DOCUMENT RESUME

ED 071 813 RC 006 702

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TITLE A Primary Self-Concept Scale for Spanish-Surnamed Children, Grades K-4.
PUB DATE Feb 73
NOTE 87p.; Doctor's dissertation submitted to New Mexico State University, Las Cruces, New Mexico

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Academic Achievement; *Children; Cultural Factors; Doctoral Theses; *Group Tests; *Mexican Americans; *Primary Education; *Self Concept; Socioeconomic Influences; Statistical Analysis; Tables (Data)
IDENTIFIERS *New Mexico

ABSTRACT

The purpose of this study was to develop a group test of self-concept which is especially applicable to the Spanish-surnamed primary school student. The pilot version of this instrument, the Primary Self-Concept Scale (PSCS), was designed to measure 5 aspects of self-concept which were felt to be relevant to school success: behavior, intellectual, physical appearance, peer relationships, and emotional state. After factor analysis, however, the factors identified were (1) aggressiveness/cooperation, (2) intellectual self, (3) peer ostracism/acceptance, (4) helpfulness, (5) physiological self, and (6) adult acceptance/rejection. The 2 additional factors measured in this study were emotional self and success/nonsuccess. Both the preliminary and the revised PSCS were administered to 650 primary school pupils in New Mexico. Emanating from the PSCS was the third revision, the Primary Self-Concept Inventory (PSCS). Studies concerning the further development and refinement of the PSCI should include subjects from a variety of age levels, ethnic groups, and socioeconomic levels. Further research should also entail the development of remediational procedures closely related to performance on the PSCI. (HBS)

A PRIMARY SELF-CONCEPT SCALE FOR SPANISH-SURNAMED CHILDREN, GRADES K-4

BY

ROBERT LEONETTI, B.A., M.A.

A Dissertation submitted to the Graduate School

in partial fulfillment of the requirements

for the Degree

Doctor of Education

Major Subject: Counseling and Educational Psychology

Related Area: Educational Administration

New Mexico State University

Las Cruces, New Mexico

February 1973

"A Primary Self-Concept Scale for Spanish-Surnamed Children, Grades K-4," a dissertation prepared by Robert Leonetti in partial fulfillment of the requirements for the degree, Doctor of Education, has been approved and accepted by the following:

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ACKNOWLEDGEMENTS

The writer would like to express his sincere gratitude to his advisor, Dr. Douglas G. Muller, for his assistance in preparing this study. Special thanks also to his advisory committee, Dr. William C. Cross, Dr. Richard R. DeBlassie, Dr. Ross E. Easterling, Dr. Everett D. Edington, and Dr. Darrell Kirby.

To his parents and all his friends, particularly Bob Orling who assisted with much of his data processing, the writer would like to express his thanks for their continued encouragement and support.

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Muller, D. G., and Leonetti, R. Primary Self-Concept Scale. Las Cruces, N.M.: Las Cruces Public Schools, School District No. 2, 1970.

Muller, D. G., and Leonetti, R. Primary Self-Concept Scale. Fort Worth, Texas: National Consortia for Bilingual Education, 1971.

Muller, D. G., and Leonetti, R. Primary Self-Concept Inventory. Austin, Texas: Urban Research Group, 1973.

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A PRIMARY SELF-CONCEPT SCALE FOR SPANISH-SURNAMED CHILDREN,

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ROBERT LEONETTI, B.A., M.A.

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Las Cruces, New Mexico, 1973

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A major objective of our schools should be the development of a positive self-concept in students, particularly for the Spanish-surnamed child. The effects of low self-concept on academic achievement for the Mexican-American child are likely to be especially pronounced since his self-perception, due to cultural factors in many cases, tends to be more negative than it is for the "Anglo" child from the mainstream culture.

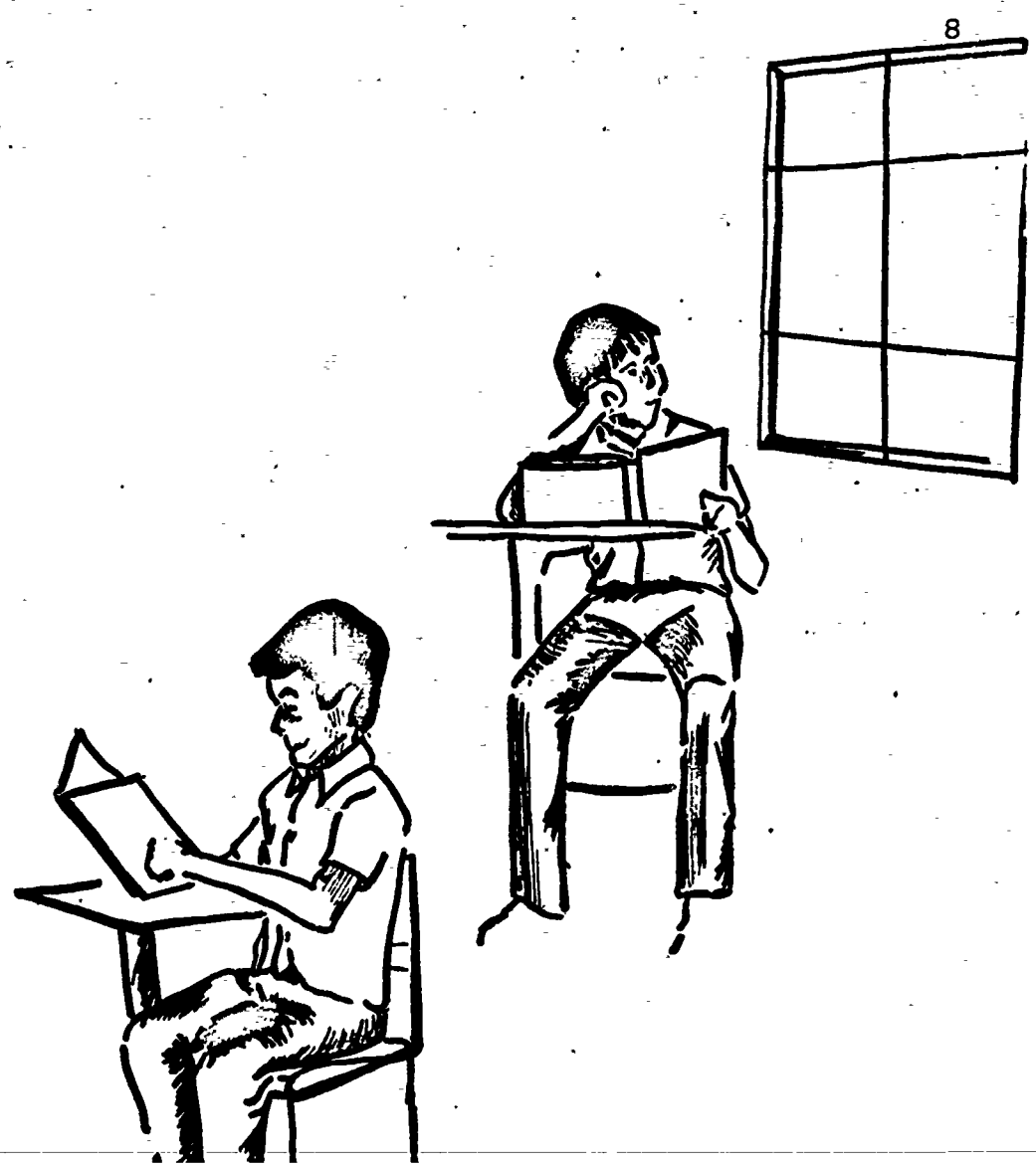
As a means of alleviating problems pertaining to self-perception, the self-concept must be assessed. Apparently, there is no well-developed group test of self-concept which is especially applicable

the classroom teacher, (f) scorability by clerical assistants, and (g) economy in usage. A pilot form of such an instrument, the Primary Self-Concept Scale (PSCS), was constructed by Muller and Leonetti (1970). The PSCS consisted of 21 illustrated items depicting children in a variety of social and academic situations. The examinee was instructed to indicate the child who most nearly agreed with his perceptions of himself.

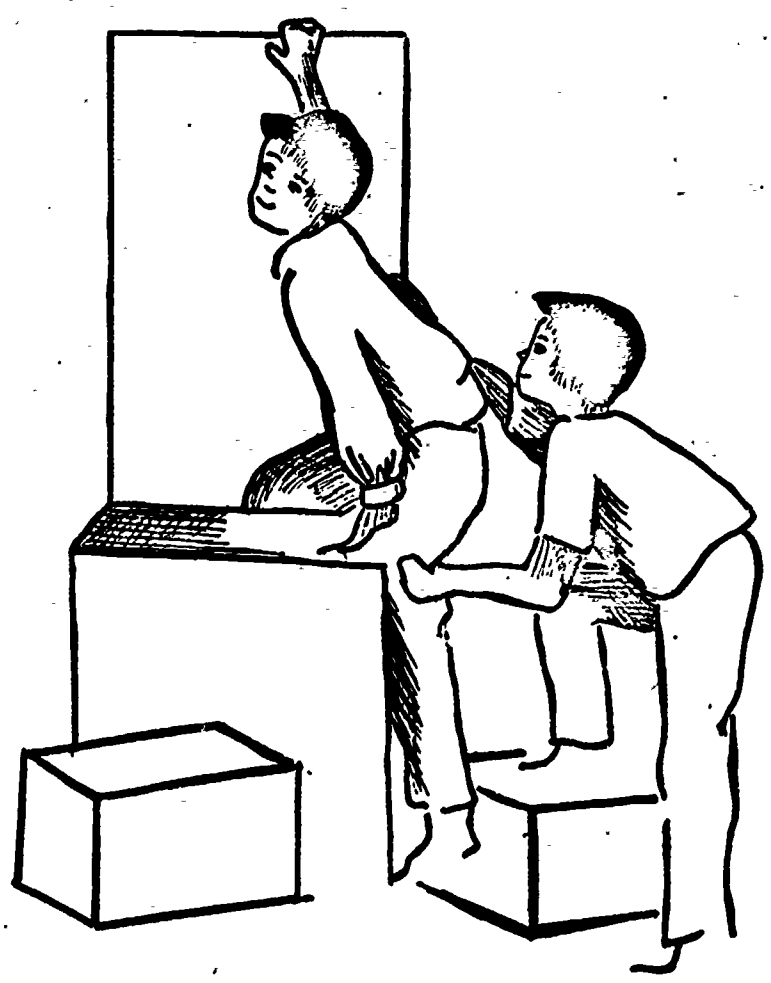
Test data derived from this instrument were subjected to a series of factor analyses. On the basis of these analyses, a second form of the test, the PSCS′, was constructed. Analyses of the PSCS′ resulted in the elimination of certain items. The remaining items comprise the PSCS″. The PSCS″ is a test consisting of 15 items defining six self-concept factors.

Test-retest reliability of the PSCS″ is sufficient.

Construct validity, as determined by a series of factor analyses, coefficients of congruence, and judgments of doctoral level faculty and graduate students, was high. Factor structure remained



in January, 1973, by the Urban Research Group in Austin, Texas.



The picture on this page shows the children climbing boxes.

