

A COMPARATIVE STUDY OF AESTHETIC PREFER-  
ENCE AND COGNITIVE DEVELOPMENT OF  
THIRD GRADE, SEVENTH GRADE, HIGH  
SCHOOL AND COLLEGE STUDENTS

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## PREFACE

This study is concerned with determining the relationship between aesthetic preference and cognitive development of art and non-art students. Six groups of reproductions of paintings, representing realistic and abstract artistic styles, were shown to third grade, seventh grade, high school and college students. A survey was used to gather and compare the student preferences. Statistical analysis includes a factorial analysis of variance and least square means were weighted according to their variance.

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## CHAPTER I

### INTRODUCTION

This study was done in the hope of determining the relationship between aesthetic preference and cognitive development of art and non-art students. The author believes that exposure to the visual arts is an essential part of the Art curriculum. Through this research the author was interested in discovering the aesthetic preference of students at different grade levels which would provide information for the development of Art appreciation units of study.

#### Problem Statement

The purpose of this study is to investigate the relationship between aesthetic preference and the cognitive development of art and non-art students in elementary school, middle school, high school, and college.

In recent years a number of studies have examined the development of children's aesthetic preference for paintings. Many of these studies have focused on three variables believed to affect aesthetic preference: the reason behind the preference judgement, the personality

variables affecting aesthetic preference, and the change in aesthetic preference in relation to age.

Wilson, Ausman, and Mathews (1973) found conservatism may be one personality variable linked to art preference. In their study they found that conservatives expressed an aversion to highly complex and abstract works of art. While liberals preferred more complex and abstract paintings. Another personality variable affecting art preference investigated by Kloss and Dreger (1971) has been temperament. Although their study failed to show a significant correlation, they do believe that abstract art can be classified as geometric and non-geometric and that these art types do correlate with temperament.

The reasons behind the preference judgements have been significantly correlated with style, color and age (Hardiman & Zernich 1975, Lark-Horovitz, 1937 and Frechtling and Davidson 1970). Generally these studies have found that younger children's preference judgements are influenced by more concrete dimensions such as artistic style which depicts the subject matter realistically while adolescents and adults prefer art which exhibit complex dimensions found in abstract art. The change in aesthetic preference in relation to age has brought many researchers to believe a correlation exists between aesthetic preference and cognitive growth. Piaget's theory of cognitive development has been used by many researchers while inves-

investigating aesthetic preference (Hardiman and Zernich, 1980, Machotka, 1966, and Lovano-Kerr, 1981).

The present study deals primarily with the following stages of Piaget's theory of cognitive development:

1. The stage of Preoperational Thought (2 - 7 years).
2. The stage of Concrete Operations (7 - 11 years).
3. The stage of Formal Operations (11 - adulthood).

### Hypothesis

The basic research question for this study was formulated to determine whether a significant correlation would exist between aesthetic preference and cognitive development of art and non-art students at third grade, seventh grade, high school and college levels.

There will be a significant difference in students preference for realistic art as the grade levels progress from third grade to seventh grade, high school, and college. It is also believed that there will be a difference in art and non-art students preference for realistic art.

### Definitions

|                       |   |
|-----------------------|---|
| Abstract:             | Having only intrinsic form with little or no attempt at pictorial representation. |
| Accommodation:        | The altering of the cognitive structure to fit a new concept (Piaget).            |
| Aesthetic Preference: | Personal judgements concerning beauty.  |
| Artist Reproduction:  | A copy of an artist's work.   |

|                 |   |
|-----------------|---|
| Artistic Style: | The design of the artist work in accord with a prevailing mode.   |
| Assimilation:   | Altering or reinterpreting a new concept to fit the cognitive structure (Piaget).   |
| Centration:     | Perceptions of events and objects are centered on a single perceptual characteristic (Piaget).                                  |
| Classification: | The ability to perceive that an object is the same as other members of its class, yet unique in its position within that class. |
| Cognitive:      | A term which is used referring to knowledge.  |
| Cool colors:    | Those colors usually associated with sky, water, and foliage.   |
| Egocentrism:    | The inability to take another persons perspective (Piaget).   |
| Equilibrium:    | A state of cognitive balance.   |
| Realistic:      | The accurate representation of objects as seen in nature.   |
| Reversibility:  | The ability to turn or move in the opposite direction an act or event from its start.   |
| Schemata:       | The internal organization of experiences and concepts.  |
| Subject matter: | The object or event represented in a work of art.   |
| Transformation: | The ability to account how one state is changed to another.   |
| Warm colors:    | Those colors usually associated with the sun or fire.   |

## CHAPTER II

### REVIEW OF LITERATURE

The aesthetic preference of visual art objects has been investigated by a great many art educators and psychologists (Rump & Southgate, 1966, Salkind and Salkind 1973) in order to gain a greater understanding of the development of aesthetic preference. Many researchers believe that aesthetic preference develops along with an individual's intellectual framework. Lovano-Kerr (1981) believes that this notion, often referred to as the cognitive movement, is emerging as a strong focus in art educational research, with the underlying assumption that the arts are a form of knowledge, a symbolic and expressive system which can be understood as cognitive processes. Hardiman and Zernich (1975) believe that preference judgements may suggest norms which can be organized and interpreted by systematic inquiry since they are reasonably common occurrences in human behavior.

#### Aesthetic Preference in Relation to Age, Subject Matter and Style

Style, subject matter and age seem to have an affect on individuals art preference. In a study investigating

the creative and appreciative art abilities of students with average drawing ability (average) and students with greater creative drawing ability (special), Lark-Horovitz (1937) found that both groups showed a preference for the same pictures according to age levels. The study also indicated that the reasons for picture choices center first on subject matter and second on color qualities. The average group, however, centered on the subject matter and the realism in the presentation and colors; whereas the specials were influenced more by the design, color, and knowledge that they would gain through analysis. While investigating the sorting behavior of subjects ranging from five-year olds to adults Frechtling and Davidson (1970) found subject matter to emerge as the most frequent criterion for classification of paintings by children, and the importance increased with age. The style of painting was only used as a criterion for sorting behavior in adult subjects and color was the least used dimension in this group. Subject matter again showed the most significant reason for preference in a report by Machotka (1966) of six-year olds' preference of paintings and the realism of the painting increased as a significant factor in choice until age eleven.

The investigation of artistic style as a major factor in individual's art preference has interested many researchers in the field. It has been suggested that as individuals mature their response to artistic style changes (Rump & Southgate, 1966, Osborne and Farley, 1970). In a

study done by Rump and Southgate (1966) designed to study student preference for abstract and realistic art work showed that seven and eleven year olds strongly prefer paintings which realistically depict familiar objects. The abstract paintings were mainly preferred by their older subjects and were liked mainly for their coloring. Gardner (1972) has suggested that preadolescents do not completely understand artistic style and thus tend to sort paintings by their overall similarities which are usually based on subject matter.

In a relationship study between aesthetic preference and visual complexity in abstract art Osborne and Farley (1970) tested two groups of graduate students ranging in age from twenty-six to twenty-eight, and differing only in art experience. Their study indicated that both groups, at this age level, preferred the more visually complex material found in abstract art. In a study investigating elementary students preference for abstract and realistic art work, Salkind and Salkind (1973) found that the majority of their subjects responded more favorably to abstract art work. They believe this finding might be explained by their environmental surroundings. As they point out (Salkind and Salkind, 1973), their subjects have grown up in a highly visual world with constant exposure to graphics which are seen on television and popular trends in arts which influence the advertising world.



Piaget's Cognitive Development Theory  
and Aesthetic Preference

A review of current research in the aesthetic preference of children suggests that as they grow older their preference for art work changes. Many of the studies indicate that younger children prefer art work which is composed of representational objects which are familiar to them more than art work which depicts abstract images (Rump and Southgate, 1966). A theoretical explanation for these changes in preference can be seen in the theory of cognitive development of Jean Piaget. Hardiman and Zernich (1980) believe Piaget's theory of cognitive development is attractive to art educators because it has effectively accounted for the cognitive differences in the developmental stages of children.

