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SELF-CONCEPT AND ITS RELATIONSHIP TO ACADEMIC ACHIEVEMENT AND OTHER SELECTED VARIABLES

by

Melvin Ray Franklin, Jr.

A Dissertation Submitted to the Faculty of the

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

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DOCTOR OF PHILOSOPHY

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THE UNIVERSITY OF ARIZONA

GRADUATE COLLEGE

I hereby recommend that this dissertation prepared under my direction by Melvin Ray Franklin, Jr.

entitled Self-Concept and Its Relationship to Academic Achievement and Other Selected Variables

be accepted as fulfilling the dissertation requirement for the degree of Doctor of Philosophy

Shitala P. Mishra
Dissertation Director

8-1-78
Date

As members of the Final Examination Committee, we certify that we have read this dissertation and agree that it may be presented for final defense.

Shitala P. Mishra	8-1-78
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Darrell Sabers	8/1/78

Final approval and acceptance of this dissertation is contingent on the candidate's adequate performance and defense thereof at the final oral examination.

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ABSTRACT

The purposes of this study were to examine the relationship between the Piers-Harris Children's Self-Concept Scale and the Coopersmith Self-Esteem Inventory (SEI), to determine the multiple correlations among the independent variables of academic achievement, socio-economic status, special education placement, ethnicity, grade placement, gender, age and scores for both self-concept measures, and to establish the contribution of each independent variable to the multiple correlation equation.

The Piers-Harris and Coopersmith SEI were administered to all fourth and seventh grade students enrolled at selected schools within a public school district in the southwestern United States. The self-concept assessments were conducted within their regular classrooms by school personnel.

Pearson product-moment correlations were computed to determine the relationship between the Piers-Harris and the Coopersmith SEI. Multiple regression analysis was utilized to examine the multiple correlations among the self-concept measures and the independent variables and to establish the regression weight for each independent variable. Results demonstrated that statistically significant correlations were found between the Piers-Harris and Coopersmith SEI measures of self-concept. The multiple

correlations were found to be statistically significant between the Piers-Harris and all independent variables when computed for students with grades 4 and 7 combined and for students within grade 7. The multiple correlations for fourth grade students were found to be non-significant. The multiple correlation between the Coopersmith SEI and all independent variables was found to be significant for the fourth grade and seventh grade samples combined and for the seventh grade sample. The multiple correlation for the fourth grade sample was found to be non-significant. The only variable to consistently maintain a significant regression weight was the academic achievement measure. A significant regression weight was found for academic achievement for both self-concept measures for the total sample and the seventh grade group and the Coopersmith SEI for the fourth grade group.

The existence and effect of a suppressor variable within the multiple regression analysis was discussed and the relationship between lie score indices contained within the self-concept measures and ethnicity, academic achievement and measured self-concept was delineated. Implications were drawn for future investigations regarding the assessment of self-concept and the construct validity of the lie score indicators.

CHAPTER 1

INTRODUCTION

There have been numerous theorists who have maintained that self-concept plays a significant role in the educational process (Allport 1943; Erickson 1950; Rogers 1951). Leviton (1975) postulated that when children are respected, accepted, and valued for what they are, they will have the opportunity to acquire self-respect, an attitude of self-acceptance, and will then have the freedom to venture into the school environment and use their potential to its utmost.

Educational goal makers have tended to vacillate between an emphasis that is based solely upon cognitive outcomes and an emphasis that concerns non-cognitive social and affective outcomes (Shavelson, Hubner, and Stanton 1976). Purkey (1970), Coller (1971), and Zirkel (1971) have noted a recent re-emphasis on the non-cognitive outcome of education and these concerns have been incorporated into several educational programs (Landry, Schilson, and Pardew 1974). Furthermore, self-concept has been assessed as an expected outcome of educational programs as well as achievement. Torshen, Kroeker, and Peterson (1974) reported that 12 states currently include self-concept measures as part of their state-wide educational assessment program.

This measurement of self-concept has illustrated the controversy regarding a unidimensional model versus a multidimensional model of self-concept and has contributed to both theoretical and instrumentation difficulties. Innumerable definitions of self-concept have complicated the development of self-concept instruments and Shavelson et al. (1976) expressed their concern with the lack of demonstrated empirical equivalence among self-concept measurements making it impossible to generalize across studies which have employed different instruments.

Wylie (1974) presented a review of many of the self-concept instruments utilized in current research and concluded with a series of recommendations for the design of a program to maximize systematic and random error variance. The methods presented suggested that:

1. Research should focus on the use and development of a minimal number of self-concept instruments.
2. Factor analysis should be used for item culling and self-concept scale construction.
3. Multitrait-multimatrix techniques should be applied for exploring and refining convergent and discriminant construct validity.

Wylie (1974, p. 180) further reviewed reliability and validity issues associated with the Piers-Harris Children's Self-Concept Scale (Piers-Harris) and concluded that the "Piers-Harris test seems worthy of further research and development." In reference to the Coopersmith Self-Esteem Inventory (SEI), Wylie (1974) stated that the Piers-Harris and Coopersmith SEI attempt to control for acquiescence-response set by including an equal number of favorably and unfavorably worded items. The split-half and test-retest reliabilities for both scales seems to be relatively comparable (Coopersmith 1967, 1975; Taylor and Reitz 1968; Piers 1977; Wylie 1974; and Lefley 1974), and Shauer (_in_ Piers 1977) demonstrated a correlation coefficient of .85 between the two instruments when utilized with fifth and sixth grade pupils. Among the self-report inventories of self-concept the Coopersmith SEI appears to have been utilized in the largest percentage of studies requiring self-concept measures. However, Wylie (1974) stated that convergent or construct validity studies for the Coopersmith SEI are virtually non-existent.

There would still appear to be a demonstrable need for research with a large sample of subjects for the examination of reliability and validity issues involved with the Coopersmith SEI and the Piers-Harris. In addition, an assessment of the factors associated with self-concept scores such as academic achievement, gender, age, socio-economic status, grade placement, special education placement, and ethnicity have not been explored in a systematic manner. The present study specifically examined the correlation between the Piers-Harris and Coopersmith SEI measures of self-concept; investigated the multiple correlation between the

Piers-Harris and the independent variables (academic achievement, socio-economic status, special education placement, ethnicity, grade placement, gender, and age); determined the multiple correlation between the Coopersmith SEI and all independent variables; and delineated each independent variable's contribution to the multiple correlation.

CHAPTER 2

REVIEW OF SELECTED AND RELATED LITERATURE

The majority of self-concept instruments employ a projective or self-report format for acquiring information regarding the self. One of the more subjective assessments of self-concept in children is devised from the projective technique. A self-concept test entitled Who Are You was developed by Engel and Raine (1963). This instrument was reported to be the most effective when utilized in a clinical or counseling situation where the respondent and interviewer are "mutually interested." The subject is requested to respond to open-ended questions in an attempt to focus on the phenomenological aspects of self-concept. The results, therefore, are dependent upon the clinical skills of the interviewer. This instrument has not been widely used in research with elementary and high school students due to its subjectivity and the necessity for individual administration.

Cicerelli, Granger, and Schemmel (1971) developed the Children's Self-Concept Index for the Westinghouse/Ohio Study of Head Start Children. It consists of a semi-projective measure which is suitable for use in small group testing of self-concept and attitude toward school, home, peers, and society for children within the primary grades. Test-retest reliability across a two week interval was reported as .66.

Q-sort techniques have also been utilized to determine self-concept with elementary school pupils (Perkins 1958; Bennett 1964). In this paradigm, the subjects were required to sort into piles (from least to most descriptive of themselves) cards on which were printed descriptive words of self.

Statements for the Self-Concept Q-Sort (SCQ) for children developed by Bennett (1964) were obtained from the Self-Concept Q-Sort (Rogers and Dymond 1954) and the manual for a Self-Concept Q-Sort prepared by Hilden (1954). A significant Pearson product-moment correlation of .34 was found between scores obtained on the Iowa Test of Basic Skills (ITBS) and the SCQ. Also, a significant correlation was found to exist between the SCQ and Lorge-Thorndike I.Q. scores; when I.Q. was held constant, through first order partial correlation techniques, a significant correlation of .24 was evidenced between the SCQ and achievement.