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INTRODUCTION

The United States Department of Commerce's Current Population Report (1972) identifies a total of 9.2 million persons of Spanish and/or Mexican origin in the nation. Approximately 60% of these people were living in the five Southwestern states of Arizona, California, Colorado, New Mexico, and Texas. This large number of persons of Mexican and/or Spanish descent makes them the third largest minority in this country (Steglish, 1968). The educational attainment of this ethnic group is in marked contrast to that of the Anglo middle-class majority. Carter (1970) described the median years of school completed by Spanish-surnamed adults 25 years and over. In standard metropolitan districts of the five major Southwestern states, he found that in 1960 the median years of school for persons with Spanish surnames was 7.1. This contrasted with 11.6 years for the total population in the same districts. The Current Population Report (1972) reveals that 58.2% of the total population 25 years old and over completed four years of high school as compared to only 29.4% for the persons of Spanish- and/or Mexican-American descent.

Many educators believe that a negative self-concept is a significant contributing factor in the low academic attainment of the Spanish-surnamed child. Carter (1970) wrote that self-derogation is seen by a majority of schoolmen as being characteristic of a

disproportionate percentage of Mexican-American children, and that the self-concept relating to academic ability can functionally limit a child's school achievement. More specifically, Hamachek (1971) has contended that if the Mexican-American child starts school with a negative self-image of himself and/or about his ability to do school work, signs of low or poor academic achievement will be apparent during the early elementary years.

Self-Concept and Academic Achievement

The importance of the self-concept to academic achievement is attested to by many educators. Gillman (1969) has argued that the development of a positive self-concept is a necessary prerequisite to academic achievement and should be a major objective of every school that is concerned with the development of productive citizens. Morgan (1969) has contended that the ultimate objective of education should be to enable each child to build a positive image of himself as a learner. Lipton (1963) wrote:

> The roots of desire to learn are deep and are multi-branched. The development of a self-worth and self-value is one of the most important and significant of these branches. To know oneself and to value oneself contributes mightily to the development of an able learner, a curious learner, and a mature learner [p. 211].

Campbell (1967), Carlton and Moore (1966), Ether (1967), Hamachek (1971), Manuel (1965), Newton (1969), and Williams and Cole (1968) also reported that there is evidence in the literature and research to indicate a relationship between self-concept and school achievement, enough, in fact, to conclude that there is a direct link

between the learner's self-concept and academic achievement. Some of this research is reviewed in Appendix A.

For the Spanish-surnamed child, the effects of low self-concept on academic achievement are likely to be especially pronounced since his self-perception tends to be more negative than it is for the "Anglo" child. Factors such as skin color, language, socioeconomic factors, and cultural characteristics seem to be, at least partially, responsible for this. Research examining the effect of these variables is reviewed in Appendix B.

As a means of alleviating problems pertaining to self-perception, the self-concept must be assessed. An instrument which attempts to adequately evaluate self-perceptions should not only be reliable and valid, but also inexpensive and easily administered and scored. It is essential, if adequate learning is to occur, that children with negative feelings of self-worth be identified early to allow the application of appropriate remediation procedures. Hopefully, identification of these children will occur while they are still in the primary grades.

Available Self-Concept Instruments

Beatty (1969) listed six self-concept tests which can be used in grade levels kindergarten through four, and seven others which are directed to grades two through four. Of the enumerated tests, only the Self-Social Symbols Tasks Tests, which are nonverbal measures of self-social concepts, are usable for all ages and all nationalities. They are still in the experimental stage and normative data are not available.

Evans (1970) listed four tests dealing with self-perceptions in his report, none of which encompasses grade levels kindergarten through four, and none is directed toward the Spanish-surnamed child.

Coller (1971) listed 27 self-concept measures for preschool and primary school children in his annotated bibliography. Five of these measures were noted by Beatty (1969), and one was noted by Evans (1970). Two tests are applicable to grades kindergarten through two, six are applicable to grades kindergarten through three, and five are applicable to grades one through three. Only two of the tests which fall into the kindergarten through three category, the Children's Self-Social Constructs Tests (grades kindergarten through three) and the Responsive Self-Concept Test (grades one through three), deal with minority concepts.

The Children's Self-Social Constructs Tests (CSSCT) (Coller, 1971) are individually administered measures of social-self concept, and are designed to measure self-esteem, social interest, identification, minority identification, realism to size, and preference for others. Test items are made up of arrays of circles and other figures from which a child is required to select a circle, draw a circle, or paste in a gummed circle to represent himself or some other person among those presented. Certain aspects of the child's perception of himself are inferred from an analysis of the arrangements. This technique implies subjectivity and ambiguity, thus making reliability and validity tenuous. Also, the scoring

of the test appears to be a somewhat difficult task, requiring at least a moderate level of training. A manual with psychometric data is available.

The Responsive Self-Concept Test (Coller, 1971) measures nine psychosocial factors: self-awareness, emotional effect, relationship with family, relationship with peers, verbal participation, approach to learning, reaction to success/failure, self-satisfaction, and level of aspiration. It is administered to small groups and is timed by the examiner. Male and female forms for whites, blacks, Orientals, and Mexicans or Spanish-Americans, are available. A picture of the child is used. He is asked to judge whether the examiner is talking about him, someone he knows, or someone he does not know. The utilization of a picture of each child makes this test somewhat impractical. Psychometric data on this instrument are not yet available.

Bolea, Felker, and Barnes (1971) have developed an interesting and useful Pictorial Self-Concept Scale for children in grades kindergarten through four. The child is presented with a deck of 50 cards. On each is a cartoon figure engaged in an activity. The child sorts the cards into three piles: "like me," "sometimes like me," and "not like me." The item pool was constructed around Jersild's (1952) collection of children's statements concerning what they liked and disliked about themselves. The authors indicated that the test can be administered to groups, but scoring seems to be a problem. That is, it appears likely that the various piles

of cards would frequently become mixed unless they were scored immediately after the child completed the test. This tends to limit the usefulness of the test as an efficient classroom tool which can be employed on a large-scale basis. Also, the task seems to be somewhat difficult for the kindergarten or first-grade child with poorly developed language skills. In addition, the test was not designed to be used with a specific cultural group and thus may suffer from an inadvertent cultural bias. The test also does not appear to yield subtest scores for each of a variety of specific aspects of self-concept. Finally, norms are not yet available for this test.

Purpose

Apparently there is no well-developed group test of self-concept which is especially applicable to the Spanish-speaking Southwestern primary school student. The purpose of this study was to develop such an instrument. However, it was hoped that the test would not be limited to only the Spanish-surnamed and/or Spanish-speaking child, but would also be applicable to the "Anglo" child, as well as to children of other cultural backgrounds. Test development attempted to select items which were compatible with the cultural and language characteristics of the Spanish-speaking child, particularly as they related to the public elementary school setting. Emphasis was placed on selecting those items which also appeared to be applicable to primary school children of other ethnic groups, i.e., Indian, Anglo, etc.

This proposed instrument should have the following properties: (a) suitability for children in grades kindergarten through four; (b) applicability to nonreaders; (c) employability with non-English-speaking children; (d) measurability of self-concept relevant to school success; (e) easy administration by the classroom teacher; (f) scorability by clerical assistants; and (g) economy of usage.

A pilot version of such an instrument, the Primary Self-Concept Scale (PSCS), was constructed by Muller and Leonetti (1970). It was administered in two forms, male and female, to 703 children of primarily Mexican- and/or Spanish-American descent in grades kindergarten through four in the Las Cruces, New Mexico, public elementary schools in January of 1971.

This preliminary instrument consisted of a series of 21 illustrations depicting a variety of social and academic situations. Within each illustration was at least one child in a positive role, and at least one child in a negative role. The examinee was instructed to indicate the child who most nearly agreed with his perceptions of himself. Specifically, the child was told a brief story about each picture and was asked to draw a circle around the person in the illustration who was most like himself. For example, one item depicted a child studying intently in the classroom, and a second child not concentrating on an academic task but gazing out of the window. The examinee was asked to circle the child who he felt was most like himself. Figures 1 and 2 present illustrations from the test with their narratives. Test administration, by group, encompassed a total testing period of 30 minutes.

This initial PSCS was designed to measure five aspects of self-concept which were felt to be relevant to school success. These were:

1. Behavior. How the child perceived himself, good or bad, in his interrelationships with his parents.

2. Intellectual. How the child perceived himself in the academic setting.

3. Physical Appearance. How the child perceived himself physically, i.e., large or small, neat or ragged.

4. Peer Relationships. How the child perceived himself in his interactions with his peers.

5. Emotional State. Did the child perceive himself as being happy or sad, crying or smiling?

Factor analysis of this instrument revealed six factors instead of the five originally hypothesized. These were:

1. Aggressiveness vs. cooperativeness in peer relationships. Does the child share and cooperate rather than be aggressive and hostile?

2. Intellectual self. How the child perceives himself in the academic setting. Does he like or dislike school?

3. Peer ostracism vs. peer acceptance. How the child perceives himself relative to being accepted or rejected by his peers.

4. Helping relationships. Does the child perceive himself as being generally independent, or does he see himself depending on assistance from his peers in working at a task?

5. Physiological self. How the child perceives himself relative to physical size, i.e., large or small.

6. Adult acceptance or rejection. Does the child perceive adults (parents, teachers) as being basically accepting or rejecting?

An analysis of the results of the preliminary administration of the PSCS is presented in Appendix C.

This study is aimed at further development of the PSCS for grades kindergarten through four.

Chapter 2

METHOD

In order to further refine the PSCS, a revision of the test was constructed (Muller & Leonetti, 1971). This test, the Primary Self-Concept Scale′ (PSCS′), included 14 items from the first form, plus 10 additional new items. The PSCS′ was designed to measure the six factors of self-concept derived from the analysis of the PSCS, plus two additional factors, emotional self and success/non-success. The listing of factors and the items assumed to relate to those factors are outlined in Table 1.

Procedure

The PSCS′ was administered to primary school pupils in four elementary schools in the Las Cruces, New Mexico, public school district, one federally-funded preschool in the Las Cruces vicinity in March, April, and May of 1972, and one federally-funded primary school project in Silver City, New Mexico. Children from the Las Cruces schools constituted a large sample of 372 subjects (sample number one, grades K-4), and a smaller cross validation sample of 100 (sample number two, grades K-4). The children from Silver City constituted a second cross validation sample of 178 subjects (sample number three, grades 1-3).

Phi correlations between pairs of test items were computed on the test performance of the three samples. The resulting inter-correlation matrices were subjected to a series of factor analyses.

TABLE 1

Hypothesized Factor Structure of the PSCS'

Hypothesized factors	Items
1. Peer aggressiveness/cooperation. Assesses child's view of himself in sharing and cooperating with his peers.	(11),(20),(22)
2. Peer ostracism/acceptance. Assesses child's view of his acceptance by his fellow students.	(16),(18),(24)
3. Intellectual self-image. Assesses child's view of himself as a student, i.e., his like and dislike of school.	(2),(4),10,(19)
4. Helpfulness. Assesses child's role as one who helps others/one who is helped by others, as seen by the child himself.	1,(8),(9)
5. Physiological self. Assesses how child sees his physical self, i.e., large or small, strong or weak, dark-skinned or light-skinned.	13,15,21,23[a]
6. Adult acceptance/rejection. Assesses child's view of his relations with adult figures (parents, teachers); whether he sees them as accepting or rejecting him.	(3),(5),14
7. Emotional self. Assesses how the child sees himself emotionally, i.e., happy or sad, angry or not angry, or as a child who laughs more than he cries.	7,(12)
8. Success/nonsuccess. Assesses the child's view of himself as to success at task-oriented pursuits.	6,17

[a]This item is not scored. It is included for future research purposes. The item is intended to reflect the self-perceptions of the child with regard to skin color.

