation coefficient was significant ($r = 0.212$, $df=222$, $p < .01$). These statistical results allowed the researcher to reject the second null hypothesis and it was concluded that there was a significant relationship between the sixth-grade students' intellectual and school status self-concept scores and their total reading achievement scores.

Null Hypothesis Number Three (Ho_3)

The exact form of the null proposition tested in hypothesis number three was as follows:

TABLE 3

CORRELATION COEFFICIENT COMPUTED BETWEEN THE SIXTH-GRADE STUDENTS' INTELLECTUAL SELF-CONCEPT SCORES AND THEIR TOTAL READING ACHIEVEMENT SCORES

Source of Data	Mean Value	Standard Deviation	Correlation Coefficient	Significance Level
Intellectual Self-Concept Scores	11.306	4.020		
			r = 0.212	< .01
Total Reading Achievement Scores (Grade Equivalents)	6.838	1.938		

Ho_3 There is no statistically significant relationship between the sixth-grade students' anxiety self-concept scores and their total reading achievement scores.

The third null hypothesis was tested by computing a Pearson's Product-Moment Correlation Coefficient between the students' anxiety self-concept scores, taken from the Piers-Harris Children's Self-Concept Scale, with their total reading achievement scores (grade equivalents), taken from the California '70 Achievement Test. The results of the computations are presented in Table 4. This table also contains the means and standard deviations of the raw data used in the calculations and the significance level of the computed correlation.

The results of testing the third null hypothesis, presented in Table 4, show that the correlation coefficient was not significant ($r = 0.123$, $df=222$, $p > .05$). These statistical results would not allow the researcher to reject the third null hypothesis and it was concluded that there was not a significant relationship between the sixth-grade students' anxiety self-concept scores and their total reading achievement scores.

Null Hypothesis Number Four (Ho_4)

The exact form of the null proposition tested in hypothesis number four was as follows:

TABLE 4

CORRELATION COEFFICIENT COMPUTED BETWEEN THE SIXTH-GRADE STUDENTS' ANXIETY SELF-CONCEPT SCORES AND THEIR TOTAL READING ACHIEVEMENT SCORES

Source of Data	Mean Value	Standard Deviation	Correlation Coefficient	Significance Level
Anxiety Self-Concept Scores	7.522	2.769		
			r = 0.123	> .05
Total Reading Achievement Scores (Grade Equivalents)	6.838	1.938		

Ho_4 There is no statistically significant relationship between the sixth-grade students' happiness and satisfaction self-concept scores and their total reading achievement scores.

The fourth null hypothesis was tested by computing a Pearson's Product-Moment Correlation Coefficient between the students' happiness and satisfaction self-concept scores, taken from the Piers-Harris Children's Self Concept Scale, with their total reading achievement scores (grade equivalents), taken from the California '70 Achievement Test. The results of the computations are presented in Table 5. This table also contains the means and standard deviations of the raw data used in the calculations and the significance level of the computed correlation.

The results of testing the fourth null hypothesis, presented in Table 5, show that the correlation coefficient was not significant ($r = 0.053$, $df=222$, $p \geq .05$). These statistical results would not allow the researcher to reject the fourth null hypothesis and it was concluded that there was not a significant relationship between the sixth-grade students' happiness and satisfaction self-concept scores and their total reading achievement scores.

Null Hypothesis Number Five (Ho_5)

The exact form of the null proposition tested in hypothesis number five was as follows:

TABLE 5

CORRELATION COEFFICIENT COMPUTED BETWEEN THE SIXTH-GRADE STUDENTS' HAPPINESS SELF-CONCEPT SCORES AND THEIR TOTAL READING ACHIEVEMENT SCORES

Source of Data	Mean Value	Standard Deviation	Correlation Coefficient	Significance Level
Happiness Self-Concept Scores	7.030	2.137		
			r = 0.053	> .05
Total Reading Achievement Scores (Grade Equivalents)	6.838	1.938		

Ho_5 There is no statistically significant relationship between the sixth-grade students' behavioral self-concept scores and their total mathematics achievement scores.

