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ABSTRACT

The report presents a summary assessment of knowledge about traditional Western forms of art among 9-year-old, 13-year-old, and 17-year-old students. Part of national information gathering project related to educational achievement in various learning areas, the report is presented in three chapters. Chapter I examines instruments used to measure recognition of the elements of art, knowledge of art history, and knowledge of criteria for making aesthetic judgments. Comparative results for students in the three age groups are presented. Chapter II offers a comprehensive picture of overall average national performance and reveals results for different subgroups within the national population. Chapter III summarizes assessment results and discusses implications of the results for art educators, parents, and interested members of the community. Findings indicated that students encountered more difficulty with factual questions than with judgmental questions; possessed high interest in and involvement with Western art, even when their knowledge level was not particularly high; and knew more about art when they participated in many types of art activities. Areas identified as worthy of further consideration by art educators centered on curriculum emphasis, student attitudes, and student performance. Appendices include background questions posed to principals of all schools participating in the survey, tables of data, and definitions of National Assessment reporting groups. (Author/DB)

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# Knowledge About Art

## SELECTED RESULTS FROM THE FIRST NATIONAL ASSESSMENT OF ART

Report 06-A-02

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## FOREWORD

When the U.S. Office of Education was chartered in 1867, one charge to its commissioners was to determine the nation's progress in education. The National Assessment of Educational Progress (NAEP) was initiated a century later to address in a systematic way that charge.

Each year since 1969, National Assessment has gathered information about levels of educational achievement across the country and reported its findings to the nation. NAEP surveys the educational attainments of 9-year-olds, 13-year-olds, 17-year-olds and adults (ages 26-35) in 10 learning areas: art, career and occupational development, citizenship, literature, mathematics, music, reading, science, social studies and writing. Different learning areas are assessed every year, and all areas are periodically reassessed in order to measure change in educational achievement. National Assessment has interviewed and tested more than 550,000 young Americans since 1969.

Learning area assessments evolve from a consensus process. Each assessment is the product of several years of work by a great many educators, scholars and lay persons from all over the nation. Initially, these people design objectives for each subject area, proposing general goals they feel Americans should be achieving in the course of their education. After careful reviews, these objectives are given to exercise (item) writers, whose task it is to create measurement tools appropriate to the objectives.

When the exercises have passed extensive reviews by subject-matter specialists, measurement experts and lay persons, they are administered to probability samples. The people who comprise those samples are chosen in such a way that the results of their assessment can be generalized to an entire national population. That is, on the basis of the performance of about 2,500 9-year-olds on a given exercise, we can generalize about the probable performance of all 9-year-olds in the nation.

After assessment data have been collected, scored and analyzed, National Assessment publishes reports to disseminate the results as widely as possible. Not all exercise results are released for publication. Because NAEP will administer some of the same exercises again in the future to determine whether the performance level of Americans has increased or decreased, it is essential that they not be released in order to preserve the integrity of the study.

This report, *Knowledge About Art*, summarizes the National Assessment study of art. Other reports in the area of art are: *Design and Drawing Skills*, Report No. 06-A-01; *Attitudes About Art*, Report No. 06-A-03 (forthcoming); *Art Technical Report: Exercise Volume*, Report No. 06-A-20 (forthcoming); and *Art Technical Report: Summary Volume*, Report No. 06-A-21 (forthcoming).

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Roy H. Forbes  
Project Director

## INTRODUCTION

Art is one of the ways that man expresses his ideas, emotions and experiences. It is a specialized means of expression, calling for sensitivity and interpretive ability on the part of the viewer. While many aspects of art are essentially unspecifiable and unquantifiable, other aspects of art — the acquisition and application of knowledge, skills, rules and standards — can be defined, specified, taught and measured.

In its assessment of students' art abilities, the National Assessment measured three major areas: ability to produce art, attitudes toward art and knowledge about art. This report discussed students' knowledge about art. Art has its own language, symbols, conventions and history; familiarity with these, while not essential for appreciating art, greatly enhances the quality of the experience. Since it was not possible to measure knowledge about all types of art, the assessment was largely limited to Western art history and conventions. This was in part due to the nature of the art objectives, which were originally developed in the mid-1960s and which reflect the academic approach of that time. While the art objectives were later modified to include a broader definition of art, the knowledge section of the art assessment retained an emphasis on the "traditional" Western forms of art.

The assessment results show that students do not have an extensive knowledge of Western art. At all three age levels included in the assessment,<sup>1</sup> the average percentage of success on the art knowledge items was below 50%.

<sup>1</sup> The National Assessment assesses students at ages 9, 13 and 17. In this report, the 17-year-old results are

There was a wide range in abilities on these items. While 9- and 13-year-olds were very successful in recognizing the *Mona Lisa* as a familiar painting — 79% at age 9 and 93% at age 13 recognized it — relatively few 9-year-olds could identify criteria to be used in judging works of art. Thirteen- and 17-year-olds showed moderate success in identifying such criteria, but they had considerable difficulty in determining the stylistic periods of given works of art.

A number of questions concerned students' involvement with art. Most students at ages 13 and 17 had taken at least some art classes and produced some types of art outside of school. In all cases, those who had greater involvement with art did better on the art knowledge questions; however, only those with fairly high levels of involvement — e.g., creating 5–10 types of art outside of school, taking 4–6 art classes, visiting art museums 5 or more times — performed appreciably better than the national level.

The first chapter of this report displays samples of the items used to measure various aspects of art knowledge and national results for these items. The second chapter presents average national performance and results for different subgroups within the national population. The third chapter addresses some questions raised by these results.

only for those 17-year-olds attending school at the time of the assessment. Art is very largely a subject acquired in school, and it was felt that the results for 17-year-olds who were in school would be most useful to art educators.

## CHAPTER 1

### KNOWLEDGE ABOUT ART: A LOOK AT THE ASSESSMENT

Knowledge about art is divided into three major areas: recognition of the elements of art, knowledge of art history and knowledge of criteria for making aesthetic judgments. This chapter displays a representative sample of items from each of these areas, giving an indication of the material covered, the type of items used and the results obtained. National and subgroup average performances, discussed in Chapter 2, are computed using results from these and other items.

Although knowledge about art is needed for an in-depth appreciation of art, it is not generally the most emphasized part of the schools' art curricula. Exposure to art and instruction in producing art usually receive more attention, especially at the elementary level. Therefore, the "knowledge" section of the art assessment is not extensive or all-inclusive, and there are relatively few items for 9-year-olds.

