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ABSTRACT

The objectives of the study were to construct instruments and investigate their reliabilities in assessing the attitudes of elementary school children. The instruments were designed to accommodate children with limited reading and writing skills. Care was taken to avoid confusing stimuli and assure a stable measure through adequate length. A review of relevant literature preceded instrument development and pilot testing. Only items with high item-scale correlations were retained. Approximately 150 children responded to each scale. All were found to be reliable and easily administered to groups of children with limited language development. (Author/DEP)

CONSTRUCTION AND INVESTIGATION OF THE RELIABILITIES OF THE SCHOOL PERCEPTION SCALES [1]

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The literature reveals discrepant findings in investigations of the influence of compensatory educational programs on attitude and self-concept development. For example, Nimnicht, Meier, and McAfee (1967), McNamara, Porterfield, Miller, and Arnold (1968), Hepner (1973), and Tuta and Baker (1973) found that compensatory programs had a positive effect. However, other investigators (Hillery, Lingren, & Remstad, 1969; Olsen, 1969; Van Koughnett & Smith, 1969) reported that compensatory programs did not produce any significant changes in self-concept. Since most compensatory programs anticipate a positive shift in the self-perceptions of target students, the discrepant findings present a perplexing problem.

Closely related to the affective assessment of compensatory programs is the investigation of the differences in self-concepts between advantaged and disadvantaged student populations. Traditionally, it has been assumed that self-devaluation occurs for individuals in the lower socioeconomic class as they internalize the more negative self-concept ascribed to them by the upper class (Lecky, 1945). Furthermore, the constant frustration and disappointment disadvantaged children encounter in the school environment has supposedly been a major factor in their eventual acceptance of a negative self-concept (Manuel, 1965). Long and Henderson (1968) and Frerichs (1971)

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reported research supporting that hypothesis. On the other hand, Greenberg, Gerver, Chali, and Davidson (1965), Soares and Soares (1969), and Trowbridge (1972) found exactly the opposite - disadvantaged or lower socioeconomic children had more positive self-concepts. The traditional view of depressed self-concepts for disadvantaged children is therefore in question. Soares and Soares (1969), for example, theorized that the relative segregation of disadvantaged children from the larger community isolated them from acquiring the negative attitudes ascribed to them by the more advantaged community. Carter (1968) postulated that disadvantaged children may simply reject the perceptions of the larger community, choosing instead to evaluate themselves according to norms established exclusively within their own segment of society. On the other hand, Greenberg (1970) interpreted discrepancies among findings as a consequence of measurement procedures.

Most experimental programs anticipate a positive shift in the self-concept or attitudes of the target student population as a by-product of attainment of cognitive goals (to be referred to as the By-Product Model of affective education). Thus, it is thought that as a student encounters success in cognitive learning tasks (e.g., making satisfactory progress when learning to read) feelings or attitudes about self will change for the better. Efficacy of the By-Product Model, however, was seriously questioned by Brandes (1973), who called for the design of curriculum to focus on "teachable" behaviors in the affective domain. A teachable behavior was defined as one which could be analyzed into a specific hierarchy of outcomes.

Brandes (1973) also identified three problems typically encountered in the evaluation of affective educational goals: (a) discrepancy between program content and program goals, (b) the need for goal-relevant measures for affective outcomes, and (c) the need for content-relevant measures for affective outcomes. Adoption of teachable behaviors for affective goals was seen

as the solution to the first problem. Speaking to the second problem, the following comment was made:

> In affective education we are not concerned just with whether students are able to do certain things but more with whether they actually do those things by choice. This fact makes for the greatest challenge in affective education because it requires both that the treatment be powerful enough to alter behavior patterns and that the measurements of outcomes be ingenious enough to assess behavior dispositions in a free-choice context (Brandes, 1973, p. 2).

Content-relevant measures, the third area of difficulty, were defined as measures which are congruent with the instructional content of the program. The ideal situation occurs when program content is teachable, when it is consistent with program goals, and when it is assessed by sufficiently sensitive measures to detect any changes in behavior.

