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ABSTRACT

The controversy on the importance of children's attitudes toward their educational experiences has focused on two major questions: First, are attitudes an appropriate concern for educational systems; and second, are attitudes important as correlates of critical educational behaviors or simply as ends in themselves? This study attempted to add some insight into this education/attitude dilemma by: Developing an instrument and administration technique for primary grade pupils to operationalize dimensions of education related attitudes; and (2) Investigating relationships between this measure and behaviors which are visible components of the educational environment. With respect to the first objective of the study a 24-item instrument, showing relatively high internal consistency, was developed. It was administered to a representative sample of pupils in grades 1-4, in Seattle Public Schools. The instrument was found to contain three factors that accounted for 36 percent of the common variance. Further, an administration procedure was developed which was usable for groups of children in the early primary grades. The administration procedure consisted of (1) a standardized video-taped administration, and (2) a response mechanism with a four choice Likert-type scale which elicited adequate scale variance down to the first grade level. The instrument failed to correlate highly with any of the validation criteria. The conclusion reached was that self-reported attitudes of primary children have little impact on other educational behaviors, specifically academic achievement. (Author/BJG)

DEVELOPMENT AND VALIDATION OF AN INSTRUMENT FOR MEASURING ATTITUDES OF PRIMARY STUDENTS IN A LARGE URBAN SCHOOL SYSTEM

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ABSTRACT

The controversy on the importance of children's attitudes to their educational experiences has focused on two major issues:

1. Are attitudes an appropriate concern for educational systems?

2. Are attitudes important as correlates of critical educational behaviors or simply as ends in themselves?

Despite the lack of resolution of the education/attitude controversy we continue to spend millions of dollars on programs that are at least in part designed to change childrens' attitudes. Most school districts and categorical funding programs have some attitude-related goals and objectives.

This study, done during the 1973-74 school year under a grant from the National Institute of Education (NIE), attempted to add some insight into this education/attitude dilemma by:

1. Developing an instrument and administration technique for primary grade pupils to operationalize dimensions of education related attitudes.

2. Investigating relationships between this measure and behaviors which are visible components of the educational environment.

With respect to the first objective of the study a 24-item instrument, showing relatively high internal consistency, was developed. It was administered to a representative sample of 1,864 pupils, grade 1-4, in Seattle Public Schools. The instrument was found to contain three factors that accounted for 36% of the common variance. Further, an administration procedure was developed which was usable for groups of children in the early primary grades. The administration procedure consisted of (1) a standardized video-taped administration, and (2) a response mechanism with a four choice Likert-type scale which elicited adequate scale variance down to the first grade level.

Despite the attractiveness of the instrument, it failed to correlate highly with any of the validation criteria. However, one of the validation criteria, a teacher rating of the child's attitude on each of the dimensions reflected in the instrument itself, correlated moderately (r = .29 to .60) with the validation criteria relating to academic achievement.

The conclusion reached was that self-reported attitudes of primary children have little impact on other educational behaviors, specifically academic achievement. An hypothesis was advanced that attitude seen as a teacher-ascribed attribute of the child is highly predictive of other educational behaviors, such as academic achievement.

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INTRODUCTION

A significant question being raised by citizens and professional educators alike focuses on the value of studying attitudes in the context of the educational process. If we know certain things about a student's affective reactions to the school environment, can we then predict with any certainty future behavior patterns in that environment? This affective-behavioral link appears to be a basic assumption underlying many of the current innovative programs designed to make education more attractive to students (i.e., change students' attitudes toward school). But there has been little systematic attempt to identify these attitudes and relate them to behavioral variables which are educationally relevant.

To date, school districts have been severely limited in their abilities to measure the attitudes of their students. There are two reasons why this situation exists. First, there has been a general lack of availability of reliable and valid attitude measuring instruments. Second, those that are available have not generally been in a format that could be easily administered to groups of young children throughout a school district. These two problems increase drastically in magnitude when one is looking specifically at the attitudes of children in grades 1, 2, 3, and 4. It is to these measurement problems that the first part of the present study is addressed. The second part examines the affective-behavioral linkages in an effort to provide some guidance to educators as they contemplate programs that require measuring attitude formation and change.

Background

In the absence of acceptable techniques to measure children's school attitudes, a preliminary instrument was developed in 1972-73. The instrument was designed to meet two specific needs. It had to be usable with groups of children in a school setting, and the response mechanism had to be appropriate for students in grades 1 through 4. This untested instrument was initially administered to 1500 students. Encouraging results led to the development of a plan to begin formal test validation procedures.

The preliminary instrument, developed and used in the 1972-73 school year, served as the basis for the work carried out between August 1973 and November, 1974. This preliminary instrument was prepared in conjunction with the evaluation of some of Seattle's ESEA Title I programs. With the main purpose of measuring the potential range of variation in satisfactions that are generated through experiences in the school environment, three dimensions of school attitude were hypothesized. These dimensions were general school attitude, peer relations, and self-concept. The general school attitude dimension involved items dealing with feelings about specific components of school such as

school subjects and learning activities. The peer relations dimension included items dealing with the child's relations with his/her peer group. Finally, the self-concept dimension included items dealing with a child's perception of his own experience in the school and classroom context.

The items in the preliminary instrument were randomly ordered and administered via a standardized video tape procedure to the test group of primary pupils in ESEA Title I programs. The data from the students were analyzed by Biomedical Statistical Programs (BMD) to make initial estimates of the reliability of the preliminary scales. Four factors were evident from the factor analysis. General school attitudes (r_{kk} = .86) and peer relationships (r_{kk} = .70) emerged as hypothesized. However, the self-concept scale divided into two factors as follows: 1) Interpersonal self-concept (r_{kk} = .77) and Intrapersonal self-concept (r_{kk} = .65).

A significant outcome of this preliminary work was the development of a written response procedure which groups of first through fourth grade children could handle with relative ease, and which yielded more response variance than most of the dichotomously scaled instruments used with young children.

This preliminary work, however, still left the following shortcomings to be resolved:

1. Since the major thrust of the preliminary instrument development was aimed at Title I students, a true random sampling of Seattle's student population, allowing generalization, was impossible.

