

DOES TRAINING IN ART INCREASE VISUAL PERCEPTION  
TO ONE'S SURROUNDINGS?

by 6791

M. MAXINE FIERO

B. S. Kansas State University, 1965

✓

---

A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree


MASTER OF SCIENCE

College of Education

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

1971

Approved by:

  
Major Professor

LD  
2668  
RU  
1971  
F48  
C.2

#### ACKNOWLEDGMENTS

The writer wishes to express appreciation to those those who have aided and guided in the preparation of this study. Dr. Floyd H. Price, Associate Professor of Education, served as the major professor. Dr. Harvey Littrell, Professor of Education, and Associate Professor, Elmer Tomasch served on the writer's committee. Their time and aid are appreciated. Dr. Howard Kittleson, Assistant Professor of Education, programmed the statistics for the computer, and aided in analyzing the print out. Gratitude is extended to the judges who rated the test papers: Mr. Charles B. Yancy, art teacher at Manhattan High School, and Mr. Steven Elder, student teacher in art at Manhattan High School and student in art at Kansas State University.

Appreciation is accorded to Scott City High School, Scott City, Kansas, where the pilot study was conducted, and to Manhattan High School, Manhattan, Kansas, where the actual study was carried out. The fine cooperation and interest of classroom instructors and students helped make this study possible.

## TABLE OF CONTENTS

ACKNOWLEDGMENTS . . . . .	ii
LIST OF TABLES . . . . .	v
CHAPTER . . . . .	PAGE
I. INTRODUCTION . . . . .	1
Background for the study . . . . .	1
Statement of the problem . . . . .	1
Purpose of the study . . . . .	1
The hypothesis . . . . .	2
Definition of terms . . . . .	2
Justification for the study . . . . .	2
Theoretical background for the study . . . . .	2
Summary . . . . .	7
II. REVIEW OF RESEARCH LITERATURE . . . . .	8
Experiments with deprived children . . . . .	8
Tests of art appreciation . . . . .	9
Tests of art ability and observation . . . . .	11
Summary . . . . .	13
III. PROCEDURES AND METHODOLOGY . . . . .	15
Design of the test . . . . .	15
Statistical hypothesis . . . . .	15
Sample description of pilot study . . . . .	15
Sample description of actual study . . . . .	16
Testing procedure . . . . .	16
Rating of the test . . . . .	17
Summary . . . . .	17

IV. ANALYSIS OF RESULTS . . . . .	19
Results of the pilot study . . . . .	19
T-test results of the actual study . . . . .	19
Student work . . . . .	20
Summary . . . . .	21
V. SUMMARY AND CONCLUSIONS . . . . .	22
The hypothesis . . . . .	22
Theory on perception . . . . .	22
Review of research literature . . . . .	22
The test . . . . .	23
Rating of the test . . . . .	23
Conclusions . . . . .	24
Implications for further research . . . . .	24
BIBLIOGRAPHY . . . . .	26
APPENDICES . . . . .	29
A. The test . . . . .	30
B. Tabulation of scores on drawings of vase and school (pilot study) . . . . .	31
C. Tabulation of scores on drawings of vase and school (actual study) . . . . .	32

LIST OF TABLES

TABLE	PAGE
I. T-test Results . . . . .	19
II. Inter-rater Reliability Correlation . . . . .	20

## CHAPTER I

### INTRODUCTION

#### Background for the study

An interest in the area of perceptual awareness was aroused as an art instructor in the public schools, but more expressly in the area of adult art education. From various statements made by adult students, the conclusive theory arrived that training in learning to look at one's surroundings and ultimately drawing these same surroundings developed in the individual an ability to see more than other persons see. Some adult students, after their course in Drawing I, stated that suddenly they were seeing things they did not know were there. The structure of buildings, furniture, and landscapes had taken on meaning of which they had not been previously aware. The Drawing I course consisted of basic perspective rules for drawing cubes from one and two points on the horizon line and progressed to simple building structures, interiors, and later to complex buildings and interiors including furniture and landscapes which were drawn from selections in their own surroundings.

#### Statement of the problem

Training in art should increase perceptual awareness to one's surroundings. This perceptual awareness should develop in the individual a greater appreciation of his environment not only of nature, but of man's artistic achievements as well.

