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ABSTRACT

This paper presents research using a computer with a video disk player to do aesthetic analysis of the work of Vincent Van Gogh. A discussion of the video disk system, and of several software systems including: (1) Dr. Halo, (2) Handy, (3) PC-Paint, and (4) Pilot are outlined. Several possible uses the computer with interactive video disks for aesthetic analyses and creative efforts are described. The brief results of a pilot study and suggestions for additional studies are detailed. Assessing the results of instruction in the arts solely on the basis of variables of recall is limiting. If art education is to be discipline based, the means for assessment of growth and learning in art history, criticism, aesthetics, and the studio arts cannot be limited to just verbal tests of information and slide identification that assesses only one dimension of learning. A proposal to develop a means of assessment that is related to the visual and perceptual, as well as to the verbal mode of human behavior in the arts is outlined. The use of interactive video disks offer the possibility of combining a mode of assessment (the measurement of aesthetic preferences) with a means of instruction (the presentation of information) in one unified package that can be done in one instructional sitting. Seven video disks that are available for use with several computer software systems are listed. (DK)

THE USE OF VIDEO DISKS

COMPUTER BASED ANALYSIS OF WORKS OF ART

by

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Abstract

This paper will present some research which makes use of the computer with a video disk player in order to do aesthetic analyses of the work of Vincent Van Gogh. The paper will consist of:

(a) a discussion of video disk system

(b) a discussion of several software systems

Dr Halo
Handy
PC-Paint
Pilot

This paper presents only several possible uses of the computer with interactive video disks for aesthetic analyses and creative efforts. It will also present the brief results of a pilot study undertaken in the Fall 1989 Semester. A special workstation for this project was provided the to the author by the Computer Science Center of the University of Maryland under a special faculty workstation grant. 1989-1990

THE USE OF INTERACTIVE VIDEO DISK IN AESTHETIC PREFERENCE STUDIES

Problem

Recent curriculum developments within the field of art education have proposed that future programs in art education on all levels encompass materials from art history, art criticism, aesthetics, as well as from studio arts. To date the means for assessment of growth and learning in those four domains have been limited to verbal tests of information and slide identification which assess only one dimension of learning in what is now described in the art education literature as a discipline based art education. It would seem that to assess the results of instruction in the arts solely on the basis of variables of recall is limiting. We

propose to develop means of assessment which are related to the visual, perceptual as well as to verbal mode of human behavior in the arts. The use of the interactive video disk offers the possibility of combining a mode of assessment (the measurement of aesthetic preferences) with a means of instruction (the presentation of information) in one unified package which can be done in one instructional sitting.

Background

The rapid developments in the use of the interactive video disk with a computer system make it possible for both the researcher in art history and aesthetics as well as the artist to have direct access by means of a computer to museum collections, exhibitions, and film presentations of the work of many artists. The following video disks are available for use with several computer software systems:

Vincent Van Gogh

The Helga Drawings

The National Gallery of Art

The Greek Vase (Getty Museum)

The Vermeer Forgies (Carnegie Mellon University)

Albers Interaction of Color (Pratt Institute)

Works of Phillip Pearlstein

In addition there are plans underway to place the following museums on video disk:

The Louvre

The Phrado

The Metropolitian Museum

The British Museum

Within several years there will be adequate resources for the researcher in art and the humanities to be able to analyze and manipulate a wide range of

artistic images. These new changes presnt some very real questions as to the nature and the structure of future courses in art and design history.
The 2 x 2 slide project revolutionized the teaching of art history with the comparative method. Such new technologies, as David Carrier has often pointed out have a special place and role in the changing nature of the teaching of art history and in fact in the very methods of art history itself.(1)

SIGNIFICANCE OF PROBLEM

Studies in aesthetic preference have long been proposed as a means for the non-verbal assessment of learning in the arts. The test methodologies whether paper and pencil tests of preference, choise or judgment (Meier, Barron, Graves, Eysenck) have not been sensitive to the particular assessment problems in the educational setting and more specifically how to measure at the classroom level the results of education in the arts which have a specific focus on the four domains of visual arts instruction that have been identified by Eisner and others (The Getty Center of the Arts) as being central to discipline based art education. Will exposure to art information effect the aesthetic preferences of the students so exposed to such instructional materials? Since the new programs place a high value as well as emphasis on information about art, artists, styles, as well as periods; what is the relationship of information about art and artists to the level of aesthetic preference (like or dislike) for specific works as a consequence of an instructional sequence?

STUDIES IN AESTHETIC PREFERENCE

One always hears people say that "I don't know if it's good art, but I know what I like!" This is often the response to works of art, especially if they happen to be of the modern and avante-garde type. Such is the subject matter of aesthetic preferences.