Note.--Item numbers in parentheses indicate those items retained from the original test.

Item correlation matrices on the pre- and posttest for sample one were factor-analyzed to eigen values of 1.0, and also forced into eight, seven, and then six factors.

The results of these analyses were examined for logical consistency of items within factors and their relationship to the constructs outlined in Table 1. On the basis of these analyses, a subset of items with a new set of factors was selected as a second revision (PSCS″). Data from cross validation samples two and three were then analyzed and compared to the results from the large sample.

Reliability

Samples number one and number two were used to evaluate reliability via the test-retest procedure. Test and retest total scores on both the PSCS′ and the PSCS″ were correlated using the Pearson product moment correlation technique.

Validity

Validity of the PSCS′ and the PSCS″ was assessed through construct, cross, content, and concurrent validation procedures.

Construct validity. Factor analysis procedures were utilized in the analysis of the data for the PSCS″ as a means of determining the extent to which this instrument maintained its factor stability. The following phi coefficient matrices were computed and factor-analyzed for the second revision (PSCS″):

1. Pretest.
2. Posttest.

3. Pretest--odd-numbered subjects.
4. Pretest--even-numbered subjects.
5. Posttest--odd-numbered subjects.
6. Posttest--even-numbered subjects.
7. Pretest--male subjects.
8. Pretest--female subjects.
9. Posttest--male subjects.
10. Posttest--female subjects.

Coefficients of congruence (Harman, 1967) were computed for each of the factors on the pre- and posttest, and for each of the factors in the odd/even analyses on the pre- and posttest (sample number one). This procedure provided a means of quantifying factor stability.

Additionally, five doctoral students in the Department of Counseling and Educational Psychology at New Mexico State University were asked to independently place the 15 PSCS'' items into the six revised factor categories. Thus, another means of quantifying factor stability was provided.

Cross validation. The PSCS' was administered to a second sample of 90 children, also from Title I schools, and 10 children from a federally-funded preschool program in grades kindergarten through four (sample number two). This group was equally divided in each grade level between Anglo and Spanish-surnamed and/or Spanish-speaking subjects. Anglo subjects were incorporated into this cross validation sample to permit an examination of the resulting factor structure in a more heterogeneous sample. A consistent factor

structure emanating from this ethnic mixture would further enhance the validity of the PSCS′.

An additional cross validation sample (sample number three), consisting of 178 subjects of Spanish-Mexican ancestry in grades one through three, was employed. These subjects were from the Silver City, New Mexico, school district.

Content validity. Three specialists in testing and test construction were asked by the investigator to examine each item of the PSCS′ to determine content or face validity. Those selected were (a) Alan J. Fitzpatrick, Ph.D., Assistant Professor of Counseling and Educational Psychology at New Mexico State University; (b) David A. Sachs, Ph.D., Assistant Professor of Psychology at New Mexico State University; and (c) Timothy J. Pettibone, Ed.D., Chairman, Department of Educational Administration at New Mexico State University.

Selection of these critics was based on their knowledge and expertise in the areas of testing and evaluation. The first and second of these specialists teach courses related specifically to testing. The third specialist is knowledgeable in test design and statistics and has personally utilized the PSCS′ as one of the instruments in the evaluation of a bilingual program in Silver City, New Mexico.

Concurrent validity. The Koppitz (1968) Human Figure Drawing Test (HFDT) was administered to all subjects in sample number one in April, 1972. All subjects were selected from Title I schools.

From this group, 100 tests were selected on the basis of highest and lowest total scores on the PSCS′. The 10 highest scoring and the 10 lowest scoring subjects were selected across grade levels (K-4).

In scoring the HFDT's, both type and number of emotional indicators were recorded. Scoring and enumeration of emotional indicators were done by a doctoral student in the Department of Counseling and Educational Psychology at New Mexico State University.

Pearson product moment correlation coefficients were computed for the total number of emotional indicators and total scores on the PSCS′ and the PSCS″. Coefficients of the total group and by grade level for the PSCS′ and the PSCS″ were investigated. Additionally, the relationship between emotional indicators related to academic achievement, and the subscore of intellectual self-image on the PSCS″, was examined via the Pearson product moment correlation coefficient.

Subjects

The majority of the subjects which comprise this study came from four Title I elementary schools in the Las Cruces, New Mexico, School District No. 2. One group of 10 Anglo subjects was selected from a bilingual-bicultural preschool project in the Las Cruces vicinity. An additional sample of 178 subjects was utilized from a federally-funded primary education program in Silver City, New Mexico.

The percentage of students from low income families from the four Title I Las Cruces schools was 49.8% with 97% of the total

school population being Spanish-surnamed; 41.0% with 97% of the total school population being Spanish-surnamed; 39.9% with 79% of the total school population being Spanish-surnamed; and 22.9% with 58% of the total school population being Spanish-surnamed. For the Silver City, New Mexico, sample, the average family annual income was $3,000.

The family financial background of the 10 Anglo subjects from the bilingual-bicultural preschool varied. Approximately one-half were from families earning $3,000 or less annually. The remaining half were from families earning between $3,000 and $10,000 per year. Selection of this financially diversified group of subjects was due to the difficulty in finding a representative sample, as there are no publicly supported preschool (kindergarten) programs in the State of New Mexico.

Sample number one was comprised of students from the Las Cruces Bilingual Project in grades kindergarten through four. Subjects from the experimental and control classrooms were used. All subjects were of Spanish and/or Mexican descent.

Cross validation sample number two was composed of 10 children of Anglo descent and 10 children of Spanish and/or Mexican descent at each grade level, kindergarten through four.

Cross validation sample number three consisted of 178 Spanish-surnamed subjects from a Bilingual Orientation and Language Development Program encompassing grade levels one through three. The total number of subjects and their ethnicity are summarized in Table 2.

TABLE 2

Research Samples

Grade	Number of subjects	Ethnicity
	Sample 1	
K	59	M/S-A[a]
1	100	M/S-A
2	55	M/S-A
3	76	M/S-A
4	82	M/S-A
Total	372	
	Sample 2 (cross validation)	
K	20	10 M/S-A 10 Anglo
1	20	10 M/S-A 10 Anglo
2	20	10 M/S-A 10 Anglo
3	20	10 M/S-A 10 Anglo
4	20	10 M/S-A 10 Anglo
Total	100	
	Sample 3 (cross validation)	
1	34	M/S-A
2	74	M/S-A
3	70	M/S-A
Total	178	

[a]Denotes Mexican and/or Spanish-American.

Chapter 3

PRESENTATION OF DATA

Factor Structure

Pre- and posttest item intercorrelation matrices were constructed for the sample by computing phi correlations between pairs of items. Each of these matrices was then subjected to a principal components factor analysis with a varimax rotation (Dallin & Croft, 1965). These analyses were forced into eight factors. Six or possibly seven identifiable factors instead of the initially hypothesized eight factors of self-concept seemed to be delineated. When reanalyzed with the eigen value set at 1.0, six or possibly seven identifiable factors were again discerned. The pre- and posttest data for this sample were then forced into seven factors. These analyses again revealed six identifiable factors. Pre- and posttest data were then forced into six factors. These analyses suggested that 15 or 16 items were defining six identifiable factors. These six factors and their concomitant 16 item numbers are summarized in Table 3. When the six forced-factor analysis procedure was applied, factors one (peer aggressiveness) and six (adult acceptance) of the eight factors listed in Table 1 disappeared. Factor three (intellectual self) changed slightly to an emphasis on the child's perception of his ability to conform to classroom behavior expectations.

TABLE 3

Sixteen Items Forced into Six Factors

	Factor	Item number
I	Success/nonsuccess	6,10,17
II	Peer ostracism/acceptance	16,18,23
III	Physiological self	13,15,21
IV	Intellectual self	2,4,19
V	Helpfulness	8,9
VI	Emotional self	7,12

In order to evaluate the stability of the resulting factor structure, the sample one pre- and posttest data, with each test subdivided into odd-numbered and even-numbered subjects, were factor-analyzed using the 16 items forced into six factors. These analyses revealed that item 21 did not consistently load on the same factor. It loaded with the physical size factor, the success/frustration factor, and the dependency factor on the various analyses.

Item 21 was designed to measure perceived physical size. Examination of the illustration suggested that subjects may have been interpreting the item as manifesting aggressiveness, dependency/fearfulness, or physiological self. Thus, item 21 was not included in the final set of items. The only other item which exhibited a degree of instability was item 12, which failed to load on the appropriate factor on only one analysis.

The retained 15 items comprising the PSCS'' were then reanalyzed to six factors. Both pretest and posttest analyses yielded the same factor structure. The data were then subdivided as follows:

1. Pretest--odd-numbered subjects.
2. Pretest--even-numbered subjects.
3. Posttest--odd-numbered subjects.
4. Posttest--even-numbered subjects.
5. Pretest--male subjects.
6. Pretest--female subjects.
7. Posttest--male subjects.
8. Posttest--female subjects.

These subsets were also subjected to factor analysis forced into six factors. These analyses are further summarized in Table 4. Inspection of this table reveals a relatively high degree of factor stability. Eigen values for each of these analyses were very close to one when the sixth factor was extracted. These values are summarized in Table 5. The resulting six factors with their 15 concomitant item numbers are presented in Table 6.

Reliability

The Pearson product moment correlation coefficients were computed between test and retest scores of the PSCS' and the PSCS'' for samples one and two. These coefficients, presented in Table 7, reveal a sufficient degree of test-retest reliability. Reliability was higher for sample one than for sample two, and higher for the PSCS'' than for the PSCS'. All coefficients were significant ($p < .01$).

TABLE 4

Factor Structure of Each Six Factor PSCS"
Pretest or Posttest Analysis

Analysis	Factors I	II	III	IV	V	VI
Pretest	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
Posttest	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
Pretest--Odd	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
Pretest--Even	6, 17	16,18,23	13,15	2,4,19,10	8,9	7,12
Posttest--Odd	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
Posttest--Even	6,10,17,12	16,18,23	13,15	2,4,19	8,9	7
Pretest--Male	6, 17	16,18,23	13,15	2,4,19,10	9	7,12,8
Pretest--Female	(6)[a],10,17	16,18,23[b]	13,15	2,4,19	8,9	7,12
Posttest--Male	6,10,17	16,18,23	13,15	2,4,19	8	7,12,9
Posttest--Female	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12

[a]Items 10 and 17 loaded together and 6 loaded separately.

[b]Items 16, 18, 23, 7, and 12 loaded on one factor.