The fifth null hypothesis was tested by computing a Pearson's Product-Moment Correlation Coefficient between the students' behavioral self-concept scores, taken from the Piers-Harris Children's Self Concept Scale, with their total mathematics achievement scores (grade equivalents), taken from the California '70 Achievement Test. The results of the computations are presented in Table 6. This table also contains the means and standard deviations of the raw data used in the calculations and the significance level of the computed correlation.

The results of testing the fifth null hypothesis, presented in Table 6, show that the correlation coefficient was significant ($r = 0.145$, $df=222$, $p < .05$). These statistical results allowed the researcher to reject the fifth null hypothesis and it was concluded that there was a significant relationship between the sixth-grade students' behavioral self-concept scores and their total mathematics achievement scores.

Null Hypothesis Number Six (Ho_6)

The exact form of the null proposition tested in hypothesis number six was as follows:

TABLE 6

CORRELATION COEFFICIENT COMPUTED BETWEEN THE SIXTH-GRADE STUDENTS' BEHAVIORAL SELF-CONCEPT SCORES AND THEIR TOTAL MATHEMATICS ACHIEVEMENT SCORES

Source of Data	Mean Value	Standard Deviation	Correlation Coefficient	Significance Level
Behavioral Self-Concept Scores	14.179	3.595		
			r = 0.145	<.05
Total Mathematics Achievement Scores (Grade Equivalents)	6.421	1.267		

Ho_6 There is no statistically significant relationship between the sixth-grade students' intellectual and school status self-concept scores and their total mathematics achievement scores.

The sixth null hypothesis was tested by computing a Pearson's Product-Moment Correlation Coefficient between the students' intellectual and school status self-concept scores, taken from the Piers-Harris Children's Self Concept Scale, with their total mathematics achievement scores (grade equivalents), taken from the California '70 Achievement Test. The results of the computations are presented in Table 7. This table also contains the means and standard deviations of the raw data used in the calculations and the significance level of the computed correlation.

The results of testing the sixth null hypothesis, presented in Table 7, show that the correlation coefficient was significant ($r = 0.227$, $df=222$, $p < .01$). These statistical results allowed the researcher to reject the sixth null hypothesis and it was concluded that there was a significant relationship between the sixth-grade students' intellectual and school status self-concept scores and their total mathematics achievement scores.

Null Hypothesis Number Seven (Ho_7)

The exact form of the null proposition tested in hypothesis number seven was as follows:

TABLE 7

CORRELATION COEFFICIENT COMPUTED BETWEEN THE SIXTH-GRADE STUDENTS' INTELLECTUAL SELF-CONCEPT SCORES AND THEIR TOTAL MATHEMATICS ACHIEVEMENT SCORES

Source of Data	Mean Value	Standard Deviation	Correlation Coefficient	Significance Level
Intellectual Self-Concept Scores	11.304	4.020		
			$r = 0.227$	$< .01$
Total Mathematics Achievement Scores (Grade Equivalents)	6.421	1.267		

Ho_7 There is no statistically significant relationship between the sixth-grade students' anxiety self-concept scores and their total mathematics achievement scores.

The seventh null hypothesis was tested by computing a Pearson's Product-Moment Correlation Coefficient between the students' anxiety self-concept scores, taken from the Piers-Harris Children's Self Concept Scale, with their total mathematics achievement scores (grade equivalents), taken from the California '70 Achievement Test. The results of the computations are presented in Table 8. This table also contains the means and standard deviations of the raw data used in the calculations and the significance level of the computed correlation.

The results of testing the seventh null hypothesis, presented in Table 8, show that the correlation coefficient was not significant ($r = 0.128$, $df=222$, $p \geq .05$). These statistical results would not allow the researcher to reject the seventh null hypothesis and it was concluded that there was not a significant relationship between the sixth-grade students' anxiety self-concept scores and their total mathematics achievement scores.