Piaget's cognitive development theory analyzes the intellectual growth of individuals as they progress through different stages of development which leads them from less to more advanced levels of functional skill (Hardiman and Zernich, 1980). He believed that as children pass through each developmental stage they progressively increase in comprehensive ways of thinking (Crain, 1985). The stages of cognitive development identified by Piaget are: Sensory-motor, (birth to two years), Preoperational Thought, (two to seven years), Concrete Operations, (seven to eleven years), and Formal Operations, (eleven to adulthood). Although Piaget's research focused primarily on his stages

of intellectual development he believed that intellectual activity cannot be separated from the biological activity of individuals (Wadsworth, 1979). He viewed intellectual and biological activity as part of the overall process by which an individual adapts to the environment and organizes experiences (Wadsworth, 1979). The concepts Piaget used to explain the process of intellectual organization and adaptation are: schemata, assimilation, accommodation, and equilibrium.

The formation of mental schemata occurs as a result of repeated experiences with objects (Davis, 1983). This repeated experience allows the individual to develop memories of certain appearances and the meaning of particular objects and classes of objects (Davis, 1983). As an individual matures the mental schema never stops incorporating and refining new information. Schemata are the intellectual structures that organize events as they are perceived by the organism into groups according to common characteristics (Wadsworth, 1979).

The cognitive process necessary for a person to incorporate new information or events into his existing schemata is assimilation. Assimilation is part of the processes by which the individual cognitively adapts to and organizes the environment (Wadsworth, 1979). It is an ongoing process by which every individual continually incorporates new stimuli or information. Through assimilation the growth of schemata occurs. As an individual matures schemata change.

Piaget accounts for this change by means of accommodation (Wadsworth, 1979).

When a person is confronted with new information or a new experience he is often unable to fit it into his existing schemata, since a schema for that experience has not yet been created. When this occurs accommodation is necessary. Accommodation can be seen as a change in the cognitive structure of the schemata. Through accommodation an individual can develop a new schema for the stimulus or he can change or modify the old schema, this will allow assimilation of the new stimuli (Wadsworth, 1979). Assimilation and accommodation are both necessary structures of intellectual development.

Equilibrium can be seen as the goal of all living organisms (Hardiman and Zernich, 1980). Hilgard and Bower (1975) define equilibrium as an adjustive process needed to fit external reality into an existing structure (assimilation), and to modify that structure (accommodation), while this is taking place (Lavono and Kerr, 1981). Equilibrium can be seen as a balance between accommodation and assimilation. The principle of equilibrium can be seen when an individual is asked to establish a preference for paintings of different artistic styles. If a person is asked to choose between two paintings, one which depicts the subject matter realistically and one which depicts the subject matter in abstract terms, the individual will first search for recognizable objects in each

painting in order to assimilate the information. This allows him to place the stimulus into his existing schemata. If the individual views the abstract painting and is unable to assimilate the stimulus, he must then use accommodation by creating a new schema or modify the old. He may look at the shapes used in the painting in order to find a recognizable image. If one is found he may say, "yes", this painting is of a person, but painted using only squares (accommodation). Once accommodation has occurred, the information can be assimilated, thus reaching a state of equilibrium.

#### Piaget's Stages of Cognitive Development

Cognitive development, as seen by Piaget, can be described using four distinctly different developmental stages which are: Sensory-Motor, Preoperational Thought, Concrete Operations, and Formal Operations. Piaget believes (Hardiman and Zernich, 1980) that all normal children proceed through the same sequence, and that these qualitative stages emerge in an unchanging order, although often at different rates. However, not all individuals achieve or attain the final stage of operations. Once a person achieves a higher stage of cognitive development, all the structural properties of the preceding stage become integrated into the stages that follow (Hardiman and Zernich, 1980).

The Sensory-Motor stage begins at birth and continues until the age of two years. In this stage the cognitive activity of the infant is primarily reflective and based on immediate sensory experiences (Davis, 1983). As the child proceeds through the stage of cognitive development, the intellect evolves as the child reacts to the environment (Wadsworth, 1979). The child begins to develop schemata as his vision and tactile senses begin to appear. This capacity to hold and develop mental images is described as object permanence. Object permanence is considered to be a significant accomplishment for the child and leads the way to language development (Davis, 1983). Although the Sensory-Motor stage shows little relevance to the development of aesthetic preference it is important to note that the child has now developed an awareness of an object's existence on its own, and now has the ability to internally represent objects. This ability liberates him from the sensory-motor intelligence, permitting the invention of new means to solve problems through mental activity (Wadsworth, 1979). The child's intellectual development will now be influenced by a combination of symbolic, representational, and motor activities.

The Preoperational stage is characterized by increasingly symbolic activities, including language, imagery, and the use of memory (Davis, 1983). He may now begin to anticipate certain outcomes of his behavior, by remembering chains of events such as putting a simple puzzle together

(Hardiman and Zernich, 1980). He may remember where each piece of the puzzle goes but not necessarily why it connects at a certain point showing limited abilities of transformation. At this point the preoperational child is incapable of reflecting on his own thoughts. He believes that everyone must think as he does. This is referred to as egocentrism. The child is unable to take another person's viewpoint or question his own. Egocentrism, in a sense, limits the preoperational child's intellectual development until he begins to question his own thinking or validation of concepts. Centration is also an important characteristic of the preoperational child. Centration is shown when the child only centers on a limited perceptual aspect of the stimulus (Wadsworth, 1979). Through visual inspection the child is unable to explore all aspects of the stimulus and assimilates only limited concepts. The preoperational child's limited classification and centration abilities may influence the child's aesthetic preference. The preoperational child is only able to classify objects and events using one salient criterion. For example, Machotka (1966) found that young children prefer paintings on the basis of such concrete features as familiar subject matter and color. Davidson and Frechtling, (1970), support this belief and suggest that it is only after the development of concrete operations that the child is able to classify paintings using more complex variables such as style. The characteristics of the preoperational

child make for slow, concrete and restricted thought processes (Wadsworth, 1979). As the child leaves the stage of Preoperations he begins to show a new capacity for reasoning.

During the stage of Concrete Operations, roughly beginning about age seven and ending around age eleven, the child begins to develop what Piaget refers to as logical operations. At this time the child develops logical thought processes that can be applied to concrete problems (Wadsworth, 1979). The concrete operational child has obtained a level of intellectual activity that allows for more advanced forms of classification. He now begins to exhibit the ability to follow transformation and master reverse operations. He has overcome the egocentrism of earlier stages and is aware that others come to solutions which differ from his own: as a consequence, he begins to seek validation of his thoughts (Wadsworth, 1979). The ability to take into account all the salient features of an object or event is referred to by Piaget as decentering. Decentering permits the logical solution to concrete problems. Transformation is also used by the concrete operational child as he becomes aware of the relationship between successive steps in solving problems. Reversibility and conservation are also possible for the child in the stage of Concrete Operations. Seriation allows the child to mentally arrange elements according to increasing and decreasing size.

Classification is more advanced for the concrete operational child, as he can simultaneously consider two kinds of classes, perform the addition of classes, and reverse the process (Wadsworth, 1979). Although the child has an advanced classification system he must still rely on concrete features to solve problems involving objects and events. He has not yet developed the ability to solve problems which are entirely verbal or problems requiring complex abstract operations. This concept may explain why in Rump and Southgate's study (1966), subjects eleven years old and younger prefer paintings which realistically represent familiar objects, while older subjects prefer paintings which depicted more abstract images.

In Piaget's last stage of intellectual development, Formal Operations, which begins at approximately eleven to fifteen years of age, the ability to use reasoning and logic to solve all classes of problems develops. During this stage the child is able to organize data, reason scientifically, and to generate and test hypotheses (Wadsworth, 1979). The individual can think abstractly and logically. The intellectually mature individual becomes aware of understanding and manipulating relationships between abstractions without any reference whatsoever to concrete-empirical reality (Ausubel, 1978). An individual in Formal Operations can now solve verbal problems, understand the conservation of movement, understand the reasoning of reciprocals, and use combinational thought. The preference



for adults of visually complex paintings was tested by Osborne and Farley (1970) and found that all subjects at this age level preferred the visually complex material depicted in abstract paintings. At the stage of Formal Operations the individual is able to classify paintings by artistic style as suggested by Rump and Southgate (1966). There is no longer a need to rely on concrete features such as subject matter when establishing preference. He is now able to consider concepts such as line, balance, emphasis, and harmony when viewing a work of art.