#### Elements of Art

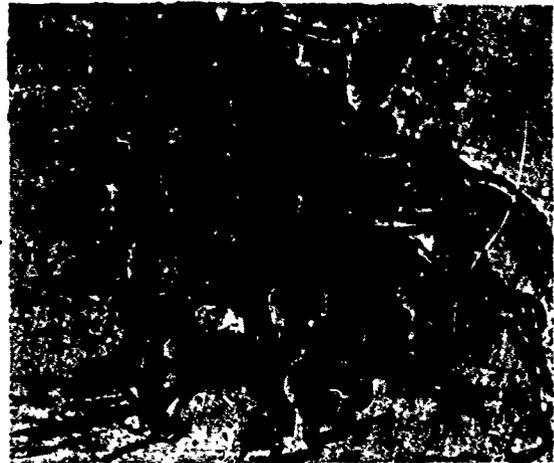
Content and form are two major components of any work of art. Content involves the subject matter of a work, both literal and symbolic; form includes such things as shapes, lines, colors and textures and their interactions.

The item shown in Figure 1 assesses ability to recognize symbolic content in a drawing.

While nearly three-fifths of the 13- and 17-year-olds realized that the skeleton with the scythe is emblematic of death, a large proportion at both ages felt that this figure repre-

sented violence. In this case, 17-year-olds were not any better than 13-year-olds at recognizing a symbolic meaning. However, in the two examples seen in Figure 2, asking for interpretation of sections of Picasso's *Guernica*, 17-year-olds were more successful than 13-year-olds.

FIGURE 1. Elements of Art: Sample Exercise and National Results



What does the skeleton most likely represent in this drawing?

	National Results	
	Age 13	Age 17
<input type="radio"/> Death	58%	58%
<input type="radio"/> Freedom	4	4
<input type="radio"/> Hatred	10	8
<input type="radio"/> Violence	24	25
<input type="radio"/> I don't know	4	4

\*Figures may not total 100% due to rounding error.

Other items were concerned with the formal elements of works of art. For instance,

**FIGURE 2. Elements of Art: Sample Exercise and National Results**



The painting above represents the bombing of the town of Guernica during the Spanish Civil War. Some of the objects in the painting have symbolic meanings. For example, the woman's dead child might represent death. At the bottom of the painting there are a warrior, a broken sword, and a flower which also have symbolic meanings.

Mark the statement which BEST describes what you think the object means or symbolizes.

The sword means or symbolizes



	National Results	
	Age 13	Age 17
<input type="radio"/> fighting.	32%	23%
<input type="radio"/> death.	15	11
<input type="radio"/> hate.	8	10
<input type="radio"/> defeat.	42	54.
<input type="radio"/> I don't know.	2*	1*

The flower means or symbolizes



	National Results	
	Age 13	Age 17
<input type="radio"/> love.	21%	11%
<input type="radio"/> hope.	43	64
<input type="radio"/> beauty.	24	13
<input type="radio"/> truth.	6	7
<input type="radio"/> I don't know.	6	5*

\*Figures may not total 100% due to rounding error.

the question shown in Figure 3 measured student's ability to recognize that use of line and shading affects the mood of a drawing. Students at both ages were quite adept at selecting the picture that conveyed the greatest feeling of movement.

Most 17-year-olds, however, were at a loss when asked to identify aspects of composition in a drawing. The task, presented in Figure 4, was to outline two important triangular shapes in the drawing. Only about one-fifth of the 17-year-olds correctly placed at least one of the triangles.

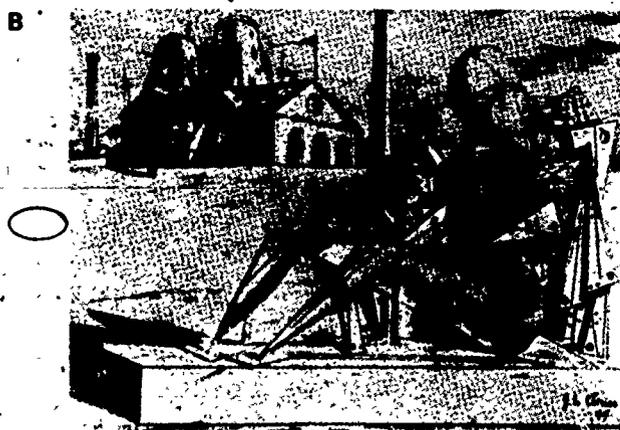
The correct response was to draw one triangle for the mother and another for the child. The triangle for the mother had to include her head and elbow as points of the triangle, and the third point had to be either at her extended hand or along the lower portion of that arm. Acceptable triangles for the child could have as points either his head, one or the other of his feet and his hips; or his head and his elbows. Considerable leeway was allowed in the drawing of the triangles. The student had to show an awareness of the general area included in the triangle, but placement of points did not have to be exact; lines did not have to be exact or straight.

### History of Art

A knowledge of art history enhances our perception of art in several ways. It provides a background against which to evaluate a particular work, telling us about factors in the artist's life and in the world around him that might have influenced his art. It also informs us about the sequential development of ideas and forms of expression. It would be impossible to create an assessment that would cover "all" of art history; thus, the items sample only some of the diverse aspects that might be included. Some of the areas assessed were: recognizing familiar works of art, using stylistic characteristics to identify works by the same artist, identifying the stylistic period to which a work belonged, determining the historical sequence of art works through sty-

**FIGURE 3. Elements of Art: Sample Exercise and National Results**

Which one of the four works of art on this and the next page shows the greatest amount of movement? Fill in the oval beside only ONE of the four pictures.



I don't know.

	National Results	
	Age 13	Age 17
Picture A	6%	3%
Picture B	2	1
Picture C	88	93
Picture D	2	+
I don't know.	++	++

\*Plus indicates rounded percents less than one.

\*\*Figures may not total 100% due to rounding error.

FIGURE 4. Elements of Art: Sample Exercise and National Results

There are two triangular shapes ( $\Delta$ ) that are important to the composition of this painting. Trace around the edge of each of the two triangular shapes.

Task Given to 17-Year-Olds



There are two triangular shapes ( $\Delta$ ) that are important to the composition of this painting. Trace around the edge of each of the two triangular shapes.

Example of a Correct Response



listic characteristics, and relating works of art to other disciplines. The content of the items does not reflect National Assessment's judgment of the facts or concepts most important in art history; rather it represents the type of fact or concept one might be expected to know. The following items and results are presented to give the flavor of this section of the art assessment.

The majority of the 9- and 13-year-olds — 79% and 93%, respectively — selected da Vinci's *Mona Lisa* as the best known work when shown a choice of four paintings. Fewer recognized well known art works by Rembrandt and Michelangelo.

In addition to recognizing well known works of art, students were asked to look at one work of art by a well known artist and then identify a second work by him. An example of this type of task appears in Figure 5. This item was administered to 13- and 17-year-olds. Slightly less than half of the students at each age answered the question correctly; there was no appreciable improvement between ages 13 and 17.

Students generally had difficulty with the concept of style. As seen in Figure 6, many were not familiar with the word "style" as used in art. Half of the 13-year-olds and three-fifths of the 17-year-olds recognized the definition of the word.

FIGURE 5. History of Art: Sample Exercise and National Results



B



Open the foldout. Which one of the four works of art shown on the foldout was made by the same artist who made the sculpture shown above? Fill in only ONE oval.