2. There was also a need to investigate the relationship between students' attitude and other educational behaviors such as academic achievement and attendance. Clarification of the nature of this relationship was necessary to establish the predictive validity of the instrument.

Objectives

From this preliminary work then, objectives of the present study were determined to be:

1. To produce a thoroughly tested instrument for assessing elementary students attitudes toward school based on the instrument already prepared for Title I students; and

2. As a part of a validation procedure, to provide empirical evidence on the relationships between student attitude and school-related behaviors.

REVIEW OF RELATED RESEARCH

Most literature on school-related attitude has been focused on the importance of attitude as an educational goal, the relationship between attitude toward school and academic achievement, and the relationship between self-concept and academic achievement.

Attitude as an Educational Goal:

The discussion on the educational importance of attitude has been divided into two major controversies. On one hand, the importance of attitude is argued in terms of its impact on other educational behaviors. On the other hand, positive attitudes are considered ends in themselves, regardless of their effect on other educational behaviors, and are therefore worthy goals of education.

Allen (1960) considered attitudes as ends in themselves for three reasons:

- Favorable attitude should be encouraged in order to form a sound basis for future living.
- Attitude may be an important non-intellectual factor in the learning of school subjects and may condition the success of the teacher's efforts to motivation.
- Attitude may be studied simply as a process of socialization.

Holt (1964) and Tennenbaum (1940) concur with this view. They feel that if attitudes may be what a child really gets from school, they ought to be positive ones. A more recent study (Jencks, 1972) argues that attitudes should be the primary basis for evaluating schools.

School personnel also seem to feel that attitudes are important as ends in themselves. A recent survey (Woolley & Katalino, 1970) of educational objectives, as seen by school administrators and teachers, found that a positive attitude toward school is considered to be one of the most desirable objectives for schools. Out of 105 possible objectives, attitude toward school was found to be less important than self-esteem and citizenship and more important than reasoning, mathematics, writing, or reading.

In general, those who attach significance to attitudes as ends in themselves imply that affective development is an important aspect of education, regardless of its relationship with cognitive improvement. An implication of this position is that attitude may well be an important variable to consider in evaluating a school program, even if attitudes prove to be completely unrelated to cognitive outputs.

Relationships Between Attitude Toward School and Academic Achievement:

Various studies have reported correlations between attitude toward school in general (teacher, curriculum, classmates, etc.) and academic achievement ranging from -.01 to +.35.

- Tennenbaum (1940) devised a Thurstone-type scale to measure the attitude of sixth and seventh graders toward school, teacher, and classmates. He compared these attitudes with I.Q. scores, grades and other measures of achievement; he obtained no correlations above .13 with about 500 subjects.

- Teschechtelin, Hipskind, and Remmers (1940) attempted to measure the attitudes of elementary school children toward their teachers and examine their relationship to scholastic achievement and I.Q. No appreciable correlation was found between attitudes and intelligence test scores ($r = .10 \pm .03$, N=).

- Zodikoff (1967) sought to discover the relationship between children with certain academic backgrounds and attitudes most vital in democratic living, including group inter-dependence and independent thinking. Achievement level was found to be a significant correlate of attitude with high academic achievers showing higher favorable attitude signs.

- Glick (1968) studied the relationship of attitudes and achievement using the Pupil Opinion Questionnaire, a 60-item Likert scale measuring attitudes of sixth graders toward teachers, schoolwork, peers, and school in general. He found "attitude-achievement correlations" that were more in line with the common assumption of a positive attitude achievement relationship than the results of most previous studies have been.

The relationships between attitude and achievement have been somewhat stronger when the attitude is measured in relation to specific subject-matter rather than school in general.

- In Jordan's (1941) research, the correlation between attitude and achievement was found ranging from .21 to .33. These correlations gave some evidence that a positive relationship exists between attitude and achievement, but in no cases did it appear to be of impressive magnitude.

- Wethington (1966) concluded that attitude toward English, I.Q., and grade received were in every instance significantly related, with the correlation between attitude and grade ($r = .46$, $p < .001$), and the correlation between I.Q. and attitude ($r = .26$, $p < .001$).

- Adkov (1969) studied attitudes toward reading in primary pupils, but the attitude and achievement scores showed no significant correlation.

- Neale, et al, (1961) and Hayes, et al, (1966) studied relationships between reading achievement and San Diego County Inventory of Reading Attitude. Correlations were significant, ranging from .29 to .52.

The summary of research findings suggests it has been generally true that attitudes toward specific subjects are more related to school achievement than are general attitudes toward school. Nevertheless, contradictory results prevent a definitive conclusion regarding the relationship between attitude toward school subjects and achievement.

Relationships Between Self-concept and Academic Achievement:

The third main category of school related study has focused on the relationship between self-concept and academic achievement. Self-concept for many educators appears to be regarded as a separate subject rather than as a part of school related attitude research.

- The maintenance and enhancement of the perceived self is the motive behind all behaviors including academic achievement, according to Snygg and Combs (1949, 1959) and Rogers (1951).

A review of literature by Purkey (1970) indicated a persistent relationship between self-concept and academic achievement. It has not been clear, however, whether self-concept determines achievement or achievement shapes self-concept.

- Brookover (1967) concluded from his extensive research on self-image and achievement that the assumption that human ability is the most important factor in achievement is questionable and that the student's attitudes limit the level of his/her achievement in school.

- Fink (1962) found differences in self-concept between 5th grade underachievers and achievers. He concluded that there is a significant relationship between self-concept and academic underachievement.

- Brookover, Thomas, and Patterson (1964) studied 7th graders' attitudes toward self and their achievement. The relationship between students' reported concepts of their own ability and their grade point averages were positively and significantly correlated, even when measured I.Q. was controlled.

- Campbell (1967) reported a low positive correlation between the Coopersmith Self-esteem Inventory, a self-report questionnaire, and the achievement of 4th, 5th, and 6th grade students.

- Caplin (1966) studied black children's self-concept and their academic achievement and found that children who professed more positive self-concepts tended to have higher academic achievement.

- Gill (1969) also found a pattern of achievement significantly related to the perceived self in public school students.

- In an investigation of the relationship between children's perceptions of themselves and their subsequent achievement in reading in the 1st grade, Lamy (1965) suggested that children's perceptions of themselves and their world are not only related to, but may in fact by causal factors in, their subsequent reading achievement.

