

THE DEVELOPMENT OF THE ICHORD ART ATTITUDE
INVENTORY (IAAI) FOR SIXTH GRADE
CHILDREN

By

PAMELA ICHORD EHLERS

Bachelor of Science in Secondary Education

Oklahoma State University

Stillwater, Oklahoma

1977

Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
MASTER OF SCIENCE
July, 1979

Thesis
1979
E 33d
cop. 2



THE DEVELOPMENT OF THE ICHORD ART ATTITUDE
INVENTORY (IAAI) FOR SIXTH GRADE
CHILDREN

Thesis Approved:

Audrey Eleanor Oaks

Thesis Adviser

Ternon Trope

Elizabeth D. Coker

Donald N. Nimmer

Norman N. Kuehner

Dean of the Graduate College

1031829

ACKNOWLEDGMENTS

The author wishes to express her sincere appreciation to her major adviser, Dr. Audrey E. Oaks, for her advice, guidance, and understanding throughout the course of this study. A special thanks is expressed to Dr. Donald Nimmer for the unlimited time he spent throughout this study and his valuable assistance in the statistical analysis of the data. Appreciation is also expressed to committee members, Dr. Elizabeth McCorkle and Dr. Vernon Troxel, for their guidance as well as the reading and criticism of this final manuscript.

The author would also like to thank the principals, teachers, and pupils at Wiley Post Elementary School, Putnum City School District; Oklahoma City, Oklahoma, as well as those at Lincoln, Liberty, Jefferson, Roosevelt, Trout, Washington, and Woodland Elementary Schools in Ponca City, Oklahoma, for this participation in making this study possible.

Special appreciation is expressed to Kathleen McCullough and Molly Reid for their assistance in the typing of this thesis.

A very special thanks to my parents, Vera Pamperin and Congressman Richard H. Ichord, for their encouragement during the course of this study.

Finally, sincere appreciation is expressed to the author's husband, Kim C. Ehlers, not only for his encouragement and understanding, but also for his labor and unlimited time spent in helping to compute the data for this study.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
The Problem	2
Purpose of the Study	2
Definition of Terms	3
Scope and Limitations	4
II. REVIEW OF LITERATURE	5
Introduction	5
Affective Learning	5
Attitude Scales	8
Development of the Attitude Inventory	9
Statistical Methods Appropriate for Attitude Scales	12
III. METHODOLOGY	14
Development of the IAAI	14
Pilot Study	15
Instrumentation of the Revised IAAI	15
Data Collection and Recording Normative Data	16
Reliability	16
Validity	17
IV. RESULTS OF THE STUDY	18
Introduction	18
Results and Discussion of the Pilot Study	18
Results of the Revised IAAI	29
Summary	33
V. SUMMARY AND CONCLUSIONS	37
Findings of the Pilot Study	37
Findings of the Revised Study	38
Conclusions	38
Recommendations	39

Chapter	Page
BIBLIOGRAPHY	40
APPENDIXES	43
APPENDIX A - ATTITUDE SCALES	44
APPENDIX B - IAAI DIRECTIONS AND INSTRUMENTS	49

LIST OF TABLES

Table	Page
I. Pilot Study Table Showing Mean, Standard Deviation, and Reliability of Each Sub-Test and Total Test for Boys, Girls and Total Group	19
II. Item Analysis of Projects Scale for Total Pilot Study Group	20
III. Item Analysis of Artists Scale for Total Pilot Study Group	22
IV. Item Analysis of Self-Concept Scale for Total Pilot Study Group	24
V. Item Analysis of Total Test for Total Pilot Study Group	26
VI. Revised Study Table Showing Mean, Standard Deviation and Reliability of Each Sub-Test and Total Test for Boys, Girls and Total Group	30
VII. Item Analysis of Projects Scale for Total Revised Study Group	31
VIII. Item Analysis of Artists Scale for Total Revised Study Group	32
IX. Item Analysis of Self-Concept Scale for Total Revised Study Group	34
X. Item Analysis of Total Test for Total Revised Study Group	35

CHAPTER I

INTRODUCTION

Very little study has been undertaken to assess the attitude of elementary school children toward the visual arts. Most programs in art on the elementary level are concerned with developing the motor skills of children in using equipment such as scissors, rulers and pencils, therefore, lean toward the production aspects rather than the attitude or feeling the child has for Art. Eisner (1966) stated that:

Although researchers in art education have paid much attention to the problem of studying that most highly complex cognitive process called creativity, relatively little attention has been paid to assessment of low level cognitive processes and to the assessment of student attitudes toward art (p. 43).

If teachers are emphasizing the cognitive aspects of art rather than the child's attitude, according to Robert F. Mager (1968):

The likelihood of the student putting his knowledge to use is influenced by his attitude for or against the subject; things disliked have a way of being forgotten . . . One objective toward which to strive is that of having the student leave your influence with as favorable an attitude toward your subject as possible. In this way you will help to maximize the possibility that he will remember what he has been taught, and will willingly learn more about what he has been taught (p. 11).

Assuming this theory is true, then the attitude of a child is important and should be considered.

The Problem

Current literature in the field of art education does not seem to reveal the existence of an attitude survey or inventory for elementary children. Elliot W. Eisner, professor at Stanford University in California, devised an attitude inventory composed of sixty items designed to measure attitudes toward art among secondary school and college students. Authors such as Wight and Doxsey (1972), Strickland (1970) and others have devised attitude questionnaires for elementary children, but none of these scales deal specifically with the visual arts.

Since many elementary children are taught art in a self-contained classroom by a non-art specialist, it appears that an art attitude inventory would be of assistance in determining the attitudes of students toward art activities, artists and self-concept of their own art ability.

Purpose of the Study

The purpose of this study is to:

1. Research, in-depth, the affective domain as perceived by different professionals.
2. Research, in-depth, attitude scales in different disciplines that are given on the elementary level to discover methods of developing and administering attitude scales that would be appropriate for the elementary level.
3. Design an instrument to assess the attitudes of sixth grade children toward art activities, artists and

their works, and the self concept of sixth graders regarding their own art ability.

4. Conduct a pilot study using the testing instrument.
5. Perform an item analysis and revision of the testing instrument.
6. Conduct a subsequent study using the revised assessment instrument.

Definition of Terms

Art: Synonymous with art activities. Creativity applied to any specific skill or the making of things that have form or beauty (Webster, 1971, p. 23).

Art Attitude: Learned tendencies held toward art referents.

Artist: One who is skilled in any area of the fine or graphic arts (Webster, 1971, p. 29).

Measurement: Assessment and evaluation based on numerical data. It describes the process by which data are assembled (Wight and Doxsey, 1972, p. 27).

Attitude Scale: Synonymous with inventory or questionnaire. A set of statements which express attitudes or degrees of positive or negative feeling (Edwards and Edwards, 1971, p. 229).

Values: A collection of feelings and emotions. Since the child imitates the values of significant others, teachers frequently serve as models and thus determine the values learned in the classroom (Morris, 1972, p. 228).

Scope and Limitations

Whenever and wherever pupils meet and mingle, attitudes are born, nurtured, or die because man is a social being having an affective life as well as a cognitive one. The school environment, then, is the breeding ground for both positive and negative attitude growth (Sister Josephine, 1959, p. 57).

Therefore, since students spend a greater number of their waking hours in a classroom environment, this study will be conducted in a school setting.

Although normative data collected from several communities randomly selected throughout the country would probably provide the greatest validity and reliability, due to time and cost factors, for this study data will be collected in selected schools in the Putnam City School District, Oklahoma City, Oklahoma, and Ponca City, Oklahoma.

CHAPTER II

REVIEW OF LITERATURE

Introduction

In devising an attitude inventory it is important to research various aspects of the affective domain to understand other authors' interpretations. It is also necessary to review questionnaires from different disciplines used with elementary children to determine what types of items, ways items are assembled, and directions for administering a questionnaire so that some basis can be developed for devising inventory for the study of attitudes toward the visual arts.

