THE EFFECTS OF ACADEMIC ACHIEVEMENT ON SELF CONCEPT OF THE EARLY ELEMENTARY STUDENT

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Abstract

This research attempted to isolate differences between males and females in regard to self concept and academic achievement. Research into this area has been marked by several problems including difficulty of ascertaining self concept in the young child, lack of established academic patterns in early elementary students, and neglect of important variables such as sex and age.

Independent variables studied included: sex (male or female), grade (second or fourth) and achievement level (over-achievement or underachievement). A child was classified as an overachiever if his/her academic age equivelant was higher than their mental age. A child was classified as an underachiever if his/her academic age equivelant was lower than their mental age. The measures used for this classification were the Stanford Binet, Form L-M, and the Peabody Individual Achievement Test. Dependent variables were reported self concept on two scales. The Purdue Children's Self Concept Scale was the verbal measure. The Primary Self Concept Scale was a pictorial measure; this scale is composed of several domains and factors measuring different aspects of self concept. The following domains and factors are included: intellectual self, social self, and personal self concepts. Sixty one young elementary students were tested.

For the total scores on both the verbal and pictorial scale none of the main effects were significant. No significant interactions were found among the

chosen independent variables. Neither the global verbal nor the global pictorial self concept scales were affected by the independent variables or interactions among independent variables. Significant results were found within several ot the domains and factors of the pictorial scale. It was found that aspects of self concept diminished as grade increased. This effect appeared most prevalent for male underachievers in regard to self concept of intellectual self, student self, successful self and emotional self. Self concept of female underachievers did not appear to change. While the self concept of overachieving males did not change across grades, overachieving females displayed a decrease in self concept of intellectual self, student self, successful self and emotional self. These results indicate that some of the confusion over the relationhhip between self concept and achievement may be due to the differences between males and females as grade level increases.

Review of Literature

Studies by psychologists and educators have attempted to isolate the important personality variables relating to academic performance. One frequently researched variable is self concept. Researchers have explored the nature of the relationship of this personality factor to academic over and under achievement. The majority of this research on children has been conducted at the middle elementary and junior high levels (Taylor, 1964, Piers and Harris, 1964, Stanwyck and Felker, 1971). Some definite relationships which relate to academic achievement have been established for these age groups. Nevertheless, conflicting reports remain concerning the nature of the relationship between self concept and academic achievement (Taylor, 1964).

There is a lack of research into self concept and academic achievement for early elementary children. Two reasons appear responsible. First, stability and measurability of self concept in the primary grades is questionable. Second, it is difficult to relate self concept to academic achievement at the early school level. This is due to the lack of established academic patterns during the initial primary grades. Despite these methodological complications, investigators have begun to demonstrate that research into these areas is possible at the early elementary level (Ozehosky, 1970, Wattenburg, 1974).

Particular areas of interest to researchers on self concept and academic performance have included sex differences (Primavera, 1974), differences between exceptional and normal children (Karnes, et al, 1961, Haywood, 1968) and the effects of remediation programs on self concept (Shailer, 1972, Perkins, 1969). The major methodological problems in these studies included confusing definitions of academic achievement, inadequate controls for intelligence and weak psychological instruments for measuring self concept.

Despite the methodological weakness, some studies have found consistent personality traits when comparing under and over achieving upper elementary students. The majority of these studies found underachievers to be insecure and socially maladjusted (Cowan, 1971) as well as defensive and emotionally unstable (Combs, 1974). Palkowitz (1971) supports these reports in a study that indicated that low academic achievement is only one factor in a life pattern of nonachievement. Normal achievers were found to be more socially sensitive and more positive than their underachieving peers. Conflicting evidence is presented by Taylor (1964). This report presented evidence of a surprisingly high self concept in underachievers. This may be due to reality distortion in these students, while the low self concept of overachievers in some studies suggests that academic striving may be an over compensatory reaction

to feelings of low self worth in other life areas. These conflicting results may partially be due to the following reasons: (1) The majority of these studies defined academic achievement level using school grades or standardized achievement test rankings (Taylor, 1964); (2) Information or data on intelligence level is missing in many of these studies (Taylor, 1964). Personality traits were defined on the basis of clinical interviews (Cowan, 1971), or on projective personality tests such as the Thematic Aperception Test or the Combs School Aperception Test (Combs, 1974).

Recently, investigators have begun to explore correlations between academic achievement and self concept in younger elementary school children. As with the research on older children, results of various studies are conflicting. Ozehosky (1970) designed a longitudinal study to measure the predictability of a child's second grade reading ability and self concept on the basis of the child's kindergarten self concept scores. Two measures of self concept were employed: The Children's Self Concept Inventory, a verbal scale, and an author-designed pictorial measure, the U-Scale. Children's self ratings were compared to teachers' ratings of the children's self concept at both grade levels. The verbal self concept measure was highly unreliable as it showed no changes be-

tween sexes or across grades. The nonverbal pictorial self concept measure had a reliability coefficient of .87 when compared with teacher ratings of the children's self concepts across a one-week time interval. On the basis of the U-Scale, teacher ratings, and the Metropolitan Reading Readiness Test, Ozehosky found a positive significant correlation between the level of a child's kindergarten self concept and his second grade reading ability and self concept. A limitation on the interpretation of these results exists in that Ozehosky used only children with the most extreme self concepts and did not control for intelligence. These results may only apply to extremes in self concept. A similar, but less methodologically sound investigation, failed to find significant evidence of positive correlations between kindergarten self concept and second grade reading ability (Wattenburg, 1974). This study did find a significant positive correlation between second grade self concept and reading ability. A major difficulty arises from the subjective nature of Wattenburg's self concept measures. Feelings of competence and self worth were determinded by the incident of positive, neutral and negative statements emitted by subjects while drawing pictures of their families. Other methodological difficulties with this study included a high subject mortality rate and wide socioeconomic ranges. Positive correlations between socioeconomic status

and self concept level have been demonstrated in several studies (Yellot, 1969, Sommerville, 1970). In addition, there is a greater priority on high academic achievement for middle class than for lower class students. Consequently, a subject's socioeconomic status might be confounded with his reported self concept regardless of academic achievement level.

Although measuring verbal self concept is difficult, it appears that feelings of personal worth are associated with academic achievement as early as grade two and, possibly, as early as kindergarten. Two important studies argue for the measurability of self concept by verbal means as early as the third grade. In the first study, scores for high and low self concept third and tenth graders were statisficallysimilar on a preliminary ninety-four item Piers-Harris Self Concept Inventory Form (Piers and Harris, 1964). Both groups exhibited similar correlations between teacher ratings of self concept and self report on the form. Thus, this study indicates that a reasonable level of verbal self concept exists in third graders in that they responded similarly to tenth graders who are expected to have a stable and measurable verbal self concept. The second study employed the complete eighty item Piers-Harris Self Concept Inventory (Stanwyck and Felker, 1971). Eighty-three third grade children were studied. It was found that upon conclusion of a simple academic task, high self concept children emitted more positive

self statements than low self concept children. These results were found regardless of success or failure on the task by either subject group. While this study offers further validation for the measurability of self concept by verbal instruments as early as third grade, it does not support the theory postulating correlation between self concept and academic success during a child's early school years.

The nature of this relationship is the second major issue in studies conducted on young elementary students. As can be seen from the following studies, a variety of explorations have produced conflicting results on the nature of the relationship of self concept to academic achievement. Cole (1974) studied third graders of average intelligence. Achievements levels were defined by upper lower quartile of the Metropolitan Achievement Test; self concept was measured by scores on the Children's Self Concept Index. A positive but nonsignificant correlation was established between the achievement and self concept measures. An unfortunate methodological difficulty exists as there was a ten-month time lag between the achievement and self concept measures. Another study of third graders found a similar positive but nonsignificant correlation between self report, the Thinking About Myself Scale, and standard achievement test performance. In addition, positive, significant correlations were found between teacher

estimate of child's self concept and percentile ranks on the achievement test (Yellot, 1969). Consequently, though self concept seems to be related to academic achievement in the third grade, these studies offer evidence that the child may still have difficulty verbalizing it.

While the above studies offer conflicting evidence on the relationship of self concept to academic achievement, findings were determined by group tests. An expansive study by Karnes, et al (1961) emphasizes the importance of individually administered measuring instruments and clearly defined achievement level groups. Gifted second to fifth graders were selected by I.Q. scores of 120 and up on the Stanford Binet Intelligence Test, Form LM. Over and under achievers were defined by performance that was plus or minus one standard deviation from the mean on the California Test of Achievement. The Rogers Self Concept Scale was used to measure self concept. Overachievers were found to have only a slightly higher overall self concept than underachievers. This was significant only for feelings of peer acceptance. Researchers felt the lack of significance was due to a defensive lack of realistic self concept on the part of the underachievers. Three methodological problems may also have contributed to the findings: First, no control group of normal achievers was included. Second, the

underachieving group had a significantly higher mean I.Q. than the overachieving group. Finally, the Rogers Self Concept Scale is a clinical rather than research instrument. Thus, even studies that apply carefully controlled measurement leave gaps in the nature of relationship between self concept and academic achievement in young students.

More consistent findings have been achieved by investigators exploring sex differences in this relationship. Nevertheless, these studies were performed mostly at the middle elementary level. A longtiudinal study of students, grades one to five, shows differences in academic performance between the sexes at all ages. Future female underachievers tend to excel in grade point average until grade five. There is a pattern of decreasing grade point average for underachieving females after this time. On the other hand, male students who will be underachieving in middle school tend to make low grades for the first five years of elementary school (Shaw, 1960).

Thus, this study shows that pattern of academic performance does not become established for females until grade five. Studies at grade level five show that girls demonstrate higher positive correlation between self concept and school performance than do boys. Bachtold (1969) found that underachieving fifth grade girls were less

self confident and emotionally stable than their male counterparts. Simon (1975) found positive significant correlations for self concept and achievement on five standard achievement tests for fifth and sixth grade girls. A similar significant correlation for the boys was found only on the mathematics achievement test. A possible explanation for these sex differences is proposed by Gill (1971). In this study boys' positive descriptions of ideal self increased with academic success. This relation did not hold true for their perceived self. On the other hand, girls displayed a concurrent rise in both self descriptions as academic success increased. This may account for the lack of significant correlation between academic success and self concept in middle school boys. Consistent evidence of sex differences across these studies may account for the failure to find a correlation between self concept and achievement in studies which do not include sex differences in the analysis. This is frequently overlooked in studies of young elementary children.