- Wattenberg and Clifford (1964) found that, in kindergarten children, self-concept appears to be antecedent to and predictive of reading achievement in the second grade.

It can be seen from the research that much conflicting evidence has been generated on the importance of affective dimensions in studying educational processes. In spite of this inconclusiveness, the intuitive attraction of the concept of attitude has led educators to spend large sums of money on programs which seek to "improve attitudes." The present study attempts to shed some further light on the question of educational impact of attitudes by developing a new attitudinal measure and examining its predictive validity in terms of observable educational behaviors.

PROCEDURES

Instrument Development

Based on the analysis of data from the preliminary instrument, four attitude factors were hypothesized for the present 1973-74 study. The factors were general school attitude, attitude toward school subjects, interpersonal self-concept, and intrapersonal self-concept. From the 23 items on the preliminary instrument, 17 items were utilized. Items which did not contribute at least 16% (loading $\geq .40$) common variance to a single factor were eliminated. Five items for a scale on attitude toward school subjects were added as a dimension as a result of the literature search finding that attitudes toward the specific subjects were more related to the school achievement than general school attitude.

With the generation of two additional items for the self-concept factor, the revised instrument used in 1973-74 consisted of 24 items. The items were simple and short questions (Appendix A) to induce self-report data from the children and were administered by video-tape. Of the three common methods of measuring attitude; self-report, behavioral ratings, and projective method, the self-report type of instrument has two significant merits over other methods. The instrument can be administered to groups of students, and also, data are gathered directly from students. The video-taped administration has advantages over the traditional type of paper-and-pencil questionnaire in that it not only reduces personal impact on the response to attitudinal questions but also can be uniformly administered to different groups of students.

The self-report answer sheet used by the students was a modified Likert scale consisting of four points. (Appendix B). Rather than the usual "strongly agree/disagree" labels for the points, a scale consisting of "big yes" (written big in a big box), "little yes" (written small in a little box), "little no", and "big no" was marked by the children to indicate their responses to the questions.

Predictive validity

Since a major thrust of this study had to do with the value of studying attitudes in the context of the educational process, predictive validity of the instrument was regarded as a main concern. Five validation criteria were selected as representative of the kinds of student behaviors with which most educators are commonly concerned.

1. School attendance - number of days absent and tardy during the first quarter of the year.

2. Academic achievement I - Metropolitan Achievement Test combined Reading and Mathematics scores for fall, 1973 and spring, 1974.

3. Academic Achievement II - School grades in subject-matter areas. (language arts, reading, arithmetic, social studies, science)

4. Citizenship - grades in conduct and attitude, and work and study habits.

5. Teachers' Rating Scale - As a part of the validation criteria for the study, a Teachers' Rating Scale (Appendix C) was developed. Since the scale was to measure teacher's observations of children's attitude toward the school surroundings, it was designed as a counterpart of the children's instrument. The scale consists of a four-choice rating of each child's attitude on each of the four hypothesized factors.

Data on each of the five criteria were gathered two times for the sub-sample and product moment correlations were computed between scores on the five variables and the obtained factor scores.

Sampling

The sample of students to whom the 24-item attitude instrument was administered consisted of all students (grades 1-4) in each of the ten elementary schools, including 1,943 students for the pre-survey and 1,864 for the post-survey. This represented approximately 10% of the Seattle District's population for these grades. The ten schools were selected out of a total of 86 elementary schools in Seattle School District #1 by a random interval sampling procedure. In order to assure representation of all socio-economic levels of the school district, schools were ranked according to the percentage of poverty of their respective attending populations. Percentage of poverty was computed based on OEO Poverty Guidelines and 1970 census data converted to school attendance areas.

For purposes of collecting validation data, two sub-samples were drawn from the original sample described above:

Sub-Sample 1. A 25% sub-sample was randomly selected from within each school for purposes of collecting all validation data except Metropolitan Achievement Test scores.

Sub-Sample 2. A group consisting of all second and fourth graders from Sub-sample 1. was used for validating the attitude scale against Metropolitan Achievement Test scores. This group consisted of 12.5% of the original sample.

Modifications of the Original Design

It was originally intended to gather attitude ratings by teachers, principals, and counselors on this sub-sample of students as one criterion for validating the attitude survey. However, most principals and counselors indicated they were not well enough acquainted with the majority of sampled students to provide knowledgeable ratings. Consequently, only teacher ratings were used for this part of the validation study.

It was also originally planned to gather disciplinary referrals on the sub-sample of the students as validation data. However, the teachers' ratings on "conduct and attitudes" and "work and study habits" on the report cards were used as a substitute for the disciplinary referrals because of the paucity of disciplinary referral data.

Timeline

Preparation for the survey: August 1, 1973 - October 6, 1973

- Additional literature was surveyed for the purpose of revising the initial Title I instrument.
- The data collected from the 1972-73 Title I project were further analyzed as an input for the revision of the instrument.
- A revision of the attitude instrument and the video taped administration was made.
- The attitude rating scale for teachers was constructed as a validation criterion.
- A sample of ten elementary schools was drawn by a random interval sampling procedure, representing all socio-economic levels of the Seattle School District #1.

Administration (Pre-test) of the attitude instruments and collection of validation data: October 7, 1973 - November 12, 1973

- The revised instrument was administered to the entire 1st through 4th grade populations of the ten sample schools (October 8 - November 6, 1973).
- The validation scales were administered to teachers, principals and counselors at the time of the administration.
- Other validation data including school attendance records and school achievement reports were collected and an arrangement was made for the access to the Metropolitan Achievement Test scores of the subjects.

Data Analysis: November 13, 1973 - March 1974

- The completed instruments were coded and ready for the initial analysis.
- Validation data were similarly coded.

Administration (Post-test) of the actitude instrument and collection of the data: April 15, 1974 - June 20, 1974.

RESULTS

Instrument Development

Factor Analysis. Following the first and second administration of the 24 item instrument in October 1973 and May 1974, data were factor analyzed with varimax rotation. Items failing to meet the simple structure criterion and items which did not contribute at least 10% common variance to a single factor were eliminated from further consideration. Remaining items were refactored and factor scores on each factor were used to test for predictive validity.