#### Purpose of the study

The purpose of this study was an attempt to evaluate the effectiveness of one part of art education in our public schools. This area was one of

perceptual awareness to one's surroundings. A test was constructed for the purpose of measuring how much one observes and is able to recall.

### The hypothesis

The hypothesis was that training in learning to look at one's surroundings and drawing objects from one's surroundings increases perceptual awareness.

### Definition of terms

The definition of the term perception as used in this study was the ability to observe or be consciously aware of detail that can be seen. We go around with our eyes open seeing things, and yet are not always consciously aware of much of the detail.

### Justification for the study

There is theoretical suggestion that the art program in our schools is not doing all that it can to aid in increasing perceptual awareness. Art has had a tendency to be unrelated to the total learning process. Art classes have been designed for students who want to be artists, neglecting the need for an artistically intelligent and aesthetic audience for the arts. There are questions as to what degree art classes teach students to be more aware of their environment.

### Theoretical background for the study

Harold Lee proposes that the perception of facts and perceptual judgment are two different things, and that perceptual intuition is the method by which one makes judgment of fact (5).

Perceptual intuition goes into the area of aesthetics which ultimately is what art is all about. Learning to see and being aware is part of an aesthetic evaluation. One cannot be truly discriminating unless his powers of observation are highly developed.

Thinking of art in terms of an important part of the general education of every student, many art educators feel a need to re-evaluate our methods of teaching art. In many cases the forty minutes of so-called art per week constitutes the elementary students art education. Art classes are an interlude in a dizzy schedule where the child is exposed to multiple materials and methods. Katherine Kuh feels that it would be far better that the student come in direct contact with one enthusiastic artist who can encourage him to look at his environment. She feels that students rarely look--they are enured to listening and being told. One cannot be taught to see, but one can be encouraged to look. Seeing comes later. To draw an acorn after feeling it, and then again after looking at it, to observe a familiar tree from a distance, to approach it slowly so that the tree gives way to branches, leaves, and finally a bit of bark is learning to look (14).

Every object has unique properties of its own. When approached with the idea that one is going to draw the object, a tree becomes more than a stereotyped tree and is viewed for its own uniqueness as different from any other tree.

The Gestalt Theory of seeing is that we tend to see things as wholes rather than parts. We tend to notice simple, compact precise forms, at the same time eliminating vague, incoherent, inarticulate forms from our perception (2 p. 3). While this is essential in most of our everyday living in order to avoid chaos, it renders us incapable of knowing and appreciating the fine and detailed structure of things. Not only do we miss the structure of things in nature, but of man-made artistic forms as well. One of the most frequent criticisms by the art instructor to his students at every level of education in art in their attempts to reproduce nature is "you are not really looking."



Zaidenberg states, "Anyone can draw!" (11 p. 19), meaning that anyone can give form to trees, buildings, and human form. If he has eyes with which to see and the tools with which to make a mark, he can draw. How often do adults express the thought that they wish they could paint or draw. Certainly not everyone can be an artist in our complex society, but it would seem from statements such as this and from art teachers as well that our art instruction at the lower level of education is failing the majority of our students.

Oliver Larkin comments in his "Art and the Educated Citizen",

Any method that opens one's eyes, develops one's sensibilities, and stimulates one's awareness of the qualities and the expressive powers of the artist's language is sure to be helpful. Any approach to art that substitutes factual knowledge for perception and discrimination may do more harm than good. It is a common complaint among college teachers of art that even those pupils who come to them with some preliminary work in this field have not developed that capacity for seeing which is a prerequisite to further study. (4 p. 11).

There are a number of reasons for this situation. Art has too long been concerned with "creativity", "feeling", and "individualism" where all too often there was little to express. Lack of appreciation for nature and man's artistic achievement makes us wonder if the art program should not be reassessed (15).

The art program has always been a marginal subject in our schools and has been pushed further toward the curricular fringes by our current preoccupation with technological and scientific requirements. Also a false dichotomy continues to exist in men's minds, by which the practice and enjoyment of the arts are placed in a remote and special category of human experience, divorced from what are taken to be the really important concerns of life (4).