C



National Results  
Age 13      Age 17

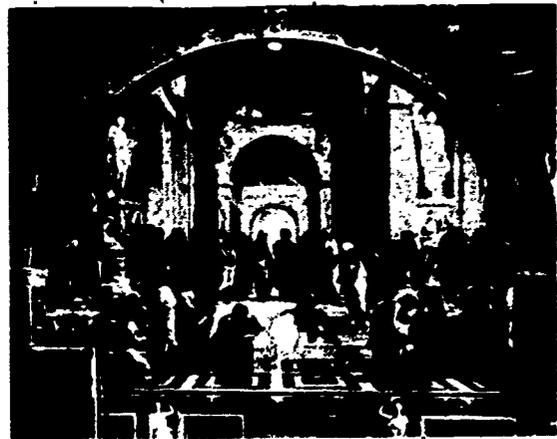
<input type="radio"/> Painting A	7%	5%
<input type="radio"/> Painting B	44	46
<input type="radio"/> Painting C	15	10
<input type="radio"/> Painting D	17	17
<input type="radio"/> I don't know.	17	23*

\*Figures may not total 100% due to rounding error.

A



D



5

15

**FIGURE 6. History of Art:  
Sample Exercise and National Results**

Works of art having similar characteristics and done during the same period of time are said to be of the same

	National Results	
	Age 13	Age 17
<input type="radio"/> family.	10%	6%
<input type="radio"/> group.	18	11
<input type="radio"/> style.	47	60
<input type="radio"/> area.	6	6
<input type="radio"/> I don't know.	19	17

Students were not very adept at relating works of art to stylistic periods. In responding

to a series of multiple-choice questions, 12% of the 13-year-olds and 15% of the 17-year-olds identified the style of Picasso's *Three Musicians* as cubism; 10% at age 13 and 20% at age 17 identified Monet's *Nymphaeas (Water Lilies)* as impressionistic; and 24% at age 13 and 34% at age 17 identified the architecture of Notre Dame Cathedral as Gothic in style.

Students were also asked to determine the historical sequence of several relatively unfamiliar art works through an examination of their stylistic properties. An example of this type of task appears in Figure 7. The majority of the students did correctly identify painting A as the oldest; they had more difficulty in determining which was the newest.

**FIGURE 7. History of Art: Sample Exercise and National Results**

Look at the three paintings on this and the next page. One was painted a longer time ago than the others, and one was painted closest to our own time. Which painting is the oldest and which painting is the newest? Fill in only ONE oval.

	National Results	
	Age 13	Age 17
<input type="radio"/> Painting A is the oldest and Painting B is the newest.	41%	50%
<input type="radio"/> Painting B is the oldest and Painting C is the newest.	8	6
<input type="radio"/> Painting C is the oldest and Painting B is the newest.	10	7
<input type="radio"/> Painting A is the oldest and Painting C is the newest.	36	31
<input type="radio"/> I don't know.	5	6

B



C



A



In a similar question, 17-year-olds were shown four sculptures with the same content — the head of a man — and asked which work had the most direct influence on one of the others (see Figure 8). To answer this question, students not only had to identify the historical sequence of the works but also had to know which stylistic periods had a strong impact upon other periods. Approximately half of the 17-year-olds recognized that the classical Greek statue created in the fourth century B.C. (sculpture A) most directly influenced Michelangelo's statue created during the Italian Renaissance of the early 1500s (sculpture D).

Other items concerned the "significance" of particular art works in the development of Western art. "Significant" as it is used here may refer to works of art that began new styles, markedly influenced other works, displayed technical advances or expressed the spirit of their age especially well. The items shown in Figure 9 question students about the importance of the pictured sculpture to the history of art. The majority of the students responded to a technical aspect of the work (the balance of the parts), which was not a technical advance by Calder, and failed to recognize his role in the development of

FIGURE 8. History of Art: Sample Exercise and National Results

Often an earlier style of art influences a later style of art. Which one style of sculpture shown on the next page could have had the MOST direct influence on which one of the other styles?

- Sculpture D probably influenced Sculpture A.
- Sculpture B probably influenced Sculpture C.
- Sculpture A probably influenced Sculpture D.
- Sculpture C probably influenced Sculpture A.
- I don't know.

National Results  
Age 17

20%  
13  
50  
5  
12



A



B



C



D

kinetic sculpture — creating a sculpture that moves in response to its environment.

**FIGURE 9. History of Art:  
Sample Exercise and National Results**



In the history of art why is this sculpture by Alexander Calder considered important? Fill in the oval beside the BEST reason.

	National Results	
	Age 13	Age 17
<input type="radio"/> Because its materials are so light.	3%	2%
<input type="radio"/> Because its parts continually change positions.	18	21
<input type="radio"/> Because it is made from steel and wire.	5	3
<input type="radio"/> Because it is so carefully balanced.	62	58
<input type="radio"/> I don't know.	12	16

Art and art history do not exist in isolation but are intimately related to the history and development of politics, ideas, religion, other arts, the sciences and so forth. Artists and their work are affected by external events; similarly, art can have an impact upon the world that views it. Understanding the re-

lationships between art and other disciplines includes the ability to place events in an historical framework. As a measure of this ability, students were asked to identify the work of art created in the same time period as another significant occurrence — for example, the creation of some other noteworthy artistic work or an important political event. Figure 10 shows an example of this type of item. Only 17-year-olds responded to this question.

Approximately one-third of the 17-year-olds correctly indicated that the works of Toulouse-Lautrec (painting D) were painted at the time when the can-can style of music was popular. About a third were misled by painting A, a work by Pieter Breugel the Elder, dated 1566, perhaps because the picture depicted people actively dancing in a style that looks somewhat like a can-can.

#### Aesthetic Judgments About Art

Assessing the ability to make aesthetic judgments is a complex problem, since even art critics often do not agree in their judgments about works of art. To reduce this problem, National Assessment did not ask students to make judgments and then, in effect, judge the quality of their judgments. The assessment merely tried to find out if students could recognize good or useful criteria for making aesthetic judgments.

In several items measuring ability to make aesthetic judgments, students were shown a work of art described as a "good" work of art and asked what was the BEST of several reasons given for judging it to be so. For example, students at all three ages responded to the item shown in Figure 11. Nine-year-olds were more highly influenced by the content of the work. Even at age 17, 12% of the students felt that the amount of time required to complete a work should contribute to their judgment of it.

FIGURE 10. History of Art: Sample Exercise and National Results

Open the foldout. Which ONE of the works of art shown on the foldout was produced during the same period of time as this music?

- Painting A
- Painting B
- Painting C
- Painting D
- I don't know.

National Results  
Age 17.

33%  
9  
18  
35  
4\*

\*Figures may not total 100% due to rounding error.

A



B



C



D



NOTE: Students heard a brief recording of the "Can-Can" theme from Jacques Offenbach's *Gaité Parisienne*.