Null Hypothesis Number Eight (Ho_8)

The exact form of the null proposition tested in hypothesis number eight was as follows:

TABLE 8

CORRELATION COEFFICIENT COMPUTED BETWEEN THE SIXTH-GRADE STUDENTS' ANXIETY SELF-CONCEPT SCORES AND THEIR TOTAL MATHEMATICS ACHIEVEMENT SCORES

Source of Data	Mean Value	Standard Deviation	Correlation Coefficient	Significance Level
Anxiety Self-Concept Scores	7.522	2.769		
			r = 0.128	> .05
Total Mathematics Achievement Scores (Grade Equivalents)	6.421	1.267		

Ho_8 There is no statistically significant relationship between the sixth-grade students' happiness and satisfaction self-concept scores and their total mathematics achievement scores.

The eighth null hypothesis was tested by computing a Pearson's Product-Moment Correlation Coefficient between the students' happiness and satisfaction self-concept scores, taken from the Piers-Harris Children's Self Concept Scale, with their total mathematics achievement scores (grade equivalents), taken from the California '70 Achievement Test. The results of the computations are presented in Table 9. This table also contains the means and standard deviations of the raw data used in the calculations and the significance level of the computed correlation.

The results of testing the eighth null hypothesis, presented in Table 9, show that the correlation coefficient was not significant ($r = 0.065$, $df=222$, $p > .05$). These statistical results would not allow the researcher to reject the eighth null hypothesis and it was concluded that there was not a significant relationship between the sixth-grade students' happiness and satisfaction self-concept scores and their total mathematics achievement scores.

Summary of Results

The results of testing the first four null hypotheses concerning reading achievement and four areas of self-concept showed that the students' reading achievement scores were

TABLE 9

CORRELATION COEFFICIENT COMPUTED BETWEEN THE SIXTH-GRADE STUDENTS' HAPPINESS SELF-CONCEPT SCORES AND THEIR TOTAL MATHEMATICS ACHIEVEMENT SCORES

Source of Data	Mean Value	Standard Deviation	Correlation Coefficient	Significance Level
Happiness Self-Concept Scores	7.030	2.137		
			r = 0.065	> .05
Total Mathematics Achievement Scores (Grade Equivalents)	6.421	1.267		

significantly related only to their intellectual and school status self-concept scores. There was no significant relationship between the students' reading achievement scores and their behavioral, anxiety, and happiness and satisfaction self-concept scores. The results of testing these four null hypotheses are summarized in Table 10.

The results of testing null hypotheses five through eight showed that the students' mathematics achievement scores were significantly related to their behavioral and intellectual self-concept scores. However, there was no significant relationship between the students' mathematics achievement scores and their anxiety and happiness and satisfaction self-concept scores. The results of testing null hypotheses five through eight are summarized in Table 10.

TABLE 10

SUMMARY OF RESULTS DERIVED FROM TESTING THE EIGHT NULL HYPOTHESES

Area of Academic Achievement	Source of Correlation	Correlation Coefficient	Significance Level
READING	Reading Achievement × Behavioral Self-Concept	$r = 0.114$	$>.05$
	Reading Achievement × Intellectual Self-Concept	$r = 0.212$	$<.01$
	Reading Achievement × Anxiety Self-Concept	$r = 0.123$	$>.05$
	Reading Achievement × Happiness Self-Concept	$r = 0.053$	$>.05$
MATHEMATICS	Mathematics Achievement × Behavioral Self-Concept	$r = 0.145$	$<.05$
	Mathematics Achievement × Intellectual Self-Concept	$r = 0.227$	$<.01$
	Mathematics Achievement × Anxiety Self-Concept	$r = 0.128$	$>.05$
	Mathematics Achievement × Happiness Self-Concept	$r = 0.065$	$>.05$

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine the relationships between school children's academic performance and certain dimensions of their self-concept. Two hundred twenty-four (N=224) sixth-grade students participated in a study which sought to establish the relationship between four different dimensions of the students' self-concept and their scores from standardized reading and mathematics tests.