The major problems which psychometricians encountered when measuring the attitudes of children were identified by Ball (1971). Those problems were as follows:

1. Children typically lack stability of attitudes associated with the phenomenal self. The extreme volatility of their attitudes reduces the reliability of any measurement technique, and hence reduces confidence in the accuracy of measure for a particular child.

2. Children often lack the skills usually expected in test-taking situations; e.g., examinees with limited reading or writing skills may find it difficult to follow instructions.

3. Eager to please adults, children may tend to give a socially acceptable response rather than a response less acceptable but more accurate. Also, children confronted with response choices which confuse them may predictably give a set response; e.g., not mark any response choice or always choose the first response.

The purpose of the present study was to construct and investigate the reliabilities of instruments to measure the self-concept, attitude toward school, and attitude toward reading of children in elementary school. Although several instruments already in print were available for the measurement task,

none was deemed acceptable according to the following criteria: (a) the instrument must be applicable to all elementary levels, (b) the instrument must quantify the constructs of self (i.e., self-concept, attitude toward school, and attitude toward reading) which were of primary interest, (c) the instrument must have optimum usability in large-scale surveys, (d) data must be available on the psychometric properties of the instrument, and (e) the design of the instrument should be such that the aforementioned problems identified by Ball (1971) are considered.

Method

To accomplish the purpose of the study, three instruments, referred to collectively as the School Perception Scales (SPS), were constructed and pilot-tested on a sample of elementary students, grades K through 6, in the Dallas Independent School District, Dallas, Texas. The three instruments were the Self-Concept Scale (SCS), the Attitude-Toward-School Scale (ATS), and the Reading Sentiment Scale (RSS). Level I of the instruments was designed for use at grades K and 1, Level II for grades 2 and 3, and Level III for grades 4, 5, and 6. The format of the instruments was based on that of a measure developed by Frymier and reported in Beatty (1969). According to the Development of Self Model proposed by Coller (1971), the SPS were a quantification of the self-evaluation component of the phenomenal self, or the appraisal and regard for the perceptions of self which one has at a particular point in time.

Except for the Level I instruments, the SPS were designed to be administered to a number of students equal to an entire classroom (approximately 30 students). Testing groups of four to six was found to be most successful

for Level I of the SPS. The SPS were self-report instruments composed of graphic alternate-choice items. When responding to one of the SPS, the child marked a graphic representation of a face on an answer sheet wherein faces corresponding to a polychotomy of the happy-sad continuum were printed for each item. Two faces, or a dichotomy, were used for Level I, three faces for Level II, and five faces for Level III. Following standarized instructions, items were read by the examiner and children were asked to indicate their feelings about a particular situation by marking an "X" through the appropriate face. The following items, A, B, and C, are taken from the Level III forms of the SCS, ATS, and RSS respectively to provide examples of item form and content:

Mark an "X" through the face which shows how you feel when _____. (Briefly pause.) *How you feel when* _____.

A. _____ *You think about how strong you are.*

B. _____ *The teacher checks your schoolwork.*

C. _____ *You read a library book.*

Special consideration was given to the major problems identified by Ball (1971) in the assessment of attitudes of children. Two procedures were used to combat the lack of stability of attitudes associated with the phenomenal self of the young child. First, items comprising the final forms of the SPS were selected through an item analysis, thus improving homogeneity of the overall instruments. Second, administration instructions were given in explicit detail and a number of practice items were included in order to control classroom climate at the time of testing. To overcome the lack of skills anticipated in test-taking situations for children, the SPS were designed so that all items were read aloud by the examiner and very limited psychomotor

development was necessary for marking responses. Testing the younger children, grades K and 1, in small groups was also used to control classroom climate and provide for increased examiner-respondent rapport. "Response-set" items and counterbalancing of the faces on the answer sheet were used to counteract the tendencies of children to give socially desirable responses or establish a fixed response set. Response-set items were non-scored items which were designed to elicit negative responses (selection of sad faces) as compared to the positive responses (selection of happy faces) expected on the construct items. Following is an example of a response-set item from the Level III forms:

Mark an "X" through the face which shows how you feel when _____. (Briefly pause.) *How you feel when* _____.