Clark (1967) devised the Clark-U-Scale, which consists of 53 outlined drawings of paired-picture situations arranged to form a dichotomy in which the child must identify either a positive or negative figure. The drawings assess the self-concept subscales of body image, appearance and sex role preference, competence, and social relationships. Based on a sample of 306 subjects, Williams (1969) obtained a reliability coefficient of .71 employing Guttman's Split-Half Method. Construct validity for the scale was shown by Ozehosky and Clark (1970) who compared 50 high self-concept and 50 low self-concept children selected by teacher rating scales. The researchers concluded that the subjects with the higher measured self-concept performed significantly better on the U-Scale than did their low self-concept counterparts.

Bolea, Felker, and Barnes (1971) designed the Pictorial Self-Concept Scale (PSCS) for use with young children. The PSCS requires the child to sort 50 cartoon type pictures into groupings of "like me," "sometimes like me" and "not like me at all."

Long, Henderson, and Ziller (1970) have employed an unusual non-verbal approach designed to measure a variety of self-relevant constructs including self-esteem. Their instrument was entitled the Self-Social Symbols Tasks and requires the subject to pictorially represent his self-concept in a sociogram paradigm. Reliability information in the manual reports corrected split-half correlation coefficients of .80 for high school students, .84 for fifth grade subjects, and .53 for third grade pupils. A four month test-retest correlation of .54 was reported for sixth grade subjects.

The Self-Esteem Inventory (SEI) (Coopersmith 1959, 1967) has been utilized as a measure of general self-concept. Coopersmith (1967, pp. 4-5) defined self-esteem as:

> . . . the evaluation which the individual makes and customarily maintains with regard to himself: it expresses an attitude of approval or disapproval, and

> indicates the extent to which the individual believes himself to be capable, significant, successful and worthy. In short, self-esteem is a personal judgment of worthiness that is expressed in the attitudes the individual holds toward himself. It is a subjective experience which the individual conveys to others by verbal reports and other expressive behaviors.

The scale consists of 58 items; 50 items from the self-esteem measure and eight items from a "lie" scale. No item analysis was performed by Coopersmith, but Dyer (1964) presented internal consistency reliability for the four subscales, General Self, Social Self-Peers, Home, and Parents and School Achievement. The obtained reliability indices ranged from .28 to .82 for boys and girls at third, fifth, seventh, ninth, and eleventh grades. The total score test-retest reliability coefficient across a five week period with a sample of 30 fifth grade students was .88 and a coefficient of .70 was obtained for a sample of 56 public school students assessed over a three year period.

The Piers-Harris Children's Self-Concept Scale (The Way I Feel about Myself) has been revised on two occasions (Piers and Harris 1964, Piers 1969). The Piers-Harris distinguishes between self-concept which is reported by the self (individual) and inferred self-concept which is believed to represent a multifaceted and relatively stable construct. Piers (1977, p. 1) stated that "A high score on the scale is presumed to indicate a favorable self-concept, which thus becomes interchangeable with the term 'self-esteem' or self-regard." The scale is presently comprised of 80 simple, declarative sentences worded at approximately a third grade level which requires a yes or no response according to a self-report of how the child generally feels about the item. Jersild's (1952) collection of children's statements about what they liked and disliked about themselves constituted the original item pool.

Kuder-Richardson Formula 20 reliability coefficients for the Piers-Harris were computed for six samples of school children in grades 3 to 10. The reliability coefficients ranged from .78 for tenth grade girls to .93 for third grade boys (Piers and Harris 1964). Test-retest correlations over a four month period for three samples, grades 3, 6, and 10, ranged from .71 to .72 (Piers and Harris 1964). Wing (in Piers 1969) reported two and four month test-retest correlations for fifth grade students of .77.

A factor analysis was performed with 457 sixth graders (Piers and Harris 1964, Piers 1969) and 10 factors accounted for 42% of the variance. Six factors were found to be interpretable and included behavior, intellectual and social status, physical appearance and attributes, anxiety, popularity, and happiness and satisfaction. Wylie (1974) suggested that further factor analysis work should be replicated with children of the same age and other ages. With reference to convergent validity, research is somewhat limited. Mayer (1967) reported a correlation of .68 between the Piers-Harris and Lipsitt's (1958) Self-Concept Scale for Children.

The Tennessee Self-Concept Scale (TSCS) (Fitts 1965) was developed as a self-descriptive scale consisting of 100 statements composed of 90 measures of self-concept and 10 lie items to which the subject responds on a five point Likert scale. The manual reported a .92 test-retest reliability coefficient for the total self-regard of 60 college students. Williams and Cole (1968) have utilized the TSCS with a population of 80 sixth graders in Georgia and reported significant correlations with the California Achievement Test.

The Michigan State Self-Concept of Ability Scale (SCA) Form A and Form B consists of eight items designed to measure self-concept of academic ability (Paterson 1967). Samples of subjects drawn from grades 7 through 10 were utilized in an assessment of internal consistency. Reliability coefficients were found to range from .82 to .92 for boys and .77 to .84 for girls (Brookover, Paterson, and Thomas 1962; Brookover, Erickson, and Joiner 1967). Internal consistency coefficients for Form B for a tenth grade sample were above .89 for both boys and girls (Brookover, LePere, Hamacheck, Thomas, and Erickson 1965).

Test-retest reliability coefficients on the SCA for one year intervals of students in grade levels 8 through 12 ranged from .69 to .72 for boys and from .69 to .77 for girls (Brookover et al. 1967). The coefficients for Form B in the subject matter areas ranged from .63 to .77 for girls (Brookover et al. 1965).

Sears and Sherman (1966) formulated a 100 item self-concept inventory derived from essays of fifth and sixth grade students The Kind of Person I Am and Would Like to Be. The authors defined self-concept as representative of the child's expectation of success in problem solving and completing tasks. These expectations are held to be learned and malleable and self-concept is conceptualized as being multifaceted. This inventory was ultimately abbreviated to 48 items (Sears 1966) which measure nine designated factors relating only to educational experiences and omitting home or out of school experiences. Kuder-Richardson reliability coefficients ranging from .56 to .92 were calculated for a population of 32 third graders and Sears reported a corrected split-half coefficient of .95 for the total self-rating score.

Gordon (1968) developed an elementary and secondary school form of the How I See Myself Scale (HISM). The HISM is most often used to measure changes in specific aspects of self-concept resulting from intensive treatment programs. Gordon (1966, p. 53) had defined self-concept as the "organization of all of the child's biological and environmental experiences as they have been interpreted by the child into a single highly organized, highly integrated multifaceted system." The author reported test-retest reliability coefficients which ranged from .62 to .82 for 80 slow-learning high school pupils over a two week interval for four subscales termed Teacher, Appearance, Body Build, and Academic Achievement.

The Self-Concept and Motivation Inventory or What Face You Wear (SCAMIN) (Farrah, Milchus, and Reitz 1968) purported to measure self-concept in relation to school and has four subscales named Failure Avoidance, Role Expectancy, Achievement Investment, and Self-Adequacy. The first two scales are combined to yield an achievement motivation score and the second two are combined to yield a total self-concept score. The authors presented split-half reliabilities of .72 for an Early Elementary Form and .83 for the Later Elementary Form. Drummond and McIntire (1975) reported correlations for the SCAMIN which suggested that the inventory is unreliable for clinical use.

The majority of self-concept instruments have been designed to evaluate the self-concepts of children from the intermediate grades and adults. The 45 item Primary Self-Concept Inventory (PSCI) was developed by Torshen (1969) to be utilized with children in kindergarten through second grade and was based on the self-concept inventory developed by Sears (1963). A factor analysis of the PSCI was performed by Torshen, Kroeker, and Peterson (1974) which yielded seven self-concept components that accounted for 73% of the variance with test-retest reliability estimates over a six month period ranging from .38 to .73.

Trosky (1974) developed the Teacher's Inventory of Pupils Self-Concept (TIPS) in a scale designed to measure the self-concepts of early primary students. Data suggested that children were able to improve their scores over a period of time, although no reliability or validity measures are reported.

In an examination of the various formats for self-concept instruments a self-report format appears to be the most promising method when external validity issues are considered. Given a consideration for reported reliability and validity quotients for the instruments, it would appear that the Piers-Harris and the Coopersmith SEI represent the most viable instruments for further measurement of self-reported self-concept.