We are all familiar with the criticism about the irrelevance of much of our education. One attempt to make education relevant to the environment and human existence is the Outdoor Education Center of Gary, Indiana. In this experimental school they have correlated science and art. They are drawing and taking design ideas from nature (19).

More criticism of our past educational practices is given by Ross Parmenter in his book, The Awakened Eye (7). He feels that we are not taught to examine things minutely. Everything learned comes from books. Most reading is done, he feels, uncritically, which discourages observation. This and other things in our culture he refers to as 'vision deadners.' Another 'vision deadner' is advertising with unending pressure to give attention to objects whose sale will profit those who manufacture them. Still another 'vision deadner' are the forces which work on us to disregard nature and history. Social impulses push us to observe certain things. Random looking is considered timewasting. We are a practical people and esteem seeing for specific purposes--for specific fields of work. But the early age at which drawing is usually abandoned is indicative of the prevailing attitude. Our practical theoretical culture is hostile to observing for its own sake. Many admittedly silly activities are considered more productive than doing nothing--that is looking just for the sake of looking. Parmenter considers Drawing to be the one school subject which is conducive to a general heightening of observation (7 p. 126-128).

Parmenter goes on further to say that, "One of the best ways to observe a thing is to draw it" (7 p. 186). Depicting anything meticulously requires time. The enforced time in front of the object being drawn gives room for all mental processes that help observing. Having drawn a thing with great effort, Parmenter feels, leads to a relationship allied to friendship. The object remains in the memory in a unique way (7 p. 186).

Art students perceive when they look for material in nature, perceive again when they look at a work of art and perceive a third time when they stand off and look at their own work. Whatever they do with art in later life, a sharpened perception gained in this way is a permanent possession (1).

An individual usually perceives what he is in the habit of perceiving. This is not full and adequate perception; hence, he probably misses much of the aesthetic value potential in any given situation. This lack of sensitivity is undeveloped taste. There is little sensitivity to aesthetic values unless the powers of perception are highly developed. Practiced perception enables one to see more in a situation than he would see otherwise. Training of observation is important then in the development of a standard of taste beyond the crude and habitual (5).

The evidence of change in an individual proves the validity of an educational process. Some thought might need to be given as to the kinds of change and directions of growth that are needed today. Much has been said about man's alienation from himself and his environment. There is great possibility that a better use of the arts in education can bring man into closer contact with his highest level of humanness.

A critical view of almost any level of American society finds "educated" people lacking in those phases of the culture which require appreciative awareness and creative activity. The neurotic American, the overworked executive, the great technologists have been produced by our American value of materialism (6).

Our educational system needs to turn out truly creative people as well as intelligent consumers. In both of these there is need for awareness.

Consumers, as well as artists who assume the role of consumers with regard to their art, can be "sold" ever-new modes of perception and discard them easily after slight use. Celebrations of the sacred disorder of one's soul are artistically convincing when there is too much traditional order in the world outside. When the world becomes perceptually disoriented, the task of the artist might be to search for convincing limits--a sense of the "permanently treasurable" (13).

There is indication at present that art students in the art schools of London are turning their attention to a careful and serious minded study of the human figure for their paintings. Previously figure drawing classes were something that had to be endured before one could get on with abstract, non-figurative painting (12).

### Summary

In theory, learning to look and really observe the structure of one's surroundings and drawing these same surroundings leads to increased perceptual awareness. It also leads to greater discrimination, heightened aesthetic values, and appreciation of art and nature.

The art program, always having been a marginal subject in schools, is being re-evaluated in terms of its importance in the learning process. Powers of perception need to be more highly developed since practiced perception enables one to see more in a situation than he would otherwise see. The study of drawing from nature is practiced perception.

## CHAPTER II

### REVIEW OF RESEARCH LITERATURE

#### Experiments with deprived children

If the study of art does increase awareness to one's surroundings, it may be an important aid in developing self-awareness as well. Implications of the importance of the study of art have been found in experiments with lower-class children, which led to self-awareness.