**FIGURE 11. Aesthetic Judgments About Art: Sample Exercise and National Results**



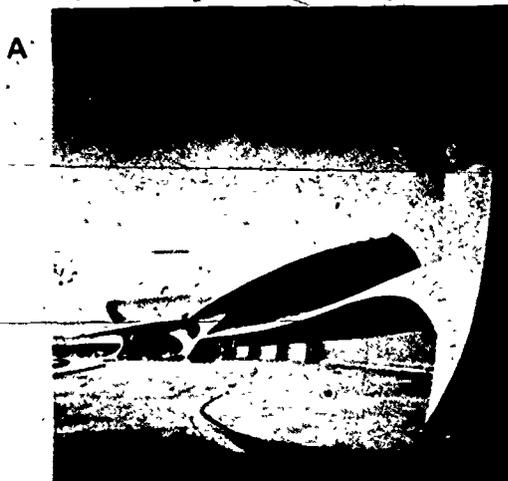
Which one of the following is the BEST reason for judging the sculpture shown above to be a good work of art?

	National Results		
	Age 9	Age 13	Age 17
<input type="radio"/> It has a father, mother and child in it.	37%	21%	15%
<input type="radio"/> It was made by a good artist.	13	6	3
<input type="radio"/> The rounded shapes go together nicely.	12	41	57
<input type="radio"/> The sculpture would have taken a very long time to make.	25	21	12
<input type="radio"/> I don't know.	13	11	13

A large number of students were successful on the item shown in Figure 12, part A; but they had difficulty in selecting a reason

for judging the clay figure shown in Figure 12, part B as "good" — many thought it must be good because it was different.

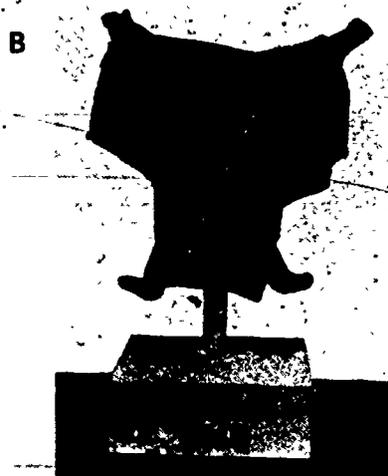
**FIGURE 12. Aesthetic Judgments About Art: Sample Exercise and National Results**



What is the BEST reason for judging the building shown above to be a good work of art?

	National Results	
	Age 13	Age 17
<input type="radio"/> It makes original use of curving forms.	24%	18%
<input type="radio"/> Its forms are cast from solid concrete.	9	7
<input type="radio"/> Its forms have a graceful flowing quality.	50	62
<input type="radio"/> It has sharply contrasting light and dark forms.	12	8
<input type="radio"/> I don't know.	4*	4*

\* Figures may not total 100% due to rounding error.



Which one of the following is the BEST reason for judging the clay figure shown above to be a good work of art?

	National Results	
	Age 13	Age 17
<input type="radio"/> It was made by a good artist.	3%	2%
<input type="radio"/> It is so unusual that there are few others like it.	57	46
<input type="radio"/> It makes good use of the rough, easily worked clay.	13	23
<input type="radio"/> It shows a young boy who is jumping.	19	11
<input type="radio"/> I don't know.	9*	18

\* Figures may not total 100% due to rounding error.

## CHAPTER 2

### KNOWLEDGE ABOUT ART: A SUMMARY OF RESULTS

Results for individual items, while interesting, do not provide a comprehensive picture of overall performance. This chapter summarizes data for all items concerned with knowledge about art. Average performance levels have been calculated for the nation and for various subgroups within the national population. These subgroups were defined in two ways: (1) background variables connected with the student (e.g., sex, race, size and type of community lived in) and (2) degree of student involvement with art.

#### National Level of Performance

Percentages of success on each of the "knowledge about art" items were averaged to provide an indicator of the national level of performance. Table 1 shows this average for each of the three age levels. Students at each age responded to different sets of exercises; therefore, the averages for each age in this table should not be compared. It should be noted that fewer than half the students at each of the three age levels assessed were able, on the average, to answer these questions acceptably.

TABLE 1. Average National Performance on Art Knowledge Items

Age 9	Age 13	Age 17
38%	43%	48%

TABLE 2. Relative Performance Across Ages on Sets of Identical Exercises

	Age 9 - Age 13	Age 13 - Age 17
Average national performance	34%	51%
Number of exercises summarized	(11)	(35)

Performance did improve for older students. Table 2 compares performance across age levels on two sets of identical exercises, one administered to all three age groups and the other to 13- and 17-year-olds. In the first example, the gap between 9- and 13-year-old performance was larger than that between 13-year-olds and 17-year-olds. The difference between 13- and 17-year-olds was about the same in both examples shown.

#### Background Variables

National Assessment reports results for the following background variables: sex, race, region of the country, size and type of community and level of parental education. Definitions of categories within these variables appear in Appendix A.

Sex appears to bear very little relationship to one's knowledge about art. At all three ages, performance of males and females was virtually identical. This similarity in achievement contradicts the belief that since females like art better than males, as evidenced by their answers to the art involvement questions, they would therefore be inclined to know more about art.

Although male and female achievement did not differ significantly, there were discrepancies in the achievement of black and

white students and students from advantaged and disadvantaged urban communities. As in other learning areas assessed by National Assessment, black and disadvantaged urban students consistently achieved below the level of other students nationally. Performance of those living in the Southeast was also consistently below the national level. At age 9, students in the Northeast showed achievement farthest above that of the nation as a whole, while at ages 13 and 17 the Central region was farthest above. Differences from the national level of performance and standard errors of these differences for the background variables reported by National Assessment appear in Appendix B.

### Involvement With Art

Students were asked a number of questions concerning their personal involvement with art. School principals were also queried about art programs in their schools (see Appendix C for the exact questions that were asked). Two questions dealt with academic experiences with art; principals were asked whether or not art was taught in their schools, and students at ages 13 and 17 were asked how many art classes they had taken in school. Other questions examined student involvement with art: what kinds of art they did on their own, whether they visited art museums and whether they collected art.

Nearly all of the students in the United States have probably had the opportunity to become acquainted with art; in our sample, art was taught in 93% of the schools attended by 9- and 13-year-olds and 95% of the schools attended by 17-year-olds.

Figure 13 shows the percentage of students at each age level with different levels of involvement in art activities. Nine-year-olds were not asked about art classes or collecting art; it was assumed that art would be difficult to isolate from the rest of the primary curriculum and that a very small number of 9-year-olds could realistically be expected to collect art.