#### Summary

Much of research conducted in the area of aesthetic preference indicates that there are changes in the aesthetic preference of an individual as he matures. Young children have been found to prefer more realistic stimuli as opposed to abstract stimuli. However, adolescents and adults appear to prefer art work which is depicted in more abstract terms.

Piaget's theory of cognitive development seems to closely relate to the aesthetic preference of individuals as they progress through the stages of Preoperational Thought, Concrete Operations and Formal Operations. It identifies qualitative changes in cognitive development as an individual develops the ability to progressively understand more abstract stimuli.

## CHAPTER III

### METHOD AND PROCEDURE

#### Population

The subjects in the study were chosen on the basis of grade level and art experience. The grade levels that were involved in the study are as follows: Third grade, Seventh grade, High School (9 - 12), and College (freshman - senior). At each grade level subjects having no art experience (non-art) and students currently enrolled in art (art) were given the survey.

The subjects used in the study were 157 non-art students consisting of 75 males and 82 females. The art students group consisted of 72 males and 69 females totaling 141. In all, two hundred and ninety eight individuals were involved.

The subjects participating in the study were currently attending schools in the Northern Oklahoma area. The schools were chosen, on the basis of there representative samples. Listed below are the schools and grade levels involved.

Third grade students, Will Rogers Elementary,  
Stillwater, Oklahoma (28 non-art students).

Third grade students, Roosevelt Elementary,  
Ponca City, Oklahoma (47 art students).

Seventh grade students, Stillwater Middle School,  
Stillwater, Oklahoma (27 art students).

Seventh grade students, Perkins-Tryon Middle School,  
Perkins, Oklahoma (49 non-art students).

Art I and Art II students, Stillwater High School,  
Stillwater, Oklahoma (37 art students)

One History and One Foreign Language Class,  
Stillwater High School, Stillwater, Oklahoma (36 non-  
art students)

One Sculpture and Art History Class, Oklahoma State  
University, Stillwater, Oklahoma (30 art students).

One Reading Skills and One Visual Arts Class,  
Oklahoma State University, Stillwater, Oklahoma  
(44 non-art students).

Correspondence with Stillwater public schools in-  
cluded: a letter of introduction, a research/request pro-  
posal and a parental consent form shown in Appendix B. Su-  
perintendents in Ponca City and Perkins were contacted per-  
sonally.

#### Instrumentation

Reproductions of painting by ten well known artists  
were chosen from the Sheerar Museum's collection in Still-  
water, Oklahoma. The reproductions were selected on the  
basis of artistic style, subject matter, and color. Two  
artistic styles were determined by the abstract or realis-  
tic qualities of the paintings. Reproductions which showed  
little or no attempt at pictorial representation were con-  
sidered abstract in style, while reproductions which more

accurately represented objects or subjects in a realistic manner as seen in nature were considered realistic in style.

One abstract reproduction and one realistic reproduction were chosen from the subject matter categories of: Architecture, Still Life, Portrait, Landscape, and People. Each subject matter category represented either a warm or cool color scheme. Cool color schemes are those usually associated with sky, water, and foliage. Warm color schemes are represented by colors usually associated with fire and sun. The reproduction used in the study range in size from 11" X 14" to 22" X 29", and are shown in Table I.

TABLE I  
FINE ART REPRODUCTIONS

| Painting                        | Artist           | Style | Birth/<br>Death Dates |
|---------------------------------|------------------|-------|-----------------------|
| "The Arch Tower"                | Lyonel Feininger | A     | 1871-1956             |
| "Impasse Cotten"                | Maurice Utrillo  | R     | 1883 1955             |
| "Still Life With Lamp"          | Joan Miro        | A     | 1893 1983             |
| "My Gems"                       | William Harnett  | R     | 1848-1892             |
| "Man With A Pipe"               | Pablo Picasso    | A     | 1881-1983             |
| "Portrait Of Doge<br>Lorendano" | Giovanni Bellini | R     | 1430-1516             |
| "Forest With Brook"             | Ernest Kirchner  | A     | 1880-1938             |
| "Corn Field"                    | John Constable   | R     | 1776-1837             |
| "Dances At The Spring"          | Francis Picabia  | A     | 1879-1953             |
| "Snap The Whip"                 | Winslow Homer    | R     | 1836-1910             |

A-Abstract      R-Realistic

### Treatment

A one-page survey sheet (Appendix A) was used to collect data from each subject. The survey was given in a classroom setting with each subject seated in clear viewing distance of the reproductions. After each subject filled out the biographical information (age, grade level, and sex) the following instructions were read:

Today I am going to show you some reproductions of paintings by well known artists. After you have seen each group of reproductions I would like you to choose which reproduction you like the best. Each reproduction has been labeled with a letter from the alphabet. Please indicate or tell me, your answer by circling the letter which corresponds or is the same as, the letter on the answer sheet.

There are no right or wrong answers. I am only interested in your preference. Are there any questions? Please do not talk during the survey. Thank you.

The presentation of reproductions was then begun. Each group of reproductions were shown for sixty seconds. After sixty seconds the subjects were requested to circle the letter of the reproduction they liked the best. The reproductions were shown in the following order:

Group I: All Subjects Realistic

- A. "Impasse Cotten", Maurice Utrillo
- "Snap The Whip", Winslow Homer
- "My Gems", William Harnett
- "Portrait of Doge Lorendano", Giovanni Bellini
- "Corn Field", John Constable

All Subjects Abstract:

- B. "The Arch Tower", Lyonel Feininger
- "Dances At The Spring", Francis Picabia
- "Still Life With Lamp", Joan Miro
- "Man With A Pipe", Pablo Picasso
- "Forest With Brook", Ernest Kirchner

Group II: Still Life

- C. "My Gems", William Harnett
- D. "Still Life With Lamp", Joan Miro

Group III: Portrait

- E. "Portrait of Doge Lorendano", Giovanni Bellini
- F. "Man With A Pipe", Pablo Picasso

Group IV: Landscape

- G. "Corn Field", John Constable
- H. "Forest With Brook", Ernest Kirchner

Group V: People

- I. "Snap The Whip", Winslow Homer
- J. "Dances At The Spring", Francis Picabia

Group VI: Architecture

K. "Impasse Cotten", Maurice Utrillo

L. "The Arch Tower", Lyonel Feininger

Following the survey, answer sheets were collected and questions were answered.

CHAPTER IV  
RESEARCH DESIGN AND STATISTICAL  
ANALYSIS

A casual-comparative design was used in this study. Two groups differing on the independent variables of age and art experience were compared on the dependent variable, art preference. The assessment which was administered to the groups was compared in six art preferences categories:

1. Realistic or abstract groups of art
2. Still lifes
3. Portraits
4. Landscapes
5. People
6. Architecture

Statistical Analysis

A factorial analysis of variance was used to analyze the data in this study. The least square means were calculated using the Statistical Analysis System (SAS) using the General Linear Model (GLM) procedure in order to determine the percentage of student preferences for realistic art. The General Linear Model procedure used is as follows:



By Subject  
 Classes BT Grade Sex;  
 Model P = BT |Grade| Sex;  
 Test H = BT Grade Sex BT \* Grade BT \* Sex Grade \* Sex E + BT  
 \* Grade \* Sex;  
 Weight WT  
 LSMeans BT |Grade| Sex;  
 Means BT |Grade| Sex;

In addition each mean was weighted inversely proportional to its variance to account for unequal sample sizes. The formula used was:  $WT + (N / (P * (1 - P)))$

A significance level of  $< 0.05$  was used to determine statistical significance. The statistical model used is as follows:

$$\text{Response} = M + \text{Experience} + \text{Grade} + \text{Sex} + \text{Experience} \times \text{Grade} + \text{Experience} \times \text{Sex} + \text{Grade} \times \text{Sex} + \text{Error}.$$

#### Group I: Abstract or Realistic Art

Group I consisted of five realistic reproductions and five abstract reproductions which included all subject matter categories. No statistically significant differences were found in student's aesthetic preference when comparing art experience, grade level, or sex. The least square means for subjects preferences of realistic art are shown in Table II and Figure 1.