TABLE 5

Eigen Values for Each of the PSCS'' Pretest or Posttest Factor Analyses

Analysis	Factors extracted					
	I	II	III	IV	V	VI
Pretest	2.78	1.68	1.26	1.16	1.14	1.08
Posttest	3.30	1.75	1.42	1.26	1.11	1.03
Pretest--Odd	2.88	1.65	1.42	1.24	1.13	1.02
Pretest--Even	2.88	1.75	1.28	1.19	1.12	1.06
Posttest--Odd	3.25	1.88	1.64	1.37	1.08	.99
Posttest--Even	3.48	1.76	1.43	1.18	1.08	.99
Pretest--Male	2.93	1.98	1.28	1.17	1.09	1.06
Pretest--Female	2.78	1.64	1.41	1.27	1.12	1.06
Posttest--Male	3.46	1.09	1.53	1.30	1.10	.87
Posttest--Female	3.22	1.61	1.43	1.26	1.25	1.12

TABLE 6

Fifteen Items Forced into Six Factors

	Factor	Item number
I	Success/nonsuccess	6,10,17
II	Peer ostracism/acceptance	16,18,23
III	Physiological self	13,15
IV	Intellectual self	2,4,19
V	Helpfulness	8,9
VI	Emotional self	7,12

TABLE 7

Test-Retest Correlation Coefficients for the Las Cruces Sample of 372 Subjects and for the Las Cruces Cross Validation Sample of 100 Subjects on the PSCS′ and the PSCS″

Test	Grade	r
	Sample Number 1 (N=372)	
PSCS′	K-4	.79
PSCS″	K-4	.91
	Sample Number 2 (N=100)	
PSCS′	K-4	.77
PSCS″	K-4	.57

Validity

Construct validity. The pre- and posttest PSCS″ factor analyses resulted in the same 15-item six-factor structure. Analyses of eight subdivisions yielded highly consistent factor structures with three analyses yielding structures in perfect agreement, three analyses with one misplaced item each, one analysis with two misplaced items, and one with three misplaced items. On nine of 14 pre- and posttest factor analyses of the PSCS′, the 15 items constituting the PSCS″ remained intact in their particular factor cluster. A summary of the 10 factor analyses of the PSCS″ is presented in Table 4. A complete listing of the results of the 33 factor analyses, which describe only the consistency of the 15 items of the PSCS″, is summarized in Table 19 in Appendix D. Information concerning the rotated factor matrices for the 33 analyses may be obtained by contacting the investigator at New Mexico State University.

Coefficients of congruence (Harman, 1967) for the PSCS″ were computed for each of the six factors on the sample one pre- and posttest, the pretest odd- and even-numbered subjects, and the posttest odd- and even-numbered subjects. Table 8 summarizes these analyses. Inspection of this table indicates a high degree of factor congruency with all but one coefficient exceeding the .95 value suggested by Harman (1967).

Construct validity was further evaluated by having five doctoral students in Counseling and Educational Psychology at New Mexico State University place PSCS″ items into six factor categories. The judges were given the description of each factor in addition to each

TABLE 8

Coefficient of Congruence -- Six Factors, 15 Items -- for the Las Cruces Sample of 372 Subjects; Pretest and Posttest

	Factor					
	I	II	III	IV	V	VI
Pretest-Posttest						
Coefficient of Congruence	.997	.998	.999	.997	.999	.996
Pretest Odd-Pretest Even						
Coefficient of Congruence	.980	.995	.988	.987	.992	.999
Posttest Odd-Posttest Even						
Coefficient of Congruence	.967	.999	.998	.999	.988	.912

illustrated item with its concomitant directions. Results of this procedure are presented in Table 9. Inspection of Table 9 indicates several item discrepancies. This observation, in addition to personal interviews with several of the judges, prompted a redefinition of factor descriptions and slight revisions in the directions for those items most frequently misplaced. The six revised factors and their concomitant descriptions are listed in Table 10. Utilizing the revised directions, seven doctoral students and four doctoral level faculty members from the Department of Counseling and Educational Psychology at New Mexico State University were again asked to follow the same procedure. These results are summarized in Table 11. Inspection of this table indicates high degree of agreement between these additional independent judges.

Cross validation. Factor analysis of the data gathered on the sample two pretest revealed six of the 15 items of the PSCS″ not clustering appropriately. For the same sample, this time utilizing the posttest, factor analysis discerned only three misplaced items.

Factor analysis of the PSCS″ for sample three revealed four items not clustering properly. Table 12 summarizes the factor structure of the PSCS″ cross validation data.

Content validity. The written comments of the three specialists in testing and evaluation concerning the face or content validity of the PSCS′ are presented below:

Alan J. Fitzpatrick, Ph.D., Assistant Professor, Department of Counseling and Educational Psychology, New Mexico State University, wrote:

TABLE 9

Doctoral Student Categorization of 15 Items into Six Factors

Judge	Factors I	II	III	IV	V	VI
1	6, 17	16,18,23	13,15	2,4,19,(10)	8,9	7,12
2	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
3	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
4	6,10,17,(4)	16,18	13,15	2, 19	8	7,12,9,23
5	6, 17	16,18,23,(2)	13,15	4,(19),(10)	8,9	7,12

TABLE 10

A Listing of Six Revised Factors of the PSCS''

	Factor
I	Success: Assesses child's perception of his tendency to succeed or fail in task-oriented pursuits.
II	Peer acceptance: Assesses child's perception of his acceptance by his peer group.
III	Physical size: Assesses child's perception of his relative physical size.
IV	Student self: Assesses child's perception of his ability to conform to classroom behavior expectations.
V	Helpfulness: Assesses child's perception of himself in the helper-helpee relationship.
VI	Emotional state: Assesses child's perception of his emotional state, i.e., happy or sad, angry or not angry.

TABLE 11

Doctoral Student and Doctoral Level Faculty Member Categorization of 15 Items into Six Factors

Judge	Factor I	II	III	IV	V	VI
1[a]	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
2[a]	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
3[a]	6,10,17	16,18,23,2	13,15	4,19	8,9	7,12
4[a]	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
5[a]	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
6[a]	6, 17	16,18,23	13,15	2,4,19,10	8,9	7,12
7[b]	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
8[b]	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
9[a]	6, 17	16,18,23	13,15	2,4,19,10	8,9	7,12
10[b]	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
11[b]	6,10	16,18,23	13,15	2,4,19	8,9	7,12,17

[a]Doctoral student in Counseling and Educational Psychology at New Mexico State University.

[b]Doctoral level faculty member in Counseling and Educational Psychology at New Mexico State University.

TABLE 12

Factor Structure of Each 15-Item, Six-Factor Cross Validation Analysis

Analysis	Factors					
	I	II	III	IV	V	VI
PSCS"	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
Cross Validation Sample 2 Pretest	6,10,(12)	16,18	15	2,4,19,(7)	9,17	8,13,23
Cross Validation Sample 2 Posttest	6,10	16,18,23	13,15	2,4,19,(17)	8, (12)	7,(9)
Cross Validation Sample 3 Test	6,10,17	16,18,23	13,15,(19)	(4),(8)	(2),9	7,12

The development of the Primary Self-Concept Scale allows for a quantification of some of the variables normally assessed by a professional psychologist through projective techniques. This instrument both gains the ease of administration and the ability to be used at a lower level of professional expertise as an objective screening instrument, while at the same time losing the clinical insights that can be gained in a one-to-one setting with projective instruments that are either more ambiguous or allow for a wider range of response. As such, this instrument appears eminently suited to filling a gap in the school counselors' armanentum of screening instruments.[1]

David A. Sachs, Ph.D., Assistant Professor, Department of Psychology, New Mexico State University, wrote:

The efforts to develop an instrument to assess-self image in an easily scorable manner are noteworthy. The "factors" appear useful in providing information which can lead the teacher to help the child in a variety of developmental areas. However, the factor "physiological self" appears relative to the child's physical size in that dimensions of large and small, and strong and weak, are relative. This is especially true when the child has a number of siblings or may have been retained in school.

The factor of "helpfulness" is also subject to situational elements. Might it be more useful to create a stimulus situation in which (a) a child has difficulty and asks for help or does not seek help, and (b) a child is described as competent, and when asked for help, either provides help or engages in a different activity.

The use of content validity can be quantified by having children and teachers sort the stimulus materials into predetermined categories. One would hope for a high agreement between examiner defined factors and child-teacher sortings.[2]

Timothy J. Pettibone, Ed.D., Chairman, Department of Educational Administration, New Mexico State University, wrote:

A careful item by item perusal of the Primary Self-Concept Scale and its directions, which I have used to assess this aspect of the Silver City, New Mexico, Bilingual

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[1]Personal communication, February, 1972.

[2]Personal communication, March, 1972.

> Education Program, indicates that this instrument has much potential in the realm of affective measurement. The factors relating to self-concept which this instrument is attempting to tap appear to be most crucial to a mentally healthy and well-adjusted child's total process of self-perception. Administration instructions are quite detailed and explicit. The provision for administering the test by teachers also enhances its utility.
>
> I feel that this instrument presents a feasible means by which educators can appropriately assess these aspects of the self-concept of Spanish-surnamed primary school children, grades kindergarten through four.[3]

Concurrent validity. The Pearson product moment correlation coefficients for the total number of emotional indicators on the HDFT and the total scores on the PSCS′ and the PSCS″ for each grade level for sample number one are presented in Table 13.

The correlation coefficient for poor school achievement indicators and the academic self factor subscore on the PSCS″ is also presented in Table 13. None of the correlations is significant at the .05 level of confidence.

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[3]Personal communication, April, 1972.

TABLE 13

Correlation Coefficients for Emotional Indicators on the HFDT and Total Scores on the PSCS′ and the PSCS″ and Academic Self Factor Score on the PSCS″

Grade	PSCS′ (23 items)	PSCS″ (15 items)
Sample 1 (N=100 Spanish-surnamed subjects)		
K	-.31	-.06
1	-.29	-.08
2	-.22	-.05
3	.15	.003
4	-.01	-.24
Total	-.17	-.09
Poor school achievement and academic self factor score (N= 41 Spanish-surnamed subjects)		
K-4		.24

Chapter 4

DISCUSSION

After a series of factor analyses had been performed, 15 items were found to consistently define six identifiable factors, while eight of the original items were found not to load consistently or meaningfully on any factor. Careful examination of the analyses, item illustrations, and item descriptions read to the children suggested that some of these inconsistently loading items were being misinterpreted by the subjects. Frequently, several factors seemed to be represented within a given item, and subjects appeared to inconsistently respond to these various content dimensions.

For example, item 14, designed to reflect the child-adult relationship factor, entails two illustrations. One depicts a child being scolded on the school playground by a teacher, and the other depicts a child being warmly accepted on the same playground with the same teacher. The illustration depicting the teacher chastising the child appears to connote such concepts as an inability to relate to peers, emotional instability, unsuccessful academic endeavors, or possibly a sense of helplessness in regard to the physical dimension. Additionally, a child may perceive this negative illustration as being conducive to peer acceptance. In several other items, the child in the negative role may actually be displaying societal expectations, particularly item one which depicts one child helping

another tie his shoe. Many kindergarten or first-grade subjects are not expected to tie their own shoes; thus, they may select the negative role because that is their expected role, and their selection does not reflect a negative self-perception. All of these may be contributing to the subject's misrepresentation of the content of a variety of factors within a particular item.

The resulting PSCS″ test-retest correlation coefficient for sample one indicates a reliable measure of self-concept for this population. The lower correlation coefficient for sample two suggests only moderate reliability. This lower reliability may be due to the high percentage of Anglo children in sample two or to the relatively small number of Ss utilized. The use of Ss from a more or less homogeneous socioeconomic level may also have the effect of suppressing the size of the reliability coefficient. Test-retest procedures should be applied to separate large samples of various ethnic groups from a variety of socioeconomic levels as a means of attaining a more accurate measure of test-retest reliability.