During the 1973-74 academic year the researcher administered the Piers-Harris Children's Self Concept Scale (PHCSCS) to, and obtained the available California Achievement Test Scores: 1970 Edition (CAT '70) for, 224 sixth-grade students who were enrolled in the Edmond, Oklahoma Public School System. Behavioral, intellectual and school status, anxiety, and happiness and satisfaction self-concept scores were correlated with reading and mathematics achievement test scores by using a Pearson's Product-Moment Correlation Coefficient. Eight null hypotheses were stated in the first chapter.

Tests of the null hypotheses showed that the students' reading achievement scores were significantly related to their intellectual and school status self-concept scores. However, there was no significant relationship between the students' reading scores and their behavioral, anxiety, and happiness and satisfaction self-concept scores.

Tests of the null hypotheses showed that the students' mathematics scores were significantly related to both their behavioral and intellectual and school status self-concept scores. However, there was no significant relationship between the students' mathematics scores and their anxiety and happiness and satisfaction self-concept scores. The conclusions drawn from the results of testing the hypotheses are presented in the next section of the dissertation.

Conclusions

Based upon this research, the following conclusions are presented:

1. There is very little, if any, relationship between the students' behavioral self-concept scores and their reading achievement scores. It is further concluded that behavioral self-concept scores may not be a reliable indicator of students' reading achievement.

2. There is a significant relationship between the students' intellectual and school status self-concept scores and their reading achievement scores. It is further concluded

that intellectual and school status self-concept scores may give good indication that the student can interpret and understand reading materials.

3. There is a very slight relationship between the students' anxiety self-concept scores and their reading achievement scores. It is further concluded that anxiety self-concept scores probably would not be a good indicator of students' reading achievement.

4. There is very little, if any, relationship between the students' happiness and satisfaction self-concept scores and their reading achievement scores. It is further concluded that happiness and satisfaction self-concept scores probably could not be used as a sound indicator of students' reading achievement.

5. There is a significant relat ship between the students' behavioral self-concept score d their mathematics achievement scores. It is further concluded that behavioral self-concept scores may be a good indicator, for the teacher, of students' mathematics achievement ability.

6. There is a significant relationship between the students' intellectual and school status self-concept scores and their mathematics achievement scores It is further concluded that intellectual and school status self-concept scores may indicate how well the student will be able to read, interpret, and solve mathematical problems.

7. There is a very slight relationship between the students' anxiety self-concept scores and their mathematics achievement scores. It is further concluded that anxiety self-concept scores are not likely to be a valid indicator as to how well the student will achieve in mathematics.

8. There is very little, if any, relationship between the students' happiness and satisfaction self-concept scores and their mathematics achievement scores. It is further concluded that happiness and satisfaction self-concept scores would not be a good indicator of students' mathematics achievement.

9. The intellectual and school status is the only self-concept dimension which is related to the students' reading and mathematics achievement. The behavioral self-concept shows the second highest relationship to both areas of achievement, anxiety self-concept shows the third highest relationship to achievement, and happiness and satisfaction shows the least amount of relationship to both areas of academic achievement.

10. The significant correlations established indicate the importance of the relationship of aspects of the self-concept to academic achievement and point to the need for additional research in the area.

Recommendations

Based on the findings of this study and the conclusions drawn from the results, the following recommendations are suggested for further research:

1. Additional validation studies, using various instruments, should be conducted in order to gain greater insight into the relationship of self-concept and achievement.

2. Additional research utilizing other subscales of the Piers-Harris Self Concept Scale and subtests of the California Achievement Test should be conducted to expand the findings of this study.

3. Research involving subjects from other age and/or grade levels should be conducted in order to generalize to other age groups.

4. Research involving subjects from other ethnic, socioeconomic, and geographic populations should be conducted in order to generalize to other groups.

5. Research should be conducted to determine if there are sex differences in the relationships between aspects of self-concept and academic achievement.