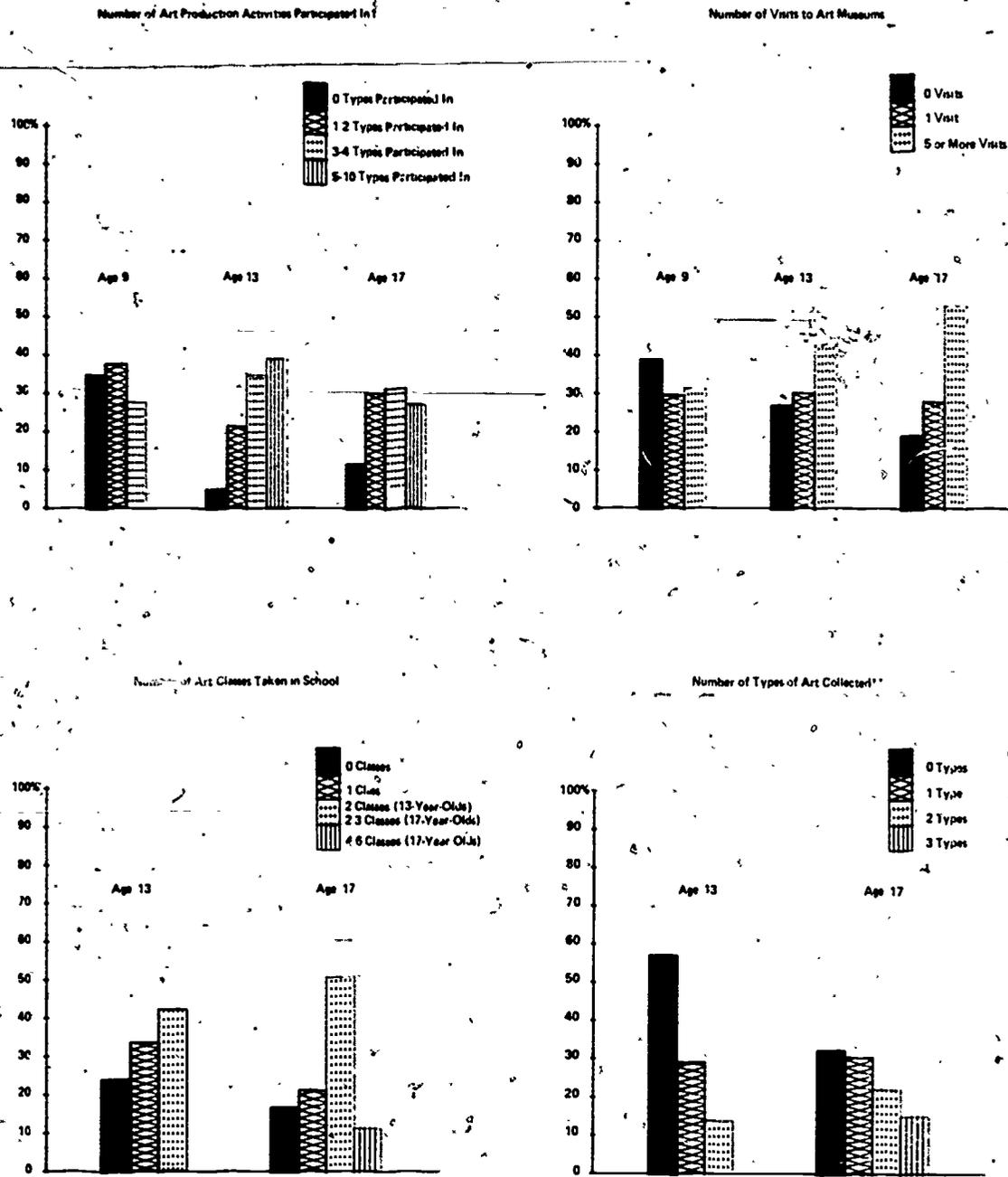
To determine the number of types of art production activities in which students had participated, the students were given a list of activities and asked if they had ever done each one outside of school. Nine-year-olds responded to a list of 4 activities, while 13- and 17-year-olds responded to a list of 10 (Appendix C). Questions about art classes taken inquired only about art classes taken in school. Questions for 13-year-olds concerned only art classes taken during the current (at the time of the assessment) school year and the school year immediately previous; questions for 17-year-olds concerned only art classes taken during grades 7-12. The questions about collecting art were specific as to the types of art collected — 13-year-olds were asked whether they collected either original works of art or reproductions; 17-year-olds were asked about original works of art, reproductions and antiques.

Thirteen-year-olds appeared to be most interested in creating art — 74% of the 13-year-olds said they participated in three or more kinds of art work compared to 58% of the 17-year-olds. Larger proportions of 17-year-olds than 13-year-olds have taken two or more art classes and visited an art museum five or more times; this may be in part a result of additional opportunities for exposure. Seventeen-year-olds were also more likely to collect art.

At all ages, drawing was named most often as a type of art done outside of school; 50% of the 9-year-olds, 78% of the 13-year-olds and 61% of the 17-year-olds said they drew other than for school. Crafts — such as weaving; macramé; knitting or embroidery — and creating signs or plans for furniture, houses, cars and so forth were the next most popular activities at ages 13 and 17.

Performance on the art knowledge items did vary according to the amount of student involvement with art. Figure 14 shows the differences from the national performance level for the art involvement variables at the three age levels. In Figure 14, each black bar represents the difference in achievement between a

**FIGURE 13. Percentage at Each Age Participating in Art Activities\***



\*Questions asked concerning art participation appear in Appendix C.

†Nine-year-olds were only asked about four types of activities.

\*\*Thirteen-year-olds were only asked about two types of art collecting.

FIGURE 14. Differences From National Performance Level – Art Involvement Variables