Construct validity appears to be adequate. Thirty-three factor analyses were performed, and the six-factor, 15-item matrix maintained its consistency on more than half of these. On five analyses, only one item per analysis did not cluster appropriately.

Coefficients of congruence computed on the various analyses were universally high. It appears that the six-factor, 15-item matrix is sufficiently stable to suggest high construct validity.

Additionally, eleven doctoral students and doctoral level faculty judges evaluated construct validity by placing the 15 PSCS'' item illustrations into the six factor categories. The results of their analyses suggest a high degree of agreement, thus a high degree of construct validity.

Content validity, as assessed by three experts in the field of testing and evaluation, also appears to be quite good. They feel the PSCS' is an easily administered and scored instrument that will be a valuable tool in the assessment of one area of the affective domain. They also believe it has the potential to provide information about children which would assist teachers to facilitate the development of a positive self-perception in the child. One expert expressed reservations in regard to the "relative" aspect of the physiological self and helpfulness factors, but the general consensus of the remaining two is that the PSCS' appears to be a reasonably valid instrument.

Factor analyses of the cross validation samples for the PSCS'' generated slightly inconsistent factor matrices. The posttest for sample two maintained factor stability much better than the pretest on the same sample. Analysis of sample three also produced a somewhat inconsistent factor matrix. These results appear to have been affected by the relatively small number of subjects utilized. It is also possible that this third group of Ss was excessively homogeneous. Although the factor matrices for both cross validation samples are not as stable and consistent across factor analyses as

they are for the large sample one, they do indicate some similarities in terms of factor construct. The number of Anglo subjects used in the Las Cruces cross validation study appears to be too small to determine the utility of the PSCS″ for this ethnic group. Thus, the data suggest that additional cross validation studies with larger, more heterogeneous samples of various ethnic groups and/or socioeconomic levels should be conducted.

Concurrent validation was evaluated by examining the relationship between the Human Figure Drawing Test and total scores of the PSCS′ and the PSCS″ for sample one. None of the correlation coefficients is significant, but for the total PSCS′ and the PSCS″ scores the direction is negative. This inverse relationship does suggest a tendency for subjects who score high on the PSCS′ and the PSCS″ to score low on emotional indicators on the HFDT.

The correlation coefficient for the academic self factor score and emotional indicators related to poor school achievement, although not significant, is positive. This datum indicates that those children scoring high on the PSCS″ also tend to score high on the academic self factor. Apparently, the HFDT and the PSCS″ are not measuring similar qualities of the affective domain. The nonphenomenological, unconscious process which the HFDT is attempting to measure is in marked contrast to the cognitive, phenomenological rationale for the PSCS″, i.e., the assessment of self-perceptions and experiences relative to academic success.

In summary, the research suggests a six-factor, 15-item instrument with stable and identifiable factors. The PSCS'' sample one test-retest reliability is good. For sample two, it is moderate. This indicates a need for further reliability studies with various ethnic groups.

Construct and content validity are the strongest of the four validation studies. Cross validation results are sufficient. Concurrent validity is the weakest. It is proposed that this latter result is due to the inappropriateness of the Koppitz human figure studies. Replication studies with larger samples of subjects from a variety of ethnic groups and socioeconomic levels for further determining reliability and validity are necessary. The PSCS'' will provide a feasible means of further establishing norms, factor stability, reliability, and validity.

The PSCS'' will allow educators to assess the self-perceptions of students early in their school experience. Early identification of those children with negative self-concepts is crucial if remediational procedures are to be employed. Those qualities of the PSCS'' which seem most important in this task are:

1. Suitability for use with the Spanish-speaking minority of the Southwest, but at the same time, applicability to the "Anglo" majority, and also other minorities.
2. Suitability for administration to children in grades K through 4.

3. Suitability for nonreading children.
4. Suitability for group and/or individual administration by the classroom teacher.
5. Administrability in English and/or Spanish.
6. Scorability by clerical assistants.
7. Reliability and validity.
8. Economy.

Emanating from the PSCS'' is a third revision, the Primary Self-Concept Inventory (Muller & Leonetti, 1973). This instrument consists of the 15 retained items of the PSCS'' plus three additional factor items and two initial warm-up items. One item has been added to each of the following factors: physiological self, helpfulness, and emotional state. With these additions, each factor of the Primary Self-Concept Inventory (PSCI) contains three items.

Research areas in which the PSCI may be appropriate might include bilingual education, remedial education programs, other various types of education programs, differences in the self-concept of numerous ethnic groups, the relationship of self-concept to reading and/or general achievement, the relationship of self-concept to skin visibility, etc.

Presently, this instrument is being used to evaluate such programs as the Las Cruces Bilingual Project, a bilingual project in New Jersey, the Regional Resource Center for the Handicapped at New Mexico State University, and in several other independent research projects. Additionally, a number of school districts have made

inquiries about the test and are considering using it to evaluate this aspect of their programs.

The further development and refinement of the PSCI, or other instruments of this nature, should emphasize the obtainment of normative data on a larger scale for a variety of ethnic groups, e.g., Mexican/Spanish-American, Negro, Indian, and Anglo. It is hoped that the PSCI will eventually be expanded to a 30-item instrument consisting of five items per factor. It is reasonable to assume that normative data would enhance its reliability and validity. Further, the possibility of identifying and measuring additional factors should be considered.

The recent voluminous research and writing in the area of growth and development of the preschool child attest to the need for a measure of self-concept for this age group. An experimental modified version of the PSCI might possibly be used with two to four-year-old children. This possibility should be investigated.

Also, there appears to be a need for a viable measure of self-concept in grades five through eight or nine. The PSCI, in verbal form, might prove useful for children in these grade levels. Certainly, this possibility should also be explored.

As a valid and reliable measure of self-concept becomes available, a direct approach to providing information on remediational procedures is possible. Thus, further research should also entail the development of remediational procedures closely related to performance on the PSCI. For example, studies should be conducted

to identify effective procedures for systematically modifying the self-concept in each of the factor areas identified by the test. These procedures should then be published as a supplement to the PSCI.

In essence, the PSCI appears to have much potential for evaluating the individual child's self-perceptions, as well as the effectiveness of educational programs attempting to modify the self-concept of the primary school child.

Chapter 5

SUMMARY

The importance of a positive self-concept to academic achievement is attested to by many educators. There is much evidence in the literature and research to indicate a relationship between self-concept and school achievement, enough, in fact, to conclude that there is a direct causal link between the learner's self-concept and academic achievement. Thus, a major objective of our schools should be the development of positive self-concepts in students.

For the Spanish-surnamed child, the effects of low self-concept on academic achievement are likely to be especially pronounced since his self-perception tends to be more negative than that of the "Anglo" child. Factors such as skin color, language, socioeconomic factors, and cultural characteristics seem to be, at least partially, responsible for this.

As a means of alleviating problems pertaining to self-perception, the self-concept must be assessed. It is essential, if adequate learning is to occur, that children with negative feelings of self-worth be identified, and appropriate remediation procedures be applied early. Apparently, there is no well-developed group test of self-concept which is especially applicable to the Spanish-speaking and/or Spanish-surnamed primary school student. Thus, the purpose of this study was to develop such

an instrument. However, it was hoped that the test would not be limited only to Spanish-surnamed children, but would also be applicable to the Anglo child, as well as to children of other ethnic backgrounds.

This proposed instrument should have the following properties: (a) suitability for children in grades kindergarten through four; (b) applicability to nonreaders; (c) employability with non-English-speaking children; (d) measurability of self-concept relevant to school success; (e) easy administrability to children individually or to groups by the classroom teacher; (f) scorability by clerical assistants; and (g) economy in usage. An instrument appearing to possess these qualities, the Primary Self-Concept Scale (PSCS), was constructed by Muller and Leonetti (1970).

In order to further refine the PSCS, a revision of the test was constructed (PSCS′). This test included 14 items from the first form, plus 10 new additional items. The PSCS′ was designed to measure the following eight factors of self-concept: (a) peer aggressiveness/cooperation, (b) peer ostracism/acceptance, (c) intellectual self, (d) helpfulness, (e) physiological self, (f) adult acceptance/rejection, (g) emotional self, and (h) success/nonsuccess.

The total sample for this study consisted of three groups of subjects. Group one was composed of 372 Spanish-surnamed subjects in grades K-4. Group two was comprised of 100 Anglo and

Spanish-surnamed subjects in grades K-4. Group three was comprised of 178 Spanish-surnamed subjects in grades 1-3.

Phi correlations between pairs of test items were computed on the test performances of the three samples. The resulting intercorrelation matrices were subjected to a series of factor analyses. The results of these analyses were examined for logical consistency of items within factors. On the basis of these analyses, a subset of items was selected as a second revision (PSCS'').

Reliability

Sample one and sample two were used to evaluate reliability via the test-retest procedure. Test and retest total scores on both the PSCS' and the PSCS'' were correlated using the Pearson product moment correlation technique. Coefficients for these analyses revealed a sufficient degree of test-retest reliability.

Validity

Construct validity. Factor analysis procedures were utilized in the analysis of the data for the PSCS'' as a means of determining the extent to which this instrument maintained its factor stability. Factor analyses of several sample divisions revealed highly consistent factor structures. Coefficients of congruence (Harman, 1967) were computed for each of the factors on the pre- and posttest, and for each of the factors in the odd/even analyses on the pre- and posttest for sample one. These analyses supported the conclusion of high factor congruency.

Additionally, doctoral level faculty members and doctoral students in the Department of Counseling and Educational Psychology at New Mexico State University were asked to independently place the 15 PSCS'' items into the six factor categories. Inspection of these results indicated a high degree of agreement between these independent judges.

Cross validation. The PSCS' was administered to a second group of 100 children from three elementary schools in Las Cruces. This group was equally divided in each grade level (K-4) between Anglo and Spanish-surnamed subjects. An additional cross validation sample consisting of 172 subjects of Spanish-Mexican ancestry in grades one through three was employed. This sample was obtained in Silver City, New Mexico. Factor analyses revealed moderate factor stability across these samples.

Content validity. Three specialists in testing and evaluation were asked by the investigator to examine each item of the PSCS' to determine content or face validity. These analyses indicated a reasonable degree of content validity.

Concurrent validity. Utilizing the total scores on the PSCS', the 10 highest scoring and the 10 lowest scoring subjects from the large Las Cruces sample of 372 were selected across grade levels (K-4). The Human Figure Drawing Test for these subjects was scored for emotional indicators. Additionally, the emotional indicators related to academic achievement were also recorded. There appeared to be no relationship between HFDT total scores and PSCS'' and PSCS'

total scores, and the HFDT academic achievement scores and the PSCS" total scores for the academic self factor.

Emanating from the PSCS" is the third revision, the Primary Self-Concept Inventory (PSCI). This revision will be published by the Urban Research Group in Austin, Texas, in January, 1973.

Studies concerning the further development and refinement of the PSCI and other various instruments of this nature, including subjects from a variety of age levels, ethnic groups, and socio-economic levels, should be conducted. Further research should also entail the development of remediational procedures closely related to performance on the PSCI. If subsequent studies reveal successful procedures and techniques, these findings should be published as a supplement to the PSCI.

Research areas for which the PSCI may be appropriate might include bilingual and remedial education programs, other various types of education programs, differences in the self-concept of numerous ethnic groups, the relationship of self-concept to reading and/or general academic achievement, and the relationship of self-concept to skin visibility.