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APPENDIX A

THE PIERS-HARRIS CHILDREN'S SELF CONCEPT SCALE: THE INSTRUMENT USED TO MEASURE THE STUDENTS' SELF-CONCEPTS

PLEASE NOTE:

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APPENDIX B

SELF-CONCEPT AND ACADEMIC ACHIEVEMENT RAW SCORES AND THE DESCRIPTIVE STATISTICS COMPUTED FOR EACH GROUP OF SCORES

TABLE 11

ACADEMIC ACHIEVEMENT AND SELF-CONCEPT SCORES RECORDED FOR THE SIXTH-GRADE STUDENTS WHO PARTICIPATED IN THE STUDY

Student Number	Total Reading Grade Equivalent	Total Mathematics Grade Equivalent	Behavioral Self Concept	Intellectual Self Concept	Anxiety Self Concept	Happiness Self Concept
1	4.7	5.2	14	14	10	8
2	3.6	3.2	16	5	7	6
3	6.3	5.6	18	13	10	9
4	5.2	4.7	7	5	6	3
5	5.6	6.3	10	11	6	8
6	7.7	5.7	15	10	8	9
7	10.1	6.4	3	3	9	1
8	9.9	7.7	18	15	9	9
9	8.5	6.7	18	16	9	9
10	7.5	7.4	17	14	8	9
11	6.2	7.7	17	16	10	8
12	6.2	6.4	13	7	9	9
13	6.4	6.4	16	11	10	9
14	4.2	4.2	18	17	9	8
15	8.6	9.3	13	17	10	9
16	5.5	6.4	17	8	8	9
17	6.2	6.4	13	10	9	8
18	6.9	5.2	14	11	8	7
19	5.7	5.2	11	16	10	9
20	7.0	6.2	18	18	11	9
21	8.1	6.6	16	11	3	5
22	8.9	7.7	10	17	7	8
23	9.1	6.7	14	12	9	9
24	7.0	5.9	16	12	7	5
25	4.6	5.6	18	10	11	9
26	9.4	8.2	13	16	6	0
27	5.2	5.8	17	16	10	9
28	11.2	6.5	16	12	6	8
29	7.4	5.6	5	11	8	3
30	8.6	6.4	15	11	8	5
31	6.0	7.4	7	7	9	3
32	7.2	5.0	14	13	7	7
33	11.2	8.8	11	16	7	9
34	6.6	6.4	13	17	8	8
35	7.6	6.0	18	16	9	8
36	6.9	6.2	18	15	12	8
37	10.1	6.6	10	9	2	4
38	5.2	6.4	16	10	6	8
39	6.7	5.6	15	13	8	9
40	7.7	6.8	14	7	5	8
41	6.8	5.7	10	1	5	6
42	6.0	5.2	17	15	10	9
43	8.6	5.9	9	9	7	5
44	5.4	6.2	14	11	6	9
45	6.7	8.9	17	18	10	8
46	5.8	5.3	18	9	5	6
47	8.6	7.1	17	18	10	8
48	6.4	8.9	15	7	8	5
49	5.5	5.3	16	13	6	7
50	7.2	6.4	12	12	7	7

TABLE 11 (Cont'd)