_____ *You can't watch your favorite TV program.*

Subjects

The 137 elementary schools in the Dallas Independent School District were rank-ordered according to Title I deprivation indexes. The Title I deprivation index for a given school represented the percentage of the student population which came from economically deprived families according to guidelines established by the U.S. Office of Education. Operational definitions of high, middle, and low economic levels for student groups were established by dividing schools into three groups of approximately equal size. The 42 Title I schools (highest indexes of deprivation) represented the low economic group. The remaining schools were divided into two groups, 47 having higher indexes and 48 having lower indexes. The upper group was considered as middle economic and the lower group as high economic. Then, the median school in each group was selected for participation in the study.

After determining which schools would be involved in the study, classrooms within schools were selected randomly and assigned one of the SPS subject to the constraint that each of the SPS be given at each grade level in each school. The SPS were administered by teachers during the period April 8 through April 10, 1974. In the case of the high economic group an insufficient number of classrooms was available so a second school having the next closest index to the median school was selected. Descriptive information regarding schools is given in Table 1, and the actual numbers of students who were sampled and who provided usable responses to each of the SPS are given in Table 2.

Table 1

Characteristics of Schools Included in the Study

School	Grade Span	Deprivation Index	Racial Distribution %White	%Black	%MA[a]	Reading Achievement[b]
High Economic 1	K-7	1.81	95	0	4	27
High Economic 2	K-7	1.99	95	1	1	16
Middle Economic	K-6	15.48	71	0	28	55
Low Economic	K-7	67.84	10	74	16	86

[a] MA = Mexican American

[b] % below expected grade equivalent (large city norms) for standardized reading tests given in September, 1973.

TABLE 2

Number of Students Sampled

Instrument[a]	No. Sampled	No. Respondents[b]
Level I, Grades K & 1		
SCS	152	150
ATS	171	170
RSS	101	101
Level II, Grades 2 & 3		
SCS	127	127
ATS	133	132
RSS	141	141
Level III, Grades 4,5, & 6		
SCS	169	169
ATS	178	177
RSS	182	176

[a] SCS = Self-Concept Scale, ATS = Attitude Toward School, RSS = Reading Sentiment Scale

[b] No. respondents = No. of children sampled who provided usable responses on at least 80% of the test items.

Data Analysis

Items comprising each of the SPS were divided into two types, response-set items and construct items. In scoring a numerical value of one was assigned to the saddest face, while the happiest face received a scale value of k, where k represents the number of faces used in the graphic scale (two for Level I, three for Level II, and five for Level III). Other faces along the continuum were assigned integer values corresponding to the index of their locations (e.g., a value of two was assigned to the neutral face for Level II).. Total scores were computed by summing item scores. Scoring was such that an individual subject must have recorded responses for at least 80 percent of all items, otherwise the particular respondent was dropped from the sample. Where the 80 percent criterion was met and a response was not marked for a particular item, the mean of the items which were marked was used as a substitute in the scoring algorithm. The item-total correlations were then computed separately for items comprising the response-set and construct scales, and items for which the correlations tended to be zero or negative were deleted. Finally, coefficient α's were computed as estimates of reliability, and frequency distributions and estimates of skewness and kurtosis were examined for the construct items to determine if scores on the SPS tended to be normally distributed.

The data were also analyzed using a 3-way crossed classification linear model without interactions. Separate analyses were performed for each of the SPS at Levels II and III. Data for Level I were not analyzed since previous results indicated the likelihood that scores were invalid.

Grade placement, economic classification, and sex classification were the factors comprising the linear model. Economic classification was recognized to be confounded with school which the subject attended, and also

perhaps did not reflect the actual economic level of the individual subject. However, it was believed to be a fairly accurate classification variable for the group. Since no a priori hypotheses regarding the relationships between scores on the SPS and the classification variables were formulated, significance of factors in the model were explored in a general sense by looking at the significance or nonsignificance of a given factor in the presence of all combinations of the other factors. Such a procedure is recommended by Searle (1971) when, as in the present study, specific hypotheses based upon estimable functions are not of interest (i.e., when the nature of the study is descriptive rather than experimental).

Results

Item analyses for both response-set and construct items provided the basis for eliminating items considered to be unsuitable. Elimination was based on item-total test correlation tending to be zero or negative.