Although no statistically significant differences were found, Figure 1 indicates there is a gradually increasing preference for realistic art until seventh grade. This

TABLE II  
 PREFERENCE FOR REALISTIC ART  
 (Experience, Grade, Sex)

| Art Experience | Sex    | Third Grade |     | Seventh Grade |     | High School |     | College |     |
|----------------|--------|-------------|-----|---------------|-----|-------------|-----|---------|-----|
|                |        | N           | LSM | N             | LSM | N           | LSM | N       | LSM |
| Art            | Male   | (25)        | .40 | (13)          | .69 | (22)        | .90 | (12)    | .58 |
|                | Female | (22)        | .45 | (14)          | .64 | (15)        | .53 | (18)    | .38 |
| Non-Art        | Male   | (10)        | .60 | (27)          | .55 | (21)        | .80 | (17)    | .76 |
|                | Female | (18)        | .61 | (22)          | .72 | (15)        | .35 | (27)    | .77 |

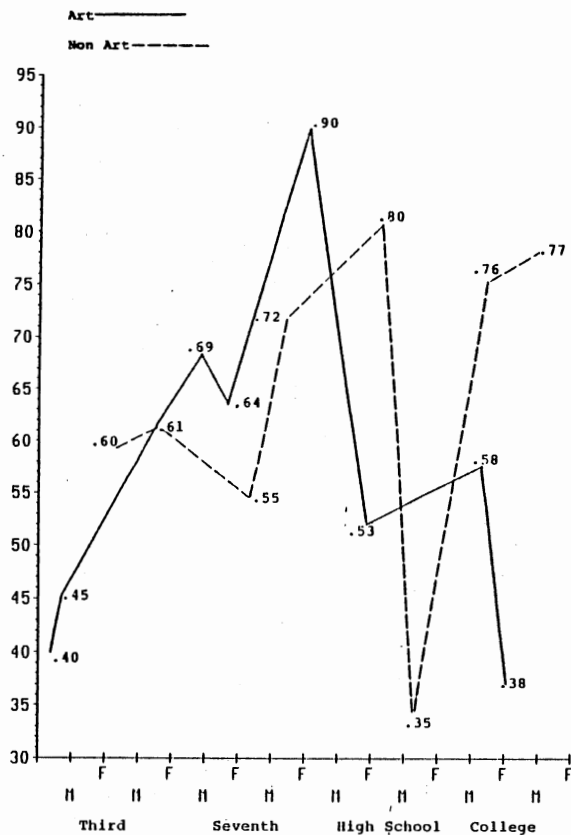


Figure 1. Preference for Realistic Art  
 (Experience, Grade, Sex)

trend is seen again when the interaction between grade and sex are investigated.

This interaction shows student's preference for realistic art increasing gradually until seventh grade. The high school students begin to break the trend with the males showing a least square means of 0.85 and females showing a least square means of 0.44 preference for realistic art. Table III shows the least square means of the grade and sex interaction. Figure 2 plots the least square means. The subjects showing the least preference for realistic art are high school females whereas, high school males show the greatest amount of preference. Appendix C lists the least square means for experience, grade, sex, experience and sex, and experience and grade.

#### Group II: Still Life

Group II consisted of one abstract and one realistic reproduction of still life paintings. The least square means in Table IV show no statistical difference in students preference for realistic still lifes. Figure 3 plots the least square means interactions for experience, grade, and sex. Male subjects in the third grade non-art group showed the least amount of preference for realistic still life paintings (0.00), while male high school non-art students exhibited the greatest preference (0.95). Appendix C lists least square means for the interactions of experience,

TABLE III  
PREFERENCE FOR REALISTIC ART  
(Grade and Sex)

| Sex    | Third Grade |     | Seventh Grade |     | High School |     | College |
|--------|-------------|-----|---------------|-----|-------------|-----|---------|
|        | N           |     | N             |     | N           |     |         |
| Male   | (35)        | .50 | (40)          | .62 | (43)        | .85 | .67     |
| Female | (40)        | .53 | (36)          | .68 | (30)        | .44 | .58     |

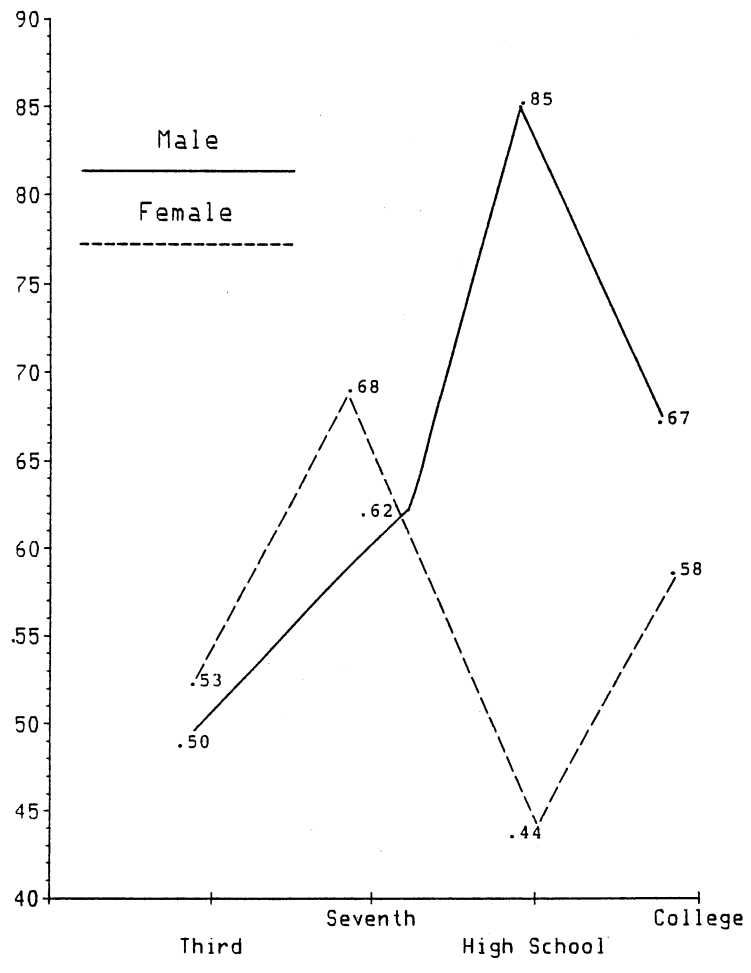


Figure 2. Preference for Realistic Art  
(Grade and Sex)

TABLE IV  
 PREFERENCE FOR REALISTIC STILL LIVES  
 (Experience, Grade, Sex)

| Experience | Sex    | N    | Third Grade |      | Seventh Grade |      | High School |      | College |
|------------|--------|------|-------------|------|---------------|------|-------------|------|---------|
|            |        |      | N           |      | N             |      | N           |      | N       |
| Art        | Male   | (25) | .68         | (13) | .92           | (22) | .90         | (12) | .75     |
|            | Female | (22) | .59         | (14) | .78           | (15) | .73         | (18) | .61     |
| Non-art    | Male   | (10) | .00         | (27) | .85           | (21) | .95         | (17) | .94     |
|            | Female | (18) | .94         | (22) | .77           | (15) | .93         | (27) | .92     |

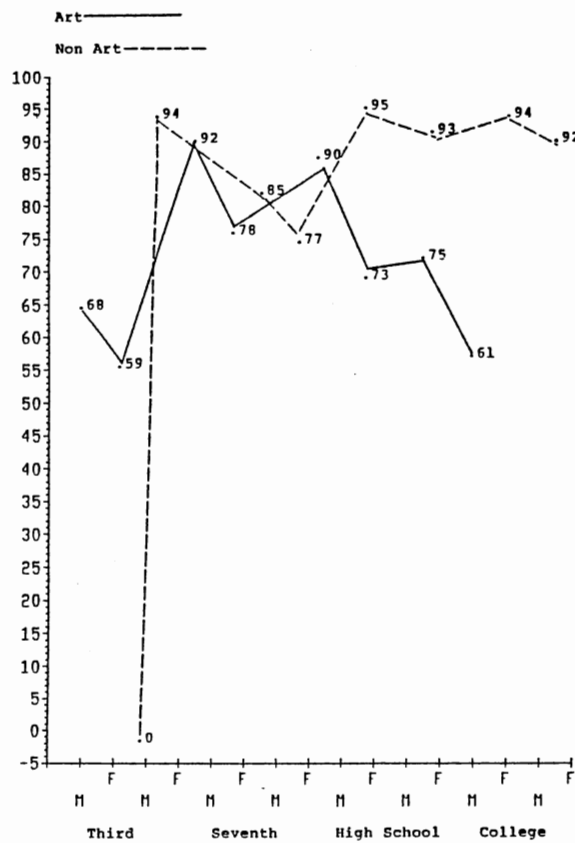


Figure 3. Preference for Realistic Still Lives  
 (Experience, Grade, Sex)

grade, experience and grade, sex, experience and sex, and grade and sex. No statistical differences were found.