Achievement

Reeder (1955) examined the relationship between self-concept and achievement for a sample of elementary school children and found that students with low measured self-esteem had lower grades than students with higher reported self-esteem. Bruck (1957) demonstrated a positive and significant relationship between self-concept and grade point average at all grade levels for a sample of 300 pupils from third through sixth and eleventh grades. Coopersmith (1959) reported a correlation of .36 between Iowa Achievement Test scores and self-esteem for fifth and sixth grade students when socio-economic status was held constant.

Fink (1962) studied a group of 26 pairs of male and 24 pairs of female ninth grade students matched for scores obtained on the California Test of Mental Maturity with intelligence quotients ranging between 90 and 110. Academic achievement was established by grade point average and self-concept was determined by judges, a teacher personal data sheet, and an essay on What I Will Be in Twenty Years. Fink reported results which confirmed that a relationship existed between the adequacy of self-concept and the level of academic achievement.

Brookover, Thomas, and Paterson (1964) studied 1,050 seventh grade students. The authors concluded that there existed a significant relationship between self-concept and grade point averages for arithmetic, social studies, English, and science when the ability factor is controlled. These findings indicated that self-esteem is a significantly better predictor of grade point average for males in arithmetic, social studies and science, but that except for the area of social studies, the power of the predictor did not hold for females.

Sears and Sherman (1966) used a case study approach for eight children in the fifth and sixth grade in an investigation concerning those factors that influence self-esteem and the influence of self-esteem upon the motivation of children for learning and achievement. Sears and Sherman concluded that a significant relationship existed between self-concept and achievement.

P. B. Campbell (1967) presented a study based on data from fourth, fifth, and sixth grade students. The author identified a positive correlation ($\underline{r}$ = .308) between scores obtained on the Coopersmith SEI and Iowa Test of Basic Skills (ITBS)

Composite achievement scores and a decreasing relationship at higher grade levels. The hypothesis of differing degrees of relationship for high, middle and low intelligence grouping was not supported. The function of the Coopersmith SEI score as a contributor to the prediction of achievement (ITBS Composite) score was explored utilizing multiple regression techniques. Campbell concluded that such an analysis was not considered to be worthwhile in that the contribution of self-concept to prediction was minimal.

Herbert (1968) administered the Reading Comprehension subtest of Cooperative English Test to 83 ninth grade students. The students were then ranked and the highest and lowest one-third were administered the Tennessee Self-Concept Scale. Results of the study showed that 17 students with high reading comprehension also had correspondingly high self-concepts, 18 of the students with low reading comprehension had low self-concepts. Paschal (1968), using scores obtained from 152 seventh grade students, reported that students with high self-concepts did better academically than did those with low self-concepts.

Caplin (1969) administered a self-report self-concept instrument to 60 intermediate grade white and Negro children. It was demonstrated that children with a positive self-concept had higher academic achievement. A study for an investigation of the question regarding the antecedent factor, self-concept or achievement, was performed by Wattenberg and Clifford (1964). A sample of 185 kindergarten children in two schools was utilized and measures of the pupils' self-concept, ego strength and intelligence were obtained. The students' self-concept, ego strength, and reading achievement were again assessed two years after completion of kindergarten. The results of this study suggested that self-concept affected reading achievement and that the students' progress in reading did not have a significant effect on self-concept. The correlation coefficients obtained between kindergarten self-concept and second grade reading were significant at the .05 level, and self-concept scores and intelligence were not found to be related. The authors implied that even as early as kindergarten the self-concept is antecedent to and predictive of reading accomplishment.

The relationship between scores obtained on the Acculturation Scale, self-concept scores obtained on the How I See Myself Scale and Stanford Achievement Test of 270 Mexican-American students in grades 6, 8, and 10 was examined by Pruneda (1973). It was noted that the mean academic achievement scores for sixth and eighth grade students with high self-concept scores were significantly higher than those of the children with low self-concept scores. This was not demonstrated, however, for the tenth grade group.

Studies associated with the implications between self-concept and academic achievement were reviewed by Leviton and he (1975, p. 33) concluded that "verification with normal children is needed." The reviewer stated further that academic achievement has been too frequently measured by grade point average and the use of grade point average should be replaced by more objective criterion scores. Further longitudinal research was suggested to study the relationship between self-concept and achievement, examining sex differences and different grade levels.

Primavera, Simon, and Primavera (1974) studied 180 fifth and sixth grade students who were administered the Coopersmith SEI, five subtests of the Stanford Achievement, Intermediate II Battery, and appropriate grade levels of the mathematics and reading tests for New York State Elementary Schools. The mean of the distribution of the Coopersmith SEI scores for the total group was found to be 70.15 (SD = 13.85). The SEI scores for males was found to be 69.34 (SD = 13.27) and for females 70.76 (SD = 14.31). These obtained means were found to be comparable to those attained by Coopersmith (1967) who reported a mean for males of 70.1 (SD = 13.8) and a mean for females of 72.2 (SD = 12.8). Pearson product-moment correlation procedures yielded significant correlations between self-esteem and academic achievement for both the total and female groups. However, only the correlation between self-esteem and the New York State Mathematics Test was found to be significant for the group of male students.

A study by Cole (1974) investigated the relationship between self-concept, attitude, and achievement motivation of average third grade students. One hundred students were given the Metropolitan Achievement Test. Eight months later the Children's Self-Concept Index and a test of attitude were administered. The data were correlated using Spearman rank-order and multiple correlation procedures which yielded low, positive, and significant correlation coefficients for self-concept and achievement motivation and all achievement areas with the exception of spelling. Cole (1974, p. 333) concluded that, "There seems to be no doubt that factors other than aptitude, as it is measured in education at this time, interact with actual achievement."

Chang (1976) studied 198 students from the fourth, fifth, and sixth grades. The study attempted to determine the relationship between children's self-concept as measured by the Piers-Harris, academic achievement as measured by the Metropolitan Achievement Test (MAT), and teachers' ratings of children's self-concept. Significant correlations ($\underline{r}$ = .67; $p < .01$) between the child's self-concept and the teacher's rating of the child's self-concept and the child's academic achievement were obtained. The self-concept scores were not found to be significantly correlated with the scores on the MAT.

Achievement has been studied more extensively than any other factor in relation to self-concept. It appears that the majority of studies support significant correlation coefficients between reported measures of self-concept and achievement. The reports support the inclusion of this factor in future self-concept research.

Gender

A study performed by Shaw and Alves (1963) found that male underachievers reported more negative self-concepts and were found to be less self-accepting than did adequate achievers. However, the female underachievers did not differ from adequate achievers on any of the scales.

The relationship of self-concept to intelligence, achievement, interests and anxiety was examined by Bledsoe (1964). His sample consisted of 271 randomly selected fourth and sixth grade boys and girls from the state of Georgia. A self-concept score was obtained utilizing a modification of the Lipsitt adaptation of Bill's Index of Adjustment. On the self-concept scale, fourth and sixth grade females rated themselves significantly higher than boys from the same grades. Self-concept correlated positively with measures of intelligence and academic achievement, but these correlations were found to be significant only for males.

Campbell (1967) used fourth, fifth, and sixth grade students and correlated scores obtained on the Coopersmith SEI and the composite score of the Iowa Test of Basic Skills. The author found that the mean school related self-concept scores differed for males and females, with females obtaining higher scores.

The Where Are You scale was administered to 80 first and fifth grade children of welfare mothers by Carpenter and Busse (1969). Girls were found to be more negative in self-concept than were boys ($p<.02$) and fifth graders were more negative than were first graders ($p<.001$).

Chang (1974) examined the self-concept of 251 children of ethnically different and 98 children of ethnically similar marriages from grades 4, 5, and 6 in two different schools. Self-concept was measured by the Piers-Harris scale and findings indicated that there were no significant differences for the variables of school grade level or sex.