Professor McWhinnie of the Department of Housing and Design has been collecting data on the aesthetic preferences of his students in a design history course. Since the course which he teaches each semester is one open to the general university student as a part of USP courses, his population is a good cross-section of the young adult student. One of his goals for this research is to begin to build a data base on the preferencs of college students for a variety of works of art and design. This project offers the ideal opportunity to develop a long term study of the college age population.

Such information will not only be most useful to Professor McWhinnie in the teaching of his design history class, but may help the design professional as well. There are few research programs in aesthetic preference or in the study of empirical aesthetics in this country and the data-bank might over the years, provide insights as to changes in preference and in preference trends.

The professional designer in such fields as interior design, fashion design, graphic design, and exhibition design meets on a professional level in his everyday work, the problem of aesthetic preference. Most of the studies done to date, involve the measurement of preference for paintings but Professor McWhinnie also hopes to move into such areas as preference for interior design, crafts and furniture design, fashion design, and for product and industrial design.

The collecting of preference data each semester allows the systematic development of a data base. What has he found out so far? Most students tend to prefer the representational in works of art. They also have a distinct preference for those subject matter areas that use the human figure. In those slides where there are no human figures, students will tend to prefer the more abstract. They seem to base their aesthetic preferences first on subject matter and then on variables of form, shape and color. Aesthetic preferences also seem to be predicatable and quite similar with each new group of students. There are patterns

of preference which seem to be consistent, although the individual mean scores for various works of art may differ each semester.

Also, the order of the slide images is important. One slide does not affect the response to the next slide or to a series of slides. This finding would seem to have some relevance for those who teach slide courses in art history and appreciation. It is the general pattern of the preference rather than a response to a single item that seems to be critical.

The Vermeer Forgies Disk was developed by Robert Cavalier and David Carrier of Cannegie Mellon University (Cavalier and Carrier, 1988)[2] (Cavalier, 1988).[3] This disk forces a student to make aesthetic judgements and discriminations about an artist's style and how one can make judgements about a real Vermeer work as different from a fake. The student plays a detective game to discover for themselves defferences between the real and the fake Vermeer painting.

The Greek Vase Disk was developed by the J. Paul Getty Art Museum to introduce the museum visitor to Classical Greek Art and the subject of Greek Vases. To date it's use has been restricted to the Getty Museum as a basic setting.

The National Gallery Disk was developed by the museum education department of the National Gallery of Art in Washington, D.C. as a means of introduction and orientation to the museum collection. This writer has used the disk to create aesthetic analyses of various works which have been photographed and then used for design history lectures. A graduate student designed and prepared a unit of study on Picasso and Cubism and on Degas and Impressionism from the National Gallery Disk (Wang 1988).[4]

The Albers Disk has been prepared by the design department of Pratt Institute to teach color theory. These are some of the current uses of the art video disks that are now on the education market.

Method

An IBM infowindow monitor is used with a video disk player. The computer has three working levels. Level one is the touch screen which can be used to input decisions and choices. Level two is the main graphics or paint package level upon which, by use of an IBM mouse system, the aesthetic or creative analysis can be introduced. Level three is the level upon which the image from the video disk is displayed. By the use of a see through color program one can access either the whole image or part of the disk image. By the use of a printer one can save a series of images which constitute the design or aesthetic analysis protocols.

In this system the video disk image is not digitized but one works on several levels or layers which are displayed one over the other on the computer screen. A current project by this writer is to use the Van Gogh disk with an IBM authoring language called HANDY. This language permits the user to have an easy access to the video disk. Included in this specific project is the dual use of the Handy software as both a means of data collecting for an aesthetic preference study and as a means of giving the student information about the art work. It can be designed as a pre and post test situation with the specific treatment (in this case) information about art. The Handy software permits easy storage of responses and the total data can be transfered to an ANSCI File.

To continue with the development of instructional sequences (by computer and sets of slides based upon computer analyses of works of art) in the general area of the development of aesthetic languages. I propose to use several video disks and computer software programs (especially Handy) which will be able to present examples of work of art and design (from the disks) together with the visual analysis in a slide format for use in the visual arts classroom as a part of a program of instruction in discipline based art education.

I will make use of several computer software programs which permit access to the video disk frame by frame. I will use several computer graphic techniques to prepare aesthetic analysis of the art and design objects selected for specific study. I shall photograph the computer screen which will have the aesthetic analysis superimposed upon the specific examples of the art works taken from the video disks.

Van Gogh Project:

We are currently using the Van Gogh disk to create a series of aesthetic analyses which can be used in art history slide lectures. For this project we are using Dr. Halo as a graphics package and Pilot as an access language to the video disk image. To date this program has been designed to be inter-active.

Example: Van Gogh's - Old Man on a Chair

We begin with a linear analysis of the basic shapes in the painting. This linear analysis achieves two results, one is to demonstrate the linear quality of the work and two to establish boundaries within which can be used as a variety of fill-in procedures in the graphics package.