One difficulty is that uses of the arts are diverse with a wide variety of by-products. This diversity can produce art programs whose purposes are vaguely defined and whose results are hard to measure. It is hard to state, let alone prove, the case for putting money behind the idea of using the arts as basic strategies to promote learning. Some teachers have notable results in using the arts with "unreachable" delinquents, but some warn that to these kids "artist" means "queer" and art means either something worth lots of money or what you find in "art magazines" and "art movies." There is remarkable recent evidence from the Job Corps and elsewhere, that the arts constitute a potent and strangely neglected key for unlocking the hearts and minds of deprived youngsters, although there is no statistical proof (8).

Kathryn Bloom, director of the Arts and Humanities Program in the U. S. Office of Education says:

The work of these innovators and others have shown that the arts can help educators reach and teach the deprived child. As a lubricant in the learning process, the arts can motivate and stimulate, reinforce a child's sense of his own worth, and ultimately bring many poverty-damaged children back into the mainstream of education. I'm convinced this may be one of the most important keys in the history of education for unlocking the doors which shut the disadvantaged child out of our educational system (8 p. 583).

In teaching art for the past five years, it has been notable that the attitude that art is somehow disconnected from their daily lives, is very general among those not necessarily considered deprived. As is often the case in experiments with educational procedures for special or deprived students, what works effectively for them is also important strategy in the educational process for all students.

An experiment in one of New York City's largest public high schools, conducted by Murphy, suggests an adjusting power of the art activity for a great variety of students. A group of 30 students, most of whom had become habitual failures in academic subjects and some chronic truants, were put in an art studio for a whole period daily where they worked in theater arts and were given lightened academic programs. The idea was for them to work together on things of genuine interest to most human beings. They made a stage setting, electrically wired, for a puppet show. They did the costuming, lighting, characters and acting for the show. None of the 30 again became a truant case and no child failed in more than one subject--being able to go back into the regular school program (6).

#### Tests of art appreciation

Art appreciation is one area of a developed perception, so a few tests of this type have been included in the review of literature. The results from these tests give some indication of the progress made in appreciation of man's artistic achievements.

Daniels (1933) found that preschool children, ages two to five, showed marked preferences for balanced block designs, but that preference for balanced designs was not correlated either with ability to reproduce the design with blocks or with their scores on Stanford-Binet tests (3).

Cyril Burt's research project on art appreciation among children and adults is cited by C. W. Valentine (9 p. 148). For this test Burt selected fifty picture post cards of reproductions of famous master artists. To get a standard for comparison he showed the pictures to eleven expert art critics and artists. The average correlation for ordering the pictures was .9. The test was made on a large number of school children and adults. The table below shows the correlation of average scores of the groups with the judgment of the experts.

	<u>No. in Group</u>		<u>Correlation with Experts</u>	
Adults (students & teachers)	46		0.69	
Applicants for art schools	37		0.76	
Adults (miscellaneous)	23		0.55	
Grammar School Children	Boys	Girls	Boys	Girls
15-17 yrs.	52	48	0.63	0.72
12-15	68	73	0.61	0.65
11-14	43	50	0.34	0.46
9-11	49	50	0.38	0.57
7- 9	34	48	0.43	0.40
Infants Department				
6- 8	36		0.59	

This same experiment was carried out on a more extensive scale by several of Burt's co-workers (Pelling, Dewar, and Cancardas) with much the same results. It is interesting to note that the 6-8 year olds correlate higher with the judgment of experts than those up to 14 years of age, and higher than the group of miscellaneous adults. The overall low correlation with that of the experts indicates that our educational system is failing to transmit the culture of the fine arts to the majority of our population.

Maitland Graves (1948) published a 90-item test of appreciation of nonrepresentative graphic art, called The Design-Judgment Test. Non-representative art was used in order to avoid specific personal reactions to subject matter.

The designs had different degrees of goodness according to basic art principles of Unity, Repetition, and Variation. The subjects pick the ones they prefer or think best. From a percentage of all correct choices, or 100 percent, groups of college students of art, architecture and illustration showed means of .75, while other college students averaged about .46. High school art students had a mean of .56, and non-art students .38. These mean scores lead to the conclusion that more than half of the high school populations studied prefer the poorer art (3 p. 309-310).

In the field of appreciation of graphic art two tests have been developed and widely used: the Macdory Art Test (1929), and the Meier-Seashore Art-Judgment test (1930, 1940). A choice is made by samples presented. The key was made by the ranking of preference by 100 experts in art. Correlations between art and appreciation tests and intelligence tests are usually between .07 and .26 (3 p. 307-308). This low correlation indicates no significant relationship between IQ and artistic ability.