A sample of 198 pupils from fourth, fifth, and sixth grades from a low socio-economic background with approximately 30% of the sample from inter-ethnic marriages in a mid-western city was studied by Chang (1976). She attempted to determine the relationship between children's self-concept, academic achievement, and teacher rating of children's self-concept. An analysis of variance was performed to examine the differences between grade level, sex, and ethnic group membership in the self-concept, teacher rating of the child's self-concept, and the child's achievement levels. The results showed significant differences between ethnic groups in self-concept, reading, mathematics, and in the teacher's rating of the child's self-concept. There were no significant differences between grade levels and across sex and self-concept, academic achievement, and teacher ratings.

Rubin (1974) measured the self-concept of 250 black preadolescent students utilizing portions of the Piers-Harris and self-esteem questions from the work of Rosenberg (1965) and Lipsitt (1958). The results supported the hypothesis that girls during this age level have more positive self attitudes than boys. Girls rated themselves significantly higher than did boys in general and for academic status; however, boys scored significantly higher on the physical appearance and attributes scale and girls were measured to be more anxious than boys.

Fisher (1974) performed a study of a first grade bilingual program and reported that both Anglo and Chicano girls exhibited a tendency to have a more positive self-concept than did the boys.

Bradley and Newhouse (1975) investigated the relationship between sociometric choice and self-concept of upper elementary school children for the purpose of determining possible sex differences relating to self-concept. The Piers-Harris was administered to 158 sixth grade students and results indicated that there were no significant sex differences when self-concept was studied in relation to sociometric choices. This finding was consistent with the Piers-Harris sample of 1964.

There exists a lack of consistency in the results of investigations of differences in reported self-concept between males and females. Insight into gender differences and its role in self-concept appears to require further exploration.

Grade Placement, Ethnic Origin, Socio-Economic Status, Chronological Age, and Special Education Placement

Klaff and Docherty (1975) compared 189 kindergarten, first, and second grade children from a traditional and two open schools using the Pictorial Self-Concept Scale and the Attitude toward School Scale. Scores obtained on the Attitude toward School Scale were higher for females than for males and decreased from kindergarten to grade 2. Self-concept was found to increase from kindergarten to grade 2, with no significant differences between the males and females.

Lefebre (1973) examined 40 Negro male seventh and eighth grade students from the Chicago Public School System matched in terms of age, Peabody IQ scores, and socio-economic status. Both groups were administered the Tennessee Self-Concept Scale and results indicated that Negro children were found to have scored significantly lower than their white counterparts on the following scales: Total Positive Behavior, Physical Self, Personality Integration, Ethical Self, Identity, and Self-Satisfaction.

A total of 93 children were randomly chosen from a heterogeneous kindergarten population of 417 children attending a central school district in a New York suburb by Samuels (1973). The sample was divided according to educational and occupational levels using the Hollingshead Two Factor Scale (Wells 1963), which resulted in a sample composition of 26 lower class black children, 17 lower class white children, 25 middle class black children, and 25 middle class white children. The children were administered the Clark U-Scale in order to ascertain self-concept and findings suggested that self-concept scores of the differential racial groups were not significantly different across social class groupings. However, significant differences within racial groups were established across social class levels for both racially divided samples.

McKinney (1973) attempted to determine whether self-concept and achievement are related to ethnicity, enrollment in Title I school programs, and aid to families of dependent children (AFDC) classification. The investigator's literature review indicated a definite relationship between self-concept and achievement and that self-concept and achievement are affected by both economic disadvantage and racial variables.

Thirty-six classrooms from six schools located in an urban-industrial city in western New York were utilized. A sample of 398 fourth and sixth grade students was drawn from the classroom and all students were administered the Iowa Test of Basic Skills and the Coopersmith SEI. The data collected indicated that no relationship existed between self-concept and achievement for this sample. The researcher also concluded that enrollment in Title I schools and AFDC classification did not have any differential effect on the student's self-concept and achievement in the district studied.

Goodman (1973) administered a self-concept measure, a sociometric rating scale, and a perceived acceptance scale in a study of 185 fourth, fifth, and sixth grade students from an elementary school in a large North Carolina city. The results of the study included findings that neither sex nor race (Black/Caucasian) were found to be a significant factor in self-concept scores.

Richmond and Dalton (1973) randomly selected eight classroom groups of educable mentally retarded pupils in a large urban school system and derived a sample of 100 pupils. The pupils ranged in age from nine to 15 years with a range of measured intelligence from an IQ of 50 to 75 with a mean IQ score of 65. The students were administered the Coopersmith SEI and the Y. E. M. R. Performance Profile for Young Moderately and Mildly Retarded. For statistical analysis of the data, pupils were assigned to a high or low group on the basis of the teacher ratings in social behavior, academics, and emotional behavior. Those children who were ranked high in academic areas by their teachers were found to have more positive self-concept than those perceived by their teachers to be less proficient academically. In addition, the educable mentally retarded subjects did not perceive their standing among peers to be positively correlated to academic success.

Larsen, Parker, and Jorjorian (1973) matched 30 randomly selected normal elementary school pupils with an equal number of classmates diagnosed as learning disabled on the basis of sex, ethnic origin, grade level, chronological age, and intelligence. Q-Sorts for both a "real self" and "ideal self" for 28 statements selected from the Coopersmith SEI were required of each subject and the classroom teacher. It was found that the subjects with learning problems demonstrated significantly greater discrepancies in real-ideal sorts than did the normal classmates.

Godfrey (1970) reported data for students in grades 6 and 7 who had not repeated any grades, had repeated one grade, or had repeated two or more grades. The self-concept differences among the groups as measured by the Tennessee Self-Concept Scale were reported as "marked" although no statistical analysis was presented. It was concluded that academic failure and low self-concept are closely associated.

CHAPTER 3

METHODOLOGY

Sample

All fourth grade students from five elementary schools and all seventh grade students from one junior high school were available for participation within the study. The schools were located within a school district of approximately 9,000 students in the southwestern United States.

Two hundred and forty-eight fourth graders and 321 seventh grade students were available for the study. The sample studied consisted of approximately 21% Hispanic, 75% Anglo, and 4% other.

Information regarding academic achievement, socio-economic status, special education placement, ethnicity, grade placement, gender and age was obtained from the students' cumulative folders. The characteristics of the demographic variables for the fourth and seventh grade samples are summarized in Table 1.

Variables

The dependent variables in this study were the scores obtained on the Piers-Harris Children's Self-Concept and the Coopersmith Self-Esteem Inventory. The independent variables

Table 1. Characteristics of the Demographic Variables for the Fourth and Seventh Grade Samples

Variable	Grade IV N	Grade IV %	Grade VII N	Grade VII %	Total N	Sample %
Grade Placement	248	43.6	321	56.4	569	100.0
Ethnicity						
Anglo	176	71.0	252	78.5	428	75.2
Hispanic	59	23.8	57	17.8	116	20.4
Other	13	5.2	12	3.7	25	4.4
Socio-Economic Status						
High	153	61.7	264	82.2	417	73.3
Low	95	38.3	57	17.8	152	26.7
Gender						
Male	121	48.8	159	49.5	280	49.2
Female	127	51.2	162	50.5	289	50.8
Special Education Placement						
Non-Special (Regular)	229	92.4	299	93.1	528	92.8
Special	19	7.6	22	6.9	41	7.2

included academic achievement (ITBS Composite Scores), socio-economic status (as derived from eligibility for reduced or free breakfast or lunch), special education placement (based on state rosters--Learning Disabled, Educably Mentally Handicapped, Emotionally Hanidcapped), ethnicity (Hispanic versus Anglo versus Other), grade placement (fourth or seventh), gender, and age.

Characteristics of the Dependent and Independent Variables

1. Self-Concept: Self-Concept was defined as the score obtained on the Piers-Harris and the Coopersmith SEI.
2. Academic Achievement: Academic achievement was defined as the composite grade equivalent scores obtained from the Iowa Test of Basic Skills (ITBS).
3. Socio-Economic Status: This measure was derived from published eligibility figures for free and reduced breakfast and lunch programs (see Appendix A). For coding purposes students not on free or reduced lunch were designated as high = 1. Students on free or reduced breakfast and lunch programs were designated as low = 0.
4. Special Education Placement: The subjects were assigned to categories based upon entry on state special education rosters which included Learning Disabled, Educable Mentally Handicapped, and Emotionally Handicapped. For the purpose of the study, students who were not carried on the special education roles were coded as regular = 1.