#### Group III: Portraits

Group III consisted of two reproductions of portraits, one abstract and one realistic. A statistically significant difference was found when the least square means of art and non-art students were compared and again when the interaction of grade and sex were compared.

Table V represents the least square means of the art and non-art students. Figure 4 plots these least square means. The interaction for experience between non-art and art student's preference for realistic art was at 0.03 significant level. The non-art students showed the greatest amount of preference for realistic portraits with a least square mean of 0.47, whereas, the art students showed the least preference for realistic portraits with a least square mean of 0.37 (see Figure 4).

The interaction of grade and sex showed a statistically significant difference of 0.03. The least square means in Table VI indicate that the females showed the least amount of preference for realistic portraits with a least square mean of (0.26) and males show the greatest preference with a least square mean of (0.69) for realistic portraits. Figure 5 plots the differences.

TABLE V  
PREFERENCE FOR REALISTIC PORTRAITS  
(Experience)

| Experience | N     | LS Mean |
|------------|-------|---------|
| Art        | (141) | .37     |
| Non-Art    | (157) | .47     |

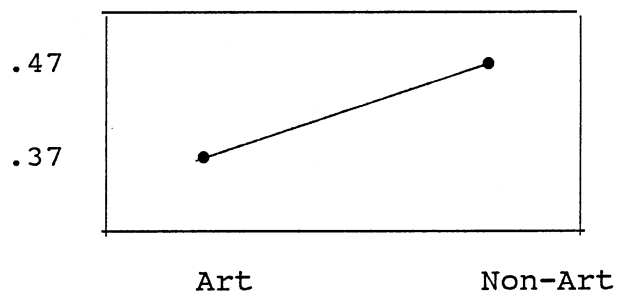


Figure 4. Preference for Realistic Portraits  
(Experience)

TABLE VI  
 PREFERENCE FOR REALISTIC PORTRAITS  
 (Grade and Sex)

| Sex    | N    | Grade       | LS Mean |
|--------|------|-------------|---------|
| Male   | (35) | Third       | .48     |
|        | (40) | Seventh     | .45     |
|        | (43) | High School | .69     |
|        | (29) | College     | .36     |
| Female | (40) | Third       | .48     |
|        | (36) | Seventh     | .38     |
|        | (30) | High School | .26     |
|        | (45) | College     | .26     |

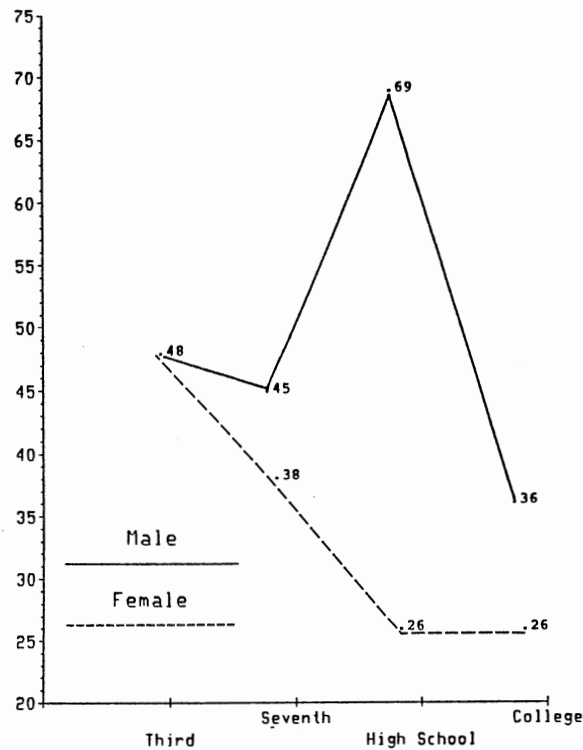


Figure 5. Preference for Realistic Portraits  
 (Grade and Sex)



The females show an increased preference for realistic art until seventh grade with a least square mean of (0.48). The preference then drops at the high school level with a least square mean of (0.26). The males preference for realistic portraits peaks at the high school level (0.69), then decreases at the college level (0.36). The least square means for the interaction of grade, experience and grade, sex, experience and sex, and for experience, grade, and sex are given in Appendix C.

#### Group IV: Landscapes

Group IV consisted of one abstract and one realistic reproduction of landscapes. Table VII shows the least square means for students preferences for realistic landscapes related to experience, grade and sex. Figure 6 plots the least square means.

Although no statistically significant differences existed, a trend does emerge when comparing male and female preferences for realistic landscapes. The males showed the greatest preference for realistic landscapes with a least square mean of (0.70) while females show the least amount of preference with a least square mean of (0.54). The least square means are represented in Table VIII and plotted in Figure 7. Appendix C shows the least square means for the interaction of experience, grade, experience and grade, grade and sex, and experience and sex.

TABLE VII  
 PREFERENCE FOR REALISTIC LANDSCAPES  
 (Experience, Grade, Sex)

| Experience | Sex    | Third Grade |     | Seventh Grade |     | High School |     | College |     |
|------------|--------|-------------|-----|---------------|-----|-------------|-----|---------|-----|
|            |        | N           | LSM | N             | LSM | N           | LSM | N       | LSM |
| Art        | Male   | (25)        | .56 | (13)          | .76 | (22)        | .77 | (12)    | .83 |
|            | Female | (22)        | .50 | (14)          | .50 | (15)        | .53 | (18)    | .33 |
| Non-Art    | Male   | (10)        | .50 | (27)          | .59 | (21)        | .80 | (17)    | .76 |
|            | Female | (18)        | .50 | (22)          | .81 | (15)        | .53 | (27)    | .66 |

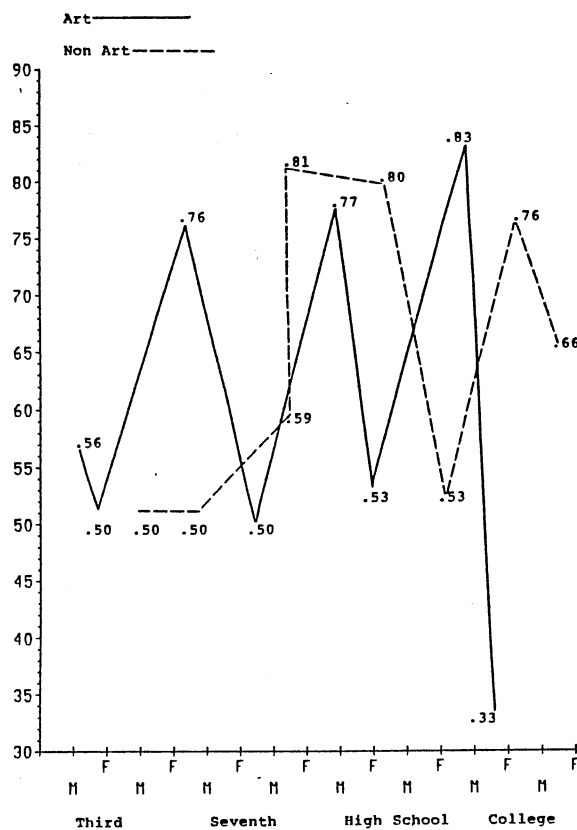


Figure 6. Preference for Realistic Landscapes  
 (Experience, Grade, Sex)

TABLE VIII  
PREFERENCE FOR REALISTIC LANDSCAPES  
(Sex)

| Sex    | N     | LS Mean |
|--------|-------|---------|
| Male   | (147) | .70     |
| Female | (151) | .54     |

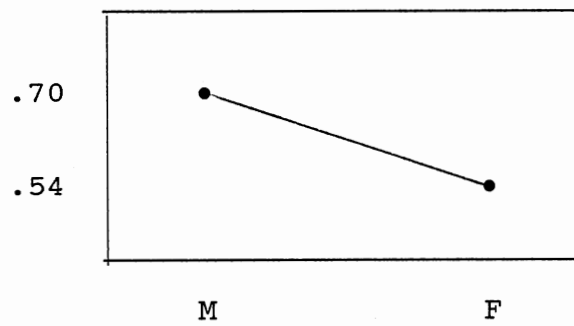


Figure 7. Preference for Realistic Landscapes  
(Sex)

### Group V: People

Group V included one realistic and one abstract reproduction of a group of people. The least square means shown in Table IX show no statistically significant difference in student preferences for a realism in people. The subjects showing the greatest preference for realistic art depicting a group of people were third grade non-art males and high school art males with a least square mean of (0.90). Female college art students show the least preference for the realistic group with a least square mean of (0.38) of people (see Figure 8). Appendix C lists least square means for the interaction of experience, grade, experience and grade, sex, experience and sex, and grade and sex.