Affective Learning

The affective domain, as used in this study, relates to a collection of attitudes and values that are developed within the school environment. An attitude is defined in different ways by different authors. Morris and Stuckhard (1977, p. 25) noted, "as an individual experiences art he is forming new attitudes toward art which are based upon his perception of these experiences." The authors have given the term "attitude" different characteristics:

- (A) Attitudes are affective evaluative concepts which give rise to motivational behavior.
- (B) Attitudes have specific social referents.

- (C) Attitudes are learned.
- (D) Attitudes are relatively stable and enduring.
- (E) Attitudes vary in quality and intensity.
- (F) Attitudes are interrelated.

G. F. Summers (1970) also supports this theory by stating:

. . . attitudes are learned and implicit. They are inferred states of the organism that are presumably acquired in much the same manner that other such internal learned activity is acquired (p. 227).

The first restriction on the problem of measuring attitudes is to specify an attitude variable and then limit the measurement to that variable (Summers, 1970). When we measure attitudes about art, we are measuring the result of the interaction of several factors. Six variable factors listed by M. J. Cook (1977) are the:

- (1) self-concept of the student
- (2) learning environment
- (3) inherent interests of the student
- (4) interest and self-concept of the teacher
- (5) motivational skills of the teacher
- (6) sense of accomplishment of the student (pp. 15-16).

Notice the emphasis on the teacher in numbers 4 and 5. An example of how these two factors might influence a child's attitude could be an art teacher who does not feel comfortable teaching students to sculpt and would give students a minimum amount of instruction in that area. How the teacher conducts the teaching/learning process will also be an important factor in determining whether the students appreciate what they have learned (Cook, 1977, p. 17).

Morris (1972, p. 228) stated that, "Values have many of the same properties as an attitude. However, a person can have an attitude or opinion without placing a value on it."

S. J. Allen and D. I. Foreman (1971) felt that there were three types of values:

- (1) Humanistic values are those important to people in their dealings with other people which include understanding the behavior of others, appreciating individual dignity and worth, appreciating diversity, and respecting the rights of others.
- (2) Democratic values are those necessary for the survival and success of democratic action, both in government and daily life as well as the desire to participate in solving problems and willingness to explore and attempt to solve value conflicts.
- (3) Personal valuing skills are those used in discovering and analyzing a student's own values. For example, ability to express one's feelings, acceptance of one's self, and ability to analyze internal value conflicts in order to modify or integrate values (p. 66).

Cook (1977) believed that:

Affective learning has to do with how a person feels about what he or she is learning and about the way he or she is learning . . . If a student learns to create a work of art but also learns to dislike art, then we need to seriously question the way (process) by which he or she was taught art. The learning process should not 'turn off' the learner (p. 14).

Walter Wager (1975) suggested that:

. . . attitude formation and change should have priority in today's educational curriculum, and should be given the same consideration in planning and design as is being placed on the cognitive domain, especially in the elementary grades where most concrete experiences are leading to attitude formation (p. 12).

Russell (1978) indicated that the:

. . . affective domain cannot be ignored, regardless of the difficulties encountered in behavioral objective preparation and evaluation. This domain is central to every part of learning . . . (p. 25).

Johnson (1973) stated that the:

. . . failure to evaluate affective outcomes has been due in part to a narrow view of evaluation and to the notion that the purpose of evaluation is to assign a grade to a pupil . . . Pupils' affective reactions should be measured to improve the instructional program (p. 307).

Attitude Scales

There are several ways to assess affective learning. According to Costa (1977, p. 261), a researcher could ask a student directly by means of a personal interview; use a questionnaire; conduct a survey or an opinion poll; employ Likert-type scales or semantic differentials.

A Likert-type scale was used by Dutton and Blum (1967, p. 264) to measure the elementary child's attitude toward arithmetic. The assessment was composed of third person statements to which the subjects could make one of five responses. (Appendix A) The authors indicated that the scale helped identify aspects of the new mathematics that children liked or disliked, but did not provide reasons for the liking or disliking of these aspects. According to Dutton and Blum this limitation also applies to other attitude scales.

In a Likert-type scale for measuring attitudes, Russell and Hollander (1971, p. 270) felt that there is no one correct answer, but that each respondent indicated only a degree of positive or negative feeling toward something. In the "Biology Attitude Scale" (Appendix A) Russell and Hollander (1975, p. 270) emphasized that "it is impossible to measure attitudes directly, it is important to assess learning directly. As in the case of learning, educators must rely on observed behavior to infer attitudes."

In a scale to measure attitudes of elementary and secondary children toward reading (Appendix A), T. H. Estes (1971, p. 136) chose the Likert-type scale because of its ease in administration and its relatively high level of accuracy. According to the author, this scale will allow teachers of reading to "objectively measure how pupils in

their schools and classes feel about reading." Data accumulated for this scale, as administered to 283 students in grades three through twelve, is also given.

A Likert-type scale was also used by Eisner (1966b) in his art attitude inventory for secondary and college level students. Eisner (1966b) stated:

It should be noted that what is being assessed in the attitude inventory is the subject's perception of his voluntary activity, satisfaction, self-estimate, and attitude toward art. The inventory does not provide a standardized objective scale for assessing the meaning of, let's say, 'Very often'. A subject may attend a museum twice per year and to him this may mean that he attends very often; to another person, twice a year attendance at an art museum may mean seldom (p. 43).

J. T. Cheffers, V. H. Mancini and L. D. Zanchkowsky developed an elementary physical education attitude scale entitled the "Cheffers and Mancini Human Movement Attitude Scale" (CAMHM). This semi-impressionistic scale was used to measure the attitudes of children toward the human movement program. According to the authors, "the test was easy to administer and the children did not seem subjected to fatigue" (1976, p. 31). This scale used only three responses instead of five. The students, who confronted with material stimuli, expressed themselves through the agency of a smile, a frown, or a neutral facial representation. To help children understand better what is expected of them, the response options in the IAAI will model those used in the (CAMHM).

Development of the Attitude Inventory

According to Wight and Doxsey (1972):

It would appear that rating scales, including self-ratings, and attitude scales would provide the most useful data for affective measurement . . . Attitude scales are designed to measure the degree of positive or negative affect associated with some psychological object (pp. 22, 23).

It was also suggested by Edwards and Edwards (1957) that:

As the first step in developing an attitude scale, we eliminate from consideration all statements about the psychological object that are factual or that might be interpreted as factual . . . We should also try to eliminate statements that might be considered ambiguous . . . Attitude scales are constructed primarily for the purpose of obtaining attitude scores for individuals and thus being able to order individuals with respect to the degree of favorableness or unfavorableness they associate with a psychological object (p. 12).

Fiske (1971) stated:

When designing an instrument the first questions one asks is: 'What does the proposed measure have to do with its rationale? Why ought it be measured? What type of variable is it? What kind of index is desired?' . . . The second question one should ask is: 'What is to be measured? What is the core of the construct? How is the construct different from similar ones?' (p. 56).

Oppenheim (1966) indicated that, "Likert scales tend to perform very well when it comes to a reliable, rough ordering of people with regard to a particular attitude" (p. 140). According to Mager (1968), "Questionnaires should contain as many items as you feel are necessary to give good evidence about the existence of your subject" (p. 77).

Stuelke (1973) stated that the respect and trust of the student was necessary if the evaluation is to be a success. Mager (1968) further mentioned that:

The honesty with which a student will answer questions on a questionnaire depends on how well he trusts the person who is doing the asking. If there is little trust, he will do his best to give what he thinks are appropriate answers. If there is a great deal of trust, he feels there is no need not to reveal his true opinion (p. 78).