Confusion exists over the nature of the relationship between self concept and academic achievement across sexes and ages. Nevertheless, a relationship is thought to exist. A final type of study, seeking to clarify the relation between self concept and academic success, attempts to determine which of the two variables is causally pre-

dominant over the other. This research has, primarily, been aimed at establishing remediation programs for underachievers. These studies tend to be laden with many of the methodological difficulties and conflicting results found in the above studies. A program by Shailer (1972) attempted to increase the grade point average of ninth grade male functioning in the lowest quarter of their class. The students' grades increased significantly after empathetic counseling to increase self esteem. Nevertheless, the grades of the control group receiving no counseling likewise increased. This may represent a regression effect. A similar finding is reported by Perkins (1969). Levy (1972) failed to find any significant increase in grades of low achieving students after modification of self concept and school sentiment. Kunce (1972), finding only a moderate positive correlation between self concept and aptitude test scores, concluded that changes in self concept will not be likely to change academic performance. On the other hand, positive self expression on a Coopersmith scale was shown to be positively correlated with academic success in a cross sectional study by Kifer, et al (1975). Once again, loosely defined achievement groups and lack of intelligence measures weaken these results.

Thus, as the literature reveals, there are several difficulties with

studies on self concept and academic achievements of over and under achievers. These problems may contribute to the results of nonsignificance or to the inconsistent findings in many of the studies cited. Although problems appear in studies of all age groups, they are particularly prominent in studies of young elementary students. There is, in fact, little definitive research on children of average intelligence in the primary grades. There are two reasons for this. First, studies of young children include many of the same methodological problems as studies of older children. These include: inadequate achievement groups formed on the basis of cummulative G.P.A. grade level without consideration of the effect mental age has on expected achievement level groupings, neglect of sex differences, and lack of a control group of normal achievers when studying over and under achievers. Second, most of the verbal self concept measures, such as the Piers-Harris and the Coopersmith, were normed on fifth and sixth grade students (Piers, Harris, 1964) and (Coopersmith, 1959). Consequently, there is some difficulty in attaining a valid and reliable measure of self concept in young elementary students.

In considering common methodological problems in studies of young students, it can be seen that Wattenburg (1974), Ozehosky (1971), and

Yellot (1969) did not consider the intelligence levels of their subjects. A positive correlation of .50 to .74 exists between intelligence and self concept (Anastasia, 1976). Therefore, differences in intelligence levels of subjects may significantly influence self concept scores regardless of achievement level. Although Cole (1974) controlled for intelligence, a group I.Q. test was used. This measures reading ability, and incorporates some items that are too difficult for a young child; it may, therefore be inadequate for the varied reading levels and distractibility of the very young student. Observation of intervening variables is impossible with group tests as the examiner must monitor a group and is unable to observe individual distractions which may hinder a young child's attention span (Anastasia, 1976). Groups in the Karnes (1961) study were mismatched for intelligence. Consequently, it appears that more stringent control for intelligence levels would improve the methodology in studies that are both comparative and correlational. An individually administered intelligence test would facilitate this.

The second major methodological problem in the above studies is careless definition of achievement level. Most of the studies on middle elementary students defined achievement levels on the basis of grade point average. This leaves many variables uncontrolled. Only Wattenburg (1974) used this unreliable indicator in the study of younger

students. Most of the studies of early elementary students assigned achievement levels on the basis of group achievement tests. Some of these include the Metropolitan (Ozehosky, 1970, and Cole, 1974) the California Test of Achievement (Karnes, et al, 1961), and the New York State Pupil Evaluation Form (Yellot, 1969). These achievement tests suffer the same difficulties when used with young children as the group intelligence tests. In addition, none of the studies cited offers supportive evidence that the tests measured the individual school objectives. An alternative method of defining achievements of early elementary students would involve using an individual achievement test. The Peabody Individual Achievement Test (PIAT) has a one month interval test - retest reliability of .91 at the third grade level. (Markwardth and Dunn, 1970). It is balanced across traditional, functional, and modern aspects of available criteria and has been nationally standardized, making it a more reliable test for young children.

The third major methodological difficulty with studies of younger children is that they seem to ignore sex differences despite evidence that specific sex differences exist among older students. In addition, subject groups are frequently constructed, using exceptional children and control groups of normal achievers. A clarification of the results on younger students might be achieved by a study that used subjects

of average ability and carefully measured achievement levels.

In addition to the methodological problems, accurate measures of self esteem are difficult to obtain in the primary grades. Most elementary school measures have been normed on middle school children. Nevertheless, the studies by Piers, Harris (1964) and Stanwyck and Felker (1971) indicate that verbal self concept is measurable as early as the third grade. Cole (1971), in a study of third graders, reports a reliability of .66 for the Purdue Children's Self Concept Index. In addition, its validity is supported by moderate correlation with teacher ratings of the child's self concept, .40. Consequently, this may be a reasonably good measure of verbal self concept for the young elementary child. In addition, a complete study should include a pictorial index of self concept in order to facilitate accurate measurement of the young child.

Miller and Leonetti (1974) designed the Pictoral Primary Self Concept Inventory which does not require a child to read and yet measures several aspects of self concept. The inclusion of two self concept measures, both of which were normed on young elementary school children, may increase the accuracy of measured self concept for this age group.

Statement of the Problem

There are two major difficulties with studies of the relationship between academic achievement and self concept at the early elementary level. First, there is a tendency to neglect other variables which may influence this relationship. Second, unreliable or invalid instruments have frequently been employed to measure the concepts of intelligence, achievement and self concept.

Some of the neglected variables which may influence this relationship include intelligence, age, sex, and socioeconomic status. Intelligence seems to be the most important for two reasons. First, it has been established that intelligence is positively correlated with self concept. Second, accurate definitions of academic achievement level depend on expected level of performance. This is best defined and clarified by comparing a child's academic achievement to his/her mental age rather than comparing a child's achievement to his/her chronological age or grade placement. In addition, the variables of sex, age, and socio-economic status have also been shown to be related to self concept.

Instruments which provide accurate measures of intelligence, academic achievement and self concept are essential in a study of these variables. This becomes particularly important when young children are tested because of their distractibility and varied reading levels. For the early elementary school students individual tests should be superior to group tests. The inclusion of more than one scale to measure self concept report would allow for comparison between the various measurement techniques. Both a verbal self concept scale and a pictorial self concept scale were used.

This study measured the relationship between achievement and self concept in young students. It also considered the effects of grade and sex on self concept. Individually administered instruments were used to obtain sensitive measures of intelligence, achievement and self concept. The verbal self concept scale was supplemented by a comprehensive pictorial scale.

Method

Design. The design was a 2 x 2 x 2 factorial: Two levels of achievement, over and under, two levels of grade, second and fourth, and two levels of sex, male and female. The dependent measures were scores on a verbal and a pictorial self concept scale. Exact probability levels were adopted. The major variable of interest was achievement level. Subjects were classified into over and under achievers on the basis of a combined achievement and intelligence score. Intelligence scores were translated to M A equivalents. A child was considered an underachiever if his/her academic achievement age equivalent was less than his/her mental age. They were considered overachievers if the academic age equivalent was more than his/her mental age. The dependent measures were verbal and pictorial self-concept scales.

Subjects. Sixty-one middle class elementary school students were selected from a Lee County public school, Fort Myers, Florida. They were selected from an initial volunteer population formed on the basis of signed parent consent forms (see Appendix A). The sample was stratified with 31 second grade and 30 fourth grade subjects. Within each grade approximately half the subjects were male, half were female.

The sample was restricted in the following ways: (1) all subjects fell within a 90 - 115 intelligence range. The average I.Q. within this group was 103. (2) all subjects fell within a middle class socioeconomic status; (3) all subjects were Caucasian. The final sample included 16 second grade males, 15 second grade females, 15 fourth grade females and 15 fourth grade males. These students came from three second grade and three fourth grade classrooms in the public school. Subjects were informed that they could terminate their participation at any point during the experiment.

Instrumentation. Each child that participated in the study was given four individual tests; these were used to measure achievement level, self concept, and intelligence. In addition, a socioeconomic evaluation was included in order to control for economic status. The tests are listed and discussed below.

Stanford-Binet Intelligence Scale, Form L-M. This is an individually administered intelligence test which was last revised in 1973 (Houghton-Mittlin Co., 1973). The abbreviated form of this test was used. This required that only the asterisked items be administered. Both verbal and performance intelligence are measured in this method. A mental age was computed for each child according to the procedure set forth in the manual.

Peabody Individual Achievement Test (Dunn and Markwardth, 1970). This is an individually administered, wide range, quick screen instrument with an over-all one month interval test-retest reliability of .78. It was constructed to be most sensitive at lower academic levels. Items were selected after repeated national field testing. It is easily administered and scored. The score yields a grade equivalent and a percentile rank. All subtest items receive a plus or minus. An achievement level is computed by establishing a basal and adding all additional month achievement scores. These raw scores are then converted to grade equivalemts on the PIAT table. An extensive review of national scholastic curriculum in grades kindergarten through twelve was made in selecting the item pool. Consequently, items are felt to be free of geographic bias. The test consists of the following subtests:

1. Reading Comprehension. This tests a child's ability to derive meaning from passages.
2. Reading Recognition. This tests a child's ability to recognize words and alphabet.
3. Spelling. Tests recognition of the written word.
4. Mathmatics. This test measures computation, concept formation and calculation.
5. General Information. This measures social studies and fine arts.

Each grade equivalent was determined by taking the average of his or her scores on all of these subtests. A constant of 6 was added to each child's grade equivalent to transform the data to age equivalents. This was done to allow for direct comparison to a child's M.A. score from the Binet I.Q. scale.

The Purdue Self Concept Scale for Primary Grade Children. This is a verbal self concept scale designed by Circelli in 1971 (See Appendix D). The questionnaire consists of 26 items which deal with a child's self concept in relation to peers, school and home. There is no breakdown on these items.

The range of scores on each item is one to five. Overall test scores range from 26 to 130. A high score indicates positive self concept regarding peers, school and home; a medium score indicates neutrality; a low score indicates negative self concept in relation to these situations. The average self concept score for young children falls between 97 and 122. This scale was normed on second grade children. A validity of .40 was established by comparing child responses to teacher ratings of the child's self concept. No reliability data is available on this scale.