Students carried on state special education rosters were coded as special education = 0.

5. Ethnicity: Ethnicity was based on information obtained from school personnel and designated according to Health, Education and Welfare guidelines. The number of Pacific Island-Asian, Black, and American Indian children represented only 4.4% of the total sample and were therefore not utilized within the data analysis. The data were then coded Anglo = 1 and Hispanic = 0.

6. Grade Placement, Gender, and Age: This information for each subject was determined by examination of cumulative folders.

Procedure

All children within the fourth and seventh grades were administered both the Piers-Harris Children's Self-Concept Scale and the Coopersmith Self-Esteem Inventory measures of self-concept. The Piers-Harris and Coopersmith SEI were administered to all the fourth grade students in their homeroom classes in a counterbalanced format. The seventh grade students were administered the Piers-Harris and Coopersmith SEI in a counterbalanced format during their science class, which is required of all seventh grade students. The students were administered the self-concept scales according to procedures outlined to the school personnel (see Appendix B). Each item was read to the students as they were asked to read the items silently.

The Piers-Harris Scale is comprised of 80 declarative sentences worded at an approximately third grade level to be answered yes or no, dependent on the way the child generally feels. Reliability coefficients computed for six samples grades 3 to 10 ranged from .78 for grade 10 girls to .93 for grade three boys (Piers-Harris 1964). A convergent validity coefficient of .68 is reported between the Piers-Harris and Lipsitt's (1958) Self-Concept for Children.

The Coopersmith scale consists of 58 items: 50 items from the self-esteem measure and eight items from a "lie" scale answered "like me" or "unlike me." A test-retest reliability coefficient over a five week period with a sample of 30 fifth grade students was reported to be .88 (Dyer 1964). Coopersmith (1959) reported a correlation of .36 between Iowa Achievement Test scores and self-esteem for fifth and sixth grade students.

Hypotheses

The Piers-Harris was coded as variable 1 and the Coopersmith SEI was termed variable 2. The independent variables were:

3. Academic achievement (Iowa Test of Basic Skills Composite Scores)
4. Socio-economic status (high, low)
5. Special education placement (Learning Disabled, Educably Mentally Handicapped, Emotionally Handicapped)
6. Ethnicity (Hispanic versus Anglo versus Other)
7. Grade placement (fourth versus seventh)

8. Gender

9. Age

The following null hypotheses were tested at the .01 alpha level:

1. The correlation between the Piers-Harris and the Coopersmith SEI measures of self-concept equals zero.

   In formula form, this hypothesis is

   Ho: $\underline{r}_{12} = 0$

2. A. The multiple correlation between the Piers-Harris and all independent variables (academic achievement, socio-economic status, special education placement, ethnicity, grade placement, gender and age) equals zero.

   In formula form, this hypothesis is

   Ho: $\underline{R}_{1.3\ 4\ 5\ 6\ 7\ 8\ 9} = 0$

   B. The multiple correlation between the Coopersmith and all independent variables equals zero.

   In formula form, this hypothesis is

   Ho: $\underline{R}_{2.3\ 4\ 5\ 6\ 7\ 8\ 9} = 0$

3. Each independent variable's regression weight equals zero.

   In formula form, this hypothesis is

   Ho: $b_i = 0$ (i = 3, 4, 5, 6, 7, 8, 9)

Analysis of Data

1. The Pearson product-moment correlation between the Piers-Harris and the Coopersmith SEI measures of self-concept equals zero.

   In formula form, this hypothesis is

   $$Ho: \underline{r}_{12} = 0$$

   This hypothesis was tested for significance utilizing the procedures outlined in Glass and Stanley (1970).

   It was expected that the hypothesis would be rejected at a 99% confidence level and alpha = .01. In the event that the hypothesis was rejected, computation of the confidence interval for the relationship between the two scales was planned. The procedure for constructing confidence intervals is described in Glass and Stanley (1970).

2. A. The multiple correlation between the Piers-Harris and all independent variables equals zero.

   In formula form, this hypothesis is

   $$Ho: \underline{R}_{1.3\ 4\ 5\ 6\ 7\ 8\ 9} = 0$$

   B. The multiple correlation between the Coopersmith and all independent variables equals zero.

   In formula form, this hypothesis is

   $$Ho: \underline{R}_{2.3\ 4\ 5\ 6\ 7\ 8\ 9} = 0$$

   The multiple correlation used was based on the linear model as discussed in Tatsuoka (1969) and Kerlinger and Pedhazur (1973). Each hypothesis was tested for significance using the procedure in the Statistical Package for Social Sciences (Nie et al. 1975). It was expected to reject both null hypotheses at alpha = .01 and then to proceed to the next set of null hypotheses.

3. This is a series of hypotheses each assuming that one independent variable's regression weight equals zero.

   In formula form, this hypothesis is

   $$Ho: b_i = 0 \ (i = 3, 4, 5, 6, 7, 8, 9)$$

   These hypotheses were tested for significance by the same procedure used for the previous pair of hypotheses. There was no prior expectation regarding which of these hypotheses would be rejected. An alpha level of .01 was employed to reduce the probability of Type I errors because the sample size is adequate to provide the power to detect any significant relationship.

CHAPTER 4

RESULTS

Hypothesis 1

The correlation between the Piers-Harris and the Coopersmith SEI measures of self-concept equals zero.

A statistically significant correlation of .781 ($p<.01$) was found between the Piers-Harris and the Coopersmith SEI measures of self-concept for the total sample. A 99% confidence interval for the relationship between the two scales was found to range from .733 to .820.

Correlations between the two measures were computed for students in the fourth and seventh grades separately. A statistically significant correlation of .750 ($p<.01$) with a 99% confidence interval ranging from .668 to .814 between the Piers-Harris and Coopersmith SEI was found for the fourth grade students. A statistically significant correlation between the two self-concept measures of .813 ($p<.01$) with a 99% confidence interval ranging from .758 to .857 was found for students within grade 7.

Hypothesis 2

A. The multiple correlation between the Piers-Harris and all independent variables equals zero.

The multiple correlation between the Piers-Harris and all independent variables was found to equal .266 ($p < .01$) for the entire sample (see Table 2). Multiple correlations between the Piers-Harris and all independent variables were computed for students within the fourth and seventh grades separately. The multiple correlation between the Piers-Harris and all independent variables was found to equal .226 and was non-significant for fourth grade students (see Table 3). The multiple correlation for seventh graders was found to equal .249 ($p < .01$) (see Table 4).

B. The multiple correlation between the Coopersmith SEI and all independent variables equals zero.

The multiple correlation between the Coopersmith SEI and all independent variables for all students utilized in the study was found to equal .297 ($p < .01$) (see Table 5). Multiple correlations were computed for all students in fourth and seventh grades separately. The multiple correlation between the Coopersmith SEI and all independent variables was found to be .284 and non-significant for the fourth grade sample (see Table 6). The multiple correlation was found to be significant ($p < .01$) if the ethnicity and socio-economic status variables are not entered. The multiple correlation for seventh grade students was found to equal .295 ($p < .01$) (see Table 7).

Table 2. Multiple Regression Summary Table for Fourth and Seventh Grade Students with the Piers-Harris as the Dependent Variable

Variable Entered	Regression Weight F-Value	Regression Weight Significance	Multiple R	R Square	R Square Change	Simple R	Overall F
1. Age	6.356	.012	.118	.014	.014	-.118	6.356
2. Academic Achievement	19.027	.001*	.232	.054	.040	.076	12.818
3. Grade	6.881	.009*	.261	.068	.014	-.117	10.950
4. Socio-Economic Status	1.096	.297	.265	.070	.002	.067	8.489
5. Special Education Placement	.135	.713	.265	.070	.000	.054	6.805
6. Gender	.055	.815	.266	.071	.000	.006	5.668
7. Ethnicity	.018	.893	.266	.071	.000	.052	4.850

*Significant ($p<.01$).