#### Tests of art ability and observation

High school pupils considered to be artistically superior were only slightly above the average Kuhlman-Anderson IQ scores. Fifty artists selected as the most outstanding among 5,500 names listed in the Biography of American Artists made an average IQ of 118 on the Otis Self-Administering Test, and showed their largest number of errors in handling number concepts. Intelligence test scores and rating as an artist showed a zero correlation in this group. These figures show that persons who produce artistic works are slightly superior in verbal intelligence test scores but that artistic ability is not dependent upon such intellectual capacity (3 p. 323).



In view of these findings it seems inappropriate that the majority of the population should prefer a poorer type of art after coming through our educational system.

Meier (1939) directed a 10-year study of artistic ability. He described six patterns which he believed to be important in graphic arts:

1. Manual skill: Fine hand-and-eye coordination which can be noted at early ages.
2. Energy output: Unusual concentration on a task for long periods.
3. Intelligence: Usual IQ-test scores are above average, with more success in parts of the test which have to do with visualizing and speed of perceiving than in parts with numbers and technical vocabularies.
4. Perceptual facility: The ability to observe and recall sensory experiences.
5. Creative imagination: Ability to organize vivid sense impressions into a work having some degree of aesthetic character.
6. Aesthetic judgment: Most important factor of artistic competence. Ability to recognize unity of composition and is measured by the Meier-Seashore Art-Judgment Test.

Meier believed the first three factors are primarily inherited and the last three are limited by inheritance (3 p. 325).

Since the last three patterns of artistic ability seem to be limited by inheritance, it can be supposed that they can be learned.

Marilyn Nease conducted an experimental study for her Master Report in which she used a group of 40 high school students who expressed the opinion that they could not draw. She directed the study under the hypothesis that anyone who can see can be taught to draw. After a period of instruction she did find

that students at the high school level without previous art training or apparent ability could learn to observe and draw. The drawings were rated by scores 1-10. A tabulation of ratings by judges on all drawings indicated that two out of 40 students did not learn to draw. The mean score of 6.2 was well above the 5.0 needed to determine the effectiveness of the experiment (18).

Empirical research in the field of art education has employed drawings of the human figure to assess variables of drawing ability, perceptual awareness, and growth. Few of the studies which used children's figure drawings focused on questions of the aesthetic quality of those drawings or questions of learning in art. When students were asked to draw a human form or a tree, they invariably produced a stereotyped version. After observing specific trees and drawings and paintings of trees, the students were requested again to draw the best possible tree. The results within a ten-minute span without any instruction in actual drawing were more realistic, life-like trees. McWhinnie emphasizes the need in research in art education to pay more attention to set, that is the instructions given prior to a specific experiment in drawing abilities and also to media used (17).

#### Summary

The study of art can be therapeutic for failing and truant children if their academic loads are adjusted. Small children seem to possess an innate sense of good design, but it can be lost or destroyed if they are not guided toward later knowledge of good art. Tests of art appreciation by Cyril Burt and co-workers indicates no significant growth in this capacity from age six to adulthood. In fact a test of high school students conducted by Graves indicates that more than half prefer the poorer art.

Correlations with art ability and IQ scores range between .07 and .26 showing no significant relationship between intelligence and artistic abilities.

A ten-year study by Meier leads him to believe that half of one's artistic ability is inherited and the rest probably learned.

High school students with no previous art instruction and no apparent ability could be taught to observe and draw the human figure.

Drawings of trees by children are much more life-like when they are allowed the opportunity to observe specific trees and then are requested to draw the best possible tree.

## CHAPTER III

### PROCEDURES AND METHODOLOGY

#### Design of the test

A test was designed to measure visual perception in complex stimuli, that is, the amount of detail one can observe and recall in one's surroundings. The test was composed of two parts: to draw and/or describe in words all detail they observed in an object and they were allowed to look at briefly, and to draw and/or describe in words an area which they see every day but did not know they were going to draw before the test was administered. The test requires an experimental group of persons with art training (art group), and a control group of persons who have had little or no art training (non-art group).