The Primary Self Concept Inventory. This was a pictorial index designed by Miller and Leonetti in 1974 (See Appendix E). It does not require a

child to be able to read. The scale is composed of 20 sets of pictures. Each set contains two pictures of a child engaged in an activity; one picture shows a child engaged in inappropriate behavior denoting negative self concept and is scored zero, the other picture shows a child engaged in appropriate behavior denoting positive self concept and is scored one. The child identifies with and responds to one of the two pictures in each set. The first two sets are examples. Each of the following 18 sets are related to one of three self concept domains. These are: social, personal, and intellectual. Each domain consists of six sets of pictures. The possible score range in each domain is zero to six, with low scores indicating negative self concept while high scores suggest positive self concept. Each of the three domains is further broken into two factors: social domain consists of pictures involving helpfulness and peer acceptance; personal domain consists of pictures involving physical size and emotional state; intellectual domain includes pictures dealing with perceived success and student self. Each domain has three sets of pictures per factor and the possible range of score is zero to three, with low scores indicating negative self concept while high scores suggest positive self concept. Appendix E presents further information on the domains and factors. This index was scored for each child for both domain and factor. In addition, an overall pictorial self concept score, range zero to eighteen, was computed.

Once again, low scores indicated overall negative self concept while high scores suggested positive self concept. Scores falling below a total of 13 are considered overall negative self concept. The third version of this instrument was used. This was normed on 1,100 early elementary children. A Pearson product correlation co-efficient established one week interval test - re test reliability for two samples at .91 and .57. The discrepency in these reliability coefficients is possibly due to a greatly reduced sample size for the second test sequence. A validity coefficient of .48 was established by comparing test results to the average ratings of five post grad child specialists.

The U.S. Bureau of the Consensus Methodology and Scores of Socio Economic Status, 1960. This measure controlled socio economic status through information obtained from parents in the consent form letter. This method requires that both parents give occupation and educational level. From this data a numerical figure which estimates socio economic status can be calculated. Numerical range for occupational category is 01 to 98; numerical range for educational level is 01 to 98. A score for both occupational and education was derived for each parent. The average of these four scores was calculated. This average was then compared to the Socio Economic Status Score Table, range zero (low socio

economic status) to 98 (high socio economic status). Scores falling between 39 and 69 were considered middle socio economic status.

Procedure. A letter with attached consent form was sent to the parents of all second and fourth grade students at Heights Elementery School, Fort Myers, Florida. This initial population comprised 191 families. Initial respondents included 54 second grade families and 63 fourth grade families. The final sample was randomly selected from these returned consent forms according to the preceding subject criteria. Forms of eligible respondents were numbered; the numbers were then randomly selected. The final sample comprised 61 students. Each of these subjects participated in a two and one-half hour session with the experimenter. During this time the Stanford-Binet, the PIAT, and both self concept scales were administered with a five minute break between tests. Subjects were then classified on the basis ot their test scores. Achievement level was calculated through comparison of age equivalent on the PIAT to mental age on the Stanford-Binet, Form L M.

A child was considered an overachiever if his/her academic achievement (in years) exceded his/her mental age (in years). A child was considered an underachiever if his/her mental age was greater than his/her academic achievement.

Results

For all dependent variables the results were analyzed in a 2 x 2 x 2 analysis of varience. The independent variables were achievement level (over and under achievers), grade (second and fourth), and sex (male and female). The dependent variables were a child's score on verbal and pictorial self concept scales. The data for all dependent variables are presented in Appendix C Table 23.

Purdue Childrens Self Concept Index (Verbal Measure). The first variable considered was the verbal measure of self concept. The main effects for achievement level sex and grade were not significant. These results indicate that none of the independent variables were related to differences in verbalized self concept (see Appendix C, Table 23). None of the interactions achieved significance. An anova summary is presented in Appendix B, Table 1. The mean scores for all groups are presented in Appendix C, Table 12.

Primary Self Concept Inventory (Pictorial Measure: Total Score). The dependent variable was an individuals score on the pictorial self concept scale. The main effects for achievement level, grade and sex were not significant. These results indicate that none of the independent variables

were related to differences in reported total pictorial self concept. (See Appendix C, Table 23). None of the interactions achieved significance. An anova summary is presented in Appendix B, Table 2. The mean scores for all groups are presented in Appendix C, Table 13.

Three three way factorial analysis were performed on the subscales of the pictorial self concept scale. Independent variables were the same as the two previous analyses.

Personal Self Concept. The main effects for achievement, sex, and grade were not significant. None of these independent variables appear to be related to differences in pictorial personel self concept (See Appendix C, Table 23). None of the interactions achieved significance. An anova summary is presented in Appendix B, Table 3. The means for personal self concept are presented in Appendix C, Table 14.

Social Self Concept. The main effects for achievement and grade were not significant. The main effect of sex approached but did not achieve significance at the exact criterion established. F (1.53) = 3.88, p. .051, N.S. Mean social self concept scores were 3.745 and 4.605, males and females respectively. Although these results indicate that none of the factors chosen as independent variables effect a childs social self concept, it appears that

females report substantially higher social self concept than males. None of the interactions achieved significance (See Appendix C, Table 23). An anova summary is presented in Appendix B, Table 4. Mean Scores For Social Self Concept are presented in Appendix C, Table 15.

Intellectual Self Concept. The main effects of achievement level and sex were not significant. The main effect of grade was significant, F(1.53) = 5.47, p = .022. The mean academic self concept scores were 5.46 and 4.76, second and fourth graders respectively. This indicates that there is a decrease in reported intellectual self concept as a function of increase in grade. The two way interactions of achievement level and grade, and of achievement level and sex were not significant. The two way interaction of grade and sex was significant, F(1.53) = 10.03, p = .003. Figure 1 presents the mean intellectual self concept scores for the significant two way interaction. Fourth grade males demonstrated significant decreases in intellectual self concept. The three way interaction of achievement level, sex, and grade was significant, F(1.53) = 4.34, p = .040. Figure 2 presents the mean intellectual self concept scores for the significant three way interaction. Inspection of the Tukey Test, (Bruning and Kintz, 1977), Appendix C, Table 24, indicates that there was no significant difference between second and fourth grade overachievers of

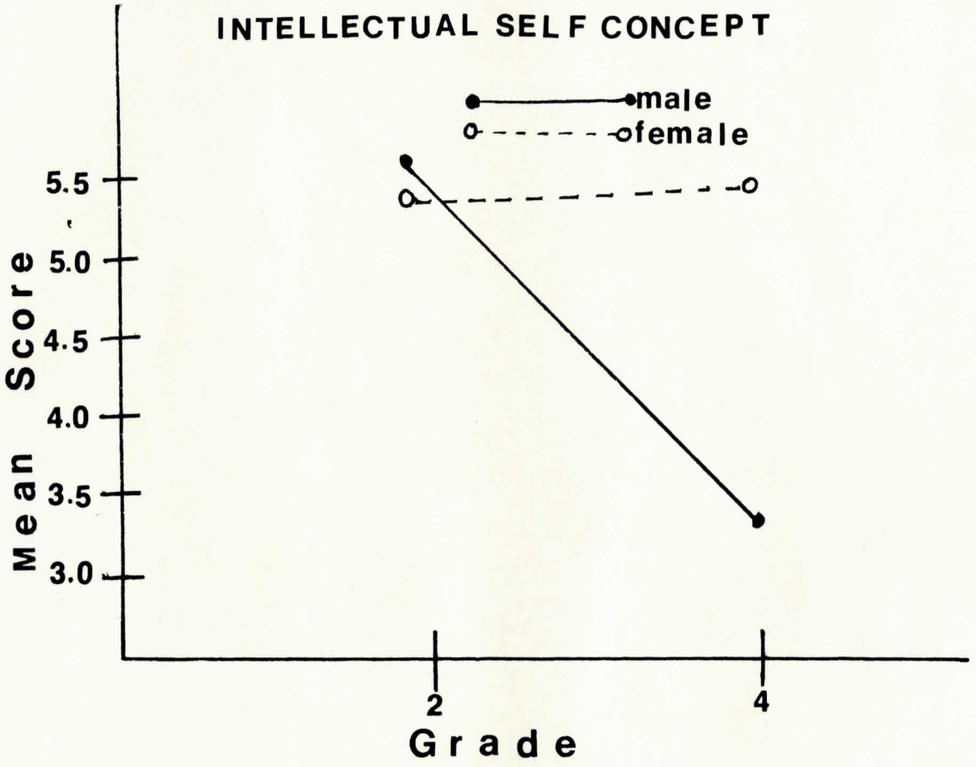

Fig.1 Interaction between Grade & Sex

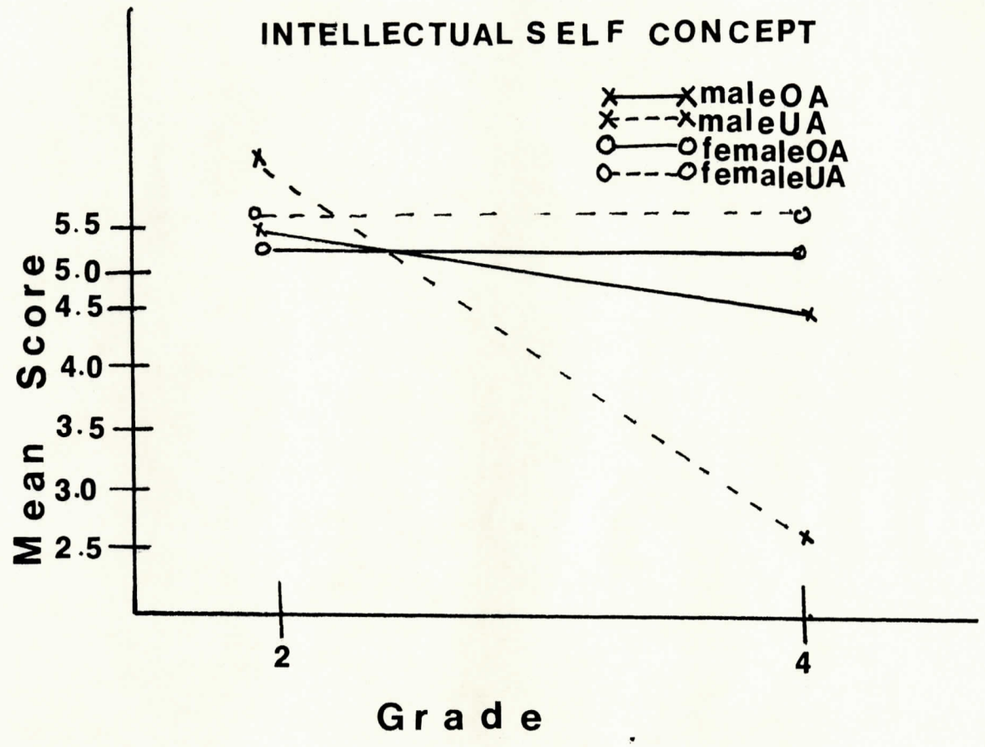

Fig.2 Interaction between Grade & Sex & Achievement

either sex. There was a significant decrease in the scores of under achieving fourth grade males across grades. Fourth grade under achieving males were significantly lower in intellectual self concept when compared to all other subjects. There was no significant change in intellectual self concept scores across grades for underachieving fourth grade females. Anova summary is presented in Appendix B, Table 5. Mean scores for all groups are presented in Appendix C, Table 16.