### Group VI: Architecture

Group VI consisted of one abstract and one realistic reproduction depicting architectural structures. No statistical differences were found in the student preferences for realistic architectural structures. The least square means are shown in Table X. The subjects showing the greatest preference for realistic architectural structures were third grade non-art males with a least square mean of (0.90) while female college non-art students showed the least preference with a least square mean of (0.22). See Figure 9.

TABLE IX  
 PREFERENCE FOR REALISTIC PEOPLE  
 (Experience, Grade, Sex)

| Experi-<br>ence | Sex    | Third<br>Grade |     | Seventh<br>Grade |     | High<br>School |     | College |     |
|-----------------|--------|----------------|-----|------------------|-----|----------------|-----|---------|-----|
|                 |        | N              | LSM | N                | LSM | N              | LSM | N       | LSM |
| Art             | Male   | (25)           | .40 | (13)             | .69 | (22)           | .90 | (12)    | .58 |
|                 | Female | (22)           | .63 | (14)             | .71 | (15)           | .80 | (18)    | .38 |
| Non-Art         | Male   | (10)           | .90 | (27)             | .51 | (21)           | .85 | (17)    | .58 |
|                 | Female | (18)           | .44 | (22)             | .81 | (15)           | .86 | (27)    | .77 |

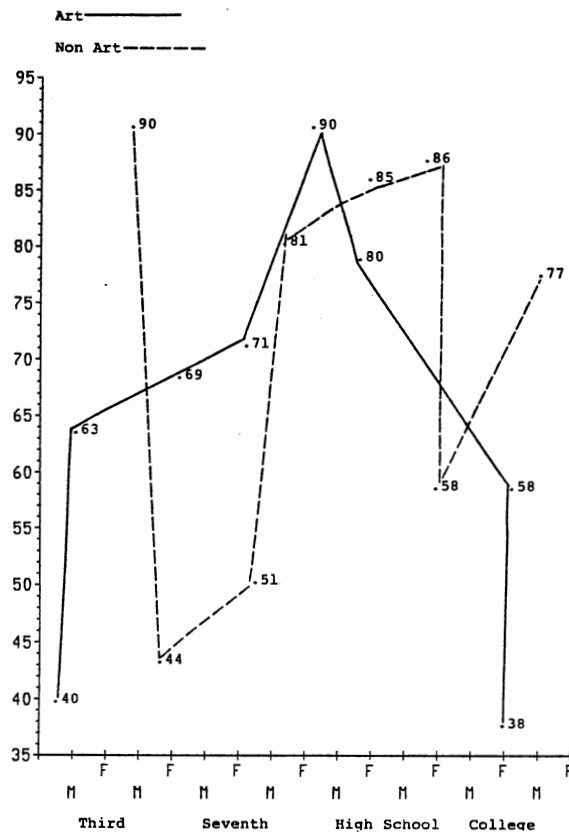


Figure 8. Preference for Realistic People  
 (Experience, Grade, Sex)

TABLE X  
 PREFERENCE FOR REALISTIC ARCHITECTURE  
 (Experience, Grade, Sex)

| Experi-<br>ence | Sex    | Third<br>Grade |     | Seventh<br>Grade |     | High<br>School |     | College |     |
|-----------------|--------|----------------|-----|------------------|-----|----------------|-----|---------|-----|
|                 |        | N              | LSM | N                | LSM | N              | LSM | N       | LSM |
| Art             | Male   | (25)           | .56 | (13)             | .38 | (22)           | .63 | (12)    | .50 |
|                 | Female | (22)           | .68 | (14)             | .57 | (15)           | .33 | (18)    | .27 |
| Non-Art         | Male   | (10)           | .90 | (27)             | .55 | (21)           | .61 | (17)    | .52 |
|                 | Female | (18)           | .61 | (22)             | .45 | (15)           | .46 | (27)    | .22 |

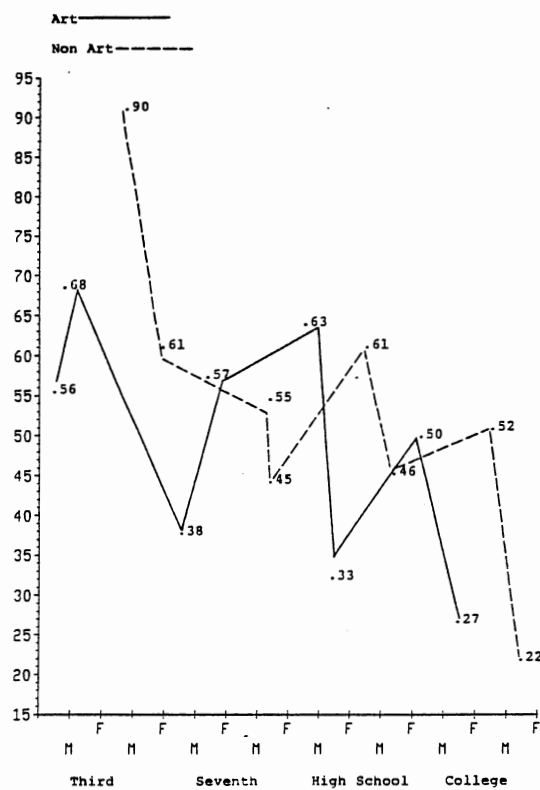


Figure 9. Preference for Realistic Architecture  
 (Experience, Grade, Sex)

Although no statistically significant difference exists, a trend does emerge when male and female preferences are compared. Table XI represents the least square means for the sexes, and plotted in Figure 10. Males show a greater preference for realistic architecture at 0.58 while females show the least amount of preference 0.45. Appendix C lists the least square means for the interactions of grade, experience and grade, experience and sex, and grade and sex.

TABLE XI  
PREFERENCE FOR REALISTIC ARCHITECTURE  
(Sex)

| Sex    | N     | LS Mean |
|--------|-------|---------|
| Male   | (147) | .58     |
| Female | (151) | .45     |

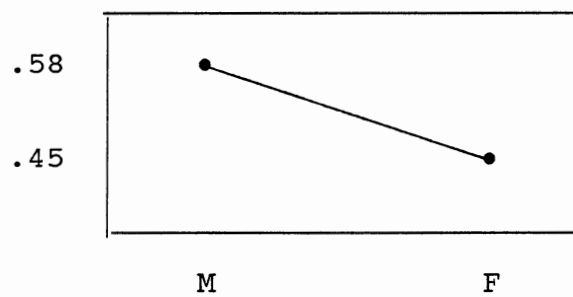


Figure 10. Preference for Realistic Architecture  
(Sex)



## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

Much of research conducted in the area of aesthetic preference indicates individuals aesthetic preference changes as they mature (Rump & Southgate, 1966, Osborne & Farley, 1970). Young children have been found to prefer more realistic art, while adults and adolescents have been found to prefer art which is more abstract.

Piaget's cognitive development theory was selected as the theoretical basis for this study because it analyzes the intellectual growth of individuals as they progress through different stages of cognitive development. The stages of cognitive development, outlined by Piaget, which appear to be relevant to aesthetic preference are: The stage of Preoperational Thought (2 to 7 years), the stage of Concrete Operations (7 to 11 years), and the stage of Formal Operations (11 to adulthood).