In the case of Van Gogh, we then begin to fill-in much of the figure or the background areas with flat colors and textures. This demonstrates the basic power of the shapes which Vincent developed in all of his works. What is interesting is the the linear paint texture which one so often ascribes to Van Gogh does not seem to be the key element in his work, rather it is the power of the shapes themselves. The color fill aspects of the graphics software packages allow one to isolate the line and the shape of the paintings as quite separate from both color and paint texture (McWhinnie & Wang, 1988).(5)

This specific research focuses with the analysis of the work of Vincent Van Gogh was to concentrate upon the line and shape qualities in Vincent's work without the color and texture variables. The results have shown rather

dramatically that the aesthetic element of shape is far more characteristic of Van Gogh's work than was realized. No matter how hard one attemptes to eliminate almost all traces of Vincent's color and texture, the shapes remain to give the ever-presence of the Van Gogh touch.

Other aspects of his research have related to the use of the golden section as well as the principles of dynamic symmetry in works of visual arts. A graphics package such as Dr. Halo III can be used to diagram works of art in terms of geometric analysis (McWhinnie, 1988).

Creative Products

In addition to providing an aesthetic analyses of various aspects of Van Gogh's work, we also use the system to create a series of images which while related to the Van Gogh originals, are also done for a purely creative product. Slides are made of the computer screen which superimposes a students creative work on top of the Van Gogh originals. We then use these slides as resources from which I am able to do drawings, prints, a painting by a system of drawings from the projective image.

The problem of hard copies with video disk is a critical one. The images from the video disk can only be displayed on the monitor, they cannot be printed nor digitized and directly be manipulated in the computer environments. One needs to work with the three levels on the IBM System. Photographs made of the screen are the easiest method to superimpose one level upon another and produce a result.

Color Analysis and Demonstration

One can also demonstrate color effects when you change the background or foreground colors in the paintings. The analysis of the use of color in works of art and design can be enhanced by the use of the computer.

This brings up the educational aspect of the interactive video disk environment. Students can be shown what happens to the visual images when colors are changed and manipulated. The interactive video disk provides a powerful as well as flexible method of visual arts research and teaching in art and design.

We have introduced the use of the computer with elementary art education students as a means of both aesthetic analysis and a way to learn art. In this case the focus is not on the computer but on learning various principles of art and design and the computer only happens to be the media employed (Bernstein, 1987).

We are now developing some data relative to student attitudes about the use of the computer.

We have discovered as a result of our pilot studies done to date that the elementary education major (without previous art work) is more open to the use of the computer then the fine arts student. These differences will be explained in future research.

FUTURE RESEARCH

Development of lesson units which use this approach and which will be tested. Student test data will be collected in the Spring of 1990 using several art education course sections. In the Fall of 1990 the art education classes will be used in pilot studies and the field testing of the materials which have already been developed.

Aesthetic preference will be collected in two ways:

a. by means of Handy as an authoring language, on the computer immediately before and after individual student instructional sessions;

b. before and after the total study by means of the Salkind Art Slide Test.

Proposed lesson units will be as follows:

a. Techniques of painting by Andrew Wyeth

b. Color analysis of Van Gogh

c. Space development in Cezanne

d. Cubism as a new vision for art and design concepts

e. The use of the three golden section in art and design

ANALYSIS OF THE TEST DATA

a. Pre and post test scores:

Pre and post test preference scores collected by Handy will be analysed by variance analysis techniques and by programs. Post test data will be collected immediately after the informational sequences are given to the subjects.

b. The Salkind Art Slide Test will be used to produce correlational and factor analytic data that will be compared to the results of the experimental treatments.

There will be no control groups and the effectiveness of the consequences will be measured by change scores on the preference tests. We will also explore the variables of looking time and the Handy software permits the collection of looking time data as well as written descriptions and responses. Several modes of data collection will be explored by means of the Handy software.

REFERENCES

1. Carrier, David, "Teaching of Art History", Leonardo, Fall 1989.
2. Carrier, David and Caralier, Robert; Manual for Intro Disk Project, Carnegie Mellon (1988).
3. McWhinnie, H.J., "An analysis of selected graphs software: Technology Update", Computer and Graphics, Spring 1989.
4. McWhinne, H.J., "The electronic image: abstraction vs simulation", Leonardo, Fall 1989.
5. McWhinnie, H.J., "The electronic sketchbook", Computers and Graphics, Spring 1989.
6. McWhinnie, H.J. and Wang, Clair; "Use of Video Disk in DBAE", Conference Report, University of Maryland.
7. McWhinnie, H.J., "A reply to Youngblood, the electronic sketchbook" Viewpoints (1987).
8. McWhinnie, H.J., "Use of computers in art education", Viewpoints, (1986).
9. Wang, Clair, "Computers and Art Education", Unpublished MA Thesis, University of Maryland, (1988).

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