Stuelke (1973) stated that a test constructor:

. . . should not use statements which create fear and anxiety within the student . . . Lack of organization, ineffective presentation of the material, poor speaking ability and lack of enthusiasm will lead to additional negative responses by the students (p. 93).

Oppenheim (1966) suggested one should not use:

. . . 'leading questions' which are so worded that they are not neutral: they suggest what the answer should be or indicate the questioner's own point of view . . . Also, one should not use 'loaded words' or a phrase which is emotionally colored and suggests an automatic feeling of approval or disapproval (p. 59).

Another area to avoid, according to Strickland (1970) is:

. . . items in which things are compared. Young children seem unable to balance one attitude against another; responses tend to be erratic because they are based on influences which vary among young children (p. 25).

Cheffers, Mancini, and Zarchkowsky (1976) in their "Human Movement Attitude Scale," gave directions which should be administered to the respondents before the questionnaire is given. This scale used pictures as stimuli instead of statements. The "Human Movement Attitude Scale" is a three-response scale in which the respondent answers with a happy face, neutral face or frown face. Their directions are similar to the following:

1. Look at the pictures.
2. If you like bouncing a ball, you would color in the box under the happy face. If you don't like bouncing a ball, you would color in the box under the sad face. If it doesn't make any difference to you, you don't like or dislike bouncing a ball, you would color in the box under the face that does not have either a smile or a frown.
3. We would like to have your feelings about what you did on the

the scale at Boston University. Look at the face you would like to wear when you see the picture.

4. Number 2 is repeated once more with another example.
5. Begin the test (p. 32).

Eight suggestions for developing your own questionnaire, given in Henerson, Morris, and Fitz-Gibbon's book (1978) How to Measure Attitudes, are:

1. Identify the objectives for the questionnaire that is being prepared. Determine what specific information you hope to obtain from the questionnaire.
2. Choose a response format.
3. Identify the frame of the respondents. What vocabulary would be appropriate? How well informed they are and so on.
4. Write the questions.
5. Prepare a data summary sheet.
6. Critique the questions. Try them out and revise them.
7. Assemble the questionnaire.
8. Administer the questionnaire (p. 56).

Statistical Methods Appropriate for Attitude Scales

Lee J. Cronbach (1949) in his book, Essentials of Psychological Testing, stated:

The second common way to summarize the performance of a group is to use the mean and standard deviation. The mean is the arithmetical average obtained when we add all scores and divide by the number of scores. The standard deviation (Std. Dev.) is a measure of the spread of scores. The variation of two sets of scores may be different even though the averages are the same (p. 94).

Principals of reliability coefficients were listed by Cronbach (1949) as:

1. A reliability coefficient tells what proportion of the best variance is non-error variance.
2. The reliability coefficient depends on the length of the test.

3. The reliability coefficient depends on the spread of scores in the group studied.
4. A test may measure reliability at one level of ability and unreliability at another.
5. The validity coefficient cannot exceed the square root of the reliability coefficient (pp. 165-166).

According to Kelley (1942),

Any research based on measurement must be concerned with the accuracy or dependability or, as we usually call it, reliability of measurement. A reliability coefficient demonstrates whether the test designer was correct in expecting a certain collection of items to yield interpretable statements about individual differences (p. 75).

Cronbach (1949, p. 148) stated that, "content validity is established by logical examination of the test and the methods used in its preparation." According to the literature cited it is important to develop a questionnaire as Cronbach (1949) further emphasized:

Test questions are only a sample of all the possible questions that might be asked and they may or may not be representative of the total domain of appropriate questions. Examining content validity, therefore, requires judging whether each item, and the distribution of items as a whole, covers what the tester wants to measure (p. 148).

CHAPTER III

METHODOLOGY

Development of the IAAI

The Ichord Art Attitude Inventory (IAAI) statements were selected from a collection of approximately seventy-five statements written by persons in the areas of Art Education and Educational Measurement. After reviewing the statements, it was determined that sub-tests should be defined.

It was concluded that a three-response format would be most appropriate for the IAAI. The students would be able to select responses from: I like or agree, represented by a picture of a smiling face; or, I am neutral, represented by a face with no facial expression; or, I dislike or disagree, represented by a picture of a frowning face.

The IAAI devised for the pilot study was composed of three scales. The first scale consisted of statements relating to activities which would most likely be done in the average elementary classroom. Each question dealt with different activities which could be done with a variety of mediums.

The second scale consisted of statements relating to artists and famous works of art in general, with no reference to specific works of art. This scale consisted of six statements dealing with artists and six statements dealing with famous art works. For data collection

purposes, this scale was entitled Artists Scale.

The third scale consisted of statements relating to the student's attitude toward his/her own art ability. This scale was entitled Self-Concept Scale and included an equal number of positive and negative statements. Since there are positive and negative attitudes, the students were asked to reverse the response polarity on the negative questions. For example, scales one and two asked students to respond to statements concerning such activities as "painting pictures" regarding their likes, dislikes or neutrality. In scale three, the student was given statements such as, "I can never think of anything to do in art class." The word never put a negative connotation on the statement, and the student was to change the polarity of his/her answer.

Pilot Study

In the pilot study, the IAAI (Appendix B) was administered to 25 girls and 25 boys in the sixth grade at Wiley Post Elementary School, Putnam City School District; Oklahoma City, Oklahoma.

Instrumentation of the Revised IAAI

After data was collected from the pilot study, a statistical analysis was conducted for the total pilot group, N = 50 sixth grade students. Four items were deleted in an attempt to improve the reliability of the questionnaire.

The revised IAAI (Appendix B) was administered to 197 sixth grade students in eight elementary schools in Ponca City, Oklahoma. Those schools participating were: Garfield, Lincoln, Liberty, Jefferson,

Roosevelt, Trout, Woodland, and Washington. The instrument was administered in the academic classroom instead of the art classroom. The same procedures were used in administering the revised instrument as were used in the pilot study.

The format of the inventory was changed, however, from three pages to four. The directions were placed on a separate page along with the first question which asked the sex of the student. Each scale was placed on a separate page, making the revised scale four pages in length.

Data Collection and Recording Normative Data

Mean scores and standard deviations were determined for each scale as well as the total. Normative data was also gathered for the scales by sex. An item analysis was performed and means and standard deviations were computed.

Reliability

Reliability for the Ichord Art Attitude Inventory (IAAI) was determined by using Lee J. Cronbach's formula for Coefficient Alpha, a measure of internal consistency. According to Cronbach (1951):

$$\text{Coefficient Alpha } \alpha = \frac{N}{N-1} \left[1 - \frac{\sum Si^2}{S_x^2} \right]$$

N = Number of items

$\sum Si$ = Sum of the item variance

S_x^2 = Variance for the test

Reliability was determined for each scale and for the total test for girls, boys, as well as the total group of sixth grade students.

Coefficient Alpha was also computed to see what would happen to the total test and each scale reliability of an item was deleted.

Validity

Kifer (1977, p. 212) stated, "It is important that the test taker and test constructor share the same set of meanings." Content validity was determined by having experts in the area of Educational Measurement evaluate the format and method of data collection.

Seven practicing teachers in the elementary field were consulted regarding appropriateness and content of the scales, before they were administered. The teachers were also asked to evaluate the reading level of the questionnaire. All seven teachers consulted felt the reading level of the questionnaire was appropriate for sixth grade students.

CHAPTER IV

RESULTS OF THE STUDY

Introduction

This study was conducted for the purpose of developing an Art Attitude Inventory for sixth grade students. A pilot study was conducted with 50 sixth grade students. Item analysis for each scale and total test was computed. Items were deleted from the test on the basis that the total test reliability would be increased if an item was deleted according to item analysis.

The revised Ichord Art Attitude Inventory (IAAI) was conducted with 197 sixth grade students. Data were processed, using the computer program SPSS which yielded means, standard deviations, and item analysis for each item, each scale, and total test.