At each stage of Piaget's cognitive development the individual begins to gain higher intellectual functions which may influence aesthetic preference. During the stage of Preoperational Thought the characteristics which may influence aesthetic preference are egocentrism and centrat-

ion. According to Piaget, the individual at this stage is unable to consider other's point of view and can only classify objects and events using one perceptual aspect of the stimuli. As the individual reaches the stage of Concrete Operations he is now developing the ability to use logical thought processes to solve concrete problems. The individual is also obtaining the ability to use multiple classification systems and can take into account all the salient features of an object or event through decentering. However, the individual must still rely on concrete features of an object or event in order to solve problems. When the individual reaches the stage of Formal Operations the ability to use reasoning and logic to solve all classes of problems appears. The individual can think abstractly and no longer needs to rely on concrete features when solving problems.

#### Conclusions

The data collected in this study were analyzed using a factorial analysis of variance. In addition, the least square means were weighed and calculated using the Statistical Analysis System using the General Linear Model procedure in order to determine the percentage of student's preference for realistic art in each subject matter category. The results indicated that there was no significant difference in the aesthetic preference of art and non-art

students at the third grade, seventh grade, high school, or college levels.

In the subject matter categories of Still lifes, Landscapes, People, Architecture and Abstract or Realistic art the student responses showed no statistical differences. However, there was a trend for females to show the least amount of preference for realistic art. The student's responses frequently changed for each subject matter category therefore no set pattern for preference judgements could be established.

A statistical difference did emerge in the subject matter category of portraits. Art students showed the least amount of preference for realistic portraits while non-art students showed the greatest preference. This might be explained by the exposure the art student receives while studying art which is Cubistic in style. Cubism was a major force in the Twentieth Century art movement and is studied in many art classes. If the art students were familiar with the movement, their previous knowledge might have influenced their responses.

A difference also emerged in the male and female preferences for realistic portraits. Females showed the least preference for realistic portraits while males showed the greatest preference. The differences in preference judgements between the sexes may have been influenced by the individuals sex or stature portrayed in the portraits. The realistic portrait by Giovanni Bellini "Portrait of Doge

Lorendano" depicts a prominent mature male with confident eyes and dominating features, while the abstract painting used by Pablo Picasso, "Man With A Pipe," portrays a male in a less domineering fashion. The results might have been different if the portraits used for the females had also depicted females.

Although significant differences did exist in the subject matter category of Portraits, the responses in the other subject matter categories indicated that no significant difference in preference judgements emerged when comparing students' art experience, grade level, sex or artistic styles. In conclusion, the aesthetic preference and cognitive development of art and not-art students in the third grade, seventh grade, high-school, and college level were not found to be significantly related in this study. Students at all grade and experience levels used personal judgements which were made on an individual basis when viewing each subject matter category which included both realistic and abstract works of art.

#### Recommendations

This study might be improved by increasing the sample size for each grade and experience level or by developing a longitudinal study which worked with the same objects over an extended period of time.

Other considerations should include the amount of art experience of each subject and the order in which the

reproductions are shown. Further studies might be designed to have the abstract of realistic group of reproduction shown last to assure that the subjects consider only the individual reproductions first.

Some questions in additional studies might be: How does the aesthetic preference of students influence the retention of works of art? Do females prefer more complex works of art than males?

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APPENDIXES



APPENDIX A  
SURVEY INSTRUMENT

## Survey Instrument: Third grade

Age\_\_\_\_\_ Grade\_\_\_\_\_ Boy\_\_\_\_\_ Girl\_\_\_\_\_

Which group of artist reproductions do you like the best?

A or B

Which reproduction do you like the best?

C or D

Which reproduction do you like the best?

E or F

Which reproduction do you like the best?

G or H

Which reproduction do you like the best?

I or J

Which reproduction do you like the best?

K or L

Survey Instrument: Seventh grade,  
High school and College

Age \_\_\_\_\_ Grade \_\_\_\_\_ Male \_\_\_\_\_ Female \_\_\_\_\_

Have you ever had any art classes? \_\_\_\_\_

If you answer was YES. How Many? \_\_\_\_\_

Which group of reproductions do you like the best?

A or B

Which reproduction do you like the best?

C or D

Which reproduction do you like the best?

E or F

Which reproduction do you like the best?

G or H

Which reproduction do you like the best?

I or J

Which reproduction do you like the best?

K or L

APPENDIX B

CORRESPONDENCE

## Letter of Introduction

Sheryl Hale  
702 S. Jardot, #6  
Stillwater, OK 74074  
(405) 372-6128

November 4, 1987

Dr. Hann  
Board of Education  
Stillwater, OK 74074

Dear Dr. Hann:

I am interested in conducting research at Will Rogers Elementary School and the Stillwater Middle School. The data collected will be used in a comparison study of elementary, middle school, high school and college level student's art preference in the Ponca City, Stillwater and Perkins area. The students will be compared at different age levels and with students having prior art experience.

The students will be asked to choose which reproduction of paintings they prefer as they are shown five different subject matter categories. The subject matter categories are as follows: Architecture, Landscape, Portrait, Still-Life and People.

The information compiled will be used in my thesis for partial fulfillment of the Masters of Science degree at Oklahoma State University.

Thank you for your consideration and assistance in this matter. If you have any further questions please contact me at (405) 372-6128.

Sincerely,

Sheryl Hale

RESEARCH REQUEST/PROPOSAL

SHERYL HALE

1) Purpose of Intended Study:

The purpose of this study is to investigate the art preferences of elementary school, middle school, high school and college students which vary in age and educational experience.

2) Specific Objectives:

The students participating in the study will be asked to view the reproductions which have been categorized in five subject matter groups according to their abstract qualities. After viewing each subject matter category, the students will be asked to choose which reproduction they like the best.

3) Target Population:

Third grade students at Will Rogers Elementary School, Stillwater, OK. Third grade students at Roosevelt Elementary School, Ponca City, OK. Seventh grade students at Stillwater Middle School, Stillwater, OK. Seventh grade students at Perkins-Tryon Middle School, Perkins, OK. Art I and Art II students at Stillwater High School, Stillwater, OK. Two non-art classes at Stillwater High School, Stillwater, OK. One Freshmen Art and Reading Class, Oklahoma State University, Stillwater OK. One advanced level Art class and advanced non-art students, Oklahoma State University, Stillwater, OK.

4) Research Condition:

The classroom time needed for the survey is twenty minutes. No physical modifications are needed.

5) Instrumentation: The reproductions being used are as follows:

|               |   |
|---------------|---|
| Architecture: | Lyonel Feininger, "The Arch Tower"              |
|               | Laurice Utrillo, "Impasse Cotten"               |
| People:       | Francis Picabia, "Dances In The Spring"         |
|               | Winslow Homer, "Snap The Whip"                  |
| Still Life:   | Joan Miro, "Still Life With Lamp"               |
|               | William Harnett, "My Gems"                      |
| Portrait:     | Pablo Picasso, "Man With A Pipe"                |
|               | Giovanni Bellini, "Portrait of Doge<br>Lorendo" |
| Landscape:    | John Costable, "Corn Field"                     |
|               | Ernst Kircher, "Forest With Brook"              |

The students will be read the following instructions before viewing the art work. Today I am going to show you some reproductions of paintings by well know artists. After you have seen each group of reproductions I would like you to choose which reproduction you like the best. Each reproduction has been labeled with a letter from the alphabet. Please indicate, or tell me, your answer by circling the answer which corresponds, or is the same as, the letter on the answer sheet. There are no right or wrong answers. I



am only interested in your preference. Are there any questions? Please do not talk during the survey. Thank you.

6) Confidentiality:

Students confidentiality will be protected by requiring the students to provide only information about their age, sex, and educational experience in the arts. Students names and school districts are not required.

7) Comparative Design:

A casual-comparative design will be used in comparing students age, sex, and educational experience in the arts with their preference for abstract or realistic art.

8) Utilization of Results:

The results of the study will be used in preparing a Master's thesis for partial fulfillment of the Masters of Science Degree at Oklahoma State University.

The study will benefit the school district by providing information for the development of a comprehensive art appreciation unit of study.

## Parental Permission Form

Dear Parent,

I am currently conducting research in the Stillwater Public Schools regarding students art preferences in order to develop a comprehensive art appreciation unit of study.

I would appreciate your child's participation in my study by completing a survey where each student is asked to choose which artist reproduction is preferred. If you approve of your child's participation please sign below.