The PSCI appears to have much potential as a tool for the assessment of the self-concept of the primary school child. This is particularly true when it is used with children of Spanish/Mexican origin from the Southwest. This will allow school personnel to address the issue of self-concept development early in the child's academic career.

REFERENCES

Ainsworth, C. L. (Ed.) Teachers and counselors for Mexican-American Children. Austin, Texas: Southwest Educational Development Corp., 1969.

Beatty, W. H. (Ed.) Improving educational assessment and an inventory of measurers of affective behavior. Washington: Association for Supervision and Curriculum Development, 1969.

Bledsoe, J. C. Self-concepts of children and their intelligence, achievement, interests and anxiety. Childhood Education, 1967, 43, 436-438.

Bolea, A. S., Felker, D. W., & Barnes, M. D. A pictorial self-concept scale for children in K-4. Journal of Educational Measurement, 1971, 8, 223-224.

Caliguri, J. The self-concept and the poverty child. Journal of Negro Education, 1966, 35, 280-282.

Campbell, P. B. School and self-concept. Education Leadership, 1967, 24, 510-515.

Carlson, R. K. Raising self-concepts of disadvantaged children through puppetry. Elementary English, 1970, 47, 349-355.

Carlton, L., & Moore, R. H. The effects of self-directive dramatization on reading achievement and self-concept of culturally disadvantaged children. Reading Teacher, 1966, 20, 125-130.

Carter, T. P. Mexican-Americans in school: A history of educational neglect. New York: College Entrance Examination Board, 1970.

Christian, C. O., Jr. The acculturation of the bilingual child. Modern Language Journal, 1965, 49, 160-165.

Coller, A. R. Self-concept measures. Head Start Test Collection Report, Department of Health, Education & Welfare, Office of Child Development, Washington, April, 1971.

Dallin, E., & Croft, D. B. "Scientific subroutine package." University of Utah, 1965.

Davison, N. J. Spanish and New Mexico. New Mexico School Review, 1966, 46, 31.

Durrett, M. E., & Davy, A. J. Racial awareness in young Mexican-America, Negro and Anglo children. Young Children, 1970, 26, 16-24.

Ether, J. A. Cultural pluralism and self-identity. Educational Leadership, 1967, 27, 232-234.

Evans, E. D. "Instrumentation in early childhood education research." Prepared for Early Childhood Education LTI, National Leadership Training Institute in Early Childhood Education, State College of Arkansas, Conway, Arkansas, 1970.

Fogel, W. Mexican-Americans in Southwest labor markets. Los Angeles: Mexican-American Study Project, University of California, 1965.

Gill, M. P. Pattern of achievement as related to the perceived self. Washington: American Educational Research Association, 1969. Pp. 1-13. ERIC # ED 029 336.

Gillman, G. B. "The relationship between self-concept, intellectual ability, achievement, and manifest anxiety among select groups of Spanish-surname migrant students in New Mexico." Unpublished doctoral dissertation, University of New Mexico, 1969. ERIC # ED 029 723.

Gonzales, N. L. The Spanish Americans of New Mexico: A distinctive heritage. Los Angeles: Mexican-American Study Project, University of California, 1967.

Guerra, M. H. Why Juanito doesn't read. California Teachers Association Journal, 1965, 61, 17-19.

Hamachek, D. E. Encounters with the self. New York: Holt, Rinehart & Winston, 1971.

Harman, H. H. Modern factor analysis. Chicago: University of Chicago Press, 1967.

Jersild, A. T. In search of self. New York: Columbia University, Teachers College, Bureau of Publications, 1952.

Justin, N. Culture conflict and Mexican-American achievement. School and Society, 1970, 98, 27-28.

Koppitz, E. M. Psychological evaluation of children's Human Figure Drawings. New York: Grune and Stratton, 1968.

Landsman, T. The role of the self-concept in learning situations. High School Journal, 1962, 45, 289-295.

Levine, H. Bilingualism: Its effects on emotional and social development. Journal of Secondary Education, 1969, 44, 69-73.

Lipton, C. Cultural heritage and the relationship to self-esteem. Journal of Educational Sociology, 1963, 36, 23-212.

Lloyd, J. The self-image of a small black child. Elementary School Journal, 1967, 67, 407-411.

Maldonado, B. M. "The impact of skin color on self concept of Mexican-American high school students." Unpublished doctoral dissertation, New Mexico State University, 1972.

Manuel, H. T. Spanish-speaking children of the Southwest. Austin: University of Texas Press, 1965.

Meyerson, M. D. The bilingual child. Childhood Education, 1969, 45, 525-527.

Morgan, H. Demands for recognition and beyond. Educational Leadership, 1969, 27, 229-231.

Morris, D. C. "The relationship between self concept and academic achievement and between level of aspiration and academic achievement." Dissertation Abstracts, 1966, 27, 979A-980A.

Morse, W. C. Self-concept data. Bulletin of the National Association of Secondary School Principals, 1964, 48, 23-27.

Muller, D. G., & Leonetti, R. Primary Self-Concept Scale. Las Cruces, New Mexico: Las Cruces Public Schools, School District No. 2, 1970.

Muller, D. G., & Leonetti, R. Primary Self-Concept Scale'. Fort Worth, Texas: National Consortia for Bilingual Education, 1971.

Muller, D. G., & Leonetti, R. Primary Self-Concept Inventory. Austin, Texas: Urban Research Group, 1973.

Newton, E. S. Bibliotherapy in the development of minority groups' self concept. Journal of Negro Education, 1969, 38, 257-265.

Olivero, J. L., et al. The Chicano is coming out of Tortilla Flats--one way or the other. Department of Health, Education & Welfare, Office of Education, Washington, July, 1968. Pp. 1-42. ERIC # ED 025 351.

Olson, A. V. Teaching culturally disadvantaged children. Education, 1967, 87, 423-425.

Ott, E. A. "Basic education for Spanish-speaking disadvantaged pupils." ERIC Clearinghouse on Rural Education, Las Cruces, New Mexico, 1969. Pp. 1-20. ERIC # ED 020497.

Perkins, H. V. Factors influencing change in children's self-concepts. Child Development, 1958, 29, 221-230.

Purkey, W. W. Self-concept and school achievement. Englewood Cliffs, N.J.: Prentice-Hall, 1970.

Rodriguez, A. Mañana in motion. National Elementary Principal, 1970, 49, 52-56.

Roseman, N. The school and self-realization. Educational Theory, 1964, 14, 282-292.

Roth, R. M. The role of self-concept in achievement. Journal of Experimental Education, 1959, 27, 265+.

Singer, H. Bilingualism and elementary education. Modern Language Journal, 1956, 40, 444-458.

Steglish, W. G. Sociological implications for a bilingual preparatory program. In C. L. Ainsworth (Ed.), Teachers and counselors for Mexican-American children. Austin, Texas: Southwestern Educational Development Corp., 1968.

Steiner, S. La Raza: The Mexican Americans. New York: Harper & Row, 1970.

Stevenson, H. W., & Stewart, E. C. A. A developmental study of racial awareness in young children. Child Development, 1958, 29, 399-409.

Thomas, D. H. Three methods of developing reading readiness in Spanish-speaking children in first grade. Reading Teacher, 1966, 20, 38-42.

Trevino, B. G. Bilingual education--A psychological helping hand. Texas Outlook, 1969, 53, 24-25.

Urquides, M. Tucson's tale of two cultures. National Education Association Journal, 1966, 56, 56-62, 88-89.

U.S. Department of Commerce. Current population report. (Series P-20, No. 238) Washington, D.C.: U.S. Department of Commerce, 1972.

Vetter, C. Trouble spot for bilingual students. Texas Outlook, 1968, 52, 31, 52.

Williams, R. L., & Cole, S. Self-concept and school adjustment. Personnel and Guidance Journal, 1968, 46, 478-481.

Zintz, M. V. Education across cultures. Dubuque, Iowa: W. C. Brown, 1963.

APPENDIX A

RELATED RESEARCH: SELF-CONCEPT AND ACADEMIC ACHIEVEMENT

SELF-CONCEPT AND ACADEMIC ACHIEVEMENT

Roth (1959) conducted a study concerning the role of self-concept in academic achievement. The sample consisted of 54 freshmen males and females drawn from three reading improvement classes at the University of Texas. The self-perceptions of the following three major groups were examined: the improver, nonimprover, and attrition group. Instruments used in the study were the Q-sort technique and the Sentence Completion Technique (selected from four dimensions of the sort). Grade point averages before and after the program were also utilized. Following are several findings noted in the study: (a) There were significant differences in general defensiveness of three groups. The attrition group was most defensive and the improver least defensive. (b) Significant differences were found in the amount of defensiveness in the self-concept in the following order from most defensive to least defensive: attrition, nonimprover, and improver. (c) There were significant differences in the amount of defensiveness in the self as a reader conception. The three groups ranked in the following order from most defensive to least defensive: attrition, nonimprover, and improver. (d) The improvers had the highest grade-point averages for the semester previous to the one in which they had enrolled in the program. This study clearly demonstrated a positive relationship between self-concept and academic success.

Gill (1969) examined the relationship of the perceived self to academic achievement for public school children. The subjects were 1,424 ninth-grade students whose self-perceptions were inferred from ratings on each of the eight factors of the Perceived-Self Scale. Gill concluded that the patterns of achievement, defined in terms of discrepancies between predicted and actual levels of achievement, are significantly related to the perceived self as it is inferred from the perceived self-role. He further concluded from this study that its results supported this conclusion with such convincing uniformity that the importance of the role of the self-concept in the educational process needs much more emphasis than it is presently given.

Bledsoe (1967) conducted a study which concerned the relationship of self-concept and academic achievement. His design utilized a random sample of 271 fourth- and sixth-grade boys and girls from four schools in Clarke County, Georgia. The instruments used to measure this relationship were the Self-Concept Scale, consisting of a checklist of 30 trait-descriptive adjectives which the subject checks as characteristic of himself, and the California Achievement Test. Correlations between achievement and positive self-concept were significant for boys. For girls they were not significant, although the direction was positive.

William W. Purkey (1970), in the chapter on "The Self and Academic Performance" from his book Self-Concept and School Achievement, concluded that:

> There is a persistent and significant relationship between the self-concept and academic achievement in each grade level, and that change in one seems to be associated with change in the other. Studies have been presented to indicate how the successful student sees himself, and how his self-concept contrasts with the self-image of the failing student. Although the data do not provide clear-cut evidence about which comes first--a positive self-concept or success, a negative self-concept or scholastic failure--it does stress a strong reciprocal relationship and gives us reason to assume that enhancing the self-concept is a vital influence in improving academic performance [p. 27].

Caliguri (1966), Carlson (1970), Guerra (1965), Landsman (1962), Lloyd (1967), Morse (1964), Olson (1967), Ott (1969), Perkins (1958), Roseman (1964), and Vetter (1968), in their research and writing, also have inferred, directly or indirectly, the importance of a positive self-concept as a prerequisite to academic achievement.

For the Spanish-surnamed child, the prevailing educational system appears to create an anxiety-provoking situation which leads to disassociation, confusion, and disorientation of values (Olivero et al., 1968; Rodriguez, 1970). Levine (1969) concluded:

> It is perhaps remarkable that faced with frustrations both in and out of school, the Spanish-speaking child is not more socially and emotionally maladjusted than he is [p. 72].