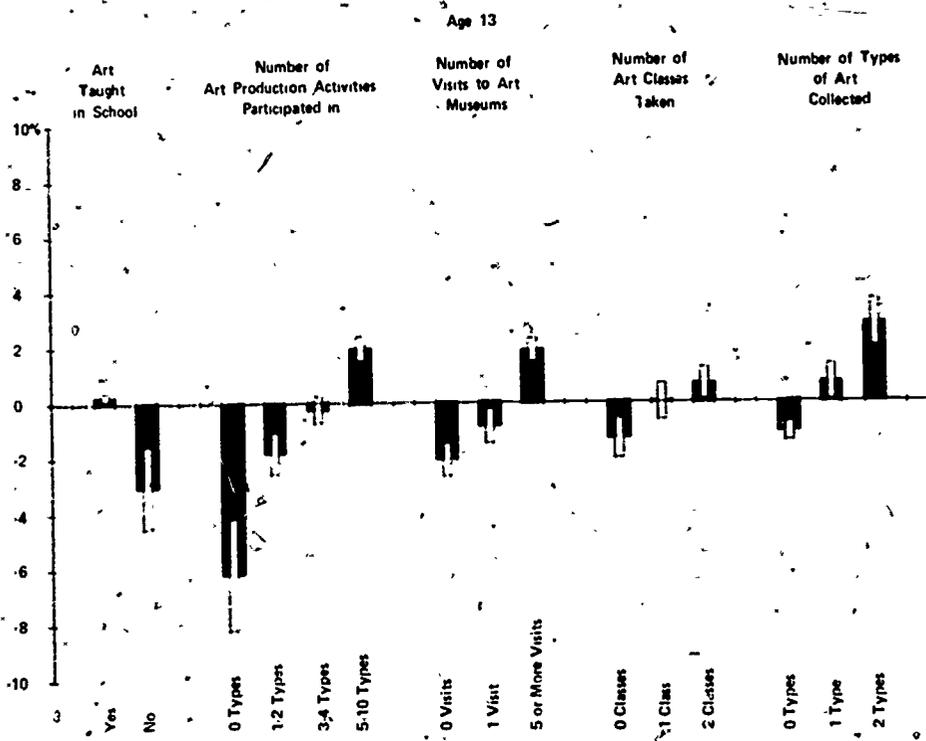
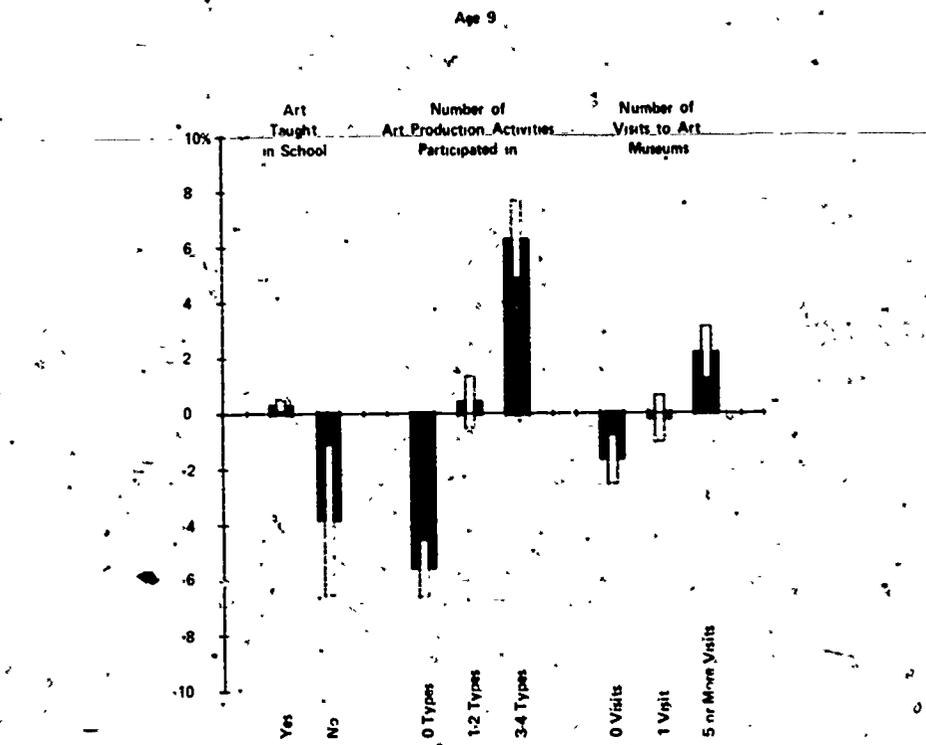
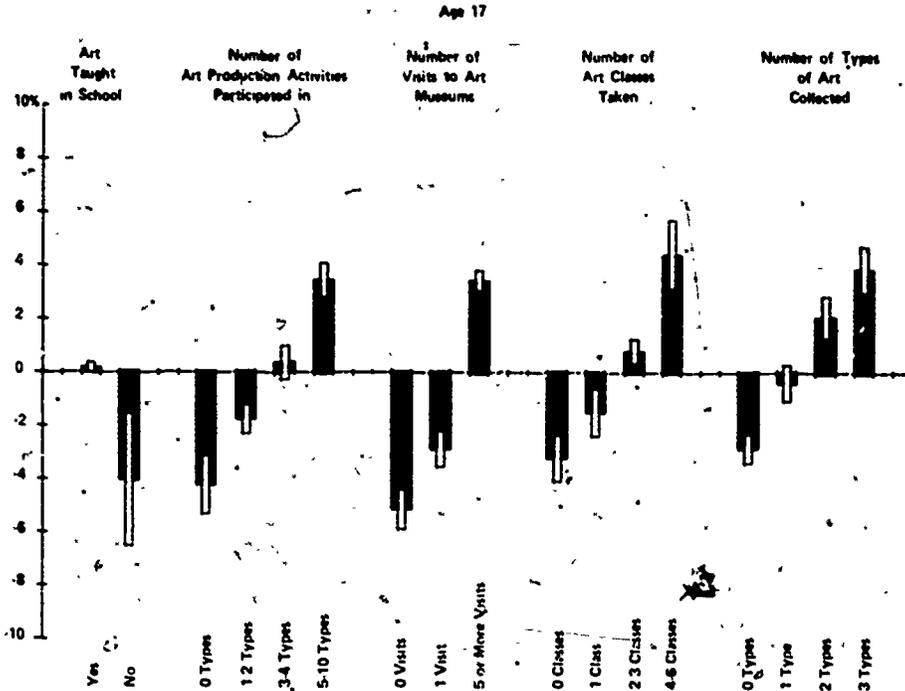


FIGURE 14. (continued) Differences From National Performance Level – Art Involvement Variables



certain group of people at an age level and the total age population. The smaller white bars within the black bars represent two standard errors above and below the difference shown by the black bars. Readers can use these graphs to quickly compare differences in the performance of the various groups and the statistical significance of these differences.<sup>1</sup>

Those at the extreme ends of each variable — those having little or no involvement with art and those evidencing high levels of involvement — display achievement levels significantly different from that of the nation. In all cases, there is a positive relationship between art involvement and performance on the art knowledge items, with higher levels of involvement appearing with higher performance levels.

<sup>1</sup> Group differences from the national performance level, standard errors and a discussion of statistical significance appear in Appendix B.

## CHAPTER 3

### IMPLICATIONS OF THE ART RESULTS

Students tended to have more difficulty with factual questions — e.g., those concerned with stylistic periods — than with more judgmental questions, such as recognizing similarities between two paintings or determining the symbolism of a particular art work. The ability to recognize artistic criteria for judging a work of art was more highly developed at the two older ages than for 9-year-olds, as would be expected in light of generally accepted theories of cognitive development. Since today's elementary and secondary art curricula usually stress art production skills and direct experiences with art, and emphasis on art history and conventions varies greatly from school to school, it is not surprising that performance levels on knowledge items were not particularly high.

Although students may not possess a great deal of knowledge about Western art and art history, their interest in and involvement with art appear to be fairly high. Outside of required schoolwork, drawing is pursued by half of the 9-year-olds, nearly four-fifths of the 13-year-olds and three-fifths of the 17-year-olds. Crafts such as needlework and macrame are practiced by around half of the students at ages 13 and 17; about half of the 13-year-olds and two-fifths of the 17-year-olds design things. This indicates that there is a substantial interest in art that art education programs could tap and build upon.

While 17-year-olds demonstrated a slightly higher performance on the art knowledge items than did 13-year-olds, the 13-year-olds participated in a greater number of art production activities. Out of the 10 types of art production activities asked about (see Appendix C), 17-year-olds were more likely than

13-year-olds to participate in only one — photography.