Results of the factor analysis of attitude survey items are presented in Table 1. Items were analyzed twice for the pre- and twice for the post-test of attitude instrument with the second analysis in each case including only items meeting the simple structure criterion, and contributing at least ten percent common variance to a factor. Three identifiable factors account for 36% of the common variance in the pre-test analysis and 38% in the post-test analysis.

The data in Table 1 lend empirical support to three of the four hypothesized factors that the survey was intended to measure: general school attitude (Factor I), interpersonal self-concept (Factor II), and intrapersonal self-concept (Factor III). Items hypothesized to measure additional factors identifiable as attitudes toward specific subject matter areas clearly merged with the general school attitude factor. This latter finding suggests that students in the age group under study tend, at least affectively, to view various subject matter areas as part of a total school experience rather than as distinct entities.

Item Distributions. As a check on the success of the four-point scale answer sheet format in increasing variance, item distributions were computed for both pre and post-survey administration. Examination of the data presented in Tables 2 and 3 reveals that while there is a clear tendency for most distributions to be skewed in the direction of "positive" or "favorable" responses, all scale points were used (i.e. enough variance was generated) to an extent which indicates that children in this age range are capable of discriminating beyond simple dichotomous scales.

Reliability. Internal consistency reliability coefficients (coefficient alpha) were calculated for the items on each factor both in pre and post-tests. (Nunnally, 1970). As shown in Table 4, the coefficient for general school attitude was the highest, with .80 in pre-test and .77 for the post-test. The second factor, interpersonal self-concept, had coefficients of .64 in the pre-survey and .69 in the post-survey. The third factor, intrapersonal self-concept yielded the lowest coefficients with .50 in pre survey and .46 in the post-survey.

TABLE 1

TEST ITEM FACTOR LOADINGS FOR ITEMS MEETING SIMPLE STRUCTURE
10% COMMON VARIANCE CRITERIA

	Item No.	Items for Factors	Factor Loadings			
			Pre		Post	
			24 Items	19 Items	24 Items	20 Items
Factor I	1	Do you like math?	.46	.48	.51	.46
	4	Do you like school?	.71	.71	.76	.69
	6	Do you like spelling?	.51	.49	.51	.48
	8	Do you think that school is boring?	-.64	-.57	-.72	-.68
	10	Do you like things you do in school?	.57	.58	.63	.66
	11	Do you like writing?	.47	.48	.48	.51
	12	Is reading fun for you?	.38*	*	.46	.48
	13	Do you think school is a sad place?	-.32*	-.40*	-.45	-.51
	20	Do you like to work in school?	.75	.76	.75	.74
	22	Do you think that school is a happy place?	.65	.66	.66	.67
Factor II	7	Are other kids usually friendly?	.47	.44	.45	.46
	15	Do most of the other kids like you?	.68	.67	.76	.73
	17	Do you have lots of friends your age?	.31	.35	.41	.39
	18	Do other people like you?	.63	.65	.68	.65
	21	Do other people trust you?	.44	.45	.41	.42
Factor III	2	Do you wish that you were a different girl or boy?	.35	.35	.39	.36
	3	Is it hard to be yourself?	.45	.43	.46	.43
	9	Do you give up very easily?	.38	.38	.23*	.26*
	13	Do you think that school is a sad place?	.42	.36	.12*	.15*
	16	Are things all mixed up in your life?	.40	.41	.56	.57
	24	Does it take you a long time to get used to anything new?	.43	.41	.32	.33

* Not used in computing factor scores.

TABLE 2

PERCENTAGE DISTRIBUTIONS OF RESPONSES I (PRE-TEST)
N=1943

	Percentage of Responses				
Item No.	1*	2*	3*	4*	Missing
1	19.2	9.7	23.8	44.0	3.3
2	70.2	9.8	5.3	11.9	2.8
3	53.5	22.0	9.2	12.6	2.7
4	11.3	5.0	19.1	62.4	2.2
5	4.0	1.8	7.0	85.0	2.2
6	22.4	11.1	24.1	39.8	2.6
7	21.5	15.2	29.1	32.1	2.1
8	57.8	13.5	7.4	19.8	1.5
9	52.8	19.1	7.9	18.6	1.6
10	6.9	5.5	24.4	61.6	1.6
11	11.3	8.5	23.7	54.9	1.6
12	12.1	8.6	19.3	58.5	1.5
13	70.4	12.6	3.8	11.2	2.0
14	17.9	7.8	18.9	53.9	1.5
15	14.5	9.3	28.5	45.7	2.0
16	58.1	15.5	9.4	14.7	2.3
17	13.6	10.0	15.7	59.3	1.4
18	8.7	6.7	29.6	53.5	1.5
19	5.9	2.3	8.1	82.2	1.5
20	14.1	9.7	24.3	50.4	1.5
21	13.0	11.9	27.8	45.3	2.0
22	10.8	7.5	20.9	59.1	1.7
23	8.5	5.7	25.0	59.3	1.5
24	41.9	18.0	13.4	25.4	1.3

* 1-4 refer to "Big No", "Little No", "Little Yes", and "Big Yes" respectively.

TABLE 3

PERCENTAGE DISTRIBUTIONS OF RESPONSES II (POST-TEST).
N=1864

Item No.	Percentage of Responses				
	1*	2*	3*	4*	Missing
1	20.0	10.0	26.7	41.1	2.2
2	69.1	10.4	7.5	11.3	1.7
3	55.0	23.4	9.5	9.8	2.3
4	13.7	6.9	23.2	54.1	2.1
5	2.9	1.6	9.7	84.0	1.8
6	23.0	13.5	28.3	33.5	1.7
7	18.0	16.7	36.1	27.9	1.3
8	51.1	16.3	10.2	21.5	0.9
9	59.7	21.7	6.6	10.9	1.1
10	8.5	6.9	30.7	52.6	1.3
11	12.9	10.0	26.4	49.6	1.1
12	12.9	9.0	21.5	55.6	1.0
13	69.4	15.1	4.7	9.3	1.5
14	17.9	9.9	19.6	50.9	1.7
15	13.7	12.8	31.3	40.9	1.3
16	58.9	15.9	11.1	12.4	1.7
17	13.7	12.4	19.5	53.1	1.3
18	9.5	7.7	33.0	49.1	0.7
19	4.9	3.0	9.9	81.5	0.7
20	17.2	12.9	28.5	40.7	0.7
21	13.3	12.8	33.2	39.8	0.9
22	12.3	10.6	24.8	51.3	1.0
23	6.2	7.0	29.4	56.5	0.9
24	43.6	21.0	12.6	22.4	0.4

* 1-4 refer to "Big No", "Little No", "Little Yes", and "Big Yes" respectively.