Thank you for your consideration in this matter.

Sincerely,

Sheryl Hale

\_\_\_\_\_  
Students' Name

\_\_\_\_\_  
Parents' Signature

APPENDIX C

TABLES OF LEAST SQUARE MEANS

## TABLES OF LEAST SQUARE MEANS

TABLE XII

GROUP I: PREFERENCE FOR ABSTRACT OR  
REALISTIC ART

| Experience | LS Mean | Sex    | LS Mean |
|------------|---------|--------|---------|
| Art        | .57     | Male   | .66     |
| Non-Art    | .64     | Female | .56     |

| Grade       | LS Mean | Experience | Sex    | LS Mean |
|-------------|---------|------------|--------|---------|
| Third       | .51     | Art        | Male   | .64     |
| Seventh     | .65     | Art        | Female | .50     |
| High School | .65     | Non-Art    | Male   | .68     |
| College     | .62     | Non-Art    | Female | .61     |

| Experience | Grade       | LS Mean |
|------------|-------------|---------|
| Art        | Third       | .42     |
| Art        | Seventh     | .66     |
| Art        | High School | .72     |
| Art        | College     | .48     |
| Non-Art    | Third       | .60     |
| Non-Art    | Seventh     | .64     |
| Non-Art    | High School | .58     |
| Non-Art    | College     | .77     |

## TABLES OF LEAST SQUARE MEANS

TABLE XIII

GROUP II: PREFERENCE FOR REALISTIC STILL LIFES

| Experience | LS Mean | Sex    | LS Mean |
|------------|---------|--------|---------|
| Art        | .74     | Male   | .75     |
| Non-Art    | .79     | Female | .78     |

| Grade       | LS Mean | Experience | Sex    | LS Mean |
|-------------|---------|------------|--------|---------|
| Third       | .55     | Art        | Male   | .81     |
| Seventh     | .83     | Art        | Female | .68     |
| High School | .88     | Non-Art    | Male   | .68     |
| College     | .80     | Non-Art    | Female | .89     |

| Experience | Grade       | LS Mean | Grade       | Sex    | LS Mean |
|------------|-------------|---------|-------------|--------|---------|
| Art        | Third       | .63     | Third       | Male   | .34     |
| Art        | Seventh     | .85     | Seventh     | Male   | .88     |
| Art        | High School | .82     | High School | Male   | .93     |
| Art        | College     | .68     | College     | Male   | .84     |
| Non-Art    | Third       | .47     | Third       | Female | .76     |
| Non-Art    | Seventh     | .81     | Seventh     | Female | .77     |
| Non-Art    | High School | .94     | High School | Female | .83     |
| Non-Art    | College     | .93     | College     | Female | .76     |

## TABLES OF LEAST SQUARE MEANS

TABLE XIV

GROUP III: PREFERENCE FOR REALISTIC PORTRAITS

| Grade       |  | LS Mean | Sex    |  | LS Mean |
|-------------|--|---------|--------|--|---------|
| Third       |  | .48     | Male   |  | .49     |
| Seventh     |  | .41     | Female |  | .35     |
| High School |  | .48     |        |  |         |
| College     |  | .31     |        |  |         |

| Experience | Grade       | LS Mean | Experience | Sex    | LS Mean |
|------------|-------------|---------|------------|--------|---------|
| Art        | Third       | .36     | Art        | Male   | .45     |
| Art        | Seventh     | .44     | Art        | Female | .28     |
| Art        | High School | .47     | Non-Art    | Male   | .53     |
| Art        | College     | .20     | Non-Art    | Female | .41     |
| Non-Art    | Third       | .60     |            |        |         |
| Non-Art    | Seventh     | .38     |            |        |         |
| Non-Art    | High School | .49     |            |        |         |
| Non-Art    | College     | .42     |            |        |         |

| Experience | Sex    | Third Grade | Seventh Grade | High School | College |
|------------|--------|-------------|---------------|-------------|---------|
| Art        | Male   | .36         | .53           | .68         | .25     |
| Art        | Female | .36         | .35           | .26         | .16     |
| Non-Art    | Male   | .60         | .37           | .71         | .47     |
| Non-Art    | Female | .61         | .40           | .26         | .37     |

## TABLES OF LEAST SQUARE MEANS

TABLE XV

## GROUP IV: PREFERENCE FOR REALISTIC LANDSCAPES

| Experience | LS Mean |
|------------|---------|
| Art        | .60     |
| Non-Art    | .64     |

| Grade       | LS Mean |
|-------------|---------|
| Third       | .51     |
| Seventh     | .67     |
| High School | .66     |
| College     | .64     |

| Experience | Sex    | LS Mean |
|------------|--------|---------|
| Art        | Male   | .73     |
| Art        | Female | .46     |
| Non-Art    | Male   | .66     |
| Non-Art    | Female | .62     |

| Experience | Grade       | LS Mean |
|------------|-------------|---------|
| Art        | Third       | .53     |
| Art        | Seventh     | .63     |
| Art        | High School | .65     |
| Art        | College     | .58     |
| Non-Art    | Third       | .50     |
| Non-Art    | Seventh     | .70     |
| Non-Art    | High School | .67     |
| Non-Art    | College     | .71     |

| Experience  | Sex    | LS Mean |
|-------------|--------|---------|
| Third       | Male   | .53     |
| Seventh     | Male   | .68     |
| High School | Male   | .79     |
| College     | Male   | .79     |
| Third       | Female | .50     |
| Seventh     | Female | .65     |
| High School | Female | .53     |
| College     | Female | .50     |

## TABLES OF LEAST SQUARE MEANS

TABLE XVI

GROUP V: PREFERENCE FOR REALISTIC PEOPLE

| Experience | LS Mean | Sex    | LS Mean |
|------------|---------|--------|---------|
| Art        | .64     | Male   | .68     |
| Non-Art    | .72     | Female | .68     |

| Grade       | LS Mean | Experience | Sex    | LS Mean |
|-------------|---------|------------|--------|---------|
| Third       | .59     | Art        | Male   | .64     |
| Seventh     | .68     | Art        | Female | .63     |
| High School | .85     | Non-Art    | Male   | .71     |
| College     | .58     | Non-Art    | Female | .72     |

| Experience | Grade       | LS Mean | Grade       | Sex    | LS Mean |
|------------|-------------|---------|-------------|--------|---------|
| Art        | Third       | .51     | Third       | Male   | .65     |
| Art        | Seventh     | .70     | Seventh     | Male   | .60     |
| Art        | High School | .85     | High School | Male   | .88     |
| Art        | College     | .48     | College     | Male   | .58     |
| Non-Art    | Third       | .67     | Third       | Female | .54     |
| Non-Art    | Seventh     | .66     | Seventh     | Female | .76     |
| Non-Art    | High School | .86     | High School | Female | .83     |
| Non-Art    | College     | .68     | College     | Female | .58     |



## TABLES OF LEAST SQUARE MEANS

TABLE XVII

GROUP VI: PREFERENCE FOR REALISTIC ARCHITECTURE

| Experience | LS Mean |
|------------|---------|
| Art        | .49     |
| Non-Art    | .54     |

| Grade       | LS Mean |
|-------------|---------|
| Third       | .68     |
| Seventh     | .49     |
| High School | .51     |
| College     | .38     |

| Experience | Sex    | LS Mean |
|------------|--------|---------|
| Art        | Male   | .52     |
| Art        | Female | .46     |
| Non-Art    | Male   | .65     |
| Non-Art    | Female | .43     |

| Experience | Grade       | LS Mean |
|------------|-------------|---------|
| Art        | Third       | .62     |
| Art        | Seventh     | .47     |
| Art        | High School | .48     |
| Art        | College     | .38     |
| Non-Art    | Third       | .75     |
| Non-Art    | Seventh     | .50     |
| Non-Art    | High School | .54     |
| Non-Art    | College     | .37     |

| Grade       | Sex    | Mean |
|-------------|--------|------|
| Third       | Male   | .73  |
| Seventh     | Male   | .47  |
| High School | Male   | .62  |
| College     | Male   | .51  |
| Third       | Female | .64  |
| Seventh     | Female | .51  |
| High School | Female | .40  |
| College     | Female | .25  |

VITA \

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