Level I Instruments

Initially, each of the Level I instruments had consisted of 30 items, 10 response-set items and 20 construct items. After the elimination of aberrant items, a common set of nine response-set items was retained, and 12 construct items for each instrument (SCS, ATS, and RSS) were kept. Thus, according to the scoring algorithm, scores for each instrument were in the range 12 to 24, with higher scores indicating a more positive attitude.

As shown in Tables 3 and 4, scores on each of the Level I instruments were highly skewed in the negative direction with positive kurtosis. Approximately 50 percent of the subjects obtained a maximum score of 24 or a score of 23 across all instruments (contributing to over-estimation of reliability). Consequently the Level I data were excluded from further analyses since it was apparent that none of the scales would possess adequate discriminability.

TABLE 3

Estimates of Reliability and
Distribution Statistics for Construct Items
of All Instruments

Instrument	Reliability[a]	Distribution Statistic			
		Mean	Standard Deviation	Skewness	Kurtosis
SCS/I	.87	21.1	3.28	-6.20	1.14
ATS/I	.85	21.5	2.90	-8.38	4.96
RSS/I	.85	21.4	2.94	-4.74	0.70
SCS/II	.48	39.5	3.66	-0.09	-0.22
ATS/II	.74	45.0	5.08	-2.42	-0.41
RSS/II	.80	46.3	5.31	-4.28	3.47
SCS/III	.75	74.0	9.14	-4.13	2.65
ATS/III	.89	71.5	15.04	-3.02	-0.92
RSS/III	.87	71.8	13.15	-1.56	-1.47

Note.- See Table 2 for n's and Tables 4, 5 and 7 for frequency distributions.

[a]Coefficient α

TABLE 4

Frequency Distributions for Construct Items of the Level I Instruments

Score	Instrument					
	SCS[a]		ATS[b]		RSS[c]	
12	1	(1)	2	(1)	0	(0)
13	5	(3)	2	(1)	0	(0)
14	9	(6)	6	(4)	5	(5)
15	3	(2)	3	(2)	3	(3)
16	0	(0)	1	(1)	0	(0)
17	2	(1)	2	(1)	4	(4)
18	7	(5)	8	(5)	5	(5)
19	14	(9)	6	(4)	7	(7)
20	6	(4)	12	(7)	6	(6)
21	9	(6)	15	(9)	7	(7)
22	21	(14)	25	(15)	13	(13)
23	36	(24)	41	(24)	17	(17)
24	37	(25)	47	(28)	34	(34)

Note. - Numbers given in parentheses are the percentages for the given frequencies. See Table 2 for n's. The sum of percentages may not equal 100 due to round-off.

[a]Self-Concept Scale

[b]Attitude-Toward-School Scale

[c]Reading Sentiment Scale

Level II Instruments

Frequency distributions for the construct items of Level II instruments are shown in Table 5, and estimates of reliability and distribution statistics are given in Table 3. Median item-total correlations were .32, .44, and .48 respectively for the SCS, ATS, and RSS. Of the original 24 construct items in the tryout forms, 18 were retained for scoring purposes. Thus scores were in the range 18 to 54. Only one of the original 12 response-set items was deleted.

Though scores on the SCS tended toward a normal distribution, scores on the ATS and RSS were negatively skewed. Also, the distribution of RSS scores was very leptokurtic. Reliability estimates were fairly high for the ATS and RSS (.74 and .80 respectively), but the estimated reliability for the SCS was only about .50.

Analyses of the data using the linear model revealed significant relationships ($p<.05$) between the self-concept criterion and economic level, the self-concept criterion and sex classification, and the attitude-toward-school criterion and grade placement. F-statistics for those tests are shown in Table 6. The following contrasts[2] were computed for those effects which were found to be significant:

Criterion	Description of Contrast	Value of Contrast
Self-Concept	Low Economic - Middle Economic	2.14
	Middle Economic - High Economic	-0.94
	(Low Economic - High Economic)	(1.19)
Self-Concept	Male - Female	1.59
Attitude Toward School	Grade 2 - Grade 3	4.04

In all other cases, including any relationship for the reading sentiment criterion, no significant effects were noted.

[2] In the model $Y=X\beta+\varepsilon$ the linear combination of parameters $\Sigma\lambda_i\beta_i$ is called a contrast if $\Sigma\lambda_i=0$ (Graybill, 1961).