Student Number	Total Reading Grade Equivalent	Total Mathematics Grade Equivalent	Behavioral Self Concept	Intellectual Self Concept	Anxiety Self Concept	Happiness Self Concept
51	4.4	5.2	14	13	7	8
52	10.7	8.0	14	15	11	9
53	10.7	8.4	18	17	10	8
54	7.8	6.9	14	9	6	5
55	5.0	6.1	10	9	6	6
56	8.0	8.5	15	11	7	8
57	5.4	4.7	13	8	7	2
58	6.4	5.8	18	16	8	9
59	3.2	5.9	4	5	2	3
60	5.4	5.6	16	15	6	8
61	5.4	5.3	18	15	8	9
62	5.2	4.5	12	14	8	9
63	3.7	5.9	18	12	7	9
64	8.6	7.1	14	10	3	6
65	8.9	8.0	15	15	4	8
66	4.0	6.9	13	9	6	6
67	7.5	6.2	18	17	11	9
68	8.1	6.8	13	12	9	9
69	7.2	6.6	6	4	7	4
70	9.1	7.9	17	17	12	9
71	8.3	6.9	15	11	11	7
72	6.1	6.8	16	7	4	8
73	8.0	7.0	15	16	8	8
74	7.6	5.8	18	12	8	9
75	6.5	5.6	18	5	5	7
76	6.8	6.0	18	13	11	8
77	6.9	7.2	15	13	10	8
78	5.0	4.7	16	14	9	9
79	4.0	5.2	11	7	7	3
80	7.3	4.7	7	7	7	7
81	8.6	7.4	9	6	1	3
82	9.1	6.4	18	15	11	8
83	5.5	6.8	14	17	11	9
84	3.4	3.5	14	8	8	7
85	6.1	6.4	17	12	8	9
86	6.0	5.6	18	16	11	9
87	6.1	7.1	16	8	9	3
88	8.9	6.4	17	11	12	9
89	5.0	4.5	9	11	3	6
90	6.4	6.4	17	16	10	7
91	3.9	4.5	18	11	6	9
92	8.9	8.4	12	15	5	7
93	7.6	6.1	11	11	6	9
94	9.4	7.0	17	17	11	9
95	6.5	6.8	8	9	4	4
96	4.8	6.4	12	3	4	7
97	7.3	7.1	15	12	11	9
98	11.6	7.7	16	13	10	7
99	7.5	6.4	17	11	4	7
100	5.3	5.3	17	11	10	8

TABLE 11 (Cont'd)

Student Number	Total Reading Grade Equivalent	Total Mathematics Grade Equivalent	Behavioral Self Concept	Intellectual Self Concept	Anxiety Self Concept	Happiness Self Concept
101	7.6	6.4	15	13	10	9
102	7.7	5.6	12	10	6	9
103	4.4	4.6	14	14	5	4
104	8.0	7.8	17	17	10	9
105	3.7	4.5	5	3	1	4
106	7.3	7.1	16	15	10	9
107	6.2	5.2	11	7	6	8
108	8.9	8.0	17	16	8	8
109	5.4	6.4	9	7	7	6
110	6.1	4.4	5	5	2	4
111	7.2	5.8	11	4	3	2
112	7.3	6.4	13	10	9	7
113	7.1	5.3	17	15	11	9
114	3.2	5.6	14	14	5	7
115	5.4	5.9	18	16	9	8
116	5.4	5.8	11	7	7	6
117	4.9	8.8	15	9	8	8
118	7.2	6.6	15	12	7	9
119	5.4	5.0	12	6	6	7
120	7.2	6.4	17	12	7	9
121	7.0	6.3	14	8	7	4
122	11.2	8.6	15	14	9	7
123	3.7	5.4	16	13	5	6
124	8.1	9.3	17	13	11	9
125	5.5	5.9	13	10	9	5
126	4.3	4.7	16	13	7	8
127	8.5	7.4	3	12	9	4
128	6.4	5.4	18	13	6	7
129	6.7	5.6	5	4	5	2
130	5.6	7.1	16	16	11	9
131	6.9	6.7	15	12	8	9
132	11.2	6.2	15	11	9	5
133	10.4	8.2	15	11	1	4
134	2.9	5.9	12	2	0	3
135	7.4	6.9	15	9	6	6
136	4.8	5.2	8	12	2	8
137	8.5	5.5	12	9	6	7
138	4.7	5.6	11	8	9	6
139	5.1	5.5	16	13	11	9
140	5.7	5.9	11	8	4	8
141	8.1	7.3	18	18	11	9
142	6.4	5.9	15	13	11	9
143	6.4	5.1	17	14	9	9
144	6.8	8.4	16	8	7	9
145	6.9	7.9	15	9	3	2
146	7.2	7.0	17	11	5	5
147	7.0	6.9	16	11	7	9
148	9.7	7.5	16	11	6	6
149	7.3	6.4	9	14	9	9
150	6.9	7.5	15	13	9	5