Six three way factorial analysis were performed on the Factors of the Pictorial Self Concept scale. Independent variables remained the same.

Factor I: Personal Self Concept Subscale: Emotional Self. The main effects of achievement, sex, and grade were not significant. None of the two way interactions were significant. The three way interaction of achievement level, grade and sex was significant , $F(1.53) = 4.764, p = .032$. Figure 3 represents a graph of this interaction. To further specify existing differences selected means were compared using the Tukey Test, Appendix C, Table 25. First, there were no significant changes in emotional self concept scores across grades for male over or under-achievers, or for female underachievers. Second, second grade male over-achievers have a significantly lower emotional self concept score than

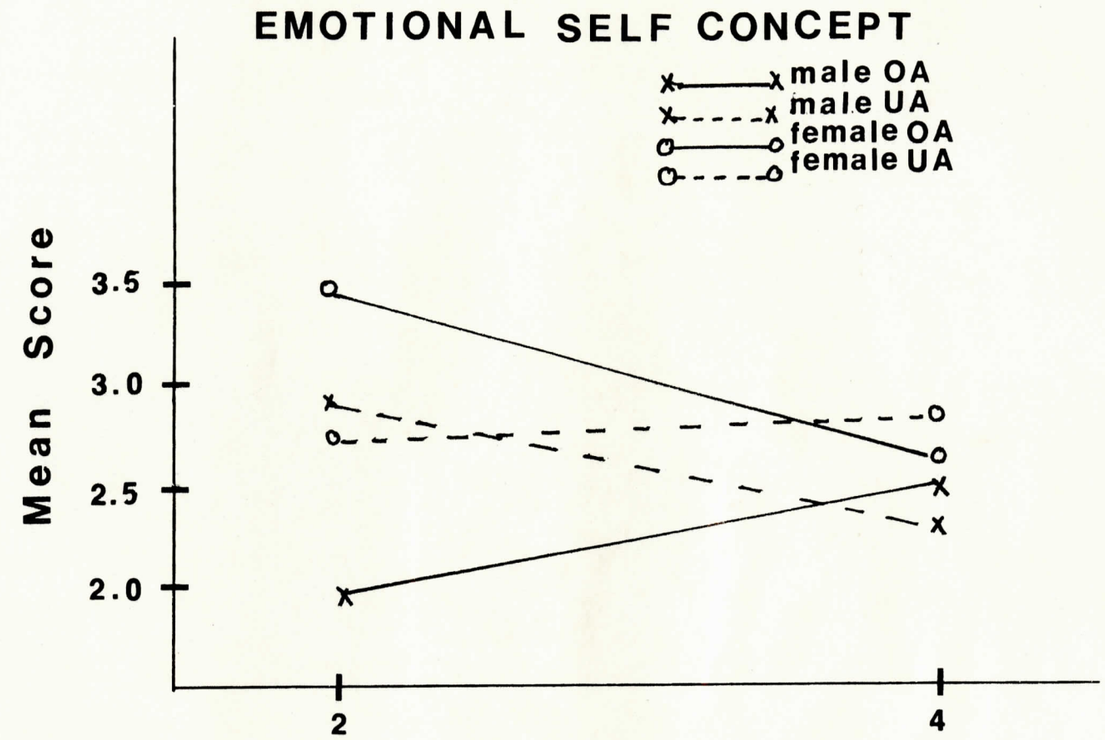

Fig 3 Interaction Between Grade & Sex & Achievement

second grade female overachievers. The overachieving male emotional self concept score increases, though not significantly, across grades, the overachieving female self concept score decreases significantly across grades. An anova summary is presented in Appendix B, Table 6. All means are presented in Appendix C, Table 17.

Factor 2. Personal Self Concept Subscale: Physical Size. The main effects of achievement, sex, and grade were not significant. (See Appendix C, Table 23). None of the interactions were significant. Anova summaries are presented in Appendix B, Table 7. Mean scores are presented in Appendix C, Table 18.

Factor 1. Social Self Concept Subscale: Peer Acceptance. The main effects of achievement and grade were not significant. (See Appendix C, Table 23). The main effect of sex was significant. F (1.53) = 4.167, p = .044. Respective means for males and females were 1.90 and 2.30. This indicates that males describe a lower self concept of peer acceptence than females. None of the interactions were significant. An anova summary is presented in Appendix B, Table 8. Mean scores for all groups are presented in Appendix C, Table 19.

Factor 2. Social Self Concept Subscale: Helpfulness. The main effects

of achievement, grade and sex were not significant. None of the interactions were significant. (See Appendix C, Table 23). Anova summaries are presented in Appendix B, Table 9. Mean scores are presented in Appendix C, Table 20.

Factor 1. Intellectual Self Concept Subscale: Successful Self. The main effects of achievement and sex were not significant. The main effect of grade was significant. F(1.53) = 3.987, p. = .048. Respective second and fourth grade mean scores were 2.85 and 2.17. This indicates that concept of successful self tends to decrease as a function of an increase in grade level. None of the two way interactions were significant. The three way interaction of achievement level, grade and sex was significant. Figure 4 represents a graph of this interaction. Inspection of the Tukey Table, Appendix C, Table 26, indicates that underachieving males display a significant drop in self concept of success as they move from second to fourth grade. This is not the case for females. Underachieving females do not significantly alter reported self concept of success across grades. Scores reported for self concept of success by underachieving fourth grade females are: (1) significantly higher than scores for underachieving fourth grade males, (2) substantially, though not significantly higher than scores of overachieving fourth grade females, (3) not significantly different

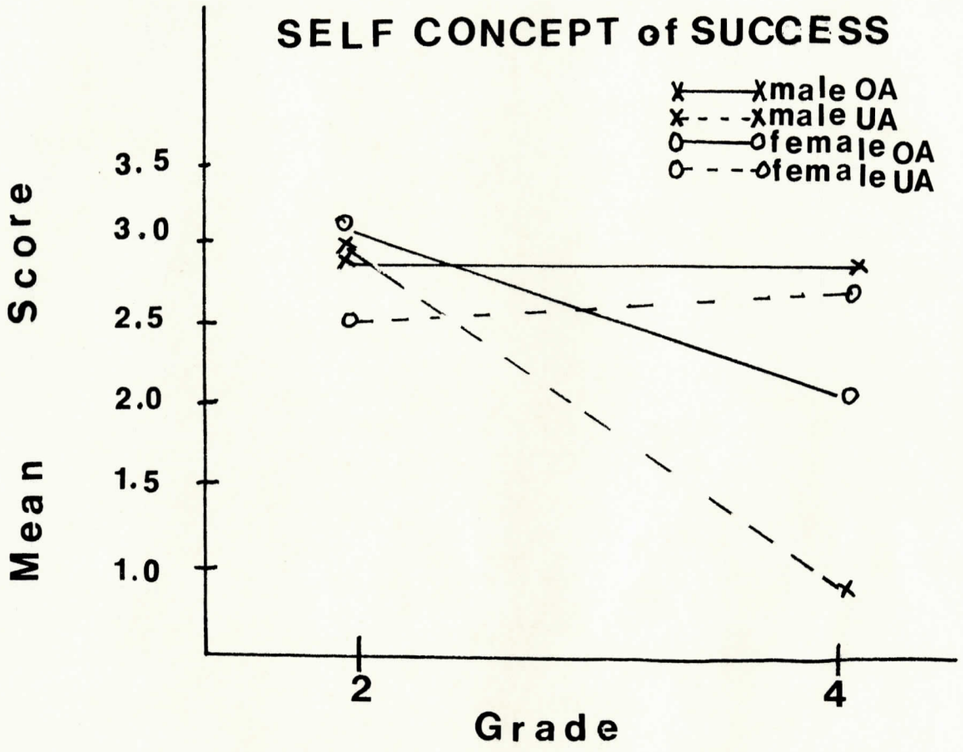

Fig. 4 Interaction between Grade & Sex & Achievement

from scores of overachieving fourth grade males. An anova summary is presented in Appendix B, Table 10. Mean scores are presented in Appendix C, Table 21.

Factor 2. Intellectual Self Concept subscale: Student Self. The main effect of achievement and sex were not significant. The main effect of grade was significant. F (1.53) = 3.171, p = .042. Respective means for second and fourth grades were 2.74 and 2.44. This suggests that self concept of student self diminishes as a function of increased grade level. None of the two way interactions were significant. The three way interaction of achievement, grade and sex was significant. F (1.53) = 3.032, p = .006. Figure 5 represents a graph of this interaction. Inspection of the Tukey Table, Appendix C, Table 27 indicates a significant decrease in student self concept for fourth grade male underachievers in comparison to second grade male underachievers. All other groups remain uneffected regardless of sex, grade or achievement level. An anova summary table is presented in Appendix B, Table 11. All means are presented in Appendix C, Table 22.

Discussion

The results of this study indicate that self concept is measurable in young middle class caucasion elementary school students. There appear to be several limitations to its measurability.

First, global measures of self concept do not appear to be very sensitive. Neither the Purdue Childrens Self Concept Index (verbal scale) nor the total score from the Primary Self Concept Inventory (pictorial scale) varied as a function of grade, sex or achievement level.

Second, it appears that verbal self concept may be difficult to measure in young elementary school students. This is contrary to findings by Cole (1974). Cole found significant differences in self concept for third grade over and under achievers using the Purdue Childrens Self Concept Scale.

Third, several studies suggested the use of pictorial self concept measures (Ozehosky, 1970). While the global measure appeared to be inadequate, several subscales of the self concept measure did appear to be affected by age, sex, and achievement. These were emotional state, peer acceptance, intellectual self, student self, success self.

