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Going beyond chalk to pixels:
The Manipulations of a Technochick

Liliane Bohbot

A Thesis

in

The Department

of

Art Education

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Abstract

Going beyond Chalk to Pixels:
The Manipulations of a Technochick

Liliane Bohbot

This didactic CD-ROM is designed for art educators and artists who have yet to use a computer as a means for creating digital imagery. Through its multimedia interaction, users will be encouraged to try new methods and procedures for creating in a digital environment by manipulating an image from a series of tools similar to watercolor techniques. Ultimately, the CD-ROM will then serve as a model to encourage and inspire art educators and artists to integrate this new medium into their own teaching and creative practice to further their understanding of digital media.

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Acknowledgements

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Nikitas Spyropoulos for programming and scripting the content of the CD-ROM. This project could not have been possible without your expertise and generosity. ***Daniel Simms*** for creating such a wonderful selection of music.

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And to ***Paul Langdon***, who has been instrumental in my adventure with digital art and incredibly supportive since the very beginning. Thank you!

Introduction

My goal for the Master's thesis is to make my own artistic and teaching process transparent through a multimedia interactive CD-ROM that will serve as a model and inspiration for other artists and art educators wishing to use digital art. I will also show how my art production process, teaching practice, and involvement with digital art converge via the interactive options available in the CD-ROM. This CD-ROM is designed for art educators and artists who have yet to use a computer as a means for creating digital imagery. As a result, the CD-ROM is a visual representation demonstrating how my artistic process and teaching practice slowly incorporated this new method of creation.

Originally trained as a painter, I began exploring with computers in 1995. It began as a necessity to type term papers for my Graduate Program in Art Education. This lead to the buying of my first computer, a Macintosh Performa which I set up with little assistance from the vast display of information from the "help" manuals. Slowly, I discovered ways of creating on a computer beyond its initial use as a word processor and I soon became hooked. Furthermore, I discovered that I could adapt my creative process to this new medium and slowly realized that my artistic language remained consistent whether I was using oils, chalk or pixels. Therefore, I wanted to show through various media representation, how my visual language could go beyond the constraints of this new medium. The CD-ROM seemed like a perfect vehicle for illustrating in its entirety a diversity of creative expression with tutorials in an interactive environment.

Many artists and art educators like myself often explore and experiment through various means, materials and techniques. This process involves a balancing act between our likes and dislikes, the styles of the time, and the demands of each media. This CD-ROM is a celebration of traditional methods for creating art combined with the latest developments in computer technology. Moreover, the CD-ROM is not seeking to convert the traditional artist, but rather to demonstrate that tools and technology do not make the artists. Rather it is the artists that go beyond materials and media. The CD-ROM will give insight into understanding how I have used digital media as one of the many creative outlets.

My work shows how one can go beyond the confines of the computer by demonstrating how I create via the computer using digital media and applying familiar traditional steps that have been used for centuries before artists were given this latest technology. The CD-ROM provides a simple and interactive environment, where users will be encouraged to try new tools and techniques to create in a digital environment. Hence, I will try to bring the trials and rewards of traditional craftsmanship to the computer's cold realm. The computer contains a wide series of tools that offer many variations, but never does the computer create on its own. Just like the brush does not paint by itself, the various painting tools in computers are there for people like myself and others to discover and explore another dimension of art making.

Literature Review

Ever since I began exploring the use of computers and new media, my work has evolved in new directions along with other artists who have been influential to me in this exploration. The following people have influenced my development and contributed to my understanding of this new medium.

I will begin with the approaches offered by Frank Dietrich, who explains how the computer personifies a symbol-processing machine capable of simulating mental acts similar to the creative activity that is embodied in a work of traditional art. There has been an evolution regarding the creative and technological process involved in computer art since his earlier writing on the subject. There was probably fear and reticence on the part of artists towards the computer and the first to experiment with computers were scientists. Dietrich states: "acknowledging the degenerative power of computers, I consciously limit myself here to the productive aspect of computer art only, even though I am aware that this art form also poses new questions in regard to the completion of the aesthetic communication cycle, particularly in terms of symbolic meaning and understanding by humans and machines".[1]

Our views and attitudes towards digital art have changed since artists have begun exploring creative possibilities via the computer. By exploring all of an image's potentialities, the artist is now capable of changing them at will towards innovative

1 Dietrich, Frank. (1987) . The Computer: A Tool for Thought-Experiments. LEONARDO, 20 (4), p.317

transformations. I began exploring with computers from the position that creating art is an expression of ideas, and the tools and media used are only a means to an end.

Buffy-Sainte Marie's discovery of digital art was a revelation to me since it reminded me of the cost and space attached with owning a painting studio. She, like myself, quickly became familiar with the computer and used it to create digital imagery as well as writing her own music. I relate to her ideas of combining different kinds of artforms into one medium. It's a matter of seeing similarities rather than seeing differences that counts. She states: "The artistic process involved in Digital Art is very much the same as that of making other kinds of painting: We choose tools; we choose paints; we choose paper or canvas or other media; we have an idea; the idea grows as we paint; we work on the painting until at some point we decide the painting is done".[2]

Therefore, through the probing of our own process, we have found alternate means of creation that range from music, performance, painting and poetry to discover that the creative process can surpass the medium. Furthermore, digital artist now are equipped with all the technological devices ranging from computers, printers, scanners and any other accessory that will further enhance their creation. Through this combination of the various tools available, it is now possible to achieve a diversity of art forms solely from home.