TABLE 11 (Cont'd)

Student Number	Total Reading Grade Equivalent	Total Mathematics Grade Equivalent	Behavioral Self Concept	Intellectual Self Concept	Anxiety Self Concept	Happiness Self Concept
151	10.4	8.8	16	18	9	8
152	5.1	4.4	17	9	11	9
153	6.4	5.5	11	8	0	6
154	8.6	6.3	16	11	6	9
155	6.1	6.9	18	12	6	9
156	9.7	7.5	9	1	1	3
157	5.6	5.3	15	7	9	9
158	5.0	4.2	9	8	8	6
159	6.0	5.9	11	1	1	0
160	5.2	4.1	17	6	5	6
161	6.9	7.2	8	7	6	5
162	7.7	7.4	17	8	9	9
163	3.4	4.7	13	6	8	8
164	6.2	5.3	17	13	12	8
165	6.7	7.8	15	13	8	7
166	4.7	5.3	16	4	11	9
167	6.2	7.7	8	3	1	1
168	3.0	3.4	18	17	11	9
169	7.2	8.8	17	18	11	9
170	4.6	5.9	12	4	1	3
171	9.1	8.4	18	16	11	7
172	3.9	4.9	7	13	10	7
173	5.5	7.9	16	7	6	6
174	8.0	5.8	15	14	10	8
175	8.5	6.9	12	10	5	9
176	8.6	7.0	18	14	8	9
177	5.4	6.9	16	14	11	8
178	4.4	4.4	17	13	8	8
179	10.7	7.5	17	11	11	5
180	9.9	6.5	17	8	7	8
181	10.4	8.0	18	17	9	8
182	5.5	3.3	6	5	2	3
183	6.0	6.8	16	11	10	8
184	7.1	7.1	16	9	8	7
185	8.5	8.2	12	9	6	7
186	3.6	4.7	16	10	10	5
187	6.7	7.3	18	15	8	8
188	5.5	5.1	5	4	5	1
189	5.0	5.0	18	16	11	8
190	5.5	5.5	17	13	10	8
191	5.8	5.3	17	8	6	7
192	6.8	5.4	10	4	7	6
193	8.9	9.0	17	12	4	6
194	5.6	7.2	17	11	10	9
195	7.1	7.9	9	6	11	6
196	5.7	5.0	15	12	6	8
197	9.4	7.3	16	7	10	8
198	9.1	8.4	18	8	10	9
199	5.7	6.6	11	7	4	5
200	10.7	8.9	17	15	11	6

TABLE 11 (Cont'd)

Student Number	Total Reading Grade Equivalent	Total Mathematics Grade Equivalent	Behavioral Self Concept	Intellectual Self Concept	Anxiety Self Concept	Happiness Self Concept
201	7.0	6.4	9	5	4	6
202	6.4	6.8	18	12	9	8
203	9.9	8.6	12	11	3	8
204	10.4	8.8	16	7	8	7
205	7.4	6.8	18	16	7	9
206	6.6	6.4	14	16	10	8
207	7.0	6.0	5	5	2	7
208	2.7	5.0	17	12	8	7
209	6.4	7.2	15	14	7	8
210	5.4	7.6	14	10	9	7
211	8.6	7.9	12	15	9	9
212	9.1	8.2	14	11	5	4
213	5.1	5.7	14	12	7	6
214	7.1	6.4	6	8	6	1
215	6.2	5.7	15	8	2	8
216	10.4	8.9	18	12	10	8
217	5.4	5.3	18	14	8	8
218	7.0	6.5	16	16	12	9
219	10.1	7.9	18	14	10	8
220	4.3	6.6	10	12	8	6
221	5.1	5.9	15	11	10	8
222	2.9	4.4	11	12	7	6
223	7.1	7.4	13	12	6	6
224	11.2	8.6	17	17	11	8
MEAN	6.83	6.42	14.18	11.30	7.52	7.03
STANDARD DEVIATION	1.94	1.27	3.60	4.02	2.77	2.14