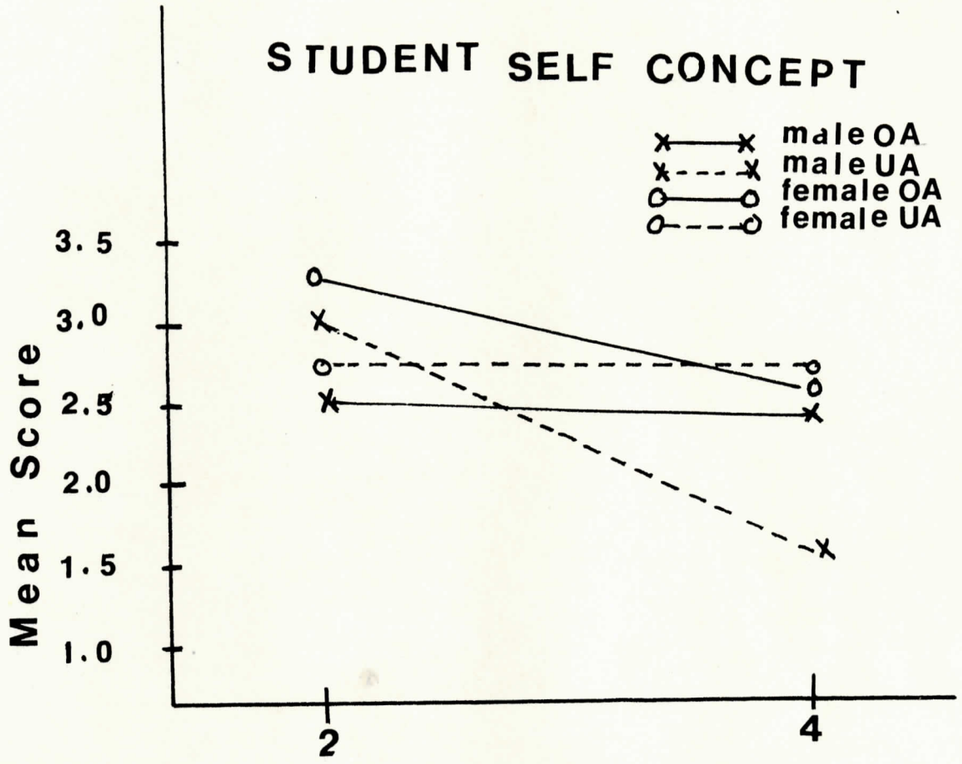

Fig 5 Interaction between Grade & Sex & Achievement

Sex and grade differences: Fourth graders demonstrated significantly lower self concept than second graders in relation to intellectual self, student self, and success self. These differences support the notion that self concept is in the process of change and development in the early school years. Underachieving fourth grade males reported an overall lower self concept of peer acceptance and a lower emotional state than females. This indicates that underachieving fourth grade males perceive themselves as significantly less happy than underachieving fourth grade females.

These sex and grade differences became more pronounced when achievement level was considered. The literature reports that high self concept sometimes accompanies underachievement. Karnes (1971) and Taylor (1964) suggest that high self concept in underachievers is due to reality distortion. Further reports suggest that underachievers are socially maladjusted (Cowan, 1971), defensive and emotional unstable (Combs, 1974). Male underachievers did display a decline in reported emotional state across grades. Fourth grade female underachievers appeared unaffected. This may be due to defensive reality distortion (Taylor, 1964) or to the possibility that patterns of achievement are not established for females at the fourth grade level (Shaw, 1960). While the emotional state of overachieving males improved across grades, female overachievers demonstrated a lowered emotional state across grades. This finding offers further evidence for reality distortion in female students in that female

overachievers may experience emotional insecurity which would account for the decrease in self-concept scores.

Intellectual self concept decreased for male underachievers across grades while male overachievers showed little change; female overachievers decreased in intellectual self concept, student self concept and self concept of success across grades. Underachieving females were not affected. This is contrary to findings by Bachtold, (1969) which suggested that underachieving females would display a lower self concept than underachieving males.

This study suggests that there is a relationship between self concept and achievement, though it does not appear to be as simple as other researchers have described. Studies which fail to include sex as a variable may not reveal any differences. Self concept seems to be related to achievement in different ways for boys and girls. Overachievement does not lead to any change in boys' self concept across grade while underachievement seems to be related to a decrease in self concept across grade. Underachievement does not lead to any change in self concept for girls but overachievement seems to be related to a decrease in self concept across grades two and four.

Several implications for futher research are suggested from this study. A major question is, why do boys and girls differ? Possible explanations include: (1) Anxiety and over achievement are positively related in girls while boys are virtually unaffected; (2) different cultural expec-

tations exist for boys and girls which create anxiety in achieving females while their underachieving counterparts demonstrate a comfortable self image. A longitudinal study might reveal the extent and the intensity of these theories. This would suggest a possible need to deal with the effect of overachievement on women and the need to develop programs for young bright females.

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APPENDIX A

Dear Parents: January, 1978

I am a psychology intern with the Children's Unit of the Lee County Guidance Center and am currently running a study on factors which relate to self concept in second and fourth graders.

I will meet with participating students for a two hour session. During this period each child will be given two self concept measures, an individual achievement test, and an individual intelligence test. Each child will be given the opportunity to terminate his or her participation in the testing at any time during the session.

All results of these tests will be confidential. Parents of participating students will be provided with results by letter. These results will include the child's achievement level, general range of intelligence, and self concept in so far as the instruments I am using measure it. At the conclusion of the study parents interested in more information on how this study relates to their individual child will receive notice of a group meeting arranged by the researcher.

If you would be interested in having your child participate in this study, please fill out the accompanying form and have your child return it to school. Once all forms have been returned a random sample of final students will be selected.

Thank you.

Sincerely,

Shelby Gennett

I understand the nature of this study and concent for my child to take part in it.

Signature _____

Address _____

Child's name _____

The following information will be helpful in the study.

Child's age _____

Child's grade _____

Child's sex _____

Number of siblings _____

The following information is to be completed by both parents.

Father's occupation _____ (if self employed or retired give nature of business or former business)

Mother's occupation _____

Highest grade of school completed (father) _____

Highest grade of school completed (mother) _____

The following is for research purposes and to be left blank.

Purdue S.C. Scale	_____	P.I.A.T.	
U-Scale	_____	General info	_____
Stanford Binet	_____	Math	_____
		Read Comp	_____
		Read Rec	_____
		Spelling	_____

March 1978

Dear Parents:

Your child's achievement and self concept scores have returned. If you are interested in discussing these results with teachers the examiner can also be available for meetings March 14th to March 22nd.

Please state a date and time and we will call to confirm this with you.

Sincerely,

Shelby D. Gennett
Psychology Intern

_____ _____
Parent name Teacher

_____ _____
Phone # Date and time

APPENDIX B

Table 1

Analysis of Variance For the Purdue Childrens Self Concept Index (Verbal Scale)

Source	DF	Mean Square	F
Achievement	1	539.954	1.402
Grade	1	1355.807	3.520
Sex	1	67.415	0.175
Achievement x grade	1	86.28	0.669
Achievement x sex	1	110.875	0.224
Grade x sex	1	737.50	0.228
Achievement x grade x sex	1	210.22	1.915
Residual	53	385.171	
Total	60	383.686	

Table 2

Analysis of Variance For Primary Self Concept Inventory (Pictorial Index)

Source	DF	Mean Square	F
Achievement	1	118.97	1.765
Grade	1	37.95	0.563
Sex	1	80.24	1.191
Achievement x grade	1	120.34	1.786
Achievement x sex	1	28.18	0.418
Grade x sex	1	69.04	1.024
Achievement x grade x sex	1	3.90	0.058
Residual	53	67.391	
Total	60	67.755	

Table 3

Analysis of Variance For Personal Self Concept (Pictorial Subscale)

Source	DF	Mean Square	F
Achievement	1	3.18	1.903
Grade	1	0.41	0.243
Sex	1	2.53	1.510
Achievement x grade	1	0.745	0.446
Achievement x sex	1	1.362	0.814
Grade x sex	1	6.432	3.844
Achievement x grade x sex	1	0.626	0.374
Residual	53	1.673	
Total	60	1.713	

Table 4

Analysis of Variance For Social Self Concept (Pictorial Subscale)

Source	DF	Mean Square	F
Achievement	1	1.44	0.681
Grade	1	2.72	1.284
Sex	1	8.27	3.888 *
Achievement x grade	1	0.001	.000
Achievement x sex	1	0.171	.081
Grade x sex	1	5.003	2.365
Achievement x grade x sex	1	1.22	.575
Residual	53	2.115	
Total	60	2.115	

Table 5

Analysis For Variance For Intellectual Self Concept (Pictorial Subscale)

Source	DF	Mean Square	F
Achievement	1	0.088	0.067
Grade	1	7.255	5.473 *
Sex	1	2.407	1.816
Achievement x grade	1	2.785	2.101
Achievement x sex	1	1.043	0.79
Grade x sex	1	13.298	10.03**
Achievement x grade x sex	1	5.761	4.346*
Residual	53	1.326	
Total	60	1.683	

* $p < .05$
** $p < .01$

Table 6

Analysis of Variance For Factor I
Personal Self Concept: Emotional Self

Source	DF	Mean Square	F
Achievement	1	0.060	0.102
Grade	1	1.023	1.754
Sex	1	2.166	3.713
Achievement x grade	1	.008	0.013
Achievement x sex	1	1.983	3.401
Grade x sex	1	0.720	1.235
Achievement x grade x sex	1	2.779	4.764 *
Residual	53	0.583	
Total	60	0.657	

Table 7

Analysis of Variance For Factor 2
Personal Self Concept: Physical Size

Source	DF	Mean Square	F
Achievement	1	0.095	0.069
Grade	1	1.269	0.920
Sex	1	4.105	2.277
Achievement x grade	1	0.003	0.002
Achievement x sex	1	0.014	0.010
Grade x sex	1	2.739	1.987
Achievement x grade x sex	1	0.001	0.001
Residual	53	1.379	
Total	60	1.361	

Table 8

Analysis of Variance For Factor 1
Social Self Concept: Peer Acceptance

Source	DF	Mean Square	F
Achievement	1	2.170	2.571
Grade	1	0.031	0.036
Sex	1	3.517	4.167*
Achievement x grade	1	0.130	0.154
Achievement x sex	1	1.888	2.236
Grade x sex	1	0.009	0.011
Achievement x grade x sex	1	2.285	2.708
Residual	53	0.844	
Total	60	0.905	