Results and Discussion of the Pilot Study

Means, standard deviations, and reliability using the Cronbach Alpha measure of internal consistency was determined for each scale and total test for girls, boys, and total group (Table I). The Artist Scale with a $r = .79$ showed the greatest measure of reliability of the three scales and was the only one in which the boys surpassed the girls.

Table II shows the item analysis of the Projects Scale for the total pilot study group. The item means, standard deviations, and scale means if the item was deleted, the scale variance if the item

TABLE I

PILOT STUDY TABLE SHOWING MEAN, STANDARD DEVIATION, AND
RELIABILITY OF EACH SUB-TEST AND TOTAL TEST FOR BOYS,
GIRLS AND TOTAL GROUP

Subtest	Number of Items	Total Group N=50			Boys N=25			Girls N=25		
		\bar{X}	STD.DEV.	Reliability*	\bar{X}	STD.DEV.	Reliability*	\bar{X}	STD.DEV.	Reliability*
Projects	14	34.26	4.48	.51	32.68	4.59	.41	35.84	3.83	.58
Artists	12	26.08	4.48	.79	24.72	4.80	.79	27.44	4.44	.77
Self-Concept	10	24.48	4.25	.65	24.20	4.53	.63	24.76	4.03	.69
Total Test	37	84.82	10.78	.81	81.60	11.71	.81	88.04	8.84	.78

*Reliability = Chronbach Alpha, Measure of Internal Consistency

TABLE II

ITEM ANALYSIS OF PROJECTS SCALE FOR TOTAL PILOT STUDY GROUP
(N=50 Sixth Grade Students)

Item	Item \bar{X}	Item STD.DEV.	Scale \bar{X} If Item Deleted	Scale S^2 If Item Deleted	Corrected Item Total Correlation	Alpha If Item Deleted
2	2.34	.63	31.92	17.14	.48	.44
3	2.84	.51	31.42	17.80	.46	.45
4	2.68	.59	31.58	18.70	.20	.49
5	2.12	1.30	32.14	15.43	.28	.46
6	2.54	.58	31.72	19.37	.06	.51
7	2.30	.79	31.96	16.73	.41	.42
8	2.50	.61	31.76	18.15	.29	.47
9	1.88	1.27	32.38	17.34	.10	.52
**10	2.94	.98	31.32	20.63	-.17	.58
11	2.36	.72	31.40	17.23	.38	.45
12	2.38	.66	31.88	17.50	.38	.45
13	2.80	.49	31.46	19.36	.10	.50
14	2.04	.64	32.22	16.91	.52	.43
**15	2.54	1.54	31.72	18.70	-.08	.61

**Items deleted on revised IAAI

was deleted, the corrected item total correlation and reliability of the total test if the item was deleted are shown in Table II.

The value of 3.00 was given to those items which were answered with the happy face. This suggested that the student liked or agreed with the statement. A 2.00 was given to those items answered with a neutral face, which suggested no opinion. A 1.00 was given to those items answered with the sad face, meaning they disagreed or disliked the item.

For items 2-8 on the Projects Scale, item means ranged from 2.12 to 2.84, showing that students apparently enjoyed doing these projects. However, they appeared to have less interest in paper weaving, item 9, which showed a mean of 1.88.

Item 10 had a mean of 2.94, which suggested almost all the children would enjoy building a fort or a tree house. This item had a negative correlation of $-.17$ with the rest of the test. Analysis showed reliability for the scale would increase if the item was deleted.

Means ranged from 2.04 to 2.80 on items 11-14, which suggested that students found these projects enjoyable. Item 15, color mixing, showed a negative correlation of $-.08$ with the rest of the scale. An increase in the reliability would result if this item was deleted.

The same values were assigned for each item in the Artists Scale as were given in the Project Scale (Table III).

Item 16, Artists Work Everywhere, had a mean of 2.34, but a negative correlation of $-.02$. If this item was deleted the reliability on this scale would increase to $r = .82$.

TABLE III

ITEM ANALYSIS OF ARTISTS SCALE FOR TOTAL PILOT STUDY GROUP
(N=50 Sixth Grade Students)

Item	Item X	Item STD.DEV.	Scale \bar{X} If Item Deleted	Scale S^2 If Item Deleted	Corrected Item Total Correlation	Alpha If Item Deleted
**16	2.34	.77	23.74	22.36	-.02	.82
17	2.72	.57	23.36	20.60	.36	.78
18	1.46	.58	24.62	20.73	.33	.78
19	1.58	.70	24.50	18.79	.58	.76
20	2.32	.68	23.76	18.84	.59	.76
21	2.30	.74	23.78	20.05	.34	.78
22	2.26	.83	23.82	18.60	.49	.77
23	2.02	.74	24.06	19.24	.46	.77
24	2.10	.74	23.98	18.75	.55	.76
25	2.34	.75	23.74	19.54	.41	.78
26	2.40	.78	23.68	19.12	.45	.78
27	2.24	.74	23.84	17.73	.72	.75

**Items deleted on revised IAAI

Item 17, Artists Are Important to the World Today, with a mean of 2.72, proved to be a good item. The reliability would drop if this item was deleted.

Item 18, Reading About a Great Artist, and Item 19, Watching a Movie About a Great Artist, were items which a majority of the students disliked doing.

Items 20 through 27 on the Artists Scale, however, have means ranging from 2.02 to 2.40, suggesting students would enjoy doing any of these activities.

The third scale, entitled Self-concept, was scored differently from the other scales. Projects and Artists' Scales were not composed of positive and negative statements as was the third scale. This scale was composed of five positive statements and five negative statements. Statements 28, 30, 33, 35, and 37 were given the same values as were those on the first two scales, i.e., 3.00 for selecting the happy face, 2.00 for selecting the neutral face, and 1.00 for selecting the sad face. Statements 29, 31, 32, 34, and 36 were given the opposite values, i.e., 3.00 was given for selecting the sad face, 2.00 for selecting the neutral face, and 1.00 for selecting the happy face.

Table IV shows item analysis for the Self-concept Scale. Items 28 through 37 have means ranging from 2.18 to 2.64, which suggest that students had a more positive self-concept about their art ability throughout the entire scale. However, statement 36, Everyone Thinks I'm Good in Art Except Me, had a correlation of .00, and if this item was deleted, the increase in reliability for the scale would be raised.

After reviewing Tables II - V, if item 10 was deleted the variance on the Projects Scale would increase to $S^2 = 20.63$ and total test

TABLE IV

ITEM ANALYSIS OF SELF-CONCEPT SCALE FOR TOTAL PILOT STUDY GROUP
(N=50 Sixth Grade Students)

Item	Item \bar{X}	Item STD.DEV.	Scale \bar{X} If Item Deleted	Scale S^2 If Item Deleted	Corrected Item Total Correlation	Alpha If Item Deleted
28	2.56	1.11	21.92	14.16	.32	.63
29	2.64	1.10	21.84	15.40	.17	.64
30	2.44	.73	22.04	15.14	.42	.61
31	2.50	.74	21.98	15.45	.36	.62
32	2.44	1.23	22.04	13.02	.40	.61
33	2.54	.61	21.94	15.57	.44	.61
34	2.44	.73	22.04	14.12	.62	.57
35	2.50	.58	21.98	15.98	.38	.62
**36	2.18	.77	22.30	17.48	.00	.68
37	2.24	.77	22.24	15.90	.26	.64

**Items deleted on revised IAAI

variance would increase to 117.70. Also, the reliability would increase to $r = .58$ on the Projects Scale and $r = .82$ on the total test. If item 15 was deleted the variance on the Projects Scale would increase to $S^2 = 18.70$ and total test variance would increase to $S^2 = 112.90$. The reliability would increase to $r = .61$ on the Projects Scale and $r = .83$ on the total test. Both items 10 and 15 have a negative Corrected Item Total Correlation with the Projects Scale and a low Corrected Item Total Correlation with the total test. Because the Projects Scale variance and reliability would increase and the Corrected Item Total Correlation was low or negative a decision was made to delete items 10 and 15 for the revised study.