#### Statistical hypothesis

The statistical hypothesis is: there will be no significant difference between perceptual awareness of art vs. non-art students.

$$H_0: u_v \text{ art students} \leq u_v \text{ non-art}$$

$$H_a: u_v \text{ art students} \geq u_v \text{ non-art}$$

#### Sample description of pilot study

A pilot study was conducted with the test in order to determine which questions the test participants might ask, or any part that might not be completely understandable. The source of the sample for the pilot study was a Western Kansas high school with a city population of about 5,000. Permission was obtained from the high school counselor to use as the experimental group, an art class of eight students. The control group chosen was a class of eight

drama students none of whom had had art in junior high or high school. The students and their classroom instructors were cooperative and very much interested in the test.

#### Sample description of actual study

The actual study was conducted at an Eastern Kansas high school in a university town with a city population of about 30,000. Here also the students and instructors showed great interest in the test and were very cooperative. For a comparison, a class of 30 students in Psychology was selected as the control group. This class was chosen because psychology is elective and, like the art class, would contain more than one age group, and because it would include more students with an average IQ than would a study hall. This group had twenty-four 12th graders and six 11th graders, a mean grade of 11.6. Two in the group had had art in high school.

The experimental group chosen was a class of 30 art students. Thirteen in the group were 10th graders and ten were 11th graders all finishing their first year of art in high school. Two in the group were 12th graders with three years of art in high school. The mean grade level was 10.8.

#### Testing procedure

The testing procedure was first to explain to the students the theory that persons who had studied art were more aware of their environment than persons who had not studied art. It was also explained that this was not a test of drawing ability in itself, but one of observation.

Each student was given one sheet of typing paper and an ordinary pencil. Both sides of the paper were used. They indicated their grade in school and number of years in art in high school in one corner of the paper.

The first task in the test was to have the students draw and/or describe from memory a clay vase with an ornate design. They were told that they were going to draw the object from memory. They were allowed to look at the vase for one minute. It was then covered and they were given ten minutes to draw the object.

The second part of the test was to draw and/or describe from memory the front entrance of their school building. The students did not know prior to the test that they would be drawing this. This part of the test was chosen to discover how much detail they actually observe in complex stimuli with which they came in contact every day. The students were allowed twenty minutes for this drawing. A frequent comment among the students in both groups during this part of the test was, "I have never really looked at it before." A number of the students expressed the desire to go right out and look at the front entrance when they had finished the test.

#### Rating of the test

The tests were rated by two art instructors. Their ratings were to be correlated for reliability in rating. Rating was done by numbers from one to five with five being the highest score for an exceptional amount of detail shown in the drawing. Four was signified as good detail, three as moderate, two as small amount of detail, and one, a definite lack of detail. The professional artists who did the rating mentioned that they found it difficult to rate them, particularly the non-art work, trying to rule out drawing ability as a criteria.

#### Summary

A test of observation of detail in one's surroundings was administered to a group of 30 non-art students and a group of 30 art students at the high

school level. The test participants drew and/or described in words all details they could remember of what they saw.

The tests were rated by two professional artists by numbers one to five--five being the highest possible score for an exceptional amount of detail drawn or described on the test paper.

## CHAPTER IV

### ANALYSIS OF RESULTS

#### Results of the pilot study

There was one rater for the pilot study test, so the scores from the pilot study were not computerized. The mean score on the vase drawing for art students was 3.25, the non-art 3.12. On the drawings of the school the mean score for art students was 3.5, and the non-art 2.12. Refer to Appendix B for a tabulation of all scores for the pilot study.

#### T-test results of the actual study

The null hypothesis states that there will be no significant difference between the perceptual abilities of students studying art and those who have not studied art.

$$H_0: u_v \text{ art students} \leq u_v \text{ non-art students}$$

$$H_a: u_v \text{ art students} \geq u_v \text{ non-art students}$$

The table below, giving the results of the t-test, indicates that the null hypothesis can be rejected.

Table I

	Mean Score 30 Art Students	Mean Score 30 Non-Art Students	Difference
Vase Drawing	2.000	1.167	.833
School Drawing	2.067	1.117	.950

Refer to Appendix C for a tabulation of all scores.