TABLE 4

INTERNAL CONSISTENCY RELIABILITY COEFFICIENTS BY GRADE
(COEFFICIENT ALPHA)

	Pre-Survey (N=1813)					Post-Survey (N=1484)				
Factors	Gr 1	Gr 2	Gr 3	Gr 4	Total	Gr 1	Gr 2	Gr 3	Gr 4	Total
I	.68	.79	.84	.86	.80	.77	.80	.74	.75	.77
II	.63	.60	.68	.73	.64	.65	.64	.68	.71	.69
III	.58	.42	.48	.54	.50	.38	.46	.48	.58	.46

Predictive Validity

Teachers Ratings of Student Attitudes. Correlations between scores on each of the attitude factors and teacher ratings of student attitudes are presented in Table 5. Although statistical significance is obtained in most cases, the generally low correlations indicate a weak relationship between the self-report measure and teacher perceptions of students' behavior. The most stable relationship appears to be between scores on Factor I and teacher ratings on all dimensions measured. This finding suggests that teacher observations of student behavior tend to focus on a single dimension. Teachers do not seem to view different attitude factors as distinguishable from one another. This explanation is given further support by the high intercorrelations among items on the Teacher Rating Form, (Table 6.)

TABLE 5

CORRELATION COEFFICIENTS BETWEEN ATTITUDE FACTORS
AND TEACHERS' RATINGS

Teacher Rating		Item 1**	Item 2	Item 3	Item 4	Total
Factor I	Pre	.21*	.23*	.18*	.21*	.24*
	Post	.23*	.32*	.19*	.18*	.27*
Factor II	Pre	.07	.10*	.08	.05	.09*
	Post	.14*	.13*	.18*	.11	.16*
Factor III	Pre	.17*	.17*	.11*	.19*	.18*
	Post	.09*	.12*	.14*	.12*	.14*

* $p < .05$
** See Appendix C for teacher rating items.

TABLE 6
INTERCORRELATIONS AMONG ITEMS ON THE TEACHER RATING FORM

Item	1	2	3
2	.81*		
3	.71*	.63*	
4	.64*	.64*	.56*

See Appendix C. for teacher rating items.

Attitudes and Academic Achievement. Correlations between attitude factor scores and grades received in various subject matter areas are presented in Table 7. Correlations are generally low and, while a few are statistically significant, there is no apparent pattern which would suggest a systematic relationship between the self-report attitude factor scores and academic grades.

TABLE 7
CORRELATION COEFFICIENTS BETWEEN ATTITUDE FACTORS AND SUBJECT-MATTER GRADES

Subject-Matters Grades	Factor I		Factor II		Factor III	
	Pre (N=360)	Post (N=345)	Pre (N=360)	Post (N=345)	Pre (N=360)	Post (N=345)
Language Arts	.18*	.17*	.05	.13*	.16*	.14*
Reading	.08	.19*	.11*	.15*	-.02	.10*
Arithmetic	.13*	.14*	.02	.15*	.13*	.19*
Social Studies	.15*	.08	.04	.01	.20*	.10*
Science	.13*	.06	.10*	.02	.10*	.13*
Total	.17*	.17*	.04	.13*	.17*	.17*

When Teacher ratings of student attitudes were correlated with subject matter grades, a consistent pattern of moderately high coefficients emerged. (See Table 8). This was not unexpected, because the attitude raters and the graders were the same people.

* $p < .05$

TABLE 8

CORRELATION COEFFICIENTS BETWEEN TEACHERS' RATINGS AND SUBJECT-MATTER GRADES

		Language Arts	Reading	Arith-metic	Social Studies	Science	Total
Item 1*	Pre	.30	.30	.27	.36	.35	.43
	Post	.31	.34	.36	.23	.26	.39
Item 2	Pre	.34	.29	.32	.42	.41	.49
	Post	.37	.39	.44	.24	.25	.44
Item 3	Pre	.36	.30	.28	.29	.37	.46
	Post	.30	.26	.35	.25	.22	.35
Item 4	Pre	.19	.25	.39	.44	.34	.44
	Post	.43	.38	.45	.33	.32	.48
Total	Pre	.34	.33	.37	.44	.42	.52
	Post	.41	.40	.47	.31	.31	.49

N (Pre-test) = 360 N (Post-test) = 337

It is probable that the size of these correlations was limited by restricted variance in the elementary grade reporting in Seattle. The typical scale has three points: "outstanding," "satisfactory", and "needs improvement" with the vast majority of students regularly receiving the middle rating.

A similar pattern of correlations emerged when the external achievement criterion (the Metropolitan Achievement Test Combined Reading and Math) was used. (See Tables 9 and 10.)

TABLE 9

CORRELATION COEFFICIENTS BETWEEN ATTITUDE FACTORS AND METROPOLITAN ACHIEVEMENT TEST COMBINED READING AND MATH SCORES

Grade		Factor I	Factor II	Factor III
2nd	Pre-Survey (N=90)	.18*	.06	.32*
	Post-Survey (N=201)	.29*	.22*	.04
4th	Pre-Survey (N=102)	.02	.16	.13
	Post-Survey (N=304)	.08	.04	.01

* $p < .05$

TABLE 10

CORRELATION COEFFICIENTS BETWEEN TEACHERS' RATINGS
AND METROPOLITAN ACHIEVEMENT TEST COMBINED READING & MATH SCORES

Teacher Rating	Grade 2		Grade 4	
	Pre (N=90)	Post (N=78)	Pre (N=102)	Post (N=66)
Item 1	.42	.44	.37	.45
Item 2	.43	.46	.44	.54
Item 3	.29	.40	.34	.54
Item 4	.50	.36	.39	.52
Total	.48	.50	.43	.60

$p < .05$ in all cases

The low correlations of the achievement data with the self-report measure and the consistent, moderately high correlations with teachers' ratings suggest that the latter is a good affective predictor of academic achievement. The data clearly do not indicate a meaningful relationship between attitudes measured by the self-report and academic achievement.