If item 16 was deleted, the Artists Scale variance would increase to $S^2 = 22.36$ and the total test variance would increase to $S^2 = 113.89$. The reliability would increase to $r = .82$ on the Artist Scale and $r = .81$ on the total test. Item 16 also has a negative Corrected Item Total Correlation with the Artist Scale and a low Corrected Item Total Correlation with the total test. For these reasons, a decision was made to delete item 16 for the revised study.

Item 36 was the last item chosen to be deleted for the revised study. If the item was deleted the Self-concept Scale Variance would increase to $S^2 = 17.48$ and the total test variance would increase to $S^2 = 114.60$. The reliability on the Self-concept Scale would increase to $r = .68$ and the total test reliability would increase to $r = .82$. Item 36 had a very low Corrected Item Total Correlation with both the Self-concept Scale and the total test.

TABLE V

ITEM ANALYSIS OF TOTAL TEST FOR TOTAL PILOT STUDY GROUP
(N=50 Sixth Grade Students)

Item	Item \bar{X}	Item STD.DEV.	Scale \bar{X} If Item Deleted	Scale S^2 If Item Deleted	Corrected Item Total Correlation	Alpha If Item Deleted
2	2.34	.63	82.48	109.72	.46	.80
3	2.84	.51	81.98	110.96	.46	.81
4	2.68	.59	82.14	113.63	.17	.81
5	2.12	1.30	82.70	107.19	.27	.81
6	2.54	.58	82.28	115.10	.05	.81
7	2.30	.79	82.52	108.74	.41	.80
8	2.50	.61	82.32	111.57	.32	.80
9	1.88	1.27	82.94	109.45	.19	.81
**10	2.94	.98	81.88	117.70	-.12	.82
11	2.36	.72	82.46	107.56	.54	.80
12	2.38	.67	82.44	109.84	.42	.81
13	2.80	.49	82.02	113.45	.23	.81
14	2.04	.64	82.78	107.81	.60	.80
**15	2.54	1.54	82.28	112.90	.03	.83
**16	2.34	.77	82.48	113.89	.10	.81
17	2.72	.57	82.10	112.05	.31	.80
18	1.46	.58	82.36	113.05	.22	.81

TABLE V (Continued)

Item	Item \bar{X}	Item STD.DEV.	Scale \bar{X} If Item Deleted	Scale S^2 If Item Deleted	Corrected Item Total Correlation	Alpha If Item Deleted
19	1.58	.70	83.24	108.72	.47	.80
20	2.32	.68	82.50	109.42	.43	.80
21	2.30	.74	82.52	110.21	.35	.80
22	2.26	.83	82.56	105.23	.60	.79
23	2.02	.74	82.80	106.76	.57	.80
24	2.10	.74	82.72	108.65	.45	.80
25	2.34	.75	82.48	110.30	.34	.81
26	2.40	.78	82.42	109.43	.37	.81
27	2.24	.74	82.58	105.96	.63	.80
28	2.56	1.11	82.26	107.96	.30	.81
29	2.64	1.10	82.18	112.40	.11	.82
30	2.44	.73	82.38	108.08	.49	.80
31	2.50	.74	82.32	111.32	.27	.81
32	2.44	1.23	82.38	107.87	.26	.81
33	2.54	.61	82.28	109.35	.50	.80
34	2.44	.73	82.38	108.93	.43	.80

TABLE V (Continued)

Item	Item \bar{X}	Item STD.DEV.	Scale \bar{X} If Item Deleted	Scale S^2 If Item Deleted	Corrected Item Total Correlation	Alpha If Item Deleted
35	2.50	.58	82.32	109.04	.56	.80
**36	2.18	.77	82.64	114.60	.05	.82
37	2.24	.77	82.58	113.19	.14	.81

**Items deleted on revised IAAI

Results of the Revised IAAI

Item analysis of each scale and total test for boys, girls, and total group was computed for the revised study. Table VI gives means, standard deviations, and reliability for each of these groups. There were 96 girls participating and 101 boys. Reliability proved to be the greatest with the boys throughout the test.

Deleting four items from the pilot study raised the reliability from .81 to .82 on the total test. On the first scale, the total group reliability raised from $r = .51$ on the pilot study to $r = .62$ on the revised study. Artists Scale reliability decreased from $r = .79$ to $r = .77$. The reliability for the girls decreased on the third scale considerably from $r = .69$ on the pilot study to $r = .44$ on the revised study. This differential brought the total group's reliability down from $r = .65$ to $r = .55$ on the Projects Scale for the revised study.

Item analysis of the Projects Scale for total revised study group is shown in Table VII. Values given for each item were the same as those used in the pilot study, i.e., 3.00 for selecting the happy face, 2.00 for selecting the neutral face, and 1.00 for selecting the sad face. All twelve items proved to correlate very well with the scales. According to the mean, students enjoyed doing the activities expressed in the statements, except 5 and 9, which were Designing Clothing and Weaving With Paper.

Table VIII shows item analysis of the Artist Scale for the total revised study group. Again the values for each face used on the pilot study were the same on the revised study. All items proved to correlate very well with their individual scale. If any items were deleted on this scale, the reliability would drop. According to the mean,

TABLE VI

REVISED STUDY TABLE SHOWING MEAN, STANDARD DEVIATION AND
RELIABILITY OF EACH SUB-TEST AND TOTAL TEST FOR BOYS,
GIRLS AND TOTAL GROUP

Subtest	Number of Items	Total Group N=197			Girls N=96			Boys N=101		
		\bar{X}	STD.DEV.	Reliability*	\bar{X}	STD.DEV.	Reliability*	\bar{X}	STD.DEV.	Reliability*
Projects	12	28.89	3.58	.62	29.71	3.13	.52	28.11	3.82	.70
Artists	11	25.50	4.29	.77	25.75	4.06	.75	25.27	4.50	.79
Self-Concept	9	22.20	2.89	.55	22.29	2.64	.44	22.11	3.12	.63
Total Test	33	76.59	8.59	.82	77.75	7.58	.77	75.49	9.36	.85

*Reliability = Cronbach Alpha, Measure of Internal Consistency

TABLE VII
 ITEM ANALYSIS OF PROJECTS SCALE FOR TOTAL REVISED STUDY GROUP
 (N=197 Sixth Grade Students)

Item	Item \bar{X}	Item STD.DEV.	Scale \bar{X} If Item Deleted	Scale S^2 If Item Deleted	Corrected Item Total Correlation	Alpha If Item Deleted
2	2.53	.63	26.36	11.07	.33	.59
3	2.78	.49	26.10	11.87	.21	.61
4	2.46	.72	26.43	11.13	.25	.61
5	1.86	.82	27.03	10.99	.22	.62
6	2.53	.71	26.37	11.84	.10	.64
7	2.29	.72	26.60	11.27	.21	.62
8	2.55	.63	26.34	11.15	.30	.60
9	1.78	.72	27.11	10.97	.28	.60
10	2.60	.62	26.28	11.33	.27	.60
11	2.57	.62	26.31	10.47	.49	.56
12	2.64	.64	26.25	11.00	.34	.59
13	2.30	.73	26.58	10.73	.33	.59

TABLE VIII

ITEM ANALYSIS OF ARTISTS SCALE FOR TOTAL REVISED STUDY GROUP
(N=197 Sixth Grade Students)

Item	Item \bar{X}	Item STD.DEV.	Scale \bar{X} If Item Deleted	Scale S^2 If Item Deleted	Corrected Item Total Correlation	Alpha If Item Deleted
14	2.46	.58	23.04	16.04	.28	.75
15	1.73	.67	23.78	15.51	.30	.75
16	2.01	.76	23.49	14.99	.32	.74
17	2.62	.61	22.88	15.42	.35	.74
18	2.41	.71	23.09	15.15	.30	.74
19	2.33	.75	23.17	15.83	.16	.76
20	2.21	.72	23.29	15.15	.33	.74
21	2.31	.75	23.19	15.56	.19	.76
22	2.44	.69	22.07	16.15	.17	.76
23	2.53	.70	22.97	16.32	.11	.77
24	2.46	.82	23.05	14.94	.23	.75

students enjoyed the activities expressed in the statements, except item 15, which was Reading About Great Artists. Students also disliked doing this item on the pilot study.