TABLE 5

Frequency Distributions for Construct Items of the Level II Instruments

Score	Instrument					
	SCS[a]		ATS[b]		RSS[c]	
18-30	1	(1)	1	(1)	1	(1)
31-32	2	(2)	1	(1)	0	(0)
33-34	10	(8)	2	(2)	1	(1)
35-36	14	(11)	5	(4)	4	(3)
37-38	25	(20)	7	(5)	8	(6)
39-40	24	(19)	10	(8)	6	(4)
41-42	26	(20)	12	(9)	13	(9)
43-44	16	(12)	22	(17)	12	(9)
45-46	5	(4)	19	(15)	22	(16)
47-48	3	(3)	16	(12)	19	(14)
49-50	1	(1)	19	(15)	23	(16)
51-52	0	(0)	13	(10)	15	(11)
53-54	0	(0)	5	(4)	16	(11)

Note. - Numbers given in parentheses are the percentages for the given frequencies. See Table 2 for n's. The sum of percentages may not equal 100 due to round-off.

[a] Self-Concept Scale

[b] Attitude-Toward-School Scale

[c] Reading Sentiment Scale

TABLE 6

F - Statistics for Tests of Effects at Level II

Effect[a]	Criterion	
	SCS[b]	ATS[c]
$\alpha \mid \mu$	< 1	23 32**
$\alpha \mid \mu, \beta$	< 1	23.36**
$\alpha \mid \mu, \gamma$	< 1	23.64**
$\alpha \mid \mu, \beta, \gamma$	< 1 (df = 1,122)	23.60** (df = 1,127)
$\beta \mid \mu$	4.35*	< 1
$\beta \mid \mu, \alpha$	4.26*	< 1
$\beta \mid \mu, \gamma$	4.05*	< 1
$\beta \mid \mu, \alpha, \gamma$	3.80* (df = 2,122)	< 1 (df = 2,127)
$\gamma \mid \mu$	7.01**	2.74
$\gamma \mid \mu, \alpha$	7.27**	3.06
$\gamma \mid \mu, \beta$	6.41**	2.83
$\gamma \mid \mu, \alpha, \beta$	6.35** (df = 1,122)	3.07 (df = 1,127)

Note. - For the reading sentiment criterion (RSS), $F(\alpha, \beta, \gamma \mid \mu)$ was equal to 1.63 (df = 1, 122; N.S.). Therefore, significance of individual effects are not presented.

[a] α = Grade Placement, β = Economic Level, γ = Sex

[b] Self-Concept Scale

[c] Attitude Toward School

* $p < .05$

** $p < .01$

Level III Instruments

Of the 14 response-set items for Level III instruments, 12 were retained. Twenty of the original 28 construct items (placing scores in the range 20 to 100) for each scale were retained for scoring purposes. Frequency distributions for the construct items are given in Table 7, and estimates of reliability and distribution statistics appear in Table 3. Median item-total correlations for the SCS, ATS, and RSS were .42, .58, and .62 respectively. Like the Level I and II forms, scores for Level III were negatively skewed. Scores on the ATS and RSS were platykurtic (kurtosis of -0.92 and -1.47 respectively), while those on the SCS were leptokurtic (kurtosis = 2.65). Reliabilities were acceptably high for all instruments (.75, .89, and .87 respectively for the SCS, ATS, and RSS).

All effects (grade placement, economic level, and sex) were found to be significant for the self-concept criterion. F-statistics are presented in Table 8. The following contrasts were computed for those effects:

Description of Contrast	Value of Contract
Grade 4 - Grade 5	4.08
Grade 5 - Grade 6	3.02
(Grade 4 - Grade 6)	(7.10)
Low Economic - Middle Economic	5.33
Middle Economic - High Economic	3.94
(Low Economic - High Economic)	(1.39)
Male - Female	4.02