There appears to be no doubt that a threatening and frightening series of school years can constrict and close the self, can develop feelings of self-worthlessness, and continue the vicious circle of the avoidance of learning (Landsman, 1962).

APPENDIX B

RELATED RESEARCH: SELF-CONCEPT AND ITS RELATIONSHIP TO SKIN COLOR, LANGUAGE, SOCIOECONOMIC FACTORS, AND CULTURAL CHARACTERISTICS

SELF-CONCEPT AND ITS RELATIONSHIP TO SKIN COLOR, LANGUAGE, SOCIOECONOMIC FACTORS, AND CULTURAL CHARACTERISTICS

Skin Color

A study (Morris, 1966) utilizing white and Negro children hypothesized that these children from a de facto segregated school had less positive self-concepts and lower levels of aspiration, besides lower levels of academic achievement, than did children attending desegregated schools. This study concluded that those children with more positive self-concepts and/or higher levels of aspiration did attain higher academic achievement.

There is a distinct paucity of research which deals specifically with the skin visibility of the Spanish-surnamed minority in the American Southwest. Steiner (1970) is one of a few who have written of the tendency of Mexican-Americans to reject Spanish names and accents when they leave their home area for middle-class suburbia:

> Even their black skin acquires a protective coloring and grows lighter in the bright sunlamps of the suburbs. Many are darker than black tar, but they pretend to be Anglo. They powder the back of their necks in order to look lighter skinned [p. 175].

Gonzales (1967) also discussed the rejection of the darker-skinned Mexican-Americans, particularly those in southern New Mexico, by the Spanish-Americans in the northern sector of the state. Maldonado (1972) stated similar conclusions:

> Color and its implications play a role not only in the attitudes of Anglos toward Mexican-Americans, but within the Mexican-American group itself. In-group terms referring to skin color are many and complex. In identifying an individual as prieto (dark brown), it can mean a simple descriptive term with no hint of value overtones. In adding the diminutive suffix, prietito, a value judgment going beyond mere color is attached to the word. The diminutive can imply condescension, inferring that a person is dark and of limited mental ability, or it can suggest sympathy toward the dark-skinned person. Spoken in a different context, the word prieto may be intoned with a certain inflection which is an outright insult [p. 25].

Durrett and Davy (1970) used a doll technique with children attending interracial prekindergarten programs in California which attempted to ascertain: (a) awareness of the child's own physical characteristics in others; (b) the child's preference for playmates; and (c) the child's readiness to categorize people in color-kind terms of what adults would call race. The subjects consisted of 85 children of Mexican-American, Negro, and Anglo descent. Of the Anglo children, 16 were female and 14 were male; among the Negro group, 14 were female and 11 were male; the Mexican-American group consisted of 17 females and 13 males. Ages ranged from 3 years 11 months to 4 years 11 months, with the mean age being 4 years 7 months. All the subjects were from lower socioeconomic families. The doll technique utilized in this study was developed by Stevenson and Stewart (1958). Only Anglo and Negro dolls were used, and they were identical except for hair and skin color. The Negro doll had medium-brown skin and black wavy hair. In contrast, the Anglo doll had fair skin and blond hair. In addition to the questions asked by Stevenson and Stewart (1958), such as, "Which one looks most like

you?" etc., Durrett and Davy asked, "Why?" The subjects were also asked to match brothers and sisters from among four dolls as a means of determining their classificatory ability. The study found that:

> Anglo subjects expressed the greatest own race preference both in identification and playmate choice. The Negro subjects showed the least own-group preference, particularly in the choice of playmates. The Mexican-American subjects were highly aware of the racial differences between Negroes and Anglos and appeared to have applied positive value terms to the Anglo group [p. 24].

It appears, then, that skin visibility could be a determining factor in the evolving, developing self-concept of the Spanish-surnamed child.

Language

The self-concept of the Spanish-surnamed child is further influenced by the language he speaks upon entering school. Regardless of the level of language development for the primary school Spanish-speaking child, he quite often speaks Spanish, which is considered by many to be a symbol of low social status (Thomas, 1966). Thomas (1966) contended that:

> The school in totally ignoring Spanish cuts off its major avenue of communication with these children. In ignoring Spanish, it also rejects much of what the child is [p. 41].

Very often the first lesson these children learn upon entering school is that just about everything they have learned before is wrong. They are forbidden to use their own language and are expected to learn strange new concepts and attitudes in lessons conducted in a foreign tongue. Quite often the results are failure,

frustration, and confusion, which hamper the educational process for these children, a process that tends to make them ashamed of their own language and cultural heritage (Urquides, 1966). Trevino (1969) maintained that:

> A child's language is part of himself; it is the essence of his being and mental processes. To suppress his means of communication is to close the door to mutual understanding. Without communication there cannot be genuine understanding, trust, and cooperation [p. 25].

Myerson (1969) also believed that language is an important reflection of the culture of a child. The necessity of acquiring a second language implies the need to negotiate another cultural environment. Thus, in this sense, it is easy to see how conflicts in identity arise.

Several other sources, which also attest to the importance of language and its relationship to culture and self-perceptions, are apropos. Davison (1966) wrote:

> We cannot deny a child his language without denying him confidence and pride in his heritage as well. The Spanish-speaking child must not be told and led to see at every turn that the language he has learned from his mother's lips is an undesirable, imperfect, and useless one. A language is the vehicle of the values of its culture, and to deny the merit of the language--overtly by educational decrees, or covertly by indifference, innuendo, or ridicule--is a denial of the culture and the individual [p. 31].

Christian, Jr. (1965) argued that:

> The fact has often been ignored that to human beings born into any language and culture, that language and culture represent their own existence as human beings--their own particular way of being human--and that taking this away from them is in a very real sense an attempt to take away their lives--an attempt to destroy what they are and to make of them a different kind of being [p. 160].

Urquides (1966) cited Calitri as believing that:

> Language begins out of a necessity to express what is inside the self and to communicate it to someone outside the self. And when there are many men living in the same time and place, who by their living together are forced to share burdens, to witness experiences in concert, to react to outer damages as a group, language becomes a means of survival. Further developed, it becomes an art form of a people by which they reveal to one another, and ultimately to succeeding generations, whatever secret and irresponsible emotions and ideas have come to be out of the activity of nerves and glands and brain [p. 6].

Emotional factors are no doubt operating in primary school classrooms that manifest these characteristics. The problems are inflated for the Spanish-speaking child who is trying to manipulate his environment in two languages or, in many cases, in only the Spanish language, which would create frustrated and self-defeated personalities (Ainsworth, 1969; Singer, 1956). To suppress or vilify one's language, then, is to destroy and uproot those self-perceptions which are most crucial and conducive to a healthy personality.

Socioeconomic Factors

Another important factor contributing to the unhealthy psychological milieu of many Spanish-surnamed children in the Southwest is a long and strong history of lower socioeconomic status and conflicting cultural traits and customs (Justin, 1970).

Economically, the Spanish-speaking population in the Southwest ranks near the bottom. The median income of Mexican-American males residing in the urban and rural Southwest in 1959 was $2,768. For the Anglo majority, it was $4,815, nearly double that of the

Mexican-American (Fogel, 1965). The small median income figure is proportional to their inferior occupational status by which many are classified as laborers or semiskilled employees.

The Spanish-surnamed people in the Southwest are important to the agricultural labor supply. In April, 1960, they accounted for 44% of all agricultural employees in this area. Of the urban Spanish-surnamed males, 60% were employed in the semiskilled, craftsmen, and laborer classifications, as compared to only 19% in the white-collar occupations. In contrast, the Anglo majority had almost half their employees in the white-collar group (Fogel, 1965).

Culture

Conflicting cultural traits and customs comprise another factor which appears to influence the self-concepts of the Spanish-surnamed minority in America. These conflicting aspects invoke a vision which depicts the Mexican-American child as a product of a rural folk culture that is quite prevalent in contemporary society. This life style of the Spanish-speaking community, which is generally viewed with reserve by the majority culture, is described in many articles. Some of these traits and customs were aptly summarized by Zintz (1963):

1. Language. The language of the people is Spanish, and is rooted strongly in the whole syndrome of beliefs, values, and practices. Sometimes an expression does lose its significance in the translation--sometimes there is no real word in the second language that means exactly the same thing.

2. Subjugation to Nature. An often observed reaction in the traditional Spanish-American was "If it's God's will."

3. Present Time Orientation. For the traditional Spanish-American family, the only important goal of life was going to heaven after death. One only passed through this temporal life to receive his reward in the next.

4. Status for Who He Was. This assigning status on ascription was dependent upon family lineage.

5. A Particularistic Perspective. A businessman looks first at himself as a brother to the man who is asking for credit; secondly, as a businessman who is dealing with a customer.

6. Emotional Response is Involved. The curanderas and sobadores visited with the family, drank tea, and consulted with the family before diagnosing symptoms. This friendly warmth made the impersonal nature of Anglo doctors unacceptable to the families.

7. Level of Aspiration. "To work a little, rest a little." Follow in one's father's footsteps. Be satisfied with the present.

8. Work. Work to satisfy present need. The Spanish-American was particularistic in nature. He operated on emotional response rather than subordinating the individual to the societal institution.

9. Sharing. Traditional pattern includes sharing with the extended family group. In cultural transition, Spanish-Americans suffered considerable economic poverty. Those established in the dominant culture accepted Anglo values in sharing.

10. Adherence to Time Schedules. The expression for the "clock runs" translated from Spanish is "the clock walks." It has been said that this explains the "mañana" attitude which Anglos have observed in Spanish-Americans.

11. Reaction to Change. We may follow in the old ways with confidence.

12. Non-Scientific Explanation for Natural Phenomena. Witches, fear, and non-scientific medical practices could be used to explain behavior.

13. Humility. Acceptance of the status quo. Submission might categorize behavior.

14. Obedience. The Catholic Church kept life routinized, placed emphasis on obedience to the will of God [pp. 201-202].

The extent to which a Spanish-surnamed student has adopted these traits will influence the extent to which he is alienated from his contemporary majority society.

The previous discussion reported factors inherent in much of the Spanish-speaking culture that tends to disassociate its members from the white Anglo majority. They are factors which influence the self-concept of Spanish-surnamed children, which in turn appears to affect their academic functioning. Public schools in the Southwest, as they do elsewhere in the United States, manifest the middle-class majority culture and values. The Spanish-surnamed child entering school will be confronted with a system in marked contrast to that from which he came.

APPENDIX C

ANALYSIS OF PRELIMINARY PRIMARY SELF-CONCEPT

SCALE (PSCS), JANUARY, 1970

ANALYSIS OF PRIMARY SELF-CONCEPT SCALE (PSCS),
JANUARY, 1970

Reliability

There was no direct evidence relating to the reliability of this instrument. However, factor structure stability and validity do suggest that reliability of the test is moderately high.

Factor Structure

Phi correlations between pairs of items were computed and the resulting intercorrelations matrix was subjected to a factor analysis. On the basis of this analysis, it appeared that, even though several items needed to be discarded because of low factor loadings, six, instead of the original five aspects of self-concept, were in evidence. These six factors and the items loading on those factors are described in Tables 14 and 15.

Validity

Validity of the original test was evaluated through construct, concurrent, and content procedures.