Values given to each item on the third scale, Self-concept, were reversed again in the revised study due to the positive and negative statements. Items 25, 27, 30, 32, and 33 were given the same value as the previous two scales, i.e., 3.00 for selecting the happy face, 2.00 for selecting the neutral face, and 1.00 for selecting the sad face. Items 26, 28, 29, and 31 were reversed, i.e., 3.00 was given for selecting the sad face, 2.00 for selecting the neutral face, and 1.00 for selecting the happy face.

Data for the Self-concept Scale is given in Table IX. All items correlated positively with the scale. Means ranged from 2.22 to 2.67, which suggested a majority of the students have a positive self-concept about their art ability.

Total test data are given in Table X. All items tended to correlate positively with the total test. Deleting any item would not have raised the reliability.

Summary

The revised IAAI showed an increase in reliability after deleting four items used in the pilot study. All items had a positive correlation with their scales and with the total test. Means on the majority of items demonstrated students had positive attitudes about the activities or ideas expressed in each of the statements.

TABLE IX

ITEM ANALYSIS OF SELF-CONCEPT SCALE FOR TOTAL REVISED STUDY GROUP
(N=197 Sixth Grade Students)

Item	Item \bar{X}	Item STD.DEV.	Scale \bar{X} If Item Deleted	Scale S^2 If Item Deleted	Corrected Item Total Correlation	Alpha If Item Deleted
25	2.34	.64	19.86	6.94	.30	.50
26	2.56	.66	19.63	6.94	.28	.51
27	2.40	.71	19.80	6.52	.37	.48
28	2.46	.76	14.74	6.47	.34	.49
29	2.22	.82	19.78	6.74	.22	.53
30	2.67	.54	19.51	7.14	.32	.50
31	2.57	.69	19.63	6.68	.33	.49
32	2.58	.58	19.62	7.15	.28	.50
33	2.39	.77	19.81	8.20	.10	.63

TABLE X

ITEM ANALYSIS OF TOTAL TEST FOR TOTAL REVISED STUDY GROUP
(N=197 Sixth Grade Students)

Item	Item \bar{X}	Item STD.DEV.	Scale \bar{X} If Item Deleted	Scale S^2 If Item Deleted	Corrected Item Total Correlation	Alpha If Item Deleted
2	2.53	.63	74.06	69.08	.42	.81
3	2.78	.49	73.81	71.64	.23	.82
4	2.56	.72	74.13	70.66	.22	.82
5	1.86	.82	74.73	70.02	.23	.82
6	2.52	.71	74.07	71.04	.19	.82
7	2.29	.72	74.30	69.16	.34	.81
8	2.55	.63	74.04	70.23	.30	.81
9	1.78	.73	74.81	71.01	.19	.82
10	2.60	.62	73.98	68.73	.46	.81
11	2.57	.62	74.02	68.99	.43	.81
12	2.64	.64	73.95	69.77	.34	.81
13	2.30	.73	74.29	69.54	.31	.81
14	2.46	.58	74.13	69.38	.42	.81
15	1.73	.67	74.86	68.91	.40	.81
16	2.01	.76	74.58	68.11	.41	.81

TABLE X (Continued)

Item	Item \bar{X}	Item STD.DEV.	Scale \bar{X} If Item Deleted	Scale S^2 If Item Deleted	Corrected Item Total Correlation	Alpha If Item Deleted
17	2.62	.61	73.97	68.18	.53	.81
18	2.41	.71	74.18	67.95	.46	.81
19	2.33	.75	74.26	67.46	.47	.81
20	2.21	.72	74.38	67.97	.45	.81
21	2.31	.75	74.28	69.06	.34	.81
22	2.44	.69	74.15	70.33	.26	.82
23	2.53	.70	74.06	69.20	.35	.81
24	2.46	.82	74.13	68.13	.37	.81
25	2.34	.64	74.25	70.66	.26	.82
26	2.56	.66	74.03	71.74	.15	.82
27	2.40	.71	74.19	70.39	.25	.82
28	2.46	.76	74.13	69.92	.26	.82
29	2.22	.82	74.37	70.50	.19	.82
30	2.69	.54	73.90	70.41	.35	.81
31	2.57	.69	74.02	70.33	.26	.82
32	2.58	.58	74.01	70.48	.31	.81
33	2.39	.77	74.20	71.06	.17	.82

CHAPTER V

SUMMARY AND CONCLUSIONS

This study involved the development of an Art Attitude Inventory for sixth grade children. Statements were gathered from several professionals in the fields of Art Education and Tests and Measurements.

Two studies were conducted in the development of the IAAI. The Pilot Study IAAI consisted of three scales with a total of 37 statements. A three-response format was used, i.e., happy face indicated the student agreed or liked the statement; a neutral face indicated no opinion; and a sad face indicated the student disagreed or disliked the statement. The pilot study sample consisted of 50 sixth grade students--25 boys and 25 girls, from Wiley Post Elementary School, Oklahoma City, Oklahoma.

The revised IAAI study consisted of three scales and 33 statements. After a review of the item analysis for the pilot study, four items were deleted. The same three-response format was used for this study as was used in the pilot study. The revised study sample consisted of 197 sixth grade students--96 girls and 101 boys, from eight elementary schools in Ponca City, Oklahoma.

Findings of the Pilot Study

The results of the statistical analysis of the data were as follows:

1. Reliability (Cronbach Alpha, measure of internal consistency) was greater for the boys in the Projects and Artists Scale and the total test than was computed for the girls. Reliability was greatest for the girls in the Self-concept Scale.
2. Mean scores on the majority of the items indicated that students had a positive attitude about the activities expressed in the statements given on the inventory.
3. Four items proved to have a negative correlation with their scale. Item analysis showed that reliability would increase if these items were deleted.

Findings of the Revised Study

1. All items showed a positive correlation with their scale and the total test.
2. No increase in reliability of each scale or the total test would occur if any items were deleted.
3. Mean scores indicated the students showed a positive attitude toward a majority of statements regarding art activities, artist and the students self-concept about art.

Conclusions

This study was conducted for the purpose of developing an Art Attitude Inventory as a result of statistical analysis of two studies conducted with the Ichord Art Attitude Inventory (IAAI), data indicated all items had a positive correlation with their scales and total test scores. Data derived from the administration of the IAAI to the 197 sixth grade students revealed a Cronbach's measure of internal consistency

reliability coefficient of $r = .62$ for the Projects Scale, $r = .77$ for the Artists Scale, and $r = .55$ for the Self-concept Scale and $r = .82$ for the total test. Mean scores indicated students showed a positive attitude toward a majority of the activities expressed on the statements in the inventory. As a result of the statistical analysis of the two studies conducted, the IAAI appeared to be a reliable instrument for the assessment of art attitudes of sixth grade students in the schools surveyed.

Recommendations

Because a few statements of the IAAI were reported to be weak, according to the data shown, the following recommendations were made.