Table 3. Multiple Regression Summary Table for Fourth Grade Students with the Piers-Harris as the Dependent Variable

Variable Entered	Regression Weight F-Value	Regression Weight Significance	Multiple R	R Square	R Square Change	Simple R	Overall F
1. Academic Achievement	6.199	.014	.182	.033	.033	.182	6.198
2. Gender	2.343	.128	.214	.046	.012	-.125	4.294
3. Socio-Economic Status	.325	.569	.218	.048	.002	.095	2.960
4. Ethnicity	.346	.557	.222	.049	.002	.003	2.298
5. Age	.284	.595	.226	.051	.002	-.067	1.888
6. Special Education	.016	.900	.226	.051	.000	.063	1.567

Table 4. Multiple Regression Summary Table for Seventh Grade Students with the Piers-Harris as the Dependent Variable

Variable Entered	Regression Weight F-Value	Regression Weight Significance	Multiple R	R Square	R Square Change	Simple R	Overall F
1. Academic Achievement	13.801	.001*	.220	.048	.048	.220	13.801
2. Gender	2.116	.147	.236	.056	.007	.086	7.988
3. Ethnicity	1.011	.316	.244	.059	.004	.113	5.662
4. Age	.518	.473	.247	.061	.002	.017	4.368
5. Socio-Economic Status	.163	.687	.249	.062	.001	.096	3.516
6. Special Education**							

*Significant ($p<.01$).

**Not significantly correlated to continue computation.

Table 5. Multiple Regression Summary Table for Fourth and Seventh Grade Students with the Coopersmith SEI as the Dependent Variable

Variable Entered	Regression Weight F-Value	Regression Weight Significance	Multiple R	R Square	R Square Change	Simple R	Overall F
1. Academic Achievement	18.006	.001*	.196	.038	.038	.196	18.006
2. Grade	22.403	.001*	.289	.084	.045	-.007	20.630
3. Gender	.866	.352	.292	.085	.002	-.041	14.038
4. Ethnicity	.687	.408	.293	.088	.002	.035	10.693
5. Socio-Economic Status	.765	.382	.297	.088	.002	.087	8.703
6. Age	.030	.862	.297	.088	.000	.020	7.242
7. Special Education	.022	.883	.297	.088	.000	.099	6.197

*Significant ($p<.01$).

Table 6. Multiple Regression Summary Table for Fourth Grade Students with the Coopersmith SEI as the Dependent Variable

Variable Entered	Regression Weight F-Value	Regression Weight Significance	Multiple R	R Square	R Square Change	Simple R	Overall F
1. Academic Achievement	10.424	.001*	.235	.055	.055	.235	10.424
2. Gender	2.298	.131	.258	.067	.012	-.127	6.399
3. Age	1.356	.246	.272	.074	.007	-.121	4.726
4. Special Education	.855	.356	.280	.078	.004	.132	3.756
5. Ethnicity	.433	.511	.284	.081	.002	.005	3.081
6. Socio-Economic Status	.014	.906	.284	.081	.000	.063	2.556

*Significant ($p<.01$).

Table 7. Multiple Regression Summary Table for Seventh Grade Students with the Coopersmith SEI as the Dependent Variable

Variable Entered	Regression Weight F-Value	Regression Weight Significance	Multiple R	R Square	R Square Change	Simple R	Overall F
1. Academic Achievement	22.660	.001*	.278	.077	.077	.278	22.660
2. Age	2.304	.130	.292	.085	.008	.041	12.536
3. Socio-Economic Status	.472	.493	.294	.087	.002	.114	8.498
4. Ethnicity	.128	.721	.295	.087	.000	.061	6.385
5. Special Education	.071	.790	.295	.087	.000	.075	5.105
6. Gender	.010	.920	.295	.087	.000	.020	4.240

*Significant (*p*<.01).

Hypothesis 3

Each independent variable's regression weight equals zero.

Each statistically significant regression weight is reported in this section. Correlation coefficients are presented to describe the relationship between the variables, because the magnitude of a regression weight reflects the score scale used in measuring the variable. Regression weights for each independent variable were derived for the Piers-Harris and Coopersmith SEI separately. Using the Piers-Harris as the dependent measure, a significant regression weight was found for academic achievement when it was the second variable in the equation for the entire population (r = .196). Grade placement entered the equation as the third variable with a significant regression weight (r = -.117). This independent variable loses significance when regression weights and correlation coefficients are computed by grade separately. The remaining variables' regression weights were found to be non-significant.

Regression weights were computed for fourth and seventh grade students separately using the Piers-Harris as the dependent measure. For fourth grade students no significant regression weights were obtained for the independent variables. For seventh grade students a significant regression weight (r = .220) was found for academic achievement, when it was the only variable entered in the regression equation. When academic achievement was considered following entry of the remaining independent variables, a significant regression weight was maintained.

Using the Coopersmith SEI as the dependent measure, a significant regression weight ($\underline{r}$ = .196) for the entire sample was found for the independent variable, academic achievement, when it was the only variable in the regression equation. Grade placement entered the equation as the second variable and evidenced a significant regression weight ($\underline{r}$ = -.007). Once academic achievement was entered in the equation, the partial correlation of grade placement with the Coopersmith SEI was found to be -.217 ($\underline{p}$<.01). When academic achievement and grade placement were examined following the entry of the remaining independent variables, only the regression weight for academic achievement remained significant.

Regression weights were computed for the fourth and seventh grades separately using the Coopersmith SEI as the dependent measure. For fourth grade students a significant regression weight ($\underline{r}$ = .234) was found for academic achievement, when it was the only variable entered in the regression equation. When academic achievement was examined following entry of the remaining independent variables, the regression weight was found to be non-significant. For seventh grade students a significant regression weight ($\underline{r}$ = .278) was found for academic achievement when it was the only variable in the equation. When academic achievement was considered following entry of the remaining independent variables, the regression weight was found to remain significant.

All the remaining independent variables were found to have non-significant regression weights for the total sample, and for grade 4 or grade 7 placement. Examination of the correlation matrices suggests that the other independent variables' regression weights would have been found to be statistically significant if forced into the multiple regression equations before academic achievement. However, these weights would then have become non-significant when other variables were added. Correlation matrices were obtained for the fourth and seventh grade subjects combined (Appendix C) and separately. Table 8 presents the correlation coefficients between the variables for the fourth grade students. A significant correlation of .310 was found between socio-economic status and ethnicity. The ethnicity variable included 116 Hispanic students and 25 Pacific Island and Asian, Black, and American Indian children. The number of Pacific Island and Asian, Black and American children represented only 4.4% of the population and was therefore not utilized within the data analysis, since generalizability of results would be impossible and the significance of results would be questionable in light of the small sample size. The data for this variable were examined as dichotomous data, Hispanic or Anglo. This correlation suggests that the higher a student's socio-economic status the more likely the student was Anglo. Academic achievement was

Table 8. Zero Order Correlation Coefficients for Fourth Grade Students. -- (N = 247)

	Gender	Ethnicity	Special Education	Socio-Economic Status	Age	Academic Achievement	Piers-Harris	Coopersmith SEI
Ethnicity	-.022							
Special Education	.007	.082						
Socio-Economic Status	-.114	.310*	.093					
Age	.155	-.121	.015	-.038				
Academic Achievement	-.077	.168*	.327*	.240*	-.095			
Piers-Harris	-.125	.003	.063	.095	-.067	.182*		
Coopersmith SEI	-.127	.005	.132	.062	-.121	.234*	.750*	
Lie Score	.008	.318*	.159	.230*	-.033	.275*	-.182*	-.150

*Significant ($p<.01$).

found to correlate .168 with ethnicity. The higher a student scores on the academic achievement variable the more likely the student was Anglo.

During the analysis of data phase of the study, it became necessary to combine subcategories within three of the independent variables, due to the small number of subjects in some of the groups. Within the variable socio-economic status, the low (free meal) and medium (reduced price meal) groupings were combined into a single grouping designated as low which was then examined as a dichotomous variable with high socio-economic status. The independent variable, special education placement, contained three subcategories, learning disabled, educably mentally handicapped, and emotionally handicapped. There were no emotionally handicapped students available for the study and only six seventh grade educably mentally handicapped students. Therefore all of the fourth grade special education students were classified as learning disabled and the seventh grade special education variable was computed for learning disabled and educably mentally handicapped combined. The correlation coefficient of .327 between special education placement and academic achievement suggests that students within special education classes scored lower on the academic achievement measure. Academic achievement was found to correlate .240 with socio-economic status. The higher a student's socio-economic status, the more likely that a student scored highly on the academic achievement variable.