Attitudes and School Attendance. Correlations between factor scores on the Attitude Survey and school attendance are presented in Table 11.

TABLE 11

CORRELATION COEFFICIENTS BETWEEN ATTITUDE FACTORS
AND ATTENDANCE RECORDS

	Absenteeism		Tardiness	
	Pre (N=360)	Post (n=245)	Pre (N=360)	Post (N=345)
Factor I	.01	.01	.01	-.05
Factor II	.01	-.14*	.11*	.11*
Factor III	.09	-.03*	.04	.10*

* $p < .05$

While scattered correlations meet minimal statistical significance levels, all are sufficiently low to indicate the absence of a meaningful relationship.

Correlations between teachers' ratings and rates of tardiness follow a pattern similar to the achievement correlations (see Table 12). However, in this case the relationship may be largely due to the fact that tardiness is one of a number of things which bears directly on a teacher's rating. No relationship between absenteeism and teachers' ratings emerged, possibly because, unlike tardiness, many of the reasons for being absent are considered acceptable behaviors.

TABLE 12

CORRELATION COEFFICIENTS BETWEEN TEACHERS' RATINGS AND ATTENDANCE

Teachers' Rating Form	Absenteeism		Tardiness	
	Pre (N=360)	Post (N=337)	Pre (N=360)	Post (N=337)
Item 1	.06	.07	.17*	.22*
Item 2	.02	.08	.16*	.20*
Item 3	.04	.03	.20*	.16*
Item 4	.07	.06	.17*	.21*
Total	.05	.07	.20*	.23*

Attitude and Citizenship Grades. Correlations between attitude factor scores and grades received for "citizenship" are given in Table 13.

TABLE 13

CORRELATION COEFFICIENTS BETWEEN ATTITUDE FACTORS AND CITIZENSHIP GRADES

	Conduct and Attitude		Work and Study Habits	
	Pre (N=360)	Post (N=345)	Pre (N=360)	Post (N=345)
Factor I	.15*	.25*	.10*	.23*
Factor II	.05*	.19*	.00	.18*
Factor III	.21*	.19*	.04	.17*

* $p < .05$

...ough a modest, significant relationship is apparent between attitude ...tor scores and citizenship measures obtained at the end of the year, the ...relations are of the same order of magnitude as those obtained between ...tude factors scores and the other validation criteria. Although in many ... significant, the strength of these correlations is not sufficient ...warrant acceptance of attitude factor scores obtained from the student ...report instrument as an adequate predictor of school related behaviors.

SUMMARY AND CONCLUSIONS

This study was designed to accomplish two major objectives. The first was to develop a measurement tool and an administration technique for assessing educationally relevant attitudes of students in the primary grades. The second was to examine the relationship between attitudes as measured and certain student behaviors which represent day-to-day concerns of the professional educator.

With respect to the first objective, a 24-item Likert-type instrument was developed and demonstrated to measure three identifiable dimensions of student attitude: general attitude toward school, interpersonal self-concept, and intrapersonal self-concept.

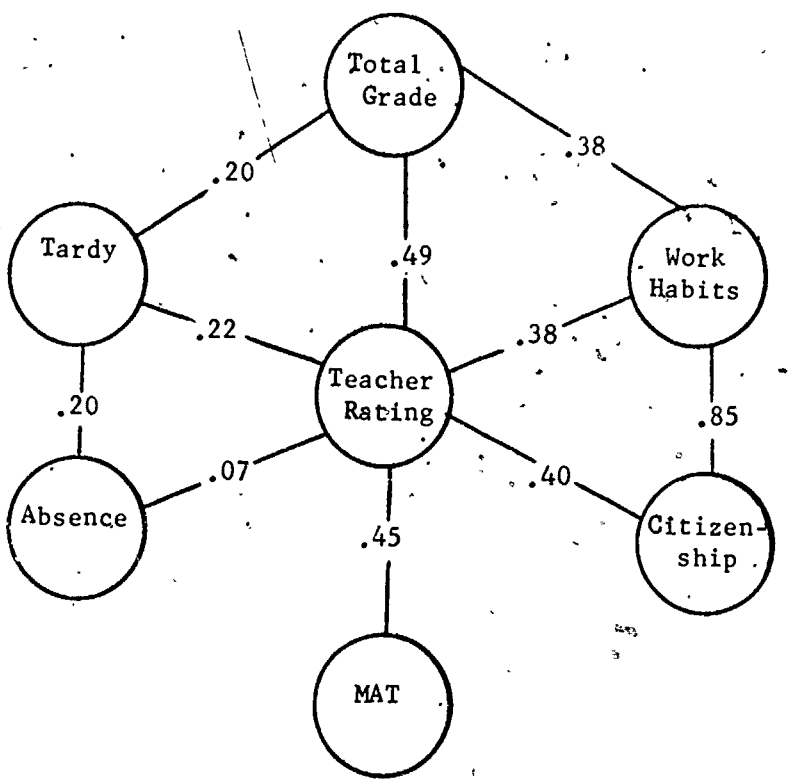
In addition, an administration procedure, including a special answer-sheet and a videotaped presentation was devised to facilitate use of the instrument in classroom settings. Both the videotape and the answer-sheet format proved easy to deal with in a classroom of 20 students. Average administration time, including equipment setup, was about 45 minutes.

The items appeared readily understandable to primary students and yielded response variances and reliabilities within an acceptable range. However, the moderate amount of common variance accounted for by the three obtained factors suggests that the survey be used with caution as a sole index of attitudes or attitude change in educational program research and evaluation.

For those in search of a set of systematic relationships between student attitudes measured by a self-report instrument and student behaviors in an educational environment, the results of this study lend little encouragement. One is forced to conclude that the prime reason that many self-report instruments have not correlated well with observable educational behaviors is <u>not</u> due solely to inadequate instrumentation. One must search for some more basic reason that would account for the failure of this and other self-report instruments to demonstrate external validity.