1. Future test administrators should pay close attention to item 6, building things, and item 13, coloring with crayons. Item analysis indicated that scale reliability could increase if these items were deleted.
2. Close attention should be given to the reading level of the test takers. The IAAI was devised for students on the sixth grade reading level. Those students mainstreamed in the elementary classroom who do not read on this level may have some difficulty with the vocabulary on the IAAI.

BIBLIOGRAPHY

- Allen, S. J. and D. I. Foreman. "Can Values Be Evaluated?" Today's Education, 66:1 (January/February, 1977), pp. 66-67.
- Cheffers, J. T., V. H. Mancini, and L. D. Zarchkowsky. "The Development of an Elementary Physical Education Attitude Scale." The Physical Educator, 33:1 (March, 1976), pp. 30-33.
- Cook, M. J. "Measurement of Affective Art Objectives." School Arts, 77 (October, 1977), pp. 14-17.
- Costa, A. L. "Affective Education: The State of the Art." Educational Leadership, 34:4 (January, 1977), EJ-153-533, pp. 260-263.
- Cronbach, L. J. "Test 'Reliability': Its Meaning and Determination." Psychometrika, 12 (1947), pp. 1-16.
- _____. Essentials of Psychological Testing. New York: Harper and Row Publishers, Inc., 1949.
- _____. "Coefficient Alpha and the Internal Structure of Tests." Psychometrika, 16 (1951), pp. 259-264.
- Dutton, W. H. and M. P. Blum. "The Measurement of Attitudes Toward Arithmetic with a Likert-Type Test." Elementary School Journal, 68 (February, 1968), pp. 259-264.
- Edwards, A. L. Techniques of Attitude Scale Construction. New York: Appleton-Century-Crofts, Inc., 1957.
- Edwards, J. S. and M. C. Edwards. "A Scale to Measure Attitudes Toward Music." Journal of Research in Music Education, 19:2 (Summer, 1971), pp. 228-233.
- Eisner, E. "The Development of Information and Attitude Toward Art at the Secondary and College Levels." Studies in Art Education, 8:1 (1966a), p. 43.
- _____. Manual for the Eisner Art Information Inventory and the Eisner Art Attitude Inventory. 1966b.
- Estes, T. H. "A Scale to Measure Attitudes Toward Reading." Journal of Reading, 15:2 (November, 1971), pp. 135-138.

- Fiske, D. W. Measuring the Concepts of Personality. Chicago: Aldin, 1971.
- Henerson, M. E., F. F. Morris, and C. T. Fitz-Gibbon. How to Measure Attitudes. Los Angeles: University of California Center for the Study of Evaluation, 1978.
- Johnson, D. W. "The Affective Side of the Schooling Experience." Elementary School Journal, 73:6 (March, 1973), pp. 306-313.
- Kelley, T. L. "The Reliability Coefficient." Psychometrika, 7 (1942), pp. 75-83.
- Kifer, E. "An Approach to the Construction of Affective Evaluation Instruments." Journal of Youth and Adolescence, 6:3 (1977), EJ 179-983, pp. 86-91.
- Mager, R. F. Developing Attitude Toward Learning. New York: Fearon Publishing, 1968.
- Morris, J. E. "Values: School Accountability and the Affective Domain." School and Society, 100 (April, 1972), pp. 228-230.
- Morris, J. W. and M. H. Stuckhardt. "Art Attitude: Conceptualization and Implication." Studies in Art Education, 19:1 (1977), pp. 21-28.
- Oppenheim, A. N. Questionnaire Design and Attitude Measurement. New York: Basic Books, Inc., 1966.
- Russell, G. H. "Do You Measure Affective Behavior?" Man/Society/Technology, 37:7 (April, 1978), pp. 24-25.
- Russell, J. and S. Hollander. "A Biology Attitude Scale." Biology Teacher, 37:5 (May, 1975), pp. 270-273.
- Sister Josephine (C.S.J.). "A Study of Attitudes in the Elementary Grades." The Journal of Educational Sociology, 33:2 (October, 1959), pp. 56-60.
- Strickland, G. Development of a School Attitude Questionnaire for Young Children. Los Angeles: California University, ED-043-919, July, 1970.
- Stuelke, D. H. "There's More to Learning Than the Accumulation of Knowledge." Man/Society/Technology, 33:3 (December, 1973), pp. 91-93.
- Summers, G. F. Attitude Measurement. Chicago: Rand-McNally & Company, 1970.
- Wager, W. "Media Selection in the Affective Domain." Educational Technology, 15:7 (July, 1975), pp. 9-13.

Webster, D. New World Dictionary. New York: The World Publishing Company, 1971.

Wight, A. R. and J. R. Doxsey. Measurement in Support of Affective Education, ED-069-731. Salt Lake City, Utah: Interstate Educational Resource Service Center, 1972.

APPENDIXES

APPENDIX A

ATTITUDE SCALES

The Measurement of Attitudes Toward Arithmetic
with a Likert-Type Scale

by

W. H. Dutton and M. P. Blum, 1968

ATTITUDE SCALE

Grade in School _____ Age _____
Years Months
Name of School _____ Male _____ Female _____
Date of Test _____ 19__

Read the statements below. Decide where you strongly agree (SA), agree (AG), are undecided (Und), disagree (Dis), or strongly disagree (SD). Then put a check in the corresponding blank. All of the statements have to do with the new mathematics that you are studying.

1. Working with numbers is fun.
2. Discovering the solutions to new mathematical problems is exciting.
3. Arithmetic should be avoided whenever possible.
4. Arithmetic is good because it makes you think.
5. It is fun to think about problems outside of class.
6. Word problems are frustrating.
7. Doing arithmetic problems is boring.
8. One cannot use new mathematics in daily life.
9. Discovering solutions to the new mathematical problems is frustrating.
10. Arithmetic is very interesting.
11. Arithmetic is a stimulating activity.
12. Arithmetic is too complicated.
13. Arithmetic is logical.
14. Arithmetic is necessary in daily life.
15. There are too many steps needed in getting the answer to a problem.
16. There are too many chances to make a mistake in arithmetic.
17. Arithmetic is practical.
18. Arithmetic takes too long.
19. Working with numbers presents a challenge.
20. Most word problems are not practical.
21. New mathematics is frightening.
22. Arithmetic is a waste of time.
23. It is fun to play with numbers.
24. There are too many rules to learn in arithmetic.
25. Discovering the solutions to new mathematics is rewarding.
26. Two things I like about the new mathematics are:
 - a. _____
 - b. _____
27. Two things I dislike about the new mathematics are:
 - a. _____
 - b. _____

Data for the T. H. Estes, (1971) Attitude Scale
Toward Reading Data

Source of Data	Range	\bar{X}	s.d.	ref.
Grades 3 - 6	57 - 138	106*	16.4	.92
Grades 7 - 12	55 - 127	98*	17.1	.96
Total Group	55 - 138	102	17.1	.94
		*t	4.06	.001

Ranges, means, standard deviations, and reliabilities, for grades 3 - 6, grades 7 - 12, and the total group, with accompanying t-test.

T. H. Estes Scale to Measure Attitudes Toward Reading,

1968

Attitude Scale

A--strongly agree
B--agree
C--undecided
D--disagree
E--strongly disagree

1. Reading is for learning but not for enjoyment.
2. Money spent on books is well-spent.
3. There is nothing to be gained from reading books.
4. Books are a bore.
5. Reading is a good way to spend spare time.
6. Sharing books in class is a waste of time.
7. Reading turns me on.
8. Reading is only for grade grabbers.
9. Books aren't usually good enough to finish.
10. Reading is rewarding to me.
11. Reading becomes boring after about an hour.
12. Most books are too long and dull.
13. Free reading doesn't teach anything.
14. There should be more time for free reading during the school day.
15. There are many books which I hope to read.
16. Books should not be read except for class requirements.
17. Reading is something I can do without.
18. A certain amount of summer vacation should be set aside for reading.
19. Books make good presents.
20. Reading is dull.