Construct validity. In order to determine the stability of the factor structure (Table 14), the population was divided into two groups, one of odd-numbered students and one of even-numbered students. Test performance of each of these two groups was then factor-analyzed. The results of these analyses are presented in Tables 16 and 17. Of particular interest was the extent to which factors in the second and third analyses resembled those in the

TABLE 14

Factor Matrix from Total Group of Students for the PSCS

Variable	Factor 1	2	3	4	5	6	7
1	-.00	.03	-.08	.15	-.01	-.04	-.84
2	.16	.09	-.27	.59	-.06	.07	-.00
3	.31	.20	-.18	-.09	-.25	.07	-.47
4	.37	.09	-.40	.03	.06	.13	-.12
5	-.04	-.09	-.55	.09	-.21	.01	.06
6	.69	.00	-.26	.11	-.15	-.03	.16
7	.14	-.21	-.10	.40	-.39	-.22	-.06
8	.13	-.09	-.21	.08	-.63	.05	-.01
9	.27	.06	-.65	.10	-.06	.04	.09
10	-.09	.16	-.18	-.03	-.54	.36	.05
11	.06	-.09	-.54	.14	-.10	-.19	-.25
12	.02	-.12	.00	.05	-.04	.83	.00
13	.63	.08	-.01	.01	-.34	-.08	-.02
14	-.11	.22	-.05	.71	-.02	-.08	-.02
15	.06	.77	.05	.07	-.09	-.05	.04
16	-.02	.16	-.59	-.08	-.12	.06	-.26
17	.13	.17	-.39	.02	-.35	-.34	.03
18	.03	.67	-.13	.13	.01	-.06	-.16
19	.69	-.01	-.01	.08	.00	-.00	-.19
20	.23	.14	.07	.04	-.66	-.11	-.20
21	.11	-.01	.05	.68	-.01	.08	-.08

TABLE 15

PSCS Retained Item Loadings by Factor .54 >

	Factor	Original item number	Correlation
I.	Aggressiveness vs. cooperativeness in interpersonal relationships with peers. Sharing and cooperating vs. aggressiveness and hostility	6 13 19	.68 .62 .69
II.	Pupil's intellectual self. How does the student see himself as a student? As liking or disliking school.	2 14 21	.59 .70 .68
III.	Peer relationships. Peer ostracism vs. peer acceptance. Does the child see himself as being accepted or rejected by his peers?	9 11 16	.65 .54 .58
IV.	Helping relationships. Does the child see himself as the helper or helpee? Is he generally independent or does he see himself depending on help from his peers in working at a task?	15 18	.78 .66
V.	Physiological self.	12	.83
VI.	Acceptance-rejection. How the child perceives adults (parents, teachers), i.e., accepting or rejecting.	1	.84

TABLE 16

PSCS Factor Matrix from Odd-Numbered Students

Variable	Factor 1	2	3	4	5	6	7
1	.20	.22	-.03	.19	.02	.12	.74
2	.16	.59	.01	-.11	-.34	-.03	.04
3	.07	-.12	-.27	-.22	-.43	.07	.37
4	.50	-.10	-.20	-.12	-.12	.17	.05
5	.49	.01	.08	-.32	.05	.09	.10
6	.28	.07	-.02	-.17	-.70	-.01	-.25
7	.10	.28	.16	-.48	-.11	-.28	.05
8	.25	.03	.06	-.58	-.11	-.03	.14
9	.67	.03	-.03	-.08	-.16	.02	-.08
10	.09	.08	-.16	-.70	.03	.15	-.08
11	.59	.14	.08	.04	-.10	-.32	.11
12	.11	.07	.11	-.07	-.00	.67	.05
13	-.01	-.16	-.14	-.11	-.64	-.17	.37
14	-.07	.66	-.21	-.16	.13	-.29	.02
15	.03	.10	-.81	-.09	-.05	-.00	.04
16	.68	.06	-.10	-.07	-.08	-.03	.09
17	.39	.10	-.03	-.17	-.17	-.47	.15
18	.20	.26	-.59	.21	.02	-.30	.08
19	.16	.24	.11	.14	-.66	-.00	.08
20	.02	-.06	-.05	-.37	-.13	-.18	.66
21	.02	.60	-.02	-.02	-.01	.32	.03

TABLE 17

PSCS Factor Matrix from Even-Numbered Students

Variable	Factor 1	2	3	4	5	6	7	8
1	-.01	.15	-.13	.06	-.[illegible]	-.14	-.00	.73
2	.04	.49	.14	-.35	-.19	.20	.23	.20
3	.29	-.18	-.18	-.24	-.33	.02	.13	.52
4	.61	.18	-.21	-.13	.05	.03	-.31	.25
5	-.08	.09	-.12	-.68	.05	-.12	.19	-.04
6	.67	.08	.01	-.23	-.01	-.05	.23	.02
7	.15	.22	.16	.02	.10	-.11	.59	.37
8	.18	-.07	-.11	-.25	-.06	.11	.64	.03
9	.34	.05	.10	-.71	-.11	-.01	-.09	.10
10	.16	-.07	-.59	.08	-.07	.05	.10	.03
11	.01	.16	-.32	-.29	.20	.00	.27	.38
12	-.03	.02	-.14	.03	.02	.79	.08	-.19
13	.61	.11	-.12	-.20	-.01	-.03	.28	-.21
14	.02	.74	.01	-.15	-.13	.02	-.06	.06
15	-.01	.16	.01	.05	-.76	-.27	.01	-.10
16	-.06	.06	-.73	-.09	-.04	.02	-.05	.19
17	.16	.03	-.41	-.26	-.09	-.51	.21	-.11
18	.04	.02	-.12	.08	-.68	.18	.05	.21
19	.67	-.02	.01	.23	-.06	-.05	.18	.12
20	.35	.12	-.27	.10	-.24	-.04	.53	-.13
21	.17	.78	-.07	.08	.04	-.08	.10	.02

first. Specifically, the extent to which items in Table 15 loaded together on the odd and even analyses was examined. For example, if items 6, 13, and 19 loaded on a common factor in the total analysis, did they load on a common factor in the odd and even analyses?

Table 18 summarizes this comparison. Inspection of this table reveals that the only difference between the analyses with regard to clustering of items on factors occurred with items 9, 11, and 16. In the total analysis and the odd analysis, these items loaded together; on the even analysis, 11 and 16 loaded together on one factor, and item 9 loaded on another factor.

Coefficients of congruence (Harman, 1967, p. 270) were computed for each of the six factors. These coefficients were .99, .99, .98, 1.0, 1.0, and .94 respectively for the six factors in Table 18. Harman suggested that a coefficient of .95 or higher is extremely good.

Thus the factor structure of those items retained in the original test seems to be reasonably stable. This suggests that the original test had at least a moderate degree of reliability. If item reliability was not at least moderate, it is extremely unlikely that a stable factor structure would have emerged.

Concurrent validity. Twenty first-graders and 20 fourth-graders were selected at random and were given the Koppitz (1968) Human Figure Drawing Test. This test was scored for total number

TABLE 18

Factor Structure of Original Self-Concept Test (PSCS) When Factored in a Single Group and When Factored in Two Groups

Items in Factor and Their Factor Loadings		
Total Group (N=708)	Odd-numbered subjects (N=354)	Even-numbered subjects (N=354)
6(.69),13(.63),19(.69)	6(.70),13(.64),19(.66)	6(.67),13(.61),19(.67)
15(.77),18(.67)	15(.81),18(.59)	15(.76),18(.68)
2(.59),14(.71),21(.68)	2(.59),14(.66),21(.60)	2(.49),14(.74),21(.78)
12(.83)	12(.67)	12(.79)
1(.84)	1(.74)	1(.73)
9(.65),11(.54),16(.59)	9(.67),11(.59),16(.68)	11(.32),16(.73)
		9(.71)

of emotional indicators. This score was then correlated with the score on the retained items (Table 15) of the original self-concept scale.

The correlation between number of emotional indicators and self-concept score for first-graders was -.75, and for fourth-graders -.39. Both are significantly different from zero at the .01 level. While both of these coefficients are at best only moderate, it must be recognized that these two tests, although each is based on a different theoretical approach, were designed to measure somewhat similar areas of adjustment and are hopefully intended by the investigator to be interchangeable. It appears reasonable to assume that self-concept would be related to emotional adjustment.

Content validity. Several counselor educators at New Mexico State University were given a copy of the original self-concept test and asked for their professional comments concerning its apparent validity. Their comments are presented as follows:

> The Primary Self-Concept Scale represents a creative and much needed contribution to the area of self-concept assessment for children in grades one through four. The drawings utilized depict persons and situations readily identifiable by a primary level child. Additionally, the authors provide an excellent set of instructions which enhance the instrument's usability.
>
> Though still in an experimental stage of development, this imaginative instrument possesses obvious face validity and holds promise for research and school program development purposes.[1]

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[1]Dr. R. E. Easterling, Associate Professor, Department of Educational Psychology, New Mexico State University, personal communication, Fall, 1970.

From another source:

I have read the directions and carefully examined each of the stimulus situations in the Primary Self-Concept Scale. It appears that the scale taps the self-concept in relation to such factors as:

(1) parent-child relationships
(2) the school environment
(3) peer relationships
(4) teacher-child relationships and
(5) child-pet relationships

These factors seem to be a representative sample of behaviors in the most crucial areas of the self-concept of children, and as such, would appear to possess adequate content validity.

The scale also appears to have a tremendous amount of potential as a diagnostic indicator which might point to those areas in need of remedial counseling in relation to self-concept.

The instructions for administration are very explicit, thus making the inventory relatively easy to administer.[2]

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[2]Dr. R. R. DeBlassie, Professor, Department of Educational Psychology, New Mexico State University, personal communication, Fall, 1970.

APPENDIX D

THIRTY-THREE FACTOR ANALYSES OF THE PSCS''

TABLE 19

Factor-Item Consistency of the PSCS'' Across 33 Factor Analyses (r = .40 >)

Test analysis	Factors I	II	III	IV	V	VI
1	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
2	6,10.17	16,18,23	13,15	2,4,19	8,9	7,12
3	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
4	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
5	10,17	16,18,23	13,15	2,4	8,9	7,12
6	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
7	6,10	16,18,23	13,15	2,4,19	8,9	7,12
8	6,10,17	16,18,23	13,15	2,4	8,9	7,12
9	6,10	16,18	13,15		9	7,12
10	6,10,17	16,18,23	13,15		8,9	12
11	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
12	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
13	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
14	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
15	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
16	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
17	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
18	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
19	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
20	6,10,17	16,18,23	13,15	2,4,19	8,9	7
21	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
22	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
23	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
24	6,[a] 17	16,18,23	13,15	2,4,19	8,9	7,12
25	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
26	6,10,17	16,18,23	13,15	2,4,19	8,9	7[b]
27	6, 17	16,18,23	13,15	2,4,19	9	7,12
28	10,17		13,15	2,4,19	8,9	7,12
29	6,10,17	16,18,23	13,15	2,4,19	8	
30	6,10,17	16,18,23	13,15	2,4,19	8,9	7,12
31	6,10	16,18	15	2,4,19		
32	6,10	16,18,23	13,15	2,4,19	8	7
33	6, 17	16,18,23	13,15		9	7,12

[a] r for Item 10 = .39.

[b] r for Item 12 = .37.