* $p < .05$

Table 9

Analysis of Variance For Factor 2
Social Self Concept: Helpfulness

Source	DF	Mean Square	F
Achievement	1	0.717	0.533
Grade	1	3.273	2.432
Sex	1	1.667	1.239
Achievement x grade	1	0.007	0.005
Achievement x sex	1	0.752	0.559
Grade x sex	1	3.076	2.286
Achievement x grade x sex	1	0.149	0.110
Residual	53	1.346	
Total	60	1.328	

Table 10

Analysis of Variance For Factor 1
Intellectual Self Concept: Success

Source	DF	Mean Square	F
Achievement	1	1.075	1.368
Grade	1	3.132	3.987 *
Sex	1	0.132	0.167
Achievement x grade	1	0.204	0.260
Achievement x sex	1	1.376	1.751
Grade x sex	1	0.693	0.882
Achievement x grade x sex	1	6.426	8.178**
Residual	53	0.786	
Total	60	0.891	

** $p < .01$

Table 11

Analysis of Variance For Factor 2
Intellectual Self Concept: Student

Source	DF	Mean Square	F
Achievement	1	0.225	0.301
Grade	1	3.171	4.235*
Sex	1	0.874	1.167
Achievement x grade	1	0.218	0.291
Achievement x sex	1	0.124	0.165
Grade x sex	1	0.057	0.076
Achievement x grade x sex	1	3.032	4.050*
Residual error	53	0.749	
Total	60	0.785	

* $p < .05$

APPENDIX C

Table 12

Mean Scores: Purdue Childrens Self Concept Index (Verbal Scale)

Group	Overachiever	Underachiever
Total SS	106.31	102.48
Grade 2	111.62	106.39
Grade 4	102.68	96.09
Grade 2 male	117.66	105.70
Grade 2 female	106.42	107.25
Grade 4 male	98.75	90.66
Grade 4 female	109.42	98.12
Male	108.21	98.18
Female	107.90	102.68

Table 13

Mean Scores: Primary Self Concept Inventory (Pictorial Index)

Group	Overachiever	Underachiever
SS	16.65	13.69
Second grade	14.46	13.89
Fourth Grade	14.12	13.36
Second grade male	13.00	14.40
Second grade female	15.71	13.25
Fourth grade male	15.83	10.00
Fourth grade female	14.30	14.62
Males	14.41	12.20
Females	13.92	13.93

Table 14

Mean Scores: Personal Self Concept Domain

Group	Overachiever	Underachiever
SS	4.00	4.48
Second grade	4.00	4.33
Fourth grade	4.00	4.72
Second grade male	3.16	4.10
Second grade female	4.71	4.60
Fourth grade male	4.08	5.00
Fourth grade female	3.85	4.62
Males	3.62	4.43
Females	4.28	4.62

Table 15

Mean Scores: Social Self Domain

Group	Overachiever	Underachiever
All SS	4.31	4.17
Second grade	4.69	4.22
Fourth grade	4.05	4.09
Second grade male	4.50	4.20
Second grade female	4.80	4.25
Fourth grade male	3.66	2.66
Fourth grade female	4.71	4.62
Males	4.06	3.43
Females	4.78	4.43

Table 16

Mean Scores: Intellectual Self Concept Domain

Group	Overachiever	Underachiever
SS	5.00	5.28
Second grade	5.31	5.61
Fourth grade	4.79	4.72
Second grade male	5.31	5.90
Second grade female	5.28	5.25
Fourth grade male	4.50	2.66
Fourth grade female	5.28	5.50
Males	4.91	4.28
Females	5.29	5.37

Table 17

Mean Scores: Emotional Self Factor

Group	Overachiever	Underachiever
SS	2.59	2.76
Second grade	2.77	2.83
Fourth grade	2.47	2.64
Males	2.21	2.61
Females	3.00	2.75
Second grade males	2.00	2.90
Second grade females	3.43	2.75
Fourth grade males	2.42	2.33
Fourth grade females	2.57	2.75

Table 18

Mean Scores: Physical Size Factor

Group	Overachiever	Underachiever
SS	2.60	2.76
Second grade	2.77	2.83
Fourth grade	2.47	2.64
Males	1.54	1.60
Females	2.07	2.06
Second grade male	1.16	1.20
Second grade female	2.14	2.12
Fourth grade male	1.92	2.00
Fourth grade female	2.00	2.00

Table 19

Mean Scores: Peer Acceptance Factor

Group	Overachiever	Underachiever
SS	2.53	2.21
Second grade	2.54	2.22
Fourth grade	2.53	2.18
Males	2.08	1.98
Females	3.00	2.24
Second grade male	2.30	1.83
Second grade female	2.12	3.14
Fourth grade male	1.66	2.33
Fourth grade female	2.37	2.86

Table 20

Mean Scores: Helpfulness Factor

Group	Overachievers	Underachievers
All SS	2.43	2.10
Second grade	1.75	2.22
Fourth grade	2.29	1.90
Male	2.08	1.98
Female	3.00	2.24
Second grade male	2.18	2.10
Second grade female	2.54	2.22
Fourth grade male	1.95	1.90
Fourth grade female	2.66	2.20

Table 21

Mean Scores: Success Factor

Group	Overachiever	Underachiever
SS	2.75	2.59
Second grade	3.00	2.78
Fourth grade	2.58	2.27
Males	2.79	1.90
Females	2.71	2.68
Second grade male	2.83	2.90
Second grade female	3.14	2.62
Fourth grade male	2.75	1.00
Fourth grade female	2.29	2.75

Table 22

Mean Scores: Student Self Factor

Group	Overachiever	Underachiever
SS	2.69	2.69
Second grade	2.92	2.89
Fourth grade	2.57	2.37
Males	2.50	2.17
Females	2.93	2.68
Second grade male	2.50	3.00
Second grade female	3.29	2.75
Fourth grade male	2.53	1.69
Fourth grade female	2.57	2.62

Table 23

Significance Levels

	Verbal S.C.	Total Pictorial S.C.	Personal S.C.	Social S.C.	Intellectual S.C.	Emotional S.C.	Physical S.C.	Peer Acceptance	Helpfulness	Success	Student
Achievement	.240	.187	.170	.999	.999	.999	.999	.111	.999	.264	.999
Grade	.063	.999	.999	.261	.022*	.188	.999	.999	.121	.048*	.042*
Sex	.999	.286	.222	.051	.180	.056	.087	.044*	.270	.999	.285
Grade x Grade	.169	.317	.052	.999	.003**	.271	.999	.999	.133	.999	.999
Grade x Achievement	.999	.999	.999	.999	.999	.067	.999	.137	.999	.188	.999
Grade x Achievement	.999	.184	.999	.999	.149	.999	.999	.999	.999	.999	.999
Grade x Achievement x Sex	.999	.999	.999	.999	.040*	.032*	.999	.102	.999	.006**	.047*

*.05
**.01

Table 24

The Tukey Test: Intellectual Self Concept

2nd. grade male overachiever = 2 MO
2nd. grade male underachiever = 2 MU
2nd. grade female overachiever = 2 FO
2nd. grade female underachiever = 2 FU
4th. grade male overachiever = 4 MO
4th. grade male underachiever = 4 MU
4th. grade female overachiever = 4 FO
4th. grade female underachiever = 4 FU

2 MO vs. 4 MO	(C. diff.=1.19)
5.31 - 4.50 = .81	(N.S.)
2 FO vs. 4 FO	(C. diff.= 1.19)
5.28 - 5.28 = 0	(N.S.)
2 MU vs. 4 MU	(C. diff.= 1.19)
5.90 - 2.66 = 3.24	(sig.)
4 FU vs. 2 FU	(C. diff.= 1.19)
5.50 - 5.25 = .25	(N.S.)
2 MO vs. 4 MU	(C. diff.= 1.19)
5.21 - 2.66 = 2.65	(sig.)
4 MO vs. 4 MU	(C. diff.= 1.19)
4.50 - 2.66 = 1.84	(sig.)
2 FO vs. 4 MU	(C. diff.= 1.19)
5.28 - 2.66 = 2.62	(sig.)
2 FU vs. 4 MU	(C. diff.= 1.19)
5.25 - 2.66 = 2.59	(sig.)
4 FO vs. 4 MU	(C. diff.=1.19)
5.28 - 2.66 = 2.62	(sig.)
4 FU vs. 4 MU	(C. diff.= 1.19)
5.50 - 2.66 = 2.84	(sig.)

The Tukey Test: Intellectual Self Concept (continued)

2 MU vs. 4 MO	(C. diff.= 1.19)
5.90 - 4.50 = 1.40	(sig.)
4 FU vs. 4 MO	(C. diff.= 1.19)
5.50 - 4.50 = 1.00	(N.S.)
4 FU vs. 2 FU	(C. diff.= 1.19)
5.50 - 5.25 = .21	(N.S.)

Table 25

The Tukey Test: Emotional Self Concept

2nd. grade female underachiever = 2 FU
2nd. grade female overachiever = 2 FO
2nd. grade male underachiever = 2 MU
2nd. grade male overachiever = 2 MO
4th. grade female underachiever = 4 FU
4th. grade female overachiever = 4 FO
4th. grade male underachiever = 4 MU
4th. grade male overachiever = 4 MO

2 FO vs. 4 FO	(C. diff.= .73)
3.43 - 2.57 = .86	(sig.)
4 FO vs. 4 MO	(C. diff.= .73)
2.75 - 2.42 = .33	(N.S.)
4 MO vs. 2 MO	(C. diff.= .73)
2.42 - 2.00 = .42	(N.S.)
2 FO vs. 4 FO	(C. diff.= .73)
3.43 - 2.57 = .86	(sig.)
4 FO vs. 2 FU	(C. diff.= .73)
2.75 - 2.75 = .00	(N.S.)
2 MU vs. 4 MU	(C. diff.= .73)
2.90 - 2.33 = .57	(N.S.)
2 FO vs. 2 MO	(C. diff.= .73)
3.43 - 2.00 = 1.43	(sig.)
4 FU vs. 4 MU	(C. diff.= .73)
2.75 - 2.33 = .42	(N.S.)