In examining the relationships of all validation data collected during this study, it was found that while the self-report instrument did not correlate well with the validation criteria, the intercorrelations among many of the validation criteria were moderately high. It was further recognized that the teachers' ratings of students' attitudes also correlated well with the other validation criteria. Figure 1 shows these correlations.

FIGURE 1



This situation indicates that there was, in fact, a relationship between student attitudes ascribed by teachers, and educationally relevant student behaviors. However, this relationship does not focus on a concept of student attitude that holds that attitude is a phenomenon residing totally within each individual student. Rather, as applied to students in a school setting, attitudes would more usefully be defined as the total set of behaviors displayed by students and interpreted by school staffs in terms of teacher expectations. Student attitudes then become "ascribed" to students rather than "residing" within them. Viewed in this way, the usually high agreement among teachers in a given school about the attitude of particular students is explained.

Further, the means to apply this concept of teacher-ascribed student attitude in useful ways within the classroom becomes clear. If we want to "improve attitude", it then follows that what we are really saying is that we want student behavior to be more in line with those behaviors that school staffs expect and admire, and that produce demonstrable learning.

In summary, this study produced a reliable self-report attitude assessment instrument. The instrument uses a four point scale and a standardized videotape administration procedure that is well within the capabilities of first through fourth grade students. However, the instrument cannot be validated in terms of commonly identified, relevant, student educational

behaviors. At the same time, professional school staffs insist that the "attitude" of students is a very important factor in student achievement. Our experiences have shown that, to be educationally useful, student attitude for pupils in grades 1-4 should be conceived as an ascribed attitude that is a composite of the teacher's interpretations of student behaviors in terms of the teacher's expectations, rather than a self-report of the student. As the literature already suggests, in terms of validity, self-report instruments for young pupils may be destined for failure as correlates of educational behaviors. More useful and relevant research should be conducted to investigate which particular behaviors are most observed and used by teachers in formulating a students' "ascribed attitude" and how these "critical" behaviors may be systematically and reliably observed.

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APPENDIX A.

ADMINISTRATION INSTRUCTIONS

Hi, my name is Mrs. Meichel. I work for a department of the Seattle Schools that is interested in finding out what students like you think about school. By learning what you think about school, we can find out if we are doing a good job making school an interesting and fun place to be. Today I am going to ask you some questions about yourself, your class and school in general. I will read the questions to you one by one. I will give you plenty of time to answer.

Right now I have some very important things to tell you. There are no right or wrong answers to these questions, so answer exactly what you think. Also please do not talk about your answers to any of the other students. When you are through, we are going to ask you to write your name at the end of the last page. This is only so that we can ask you some more questions later on. Your teachers will never know the answers you gave to these questions. Your answers will be our secret.

Okay, now everyone should have a pencil and three pieces of paper, one green sheet, one yellow sheet, and one blue sheet. If you do not have all of these things, please raise your hand right now and the monitor will bring them to you now.

Please do not make any marks on the paper until I start asking questions. Now please look at the green sheet of paper, there is one just like it on the screen.

On the left side of the paper are some pictures, see over here, there are several pictures. The first picture is a dollar bill...does everyone see it? ...a dollar bill. The next one is a car; next is a book; next is a picture of a kite, then a picture of a motorcycle; the next one is of a star; next is a picture of a tree. The next picture is of a boat; the next picture is a clock, and finally the last picture is of an airplane. Okay, now let's go back to the first one, the dollar bill, is everybody there? the dollar bill. (the first picture on the sheet). Next to the dollar bill are four answer boxes, right here 1-2-3-4. There's a big no box "N-O," no. There's a little no box, again "N-O." There's a little yes box, "Y-E-S" in the little box and finally a big

box that has yes in it "Y-E-S" yes.

This is the way you will answer the questions; I will point to a picture on the answer sheet and ask you to find that picture on your paper. Then I will ask you a question. You will give your answer by making a mark in one of the boxes next to the picture. You can make any kind of a mark you want. You mark the big no box if your answer to the question is a big strong "NO!!" (loudly). You mark the little no box if your answer to the question is "no", but only a little no. You mark the little yes box if your answer to the question is "yes", but only a little yes. You mark the big yes box if your answer to the question is a big strong "YES!" (loudly).

Now let's do a few questions together for practice. Be sure you are looking at the green piece of paper. For practice, we are just going to be working with the first two rows, the rows with the dollar bill and the car, just those first two. Got it? Now, I will ask the first practice question, then you will answer the question on your green piece of paper. Do not answer out loud. First, we need to find the line with the dollar picture - there it is, the dollar bill picture. Can you all find it on your picture. Can you all find it on your paper?

The question is, "Do you like to watch TV?" Now look at the line next to the dollar bill, and answer the question "Do you like to watch TV?" If you really really like to watch TV, your answer is a big yes, so mark the big yes box. If you like to watch TV, but only a little, your answer is a little yes, so mark the little yes box. If you don't like to watch TV very much, your answer is a little no; so mark the little no box. And if you really hate to watch TV, your answer is a big no, so mark the big no box. Okay, now everybody mark the big no box. Okay, now everybody mark on the box next to the dollar bill which gives your answer to the question. Be sure you only mark one box.

Since I like to watch TV in a big way, my answer is a big yes, right here. Here's the big yes box, remember? So to answer the question I circled the word yes in the big yes box, right there.

All right, let's do another one. Now we need to find the picture of the car. Here it is, the picture of the car, can everybody find it?
The question is, "Do you like to play football?" Now everyone mark one of

the boxes next to the car which gives your answer to the question, "Do you like to play football?" Does everybody understand how to answer the question? If you do not understand, raise your hand and the monitor will help you.

Now we will begin with the real questions. Be sure to mark your answer carefully, and don't change any answers. Remember - there are no right or wrong answers. Remember to mark only one answer and don't answer out-loud.

Mark your answer to the next question in one of the boxes next to the book. Right here, next to the book. The question is, "Do you like math?" "Do you like math?"

Mark your answer to the next question in one of the boxes next to the kite. Right here, next to the kite. The question is, "Do you wish that you were a different girl (or boy)?" "Do you wish that you were a different girl (or boy)?"