TABLE 7

Frequency Distributions for Construct Items
of the Level III Instruments

Score	Instrument					
	SCS[a]		ATS[b]		RSS[c]	
20-25	0	(0)	0	(0)	0	(0)
26-30	0	(0)	0	(0)	0	(0)
31-35	0	(0)	2	(1)	0	(0)
36-40	0	(0)	4	(2)	0	(0)
41-45	2	(1)	7	(4)	5	(3)
46-50	1	(1)	10	(6)	10	(6)
51-55	3	(2)	9	(5)	14	(8)
56-60	7	(4)	5	(3)	8	(5)
61-65	11	(7)	15	(8)	16	(9)
66-70	31	(18)	18	(10)	24	(14)
71-75	32	(19)	28	(16)	25	(14)
76-80	40	(24)	25	(14)	35	(20)
81-85	33	(20)	25	(14)	14	(8)
86-90	6	(4)	16	(9)	11	(6)
91-95	3	(2)	7	(4)	10	(6)
96-100	0	(0)	6	(3)	4	(2)

Note.- Numbers given in parentheses are the percentages for the given frequencies. See Table 2 for n's. The sum of percentages may not equal 100 due to round-off.

[a] Self-Concept Scale

[b] Attitude-Toward-School Scale

[c] Reading Sentiment Scale

TABLE 8

F - Statistics for Tests of Effects at Level III

Effect[a]	Criterion		
	SCS[b]	ATS[c]	RSS[d]
$\alpha \mid \mu$	9.53**	5.90**	9.36**
$\alpha \mid \mu, \beta$	10.29**	4.62*	7.24**
$\alpha \mid \mu, \gamma$	10.32**	6.01**	9.40**
$\alpha \mid \mu, \beta, \gamma$	11.05** (df = 2,163)	4.67* (df = 2,171)	7.25** (df = 2,170)
$\beta \mid \mu$	5.56**	34.32**	32.00**
$\beta \mid \mu, \alpha$	6.32**	33.04**	29.88**
$\beta \mid \mu, \gamma$	5.16**	32.66**	32.21**
$\beta \mid \mu, \alpha, \gamma$	5.89** (df = 2,163)	31.31** (df = 2,171)	30.05** (df = 2,170)
$\gamma \mid \mu$	9.18**	3.77	< 1
$\gamma \mid \mu, \alpha$	10.74**	4.01*	< 1
$\gamma \mid \mu, \beta$	8.36**	< 1	1.14
$\gamma \mid \mu, \alpha, \beta$	9.88** (df = 1,163)	< 1 (df = 1,171)	1.15 (df = 1,170)

[a] α = Grade Placement, β = Economic Level, γ = Sex

[b] Self-Concept Scale

[c] Attitude Toward School

[d] Reading Sentiment Scale

* $p < .05$

** $p < .01$

Thus, a decreasing trend across grade levels was apparent. Effect of economic level was identical to that for the self-concept criterion at Level II (i.e., highest scores for the low economic group, slightly lower scores for the high economic group, and much lower scores for the middle economic group). The difference between sexes, with males scoring significantly higher than females, also paralleled the results found at Level II.

As shown in Table 8, grade placement and economic level (but not sex classification) were found to be significantly related to the attitude-toward-school criterion. Profiles for scores are reflected in the following contrasts:

Description of Contrast	Value of Contrast
Grade 4 - Grade 5	-6.88
Grade 5 - Grade 6	2.25
(Grade 4 - Grade 6)	(-4.63)
Low Economic - Middle Economic	19.02
Middle Economic - High Economic	-14.34
(Low Economic - High Economic)	(4.68)

Again the same profile across economic groups was found, but scores across grade levels showed a substantial increase from Grade 4 to Grade 5 with a comparatively small decrease from Grade 5 to Grade 6 (as compared to the overall decreasing trend shown for self-concept).

Grade placement and economic level were also found to be significantly related to reading sentiment (see Table 8), but findings were very different from trends of results for the other criteria. Reading sentiment scores increased significantly across grade levels while decreasing across economic levels (low, middle, and high). Findings are reflected in the following contrasts for each effect:

Description of Contrast	Value of Contrast
Grade 4 - Grade 5	-5.86
Grade 5 - Grade 6	-1.14
(Grade 4 - Grade 6)	(-7.00)
Low Economic - Middle Economic	6.72
Middle Economic - High Economic	9.19
(Low Economic - High Economic)	(15.91)

Norms for Tryout

Means and standard deviations of the scores on the SPS are presented in Table 9. They are given by grade level, two through six, and are intended to be used as norms in future applications of the instruments. The reader, however, should keep in mind that the individual n's are comparatively small and consequently standard errors for the means may be larger in a practical sense than those which might have been obtained using a larger sample.