Table 26

The Tukey Test: Self Concept of Sucess

2nd. grade male underachievers = 2 MU
2nd. grade male overachievers = 2 MO
2nd. grade female underachievers = 2 FU
2nd. grade female overachievers = 2 FO
4th. grade male underachievers = 4 MU
4th. grade male overachievers = 4 MO
4th. grade female underachievers = 4 FU
4th. grade female overachievers = 4 FO

2 MU vs. 4 MU	(C. diff.= .94)
2.90 - 1.00 = 1.90	(sig.)
4 FU vs. 2 FU	(C. diff.= .94)
2.75 - 2.62 = .13	(N.S.)
4 MO vs. 4 MU	(C. diff.= .94)
2.75 - 1.00 = 1.75	(sig.)
4 FU vs. 4 FO	(C. diff.= .94)
3.14 - 2.29 = .85	(N.S.)
4 FU vs. 4 MU	(C. diff.= .94)
2.75 - 1.00 = 1.75	(sig.)
4 FU vs. 4 MO	(C. diff.= .94)
1.75 - 1.75 = 0	(N.S.)
4 FO vs. 4 MU	(C. diff.= .94)
2.29 - 1.00 = 1.29	(sig.)
2 MO vs. 4 MU	(C. diff.= .94)
2.83 - 1.00 = 1.83	(sig.)
2 FO vs. 4 MU	(C. diff.= .94)
3.14 - 1.00 = 2.14	(sig.)
2 FO vs. 4 MU	(C. diff.= .94)
2.62 - 1.00 = 1.62	(sig.)
2 FO vs. 4 FO	(C. diff.= .94)
3.14 - 1.00 = 2.14	(sig.)

Table 27

The Tukey Test: Student Self Concept

2nd. grade male underachiever = 2 MU
2nd. grade male overachiever = 2 MO
2nd. grade female overachiever = 2 FO
4th. grade male underachiever = 4 MU
4th. grade male overachiever = 4 MO
4th. grade female overachiever = 4 FO
4th. grade female underachiever = 4 FU

4 MO vs. 4 MU	(C. diff. = .84)
2.53 - 1.69 = .84	(sig.)
4 FO vs. 4 MU	(C. diff. = .84)
2.57 - 1.69 = .88	(sig.)
4 FU vs. 4 MU	(C. diff. = .84)
2.62 - 1.69 = .93	(sig.)
2 MU vs. 4 MU	(C. diff. = .84)
3.00 - 1.69 = 1.3.	(sig.)
2 MO vs. 4 MU	(C. diff. = .84)
2.50 - 1.69 = .81	(N.S.)
2 FO vs. 4 MO	(C. diff. = .81)
3.29 - 1.69 = 1.60	(sig.)
4 FU vs. 4 MU	(C. diff. = .84)
2.62 - 1.69 = .93	(sig.)
2 FO vs. 4 FO	(C. diff. = .84)
2.29 - 2.57 = .71	(N.S.)
2 FO vs. 2 MO	(C. diff. = .84)
3.29 - 2.50 = .79	(N.S.)

APPENDIX D

Test Booklet

PURDUE SELF CONCEPT SCALE

FOR

PRIMARY GRADE CHILDREN

EXPERIMENTAL EDITION III

VICTOR G. CICIRELLI

Name _____ Grade _____ Age _____ Sex _____

School _____ Teacher _____ Date _____

Now I am going to read you a story, listen carefully.
EXAMPLE ONE: The balloon-child is the tallest in the class.
The flag-child is the shortest in the class.

Look at the balloon-child and the flag-child on the first page. Mark an "X" in the small box at the bottom of the page that shows where *you* are.

The following should be done in conjunction with an illustration on the blackboard. The Examiner should elicit the correct answer from the subjects.

If you were the *tallest* in the class which box would you choose?

If you were the *shortest* in the class which box would you choose?

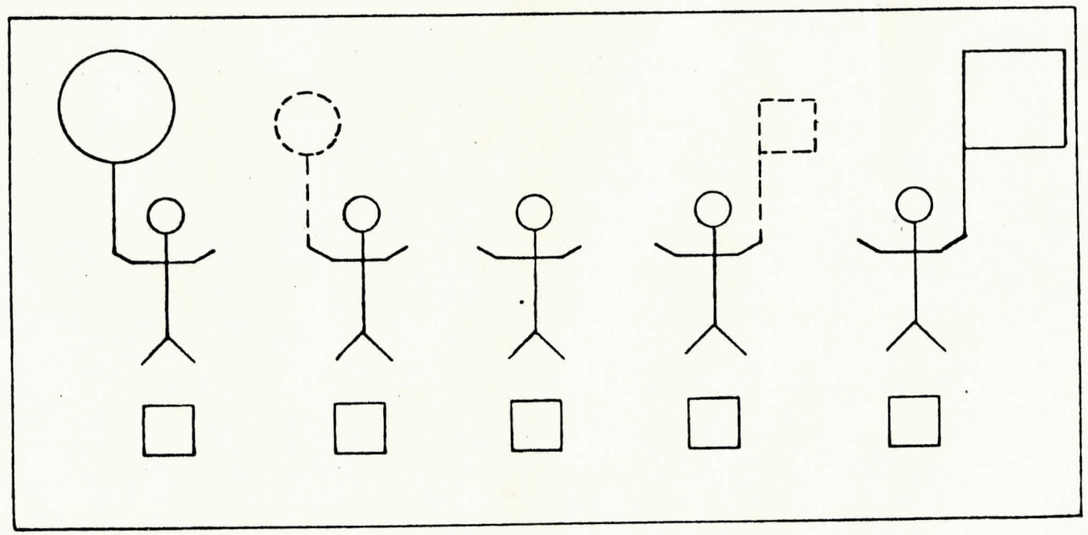
If you were not the tallest, but almost the *tallest,* which box would you choose?

If you were not the shortest, but almost the shortest, which box would you choose?

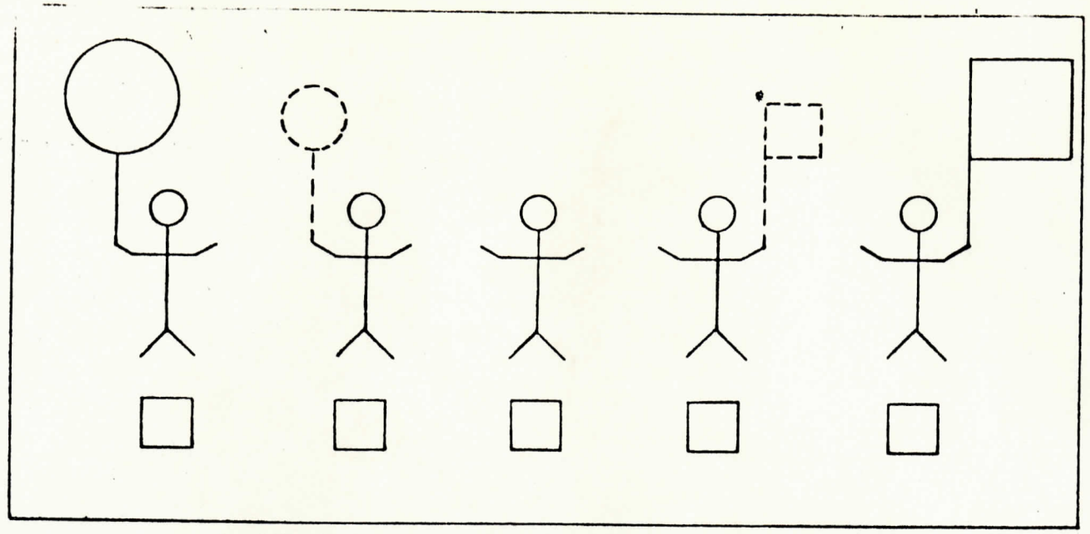
If you were not the tallest, but not the shortest, but somewhere in between, which box would you choose?

Are there any questions?

EXAMPLE 1

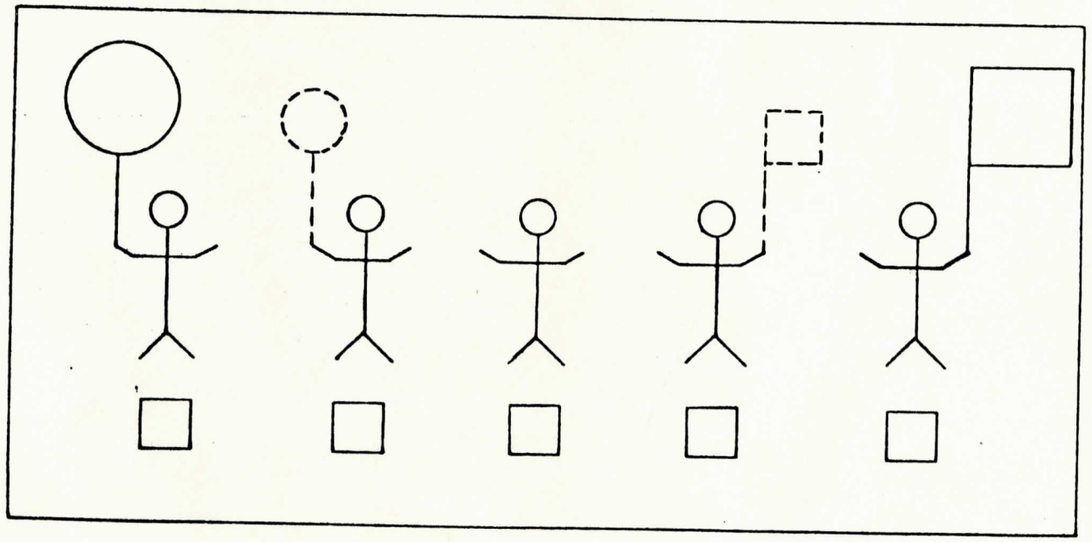


The balloon-child is the tallest in the class.
The flag-child is the shortest in the class.