Mark your answer to the next question in one of the boxes next to the motorcycle. Right here, next to the motorcycle. The question is, "Is it hard to be yourself?" "Is it hard to be yourself?"

Mark your answer to the next question in one of the boxes next to the star. Right here, next to the star. The question is "Do you like school?" "Do you like school?"

Mark your answer to the next question in one of the boxes next to the tree. Right here, next to the tree. The question is "Do you have a very good friend?" "Do you have a very good friend?"

Mark your answer to the next question in one of the boxes next to the boat. Right here, next to the boat. The question is, "Do you like spelling?" "Do you like spelling?"

Mark your answer to the next question in one of the boxes next to the clock. Right here, next to the clock. The question is, "Are other kids usually friendly?" "Are other kids usually friendly?"

Mark your answer to the next question in one of the boxes next to the airplane. Right here, next to the airplane. The question is, "Do you think that school is boring?" "Do you think that school is boring?"

Now turn to the yellow piece of paper. The pictures on it are just like those on the green paper. Mark your answers just as you did before.

Mark your answer to the next question in one of the boxes next to the dollar bill. Right here, next to the dollar bill. The question is, "Do you give up very easily?" "Do you give up easily?"

Mark your answer to the next question in one of the boxes next to the car. Right here, next to the car. The question is, "Do you like things you do in school?" "Do you like things you do in school?"

Mark your answer to the next question in one of the boxes next to the book. Right here, next to the book. The question is, "Do you like writing?" "Do you like writing?"

Mark your answer to the next question in one of the boxes next to the kite. Right here, next to the kite. The question is, "Is reading fun for you?"

Mark your answer to the next question in one of the boxes next to the motorcycle. Right here, next to the motorcycle. The question is, "Do you think that school is a sad place?" Do you think that school is a sad place?"

Mark your answer to the next question in one of the boxes next to the star. Right here, next to the star. The question is, "Do you like science?" "Do you like science?"

Mark your answer to the next question in one of the boxes next to the tree. Right here, next to the tree. The question is, "Do most of the other kids like you?" "Do most of the other kids like you?"

Mark your answer to the next question in one of the boxes next to the boat. Right here, next to the boat. The question is, "Are things all mixed up in your life?" "Are things all mixed up in your life?"

Mark your answer to the next question in one of the boxes next to the clock. Right here, next to the clock. The question is, "Do you have lots of friends your age?" "Do you have lots of friends your age?"

Mark your answer to the next question in one of the boxes next to the airplane. Right here, next to the airplane. The question is, "Do other people like you?" "Do other people like you?"

Now turn to the blue piece of paper. The pictures on it are just like those on the yellow paper. Mark your answers just as you did before.

Mark your answer to the next question in one of the boxes next to the dollar bill. Right here, next to the dollar bill. The question is, "Is art fun for you?" "It art fun for you?"

Mark your answer to the next question in one of the boxes next to the car. Right here, next to the car. The question is, "Do you like to work in school?" "Do you like to work in school?"

Mark your answer to the next question in one of the boxes next to the book. Right here, next to the book. The question is, "Do other people trust you?" "Do other people trust you?"

Mark your answer to the next question in one of the boxes next to the kite. Right here, next to the kite. The question is, "Do you think that school is a happy place?" "Do you think that school is a happy place?"

Mark your answer to the next question in one of the boxes next to the motorcycle. Right here, next to the motorcycle. The question is, "Do you feel good about the way you do things?" "Do you feel good about the way you do things?"

Mark your answer to the next question in one of the boxes next to the star. Right here, next to the star. The question is, "Does it take you a long time to get used to anything new?" "Does it take you a long time to get used to anything new?"

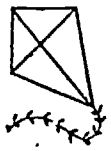
Please write your name, first and last name, on the line on the blue paper. Ask the monitor for help if you need it.

APPENDIX B -- ANSWER SHEET

NO NO YES YES

NO NO YES YES

NO NO YES YES



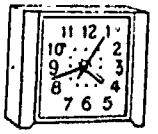
NO NO YES YES

NO NO YES YES

NO NO YES YES

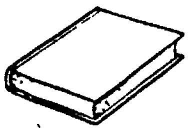
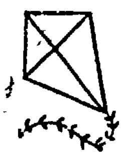
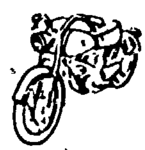
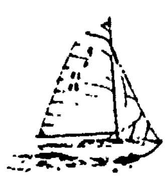
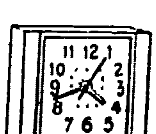
NO NO YES YES

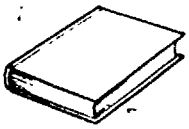
NO NO YES YES



NO NO YES YES

NO NO YES YES

	NO	NO	YES	YES
	NO	NO	YES	YES
	NO	NO	YES	YES
	NO	NO	YES	YES
	NO	NO	YES	YES
	NO	NO	YES	YES
	NO	NO	YES	YES
	NO	NO	YES	YES
	NO	NO	YES	YES
	NO	NO	YES	YES

	NO	NO	YES	YES
	NO	NO	YES	YES
	NO	NO	YES	YES
	NO	NO	YES	YES
	NO	NO	YES	YES
	NO	NO	YES	YES

NAME _____

APPENDIX C - TEACHER RATING FORM

Validation of Student Survey (Fall 1973)

Student's Name_____ School_____ Grade_____

Below are the statements which might describe the above named child and his/her behavior. Please circle the number of the answer for each item which best fits your comprehensive judgment about the child and his behavior.

strongly agree	1
agree	2
disagree	3
strongly disagree	4

All responses will be kept confidential.

1. School seems to be a happy place for him/her. He is well adjusted to school and rarely appears bored. In general, he seems to like school.

   1 2 3 4

2. He/she seems to enjoy his school subjects. He likes his studies and work in school.

   1 2 3 4

3. He/she enjoys working and playing with other children. He is cooperative and and friendly with them. Other kids seem to like and trust him.

   1 2 3 4

4. He/she feels secure in the way he does things. In general, he seems to feel confident in himself.

   1 2 3 4

This form was completed by the student's: (please check one)

☐ Principal

☐ Teacher

☐ Counselor or other student service worker