Discussion

Inasmuch as the instruments developed in the study did not prove to be acceptable across all grades at the elementary level, objectives of the study were only partially attained. Very limited success was obtained in the pilot-test of instruments at the kindergarten and first-grade levels despite explicit efforts to arrive at a format which would overcome some of the problems known to exist in measuring attitudes of young children. On the other hand, the data for grades two through six point to reasonable and usable patterns of response. The utility of the measures is suggested by the design features to overcome traditional measurement problems, characteristics of items comprising the instruments, and the acceptable levels of reliability of the instruments (except for the SCS/II). Nevertheless, the information

TABLE 9

Means and Standard Deviations by Grade Level
For the SPS

Grade	Instrument		
	SCS	ATS	RSS
Second			
Mean	39.3	46.7	45.5
Standard Dev.	3.53	4.39	5.38
N	57	75	61
Third			
Mean	39.6	42.7	46.9
Standard Dev.	3.06	4.72	5.26
N	70	57	80
Fourth			
Mean	77.2	67.3	67.3
Standard Dev.	7.25	9.87	7.88
N	67	66	67
Fifth			
Mean	73.1	74.7	73.6
Standard Dev.	8.88	9.87	9.60
N	48	54	52
Sixth			
Mean	70.7	73.2	75.4
Standard Dev.	8.40	10.54	8.77
N	54	57	57

Note. - SCS = Self-Concept Scale, ATS = Attitude Toward School, RSS = Reading Sentiment Scale

obtained would not justify the acceptance of the measures with at least some degree of reservation. Little is known about their validities except the relationship to such external criteria as socioeconomic level and gender. More extensive research investigations are needed to determine the concurrent and construct validities of the measures, test-retest reliabilities, and stability of the internal reliability estimates. Furthermore, complete revision of the Level I measures is indicated. Norms for the tryout are also suspect due to the small n's, but it must be remembered that the purpose of the study was to examine item characteristics and reliabilities of the measures and not to develop comprehensive norms.

Major findings of the study were the acceptably high reliability estimates and results from the analyses of variance which were in agreement with several recent investigations of self-concept and attitude development of children. For example, it was found that self-concept scores tended to decrease as grade level (and hence age) increased, a finding also reported by Trowbridge (1972). Several investigations (Greenberg et. al., 1965; Soares & Soares, 1969; Trowbridge, 1972) have shown that low socioeconomic children tend to score higher on a measure of self-concept than middle socioeconomic children. Findings of the present study are in concert, and further suggest that high socioeconomic children also report more positive perceptions of self than do middle socioeconomic children. As previously mentioned, however, discrepant findings have been reported by a number of other researchers (Coopersmith, 1967; Long & Henderson, 1968; White & Richmond, 1970).

A particularly interesting finding was the decrease in reading attitude scores (RSS/III) across economic levels, low, middle, and high. As revealed in Table 1, however, economic levels were directly related to

reading achievement (measured in September, 1973). Thus, expressed attitude toward reading was inversely related to performance on a standardized reading test. That finding raises serious question as to the credibility of the By-Product Model of affective education. On the other hand, however, the extent to which students may have attempted to give socially acceptable responses, a condition which could have resulted since measures were administered by teachers, is unknown.

Little use was made in the study of the scores from response-set items. The rationale for including such items was to determine whether or not subjects were responding in a fixed manner (e.g., always marking the first response or simply marking at random). Characteristics of response-set items indicated they had generally performed as expected. Imposing the arbitrary criterion of eliminating 10 percent of the respondents, the cutoff scores would be 18 and 34 respectively for Levels II and III (ranges are 11-33 and 12-60). Further investigation is proposed to examine characteristics and internal consistency of construct items for the 10 percent cutoff as well as various other cutoff levels. The investigators also propose combining the three measures (self-concept, attitude toward school, and reading sentiment) into a single instrument and conducting a study to determine its validity and reliability.

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