Table 9 presents the correlation coefficients between the variables for seventh grade students. Socio-economic status was found to correlate .169 with ethnicity. Academic achievement correlated .261 with ethnicity. Age was found to correlate -.249 with special education placement. More older children within the seventh grade were in special education classes. Academic achievement correlated .283 with special education placement. The correlation between socio-economic status and academic achievement was found to be .257. Age correlated -.166 with academic achievement. The older students' scores were lower on the academic achievement variable.

Two separate scores were derived for the Coopersmith SEI. A SEI total score was defined as the total number of correct responses excluding its lie items (a maximum of 50). A separate lie score was computed which consisted of the total number of responses indicative of defensive, lie reaction (a maximum of eight indicates "honesty" and a total of zero is indicative of "lieing"). For the fourth grade sample the following significant correlations ($\underline{p}<.01$) were found for the lie score. The ethnicity variable correlated .318 with the lie score. This correlation would suggest that Anglos obtained higher lie scores than Hispanic subjects. The correlation between socio-economic status and the lie score was .230. The higher a student's socio-economic status the higher that student scored on the lie score variable. The lie score correlated .275 within academic achievement, suggesting that the students who obtained high scores on

Table 9. Zero Order Correlation Coefficients for Seventh Grade Students. -- (N = 322)

	Gender	Ethnicity	Special Education	Socio-Economic Status	Age	Academic Achievement	Piers-Harris	Coopersmith SEI
Ethnicity	-.016							
Special Education	-.035	.077						
Socio-Economic Status	.103	.169*	.077					
Age	.104	.008	-.249*	.005				
Academic Achievement	.001	.261*	.283*	.257*	-.166*			
Piers-Harris	.086	.113	.054	.096	.017	.220*		
Coopersmith SEI	.020	.061	.075	.114	.041	.278*	.813*	
Lie Score	-.088	.087	.176*	-.001	-.131	.265*	-.261*	-.183*

*Significant ($\underline{p}$<.01).

the academic achievement variable were found to have scored high on the lie score variable. The lie score was found to correlate -.182 with the Piers-Harris. This negative correlation suggests that students scoring high on the Piers-Harris variable obtained low totals on the lie score variable.

The seventh grade sample yielded several significant ($p < .01$) correlations involving the lie score. The lie score was found to correlate .176 with special education placement, .265 with academic achievement, and -.261 with the Piers-Harris. The correlation of the lie score with the Coopersmith SEI was found to be -.183. The correlations suggest that a seventh grade student that obtains a high score on the Piers-Harris or Coopersmith SEI will obtain a low total on the lie score variable.

The means and standard deviations for the Piers-Harris, Coopersmith SEI and Coopersmith lie scores were computed for grades 4 and 7 students combined, grade 4 students and grade 7 students. Results of this analysis are listed in Appendix D.

The Kuder-Richardson Formula 20 reliability coefficients were computed for the Piers-Harris, Coopersmith SEI and Coopersmith lie score for fourth and seventh grades combined and separately. These results are presented in Table 10.

Table 10. Kuder-Richardson Formula 20 Reliabilities Coefficients

	Piers-Harris Alpha	Coopersmith SEI Alpha	Coopersmith SEI Lie Score Alpha
Grades 4 and 7 Students Combined	.918	.866	.573
Grade 4 Students	.921	.845	.543
Grade 7 Students	.915	.881	.582

CHAPTER 5

DISCUSSION

The first null hypothesis which stated that the correlation between the Piers-Harris and the Coopersmith SEI measure of self-concept would equal zero was rejected. A statistically significant correlation existed between the Piers-Harris and Coopersmith SEI for the total sample (r = .781), fourth grade students (r = .750), and seventh grade students (r = .813). Few investigators have explored the issue of convergent validity for the Piers-Harris or Coopersmith SEI. Findings in the present study are consistent with those correlations established by Austin, Poort, and Swider (in Piers 1977) and Schauer (in Piers 1977). Although the Piers-Harris contains more items, the students reported the "yes-no" format to be more easily understandable than the "like me-unlike me" wording employed by the Coopersmith SEI. The students in both fourth and seventh grades seemed to have difficulty with several terms utilized within the Coopersmith including the words "scolded," "opinion," and "discouraged." The vocabulary utilized in the Piers-Harris appeared to be particularly more appropriate for students in grade 4.

The second null hypothesis--part A stating that the multiple correlation between the Piers-Harris and all independent variables equals zero was rejected. Part B, which stated that the multiple correlation between the Coopersmith SEI and all independent variables equals zero, was also rejected. The multiple correlation for the total sample and the seventh grade group was found to be statistically significant for both instruments. Although the multiple correlations for the Piers-Harris and the Coopersmith SEI with all independent variables were significant for these groups, the total variance which could be accounted for did not exceed 9%. Therefore, for practical purposes, the independent variables chosen added little to the prediction of self-concept.

The third hypothesis, which stated that each independent variable's regression weight equals zero, was retained for all variables except academic achievement. A significant regression weight was found for academic achievement with both measures for the total sample and for the seventh grade group, and with the Coopersmith SEI for the fourth grade group. The independent variable academic achievement was the only statistically significant correlate and predictor of self-concept. All the other independent variables covaried with academic achievement; therefore they added little to prediction. For all practical purposes, the academic achievement variable accounted for such minimal variance, less than 8%, that it becomes a meaningless predictor. Of the variables employed in the study, the only viable predictor of either self-concept measure is the other self-concept measure.

The two instruments were equally reliable and their differences in correlation coefficients were due to the length of the respective tests (Piers 1977). The Spearman-Brown correction for test length demonstrates the two measures have approximately equal Kuder-Richardson Formula 20 (KR-20) reliabilities. The KR-20 correlation coefficients for the Piers-Harris and Coopersmith SEI were found to be significantly different ($p < .01$). The Piers-Harris was found to be significantly more reliable than the Coopersmith SEI and as reliable as an 80-item Coopersmith SEI corrected by the Spearman-Brown formula (Nunnally 1978). A correction for attentuation (Nunnally 1978) was utilized to address the construct validity issue and the .781 correlation between the Piers-Harris and Coopersmith SEI was raised to .877. One could conclude that the two instruments are measuring a common factor. Because the testing times necessary to administer the two instruments are approximately equal, the Piers-Harris appears to be the preferred instrument in light of the higher KR-20 correlation coefficients and subjective observations.

Examination of the multiple correlation obtained for the fourth and seventh grade students combined, with the Piers-Harris as the dependent variable (Table 3), revealed a correlation in which academic achievement served as a suppressor variable. The simple correlation between age and scores obtained on the Piers-Harris was -.118. The simple correlation of .076 was obtained between the academic achievement variable and scores obtained on the Piers-Harris. When age enters the multiple correlation as the first variable it is found to be non-significant ($p = .012$). However, when academic achievement enters the equation as the second variable, the multiple correlation becomes significant ($p < .001$) and remains significant ($p < .001$) through the addition of remaining independent variables. Academic achievement was correlated .076 with the Piers-Harris and acted as a suppressor variable (Anastasi 1976) to eliminate or suppress the irrelevant variance in the age variable and cause the multiple correlation to become statistically significant.

Wylie (1974) has discussed the need to maximize the construct validity of self-concept. Stillman et al. (1977) have demonstrated a procedure for construct validation consisting of four components. The procedure, originally proposed by Sabers and Whitney (1976), requires an assessment of the convergent validity, discriminant validity, internal consistency and sensitivity to change for the measure.

As outlined by Sabers and Whitney (1976), four questions are presented which should be raised in construct validation projects. These questions (and labels by which they will be referenced) are: (1) Does the instrument measure what it should? (Convergent Validity) (2) Does the instrument measure what it should not? (Discriminant Validity) (3) Does the instrument measure more than one thing? (Internal Consistency) (4) What conditions produce changes in the scores? (Sensitivity to Change)

With previous reference to the Piers-Harris being the self-concept instrument of choice, this measure was chosen for future construct validation. Determination of the convergent and discriminant validity and the internal consistency of the Piers-Harris is possible through data available from the present study.