At all three age levels assessed, those who participated in more types of art activities showed a higher performance on the art knowledge items than those participating in fewer types. At age 13, the number of art classes taken (during the present and previous school years) did not display a strong relationship to performance, although those who had taken art classes did somewhat better than those who had not. For 17-year-olds, those who had taken two or more art classes during grades 7 through 12 evidenced higher results than did the nation as a whole.

These results raise questions for consideration and discussion by art educators as well as parents and concerned members of the community.

- Should some areas of the art curriculum receive more emphasis than others? At the elementary level? At the secondary level? Which areas should receive more emphasis?
- How can the interest that students exhibit in art best be nurtured and channeled to enhance their life-long involvement with art? Is the apparent drop off in interest in art at age 17 cause for concern, and if so, how can it best be dealt with?
- Should we strive to improve results on the art knowledge items? To what extent?
- How can differences in subgroup performance be lessened?

This report describes student performance on art knowledge items; other art reports concern design and drawing skills and students' attitudes toward art. The results from the entire art assessment should be considered together to obtain a complete picture about present levels of achievement. The data presented

here represent the levels of achievement at the time of the first art assessment. Subsequent assessments will provide data on changes in achievement, giving additional information on differences in student knowledge, skills and attitudes.

## APPENDIX A

### DEFINITIONS OF NATIONAL ASSESSMENT REPORTING GROUPS

#### Background Variables

##### Sex

Results are reported separately for males and females.

##### Race

Results are reported for blacks and whites.

##### Size and Type of Community

The groups within this variable are defined by the size of the community in which a respondent lives and an occupational profile of the area. All population sizes are based on data from the U.S. Bureau of the Census (1970). The following groups are reported:

**Rural.** Areas with a population under 10,000 where most of the residents are farmers or farm workers.

**Low metro (low-socioeconomic or impoverished urban).** Areas in or around cities with a population greater than 200,000 where a high proportion of the residents are on welfare or are not regularly employed.

**High metro (high-socioeconomic or affluent urban and suburban communities).** Areas in or around cities with a population greater than 200,000 where a high proportion of the residents are in professional or managerial positions.

**Main big-city.** Communities within the city limits of a city with a population over 200,000 and not included in either the low-metro or high-metro group.

**Urban fringe.** Communities within the metropolitan area of a city with a population greater than 200,000, outside city limits and not included in either the low-metro or high-metro groups.

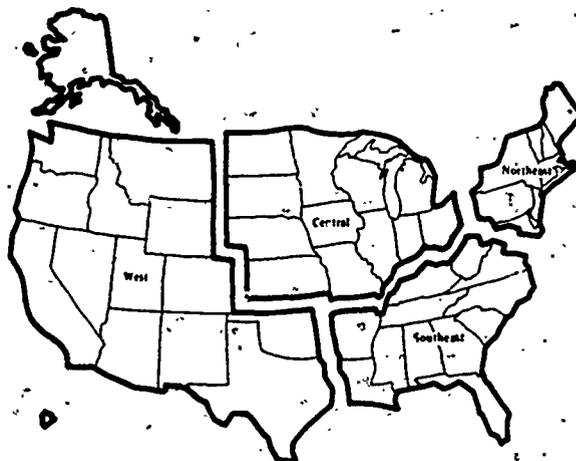
**Medium city.** Cities with populations between 25,000 and 200,000.

**Small places.** Communities with a population of less than 25,000 and not in the rural group.

##### Region

The nation has been divided into four regions — Southeast, Northeast, Central and West — as shown in Exhibit 1.

EXHIBIT 1. National Assessment Geographic Regions



## Parental Education

These groups are classified by the highest level of education attained by either parent, from no high school through post high school. The respondent stated how much school both his parents completed; the highest level attained by either parent is reported and placed within one of the following groups:

*No high school.* Neither parent completed schooling beyond the eighth grade.

*Some high school.* At least one parent completed some schooling in grades 9 through 12; neither completed high school.

*Graduated high school.* At least one parent graduated from high school; neither participated in post high school education.

*Post high school.* At least one parent had some education beyond high school.

## Art Involvement Variables

*Art taught.* Results are given for students attending schools in which art was taught and in which art was not taught, as reported by school principals.

*Kinds of art done.* For 9-year-olds, the following groups are reported: those stating they did no art outside of school, those doing 1-2 kinds of art and those doing 3-4 kinds. For 13- and 17-year-olds, groups reported are: those doing no art outside of school, those doing 1-2 types of art, 3-4 types of art and 5-10 types of art.

*Visiting art museums.* Students were grouped according to the number of times

they said they had visited an art museum. There was no time limit on when the visits had been made. The following groups were used: no visits, one visit, five or more visits.

*Art classes taken.* At age 13, students were asked if they had taken art classes during the present or the previous school year and were grouped into three categories: those who had taken no classes, one class or two classes in school during that time period.

At age 17, students were asked in which years they had taken art classes in school during grades 7 through 12. The following groupings were used:

1. Those who had taken no art classes.
2. Those who had taken art classes during one school year.
3. Those who had taken art classes during two or three school years.
4. Those who had taken art classes during four to six school years.

*Collecting art.* At age 13, students' collecting art were grouped in the following way: those collecting no art, those collecting one type and those collecting two types.

At age 17, the following groups were used:

1. Those collecting no art.
2. Those collecting one type.
3. Those collecting two types.
4. Those collecting three types.

## APPENDIX B

### AVERAGE NATIONAL PERFORMANCE, GROUP DIFFERENCES AND STANDARD ERRORS OF DIFFERENCE

National Assessment uses a national probability sample to estimate the percentage of individuals in a given group who could successfully complete a given item. Thus, for example, when we say that "85% of the 17-year-olds gave a correct response," we mean that 85% is an estimate of the proportion of all 17-year-olds in the country who could have answered correctly. As in any sampling survey work, the percentage estimates are subject to sampling error because observations are made only on a sample, not on the entire population.

Like all statistical representations, these data provide an incomplete picture because the entire population was not assessed. The particular sample in this survey is only one of a large number of all possible samples of the same size that could have been selected using the same sample design; and the average, or mean, percents correct computed from the different samples could well differ from each other. In order to estimate the effect of this sampling variability on the results, National Assessment calculates standard errors.

A standard error of the sample mean is a measure of the sampling variation among the

means of all possible samples; it is used to estimate the precision of the mean obtained in a particular sample. In about 95% of all possible samples, the interval from two standard errors below to two standard errors above a particular sample mean will include the population mean, that is, the average of the means of all possible samples. A particular interval computed in this way is called a 95% confidence interval to indicate how certain we are that the interval we constructed contains the average of all possible samples. For example, if a mean were 50.0% with a standard error of 0.5, then an approximate 95% confidence limit would be between 49.0 and 51.0%. Confidence intervals of two standard errors are used throughout this report. Readers can easily compute other confidence intervals if they choose to do so.

The following table shows mean group differences from the average national performance and standard errors of these differences at each age level. If the 95% confidence interval for a particular group does not include the national level of performance, we can say that the difference between the group's performance and the national performance is significant at the .05 level.