A Likert-Type Scale for Measuring
Attitudes Toward Biology

by
J. Russell and S. Hollander
1975

Each of the statements below expresses a feeling toward biology. Please rate each statement on the extent to which you agree. For each, you may (A) Strongly agree, (B) Agree, (C) be undecided, (D) disagree, or (E) strongly disagree.

After you have made your choice, blacken in the appropriate response in the columns on the IBM card corresponding to each item.

A	B	C	D	E
Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree

1. Biology is very interesting to me.
2. I don't like biology and it scares me to have to take it.
3. I am always under a terrible strain in a biology class.
4. Biology is fascinating and fun.
5. Biology makes me feel secure and at the same time it is stimulating.
6. Biology makes me feel uncomfortable, restless, irritable, and impatient.
7. In general, I have a good feeling toward biology.
8. When I hear the word biology, I have a feeling of dislike.
9. I approach biology with a feeling of hesitation.
10. I really like biology.
11. I have always enjoyed studying biology in school.
12. It makes me nervous to even think about doing a biology experiment.
13. I feel at ease in biology and like it very much.
14. I feel a definite positive reaction to biology; it's enjoyable.

APPENDIX B

IAAI DIRECTIONS AND INSTRUMENTS

Directions Given to Students in Administering the Ichord Art Attitude Inventory (IAAT)

The students were put at ease by being asked if they knew what a questionnaire was. Several answers were given before explaining that a questionnaire just asked their opinion. There were no right or wrong answers. At that point, the following instructions were given before passing out the questionnaires:

"This questionnaire will give a statement to which you are asked to give your opinion. You will have three choices. If you like the statement or you are in agreement with it, please check the column under the happy face. If you do not like the statement or you are in disagreement with it, check the column under the sad face. If you have a neutral feeling, you neither like nor dislike the statement, you neither agree nor disagree with it--you just do not care--then check the column under the face that is neutral or has no facial expression."

The questionnaires were distributed to the students. The following was then read:

"We at Oklahoma State University would like to know your feelings or attitudes about art. We ask that you answer each statement as honestly as possible. Do not place your name on the questionnaire. We do NOT need to know your name, but we would like to have your opinion."

"The first thing I would like for you to do is answer question one which asked whether you are a girl or a boy."

"Some statements in this questionnaire will refer to the words agree and disagree, other statements will refer to the words like or or dislike."

"Remember, if you agree with the statement or like what it is saying, then check the column under the happy face. If you disagree with the statement or do not like what it is saying, then check the column under the sad face. If you neither agree nor disagree, like nor dislike the statement, or you really do not care one way or the other, then check the column under the face which does not have any facial expression, and is neither sad nor happy, the one in the middle.

"When you are finished, turn your paper over. You may begin."

When students were finished, the questionnaires were gathered up. Students were thanked for their cooperation.

PILOT STUDY

Directions:

A. If you like or agree with the statement, check (✓) the column under the happy face, 😊 .

B. If you dislike or disagree with the statement, check (✓) the column under the sad face, ☹️ .

C. If you neither agree nor disagree, like nor dislike the statement, check (✓) the column under the neutral face, 😐 .

😊	😐	☹️
✓		
		✓
	✓	

* * * * *




1. Check (✓) one:




_____ boy  _____ girl 

😊	😐	☹️
I Agree or Like	I am Neutral	I Disagree or Dislike

Section I

2. Painting pictures
3. Making clay objects
4. Decorating my room
5. Designing clothing
6. Building things
7. Making statues or sculptures
8. Making posters
9. Weaving with paper
10. Building a fort or tree house

	 I Agree or Like	 I am Neutral	 I Disagree or Dislike
11. Going to art class			
12. Making pretty objects or decorations			
13. Drawing a picture			
14. Coloring my own art work with crayons			
15. Mixing colors of paint to see what colors result			
Section II			
16. Artists work everywhere			
17. Artists are important to the world today			
18. Reading about great artists			
19. Watching a movie about the life of a great artist			
20. Meeting a great artist			
21. Looking at old paint- ings			
22. Being an artist			
23. Finding out who painted all of the great pic- tures in a museum			
24. Going to craft shows			
25. Looking at modern pic- tures			

	 I Agree or Like	 I am Neutral	 I Disagree or Dislike
26. Watching an artist do pottery			
27. Looking at great art work			
Section III			
28. Other people like my art work.			
29. For me, art class is hard.			
30. For my age, I do well in art.			
31. I can never think of anything to do in art class.			
32. My art teacher never praises my work.			
33. I like my art work.			
34. Even though I like to do art, I would never show it to anyone.			
35. I work hard in art class.			
36. Everyone thinks I am good in art except me.			
37. I could do much better in art if I tried harder.			

REVISED STUDY

Directions:

A. If you like or agree with the statement, check (✓) the column under the happy face,






B. If you dislike or disagree with the statement, check (✓) the column under the sad face,




C. If you neither agree nor disagree, like nor dislike the statement, check (✓) the column under the neutral face,




 I Agree or Like	 I am Neutral	 I Disagree or Dislike
✓		
		✓
	✓	



* * * * *

1. Check (✓) one:




_____ girl 

_____ boy 




Section I

	 I Agree or Like	 I am Neutral	 I Disagree or Dislike
2. Painting pictures			
3. Making clay objects			
4. Decorating my room			
5. Designing clothing			
6. Building things			
7. Making statues or sculptures			
8. Making posters			
9. Weaving with paper			
10. Going to art class			
11. Making pretty objects or decorations			
12. Drawing a picture			
13. Coloring my own art work with crayons			

Section II

	 I Agree or Like	 I am Neutral	 I Disagree or Dislike
14. Artists are important to the world today			
15. Reading about great artists			
16. Watching a movie about the life of a great artist			
17. Meeting a great artist			
18. Looking at old paintings			
19. Being an artist			
20. Finding out who painted all the great pictures in a museum			
21. Going to craft shows			
22. Looking at modern pictures			
23. Watching an artist do pottery			
24. Looking at great art work			

Section III

	 I Agree or Like	 I am Neutral	 I Disagree or Dislike
25. Other people like my art work.			
26. For me, art class is hard.			
27. For my age, I do well in art class.			
28. I can never think of anything to do in art class.			
29. My art teacher never praises my work.			
30. I like my art work.			
31. Even though I like to do art, I would never show it to anyone.			
32. I work hard in art class.			
33. I could do much better in art if I tried harder.			

VITA ²

Pamela Ichord Ehlers

Candidate for the Degree of

Master of Science

Thesis: THE DEVELOPMENT OF THE ICHORD ART ATTITUDE INVENTORY (IAAI)
FOR SIXTH GRADE CHILDREN

Major Field: Curriculum and Instruction

Biographical:

Personal Data: Born in Salem, Missouri, September 2, 1955, the daughter of Congressman Richard H. Ichord and Vera Pamperien.

Education: Graduated from Houston High School, Houston, Missouri, 1973; attended William Woods College, Fulton, Missouri, 1973-1975; received a Bachelor of Science in Secondary Education degree from Oklahoma State University in May, 1977; completed requirements for the Master of Science degree in Curriculum and Instruction in July, 1979.

Experience: Director of Arts and Games Program, City of Stillwater, Stillwater, Oklahoma, Summer 1978; Loom Weaving Instructor, Multigraphics, City of Stillwater, 1977-1979; Graduate teaching assistant, Department of Curriculum and Instruction, Oklahoma State University, 1977-1979.

Professional Organizations: President, Graduate Student Council; Vice President, Beta Sigma Phi; Chi Omega Alumnus, Phi Delta Kappa Honor Society; Kappa Delta Pi Educational Honor Society; Omicron Delta Kappa Leadership Honor Society; Business & Professional Woman; Eastern Star.