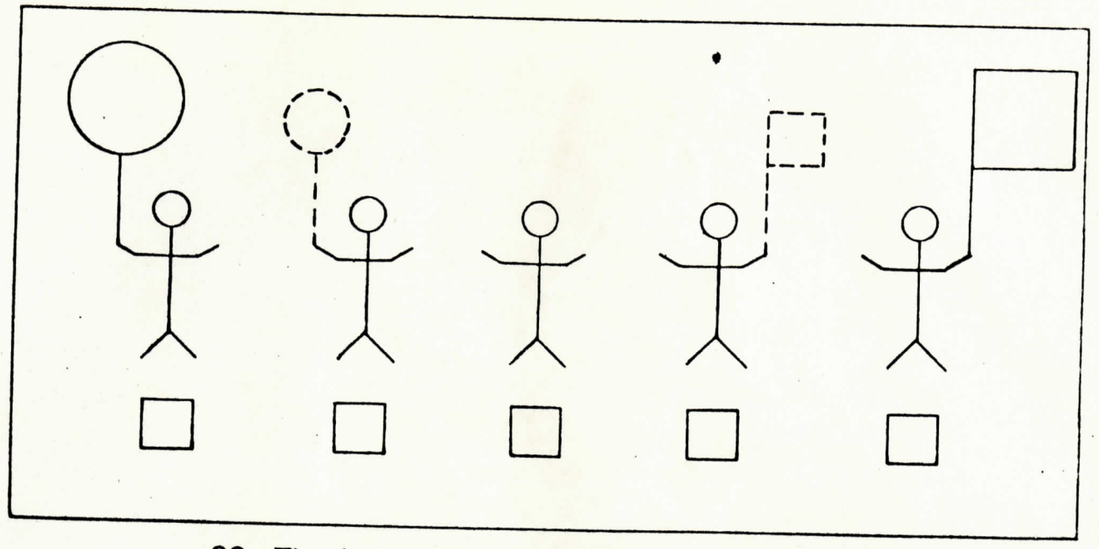


1. The balloon-child learns everything in school.
   The flag-child learns nothing in school.

EXAMPLE 2



The balloon-child has long hair.
The flag-child has short hair.



28. The balloon-child always thinks up what he does.
    The flag-child has to be told what to do.

SCORING SHEET

Name _____ Grade _____ Age _____ Sex _____

School _____ Teacher _____ Date _____

Item	Score
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	

Item	Score
15	
16	
17	
18	
19	
20	
21	
21	
23	
24	
25	
26	
27	
28	

Total _____

APPENDIX E

Primary Self-Concept Inventory Test Manual

Douglas G Muller
Phd
Robert Leonetti
Edd

TEST DESCRIPTION

Several of the more important qualities of the *Primary Self-Concept Inventory* are:

1. that it measures self-concept relevant to school success.
2. that it does not require that the child be able to read.
3. that it is appropriate for use with children in grades K through 6 and four-year-olds who have had preschool training (nursery school, Head Start, etc.)
4. that it can be administered to groups of children.
5. that it can be administered and scored by the classroom teacher.
6. that it can be administered in any language or combination of languages.

The *Primary Self-Concept Inventory* (*PSCI*) is composed of 20 items: two warm-up items and 18 scored items. Each item depicts at least one child in a positive role and at least one child in a negative role. There are separate male and female forms of the test, so that the sex of the principal characters in the test items may be matched with that of the examinee. The examinee is told a simple descriptive story about each illustration and is instructed to draw a circle around the person that is most like himself.

The test is designed to measure six aspects or factors of self-concept. These factors can be clustered into the three major domains of: personal-self, social-self, and intellectual-self.

Factor descriptions and their corresponding items appear in Table 1. The test may be scored to yield a total self-concept score, three domain scores, and six factor scores.

TABLE 1

A Lising of Factors and

Items Constituting the

Primary Self-Concept Inventory

Factor	Items
Personal-Self Domain	
1. Physical size: assesses child's perception of his/her relative physical size.	10, 16, 18
2. Emotional state: assesses child's perception of his/her emotional state, *i.e.* happy or sad, angry or not angry.	5, 13, 20
Social-Self Domain	
3. Peer acceptance: assesses child's perception of his/her acceptance by his/her peer group.	4, 8, 11
4. Helpfulness: assesses child's perception of himself/herself in the helper-helpee relationship.	9, 15, 19
Intellectual-Self Domain	
5. Success: assesses child's perception of his/her tendency to succeed or fail in task-oriented pursuits.	3, 7, 17
6. Student-self: assesses child's perception of his/her ability to conform to classroom behavior expectations.	6, 12, 14

ITEM DESCRIPTION

Item Number	Positive Item Description	Factor
1	No score	No score
2	No score	No score
3	The child successfully assembling blocks	Intellectual-Self Domain—Success
4	Any of the children talking with each other	Social-Self Domain—Peer acceptance
5	Smiling child	Personal-Self Domain—Emotional state
6	The child studying	Intellectual-Self Domain—Student self
7	The child successfully assembling puzzle	Intellectual-Self Domain—Success
8	Any of the children playing with each other	Social-Self Domain—Peer acceptance
9	The child pushing the wagon	Social-Self Domain—Helpfulness
10	The larger child pulling on the rope	Personal-Self Domain—Physical size
11	Any of the three childen working on the wagon	Social-Self Domain—Peer acceptance
12	The child studying	Intellectual-Self Domain—Student self
13	The smiling child	Personal-Self Domain—Emotional state
14	The child studying	Intellectual-Self Domain—Student self
15	The child helping the other child climb	Social-Self Domain—Helpfulness
16	The larger child	Personal-Self Domain—Physical size
17	The child successfully studying	Intellectual-Self Domain—Success
18	The larger child	Personal-Self Domain—Physical size
19	The child giving the piggy-back ride	Social-Self Domain—Helpfulness
20	Happy child	Personal-Self Domain—Emotional state

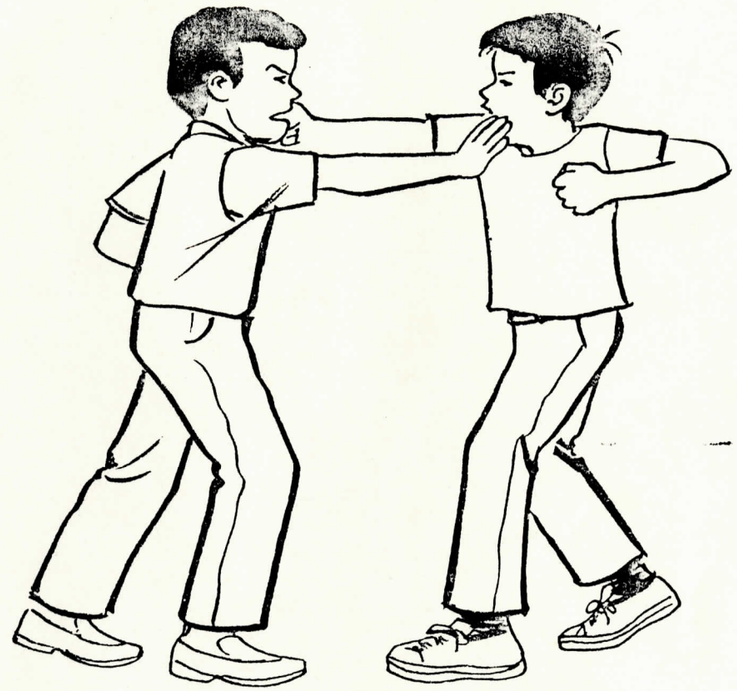
SCORING

Items One and Two are not scored. They are included primarily as a warm-up exercise.

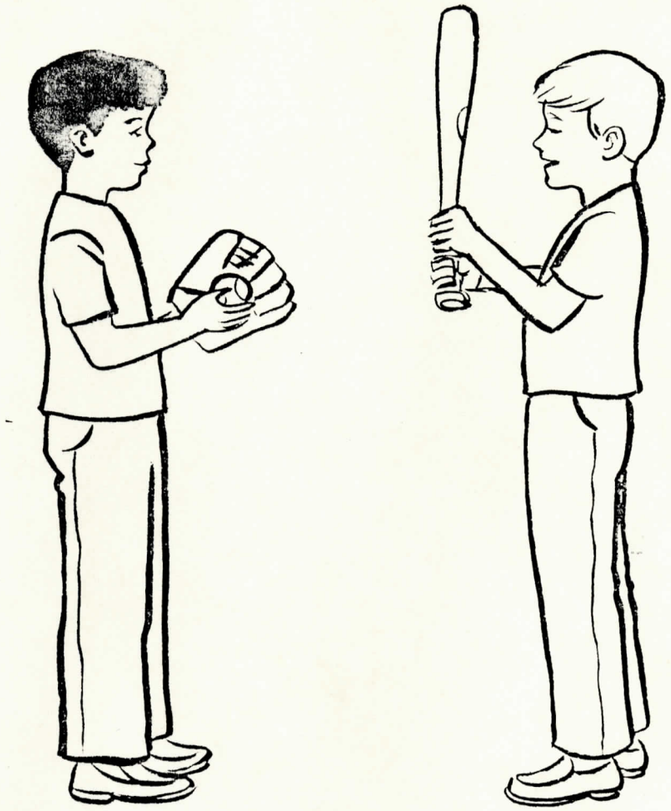
For each of the eighteen scored items, a score of 1 is given for selecting the child in the positive role; a score of 0, for selecting the negative role. The Item Description Chart on the following page identifies the positive response for each illustration.

It is possible to derive a total score, three domain scores, and six factor scores on the test. The total score is the sum of the scores on all eighteen items. To obtain factor and area scores, add the scores for the items in each domain and factor as shown in Table 1.

BOYS' FORM



□ 1

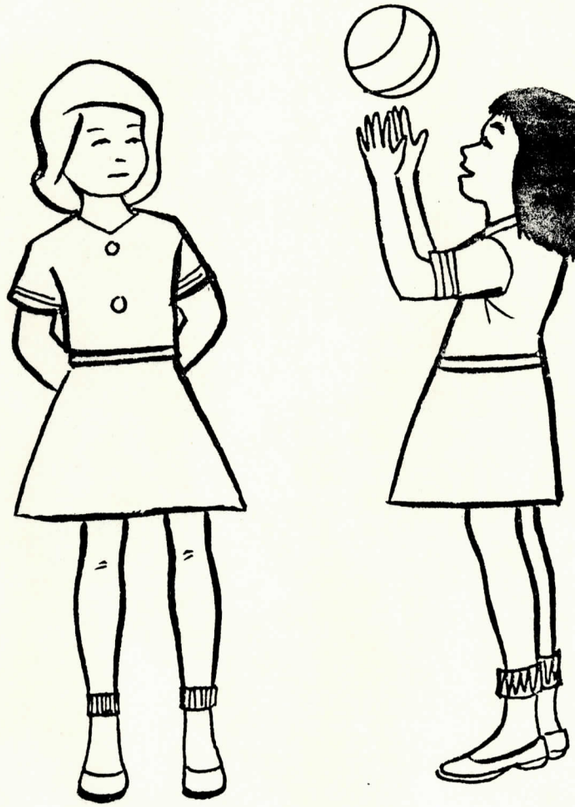


○

GIRLS' FORM

□ 1

1



2