1. Does the Piers-Harris measure what it should (Convergent Validity)

Information in this category was obtained by correlating the scores obtained from the Piers-Harris with those from another measure of self-concept. A statistically significant correlation coefficient of .781 ($p < .01$) was found between the Piers-Harris and the Coopersmith SEI suggesting that the two instruments measure the same construct.

2. Does the Piers-Harris measure what it should not? (Discriminant Validity)

Scores obtained for the Piers-Harris were correlated with each of the seven independent variables. Only the .182 correlation coefficient for fourth grade students with the independent variable of academic achievement and the .220 coefficient for seventh grade students for the same variables were significant at the .01 alpha level. Although statistically significant, these low correlations suggest discriminant validity because both the self-concept and academic achievement variables were found to be highly reliable. The Piers-Harris does not measure gender, age, socio-economic status, grade placement, special education placement, or ethnicity.

3. Does the Piers-Harris measure more than one thing? (Internal Consistency)

A KR-20 reliability coefficient of .918 was obtained for the Piers-Harris measure for fourth and seventh grade students combined and reported a relatively high degree of internal consistency. This finding would suggest that the Piers-Harris measures essentially one trait.

4. What conditions produce changes in the scores? (Sensitivity to Change)

To date no data are available in reference to this issue. The sensitivity to change of the Piers-Harris could be demonstrated through the employment of nearly parallel forms of the Piers-Harris in a pre- and post-test assessment of the effects of a self-concept enhancement program. Using the Spearman-Brown formula with the present data suggests that coefficient alpha for a 40-item Piers-Harris scale would be .849. This acceptable reliability coefficient would suggest the appropriateness of alternate forms for pre- and post-test use.

The Coopersmith SEI lie items were found to correlate significantly and positively with ethnicity, socio-economic status, academic achievement, and significantly and negatively with the Piers-Harris and Coopersmith SEI total for fourth grade students. For the seventh grade sample the lie items correlated significantly and positively with special education placement and academic achievement and significantly and negatively with the Piers-Harris and Coopersmith SEI. In light of the negative correlation with the Piers-Harris and the Coopersmith SEI, and the significant correlations of the lie score and ethnicity, socioeconomic status, and academic achievement, it appears that the lie items measure a unique factor other than self-concept.

Coopersmith (1959, 1967) suggested that the validity of the total self-concept score could be deemed questionable if responses to the lie items were inconsistent with the keyed responses. However, no normative data are reported by Coopersmith to suggest what cutting score indicates that the validity should be questioned. The Piers-Harris and Coopersmith SEI were found to correlate significantly without any adjustment for the scores on the lie scale. Therefore, it appears the convergent validity of the two scales is not severely restricted by ignoring the lie scale.

Coopersmith did not define the behavioral referent assessed by the lie items and no other research has established any correlational relationship with other purported measures of proclivity of lieing behaviors. Because little is known about the lie items employed in the Coopersmith SEI, evidence in all construct validation categories proposed by Sabers and Whitney (1976) is examined to determine the construct validity of the lie scale. To date the evidence summary would include:

1. Does the Coopersmith SEI Lie Scale measure what it should? (Convergent Validity)

This issue was not addressed in the present study. However, convergent validity might be established through the correlation of the lie scale with some analogous measure of the respondent's tendency to fake acceptable responses. Such indices are contained in several personality inventories (Anastasi 1976).

2. Does the Coopersmith SEI Lie Scale measure what it should not? (Discriminant Validity)

A measure of discriminant validity was demonstrated in the present study by the significant negative correlation between the lie scale and the obtained self-concept scores on both the Piers-Harris and Coopersmith SEI.

3. Does the Coopersmith SEI Lie Scale measure more than one thing? (Internal Consistency)

A coefficient alpha of .573 for the Coopersmith SEI Lie Scale for the combined grades 4 and 7 suggests that the index measures a unitary construct depicting high internal consistency for an eitht-item two-response scale. Utilization of the Spearman-Brown formula (Anastasi 1976) suggests that an internal consistency coefficient of .870 would be expected for a lie scale of 40 items.

4. What conditions produce a change in scores? (Sensitivity to Change)

This issue was not measured in the present study. For the component of sensitivity to change to be explored in future research, it would be necessary to delineate the construct that the lie items purport to measure. Because this issue has not been addressed in the present study or in other previous research, this procedure remains to be investigated.

The research efforts suggested in this chapter would enhance the utility of the self-concept scales, establish the construct validity of the lie scale, and provide a viable procedure for assessing treatment effects facilitating the development of positive self-concept.

APPENDIX A

FREE OR REDUCED MEAL INCOME SCALE

Children from families whose income is at or below the levels shown on the following scales are eligible for free milk and meal. If a family's income is greater than those shown, but have unusually high medical bills, shelter costs in excess of 30% of their income, special education expenses due to the mental or physical condition of a child, or disaster or casualty losses, a family's children may still be eligible.

Family Size	Free Meal & Free Milk Income Scale	Reduced-Price Meal Income Scale
One	$ 3,930	$ 6,120
Two	5,160	8.050
Three	6,390	9,970
Four	7,610	11,880
Five	8,740	13,630
Six	9,860	15,380
Seven	10,890	16,980
Eight	11,910	18,580
Nine	12,840	20,030
Ten	13,760	21,470
Eleven	14,680	22,890
Twelve	15,590	24,310
Each additional family member	910	1,420

APPENDIX B

INSTRUCTIONS FOR SCHOOL PERSONNEL

You are about to take part in a research project designed to examine the way students feel about themselves. The total time necessary for the administration of the instruments and collection of the protocols will be approximately 50 minutes.

After the students have taken their seats, randomly choose one student to give each of his classmates a copy of the Piers-Harris and randomly select another student to distribute the copies of the Coopersmith SEI. Prior to each test administration session you will be instructed by the supervisor as to which self-concept instrument to administer first. Request the students to place the instrument to be administered second on the floor under their desks.

Ask the students to place their name, age, date of birth, gender, grade school, and date of testing on the assigned portion of the instrument. Prior to administration, walk around the classroom and give assistance to any student who appears to be having difficulty.

At this point, read aloud the standardized instructions for each instrument and answer all student queries. Read aloud, twice, and quickly each of the items to the students as the students read the items silently. Begin with the sample item and progress through the remaining items as rapidly as possible. Ask the students to raise their hands if the items are being read too quickly. In the event that a student might ask that a particular word be defined, explain what the word means to the entire class.

Following completion of the last item, ask the children to place the completed form on the floor under their desks, retrieve the other self-concept instrument, and proceed with completion of the second instrument as prescribed.

Following the testing session, the instruments should be collected, bundled, and returned to the supervisor. If any questions should arise during testing, please check with the supervisor immediately.

APPENDIX C

ZERO ORDER CORRELATION COEFFICIENTS FOR FOURTH AND SEVENTH GRADE STUDENTS COMBINED*

*N = 567.

	Grade	Gender	Ethnic-ity	Special Edu-cation	Socio-Economic Status	Age	Academic Achieve-ment	Piers-Harris	Cooper-smith SEI
Gender	-.008								
Ethnicity	.072	-.019							
Special Education	.021	-.016	.081						
Socio-Economic Status	.214*	.004	.254*	.090					
Age	.948*	.034	.050	-.020	.197*				
Academic Achieve-ment	.721*	-.002	.223*	.243*	.295*	.647*			
Piers-Harris	-.117*	-.006	.052	.054	.067	-.118*	.076		
Cooper-smith SEI	-.007	-.041	.035	.099	.087	-.020	.196*	.781*	
Lie Score	.191*	-.046	.206*	.170*	.150*	.152*	.323*	-.242*	-.168*

*Significant ($\underline{p}<.01$).

APPENDIX D

MEANS AND STANDARD DEVIATIONS FOR THE PIERS-HARRIS, COOPERSMITH SEI AND LIE SCORES

	Mean	Standard Deviation
Fourth & Seventh Grade Students Combined		
Piers-Harris	54.158	12.963
Coopersmith SEI	32.956	8.155
Lie Score	5.304	1.856
Fourth Grade Students		
Piers-Harris	55.904	13.002
Coopersmith SEI	33.036	7.690
Lie Score	4.900	1.858
Seventh Grade Students		
Piers-Harris	52.800	12.790
Coopersmith SEI	32.894	8.510
Lie Score	5.619	1.795

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