**TABLE B-1. Average National Performance, Group Differences and Standard Errors of the Differences for Art Knowledge Items — Ages 9, 13 and 17**

	Age 9		Age 13		Age 17*	
	Percentage	Standard Error	Percentage	Standard Error	Percentage	Standard Error
Mean national performance	37.52	.46	43.15	.26	47.66	.35
<b>Group Differences</b>	<b>Difference From National Percentage</b>	<b>Standard Error of Difference</b>	<b>Difference From National Percentage</b>	<b>Standard Error of Difference</b>	<b>Difference From National Percentage</b>	<b>Standard Error of Difference</b>
Sex						
Male	.41	.38	.10	.20	-.17	.21
Female	-.33	.38	-.09	.19	.16	.20
Race						
Black	-8.34	.91	-6.69	.55	-8.66	.53
White	1.82	.22	1.29	.14	1.49	.16
Region						
Southeast	-5.02	.94	-1.66	.54	-3.40	.69
Northeast	2.49	.77	-.06	.48	.73	.52
Central	1.77	.75	1.17	.38	1.49	.52
West	-.12	.78	.23	.45	.34	.72
Parental education						
No high school	-5.64	1.70	-5.36	.82	-6.44	.74
Some high school	-4.02	1.30	-3.26	.58	-5.51	.47
Graduated high school	-.72	.68	-.62	.28	-.83	.32
Post high school	5.27	.56	3.18	.27	3.49	.24
Size and type of community						
High metro	6.62	1.41	3.23	.64	4.13	1.02
Low metro	-8.29	1.50	-4.53	.84	-3.39	.72
Extreme rural	-1.50	1.26	-3.09	.61	-3.22	.96

TABLE B-1 (cont.). Average National Performance, Group Differences and Standard Errors of the Differences for Art Knowledge Items — Ages 9, 13 and 17

Group Differences	Age 9		Age 13		Age 17*	
	Difference From National Percentage	Standard Error of Difference	Difference From National Percentage	Standard Error of Difference	Difference From National Percentage	Standard Error of Difference
<b>Size and Type of Community (cont.)</b>						
Main big city	-2.29	1.52	-1.70	.98	-.76	.98
Urban fringe	3.63	1.53	1.98	.48	2.59	.76
Medium city	-.50	1.06	-.35	.69	.26	.62
Small places	-.73	.66	.36	.38	-.40	.39
<b>Art involvement variables</b>						
<b>Art taught</b>						
Yes	.29	.10	.22	.07	.16	.09
No	-3.82	1.36	-3.01	.75	-4.00	1.24
<b>Kind of art done</b>						
0	-5.56	.52	-6.13	1.01	-4.19	.55
1-2	.42	.46	-1.77	.38	-1.74	.28
3-4	6.25	.70	-.24	.24	.35	.31
5-10	---	--	1.94	.22	3.44	.32
<b>Visiting art museums</b>						
0	-1.63	.44	-2.02	.30	-5.11	.37
1	-.20	.41	-.83	.31	-2.84	.34
5	2.14	.47	1.87	.22	3.42	.19
<b>Art classes taken</b>						
0	--	--	-1.27	.36	-3.19	.44
1	--	--	.03	.32	-1.47	.45
2-3††	--	--	.64	.28	.77	.23
4-6	--	--	--	--	4.38	.64
<b>Art collected</b>						
0	--	--	-1.05	.17	-2.80	.28
1	--	--	.68	.32	-.38	.33
2	--	--	2.79	.43	2.06	.39
3	--	--	--	--	3.85	.44

\*Seventeen-year-old results are only for 17-year-olds attending school at the time of the assessment.

†Negative numbers indicate performance below the national average; positive numbers indicate performance above the national level.

\*\*Dashes indicate the variable category was not used at a particular age level.

††Thirteen-year-olds were only asked about two art classes.

## APPENDIX C

### BACKGROUND QUESTIONS

#### Art Taught in the School— 9-, 13- and 17-Year-Olds

(Principals in each of the participating schools were asked the following question.)

Is art taught in your school?

- Yes  
 No

#### Participate in Art Production Activities.—9-Year-Olds

Outside of school, what kinds of art work do you do? Tell whether you do each of the following things.

A. Outside of school, do you draw?

- Yes  
 No  
 I don't know.

B. Outside of school, do you paint?

- Yes  
 No  
 I don't know.

C. Outside of school, do you make collages by cutting and pasting paper, cloth and scrap materials?

- Yes  
 No  
 I don't know.

D. Outside of school, do you carve or make models with wood, stone, clay, metal or plastic?

- Yes  
 No  
 I don't know.

#### Participate in Art Production Activities — 13- and 17-Year-Olds

Outside of school, what kinds of art work do you do? Tell whether you do each of the following things outside of school.

	Yes	No	I don't know.
A. Drawing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B. Painting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C. Making pictures by cutting and pasting paper, cloth and scrap materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D. Carving or modeling in wood, stone, clay, metal or plastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E. Print-making such as block printing, silk screening, etching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F. Making pottery, ceramics or mosaics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G. Weaving, macrame or knotting, or needlework such as embroidery, needlepoint, knitting, crocheting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
H. Making photographs or films	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I. Making jewelry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
J. Creating designs or plans for things like clothes, toys, cars, houses, furniture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

#### Visit Art Museums — 9-, 13- and 17-Year-Olds In School

A. The works of artists are shown in art museums and art galleries. How often

have you visited art museums or art galleries?

- Never
- One time
- About five times
- About ten times
- Fifteen or more times

**Attend Art Classes in School -  
13-Year-Olds**

A. Did you take an art class in school last year?

- Yes  No  I don't know.

B. Are you taking an art class during this school year?

- Yes  No  I don't know.

NOTE: Nine-year-olds were not asked this question.

**Attend Art Classes in School -  
17-Year-Olds**

A. Please indicate in which of the following years you took art classes in school.

	Yes	No	I don't know.
Seventh grade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eighth grade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ninth grade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tenth grade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eleventh grade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twelfth grade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B. Are you currently enrolled in art class?

- Yes  No  I don't know.

**Collect Works of Art -  
13-Year-Olds**

A. Original works of art are such things as paintings, drawings, sculpture, ceramic pieces, jewelry, hand-signed prints, weaving or any other work actually made by an artist.

Did you collect original works of art?

- Yes  No  I don't know.

B. Reproductions of works of art are copies of original art works.

Do you collect reproductions of works of art?

- Yes  No  I don't know.

**Collect Works of Art -  
17-Year-Olds**

A. Original works of art are such things as paintings, drawings, sculpture, ceramic pieces, jewelry, hand-signed prints, weaving or any other work actually made by an artist.

Do you collect original works of art?

- Yes  No  I don't know.

B. Reproductions of art works are copies of original art works.

Do you collect reproductions of works of art?

- Yes  No  I don't know.

C. Antiques are old objects such as furniture, glassware, rugs and toys.

Do you collect antiques?

- Yes  No  I don't know.