Dawn Mercedes' has investigated the issue of the topic of copyright in computer art, pointing out that digital artists are especially at risk for plagiarism of their work.

"The advent of the pixel has made the manipulation, alteration, and appropriation of images particularly easy" .[3] How do you protect your work and where does originality begin and end? The very fact that it can be reproduced at all times poses a serious issue that is not yet solved.

Yet I feel that since the invention of reproductions, printing and photocopying, artists have been vulnerable to losing a certain amount of control. Copying and reproducing artwork can be done in many ways and the traditional artist is as much at risk as the digital artist. As a result of working with computers, I slowly discovered that it is the creative process that differentiates us from one another. The medium is one factor; the process is another.

Mia Johnson's article made me realize that certain artists are attracted to computers because they offer an alternate means of creation. In brief, creation begins with an idea and the tools follow. She argues against the negative assumptions that people may have towards computer art and explains how: photography, film, ceramics and other means of expression other than the traditional painting and sculpture techniques fought against the same prejudice before they were recognized as legitimate art forms. I don't believe in a hierarchy of media. Nevertheless, I liked the way she goes on to describe categories from four commonly held assumptions about art and how computer art fits within these contexts. Her four categories are: 1. Art as revelation, 2. Humility, 3. A noble act and 4. Art as matter. Here is a brief description of her explanations:

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2 Sainte-Marie, Buffy. (1996). Exploring New Media: Buffy Sante-Marie on Digital Art; Painting with light. ARTFOCUS, Spring, p. 9

3 Mercedes, Dawn. (1996, May) . Digital Ethics: Computers, Photographs, and the Manipulation of Pixels. The Journal of the National Education Association 49 (3) p. 44

"1. *Art as revelation*: one of the most popular and persistent beliefs about great art is that it is a physical manifestation of something known as talent.

2. *Humility*: another persistent belief that art made by hand is more "authentic" to the human condition. Errors and imperfections in the artwork may be viewed as evidence that the artist is humble, unassuming, or even primitive.

3. *A noble act*: a belief compounding the acceptance that art is the idea that art made by hand is a *heroic* achievement.

4. *Art as matter*: is the idea that art made by hand uses more "art-like" materials and tools than machines and their output are considered to be. Artworks are valuable as conduits of materials that must be crafted by hand".[4]

She goes on to explain: " that it is the 'purists' who are biased when it comes to computer imagery because it is not made by hand". Yet she asks: "Why is it important that art be made by hand, rather than by photographic process, by machine, by computer, or any other technology".[5] The computer does not make art anymore than does a ball of clay or a paintbrush. Like the sculptor or painter, the computer artist trades off what works in terms of software or hardware constraints against creative intentions. I used to feel insecure towards other artists feeling that if I can do it in computers, therefore anyone can. But the same can be said for any medium. Once you discover a technique and a method, it is not exclusive to the user.

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4 Johnson, Mia. (1996, May). Made by hand. The Journal of the National Art Education Association 49 (3), p. 41 – 42

5 Johnson, (1996, May) p. 41

Accordingly, it is Henry-Chakkour's book that illustrated perfectly my feelings and approaches towards computer art. This is the book that inspired me to create my own CD-ROM, which would involve a studio-based environment and a visual outlet for various artworks. Chakkhour demonstrates in a CD-ROM and a book how artists and animators have applied traditional techniques through digital means. It is a clear and colorful book with easy to use instruction for the novice as well as the adept user in computers. He explores how artists and non-artists have challenged standard painting techniques by adopting the technology of computers to create new and dynamic images. This book explores nine digital art techniques, each represented by step-by-step instruction translating the familiar processes of painting, drawing, or sketching to the computer.

In addition, there is a gallery of finished work following each chapter with a CD-ROM in a user-friendly navigational product that complements the book perfectly. It is done with humor and wit, with condensed texts covering a wide range of exercises and possibilities. Using his method, I discovered that I would like to apply my own knowledge as an art educator to give access to computer art for art educators as well as for artists.

Production process

"God is in the detail"[6]

I have been a Multimedia Coordinator and teacher at the college and university level for the past three years. Since then, I have been involved with the latest state of the art technology and have worked with a wide array of students, ranging from computer experienced wizards to computer "phobics" with little or no artistic background. This experience made me reflect on some of the approaches and reactions students have towards the computer. Whether the student approaches the computer from a technological angle or from an artistic angle, the computer itself remains only a plastic box offering many possibilities. Furthermore, through the accessibility of the medium, artists and non-artists have been attracted to explore this new technique. When beginners explore the creative possibilities on the computer, sometimes it is easy to accept what the computer does automatically. Yet, the aesthetic inquiries involved with digital art should manifest itself like any other form of expression. If computer art is taught by qualified educators to present it like the artistic tool that I believe it is, then students will gain proper insight into all of its possibilities to further their personal method of creation.

My question is why do some students achieve sophisticated results while others tend to accept what the computer does automatically? My own burgeoning obsession and passion with digital art and my students' reactions to computers, led me to purchase books, CD's and multimedia tools to further my own understanding and research. Seeing

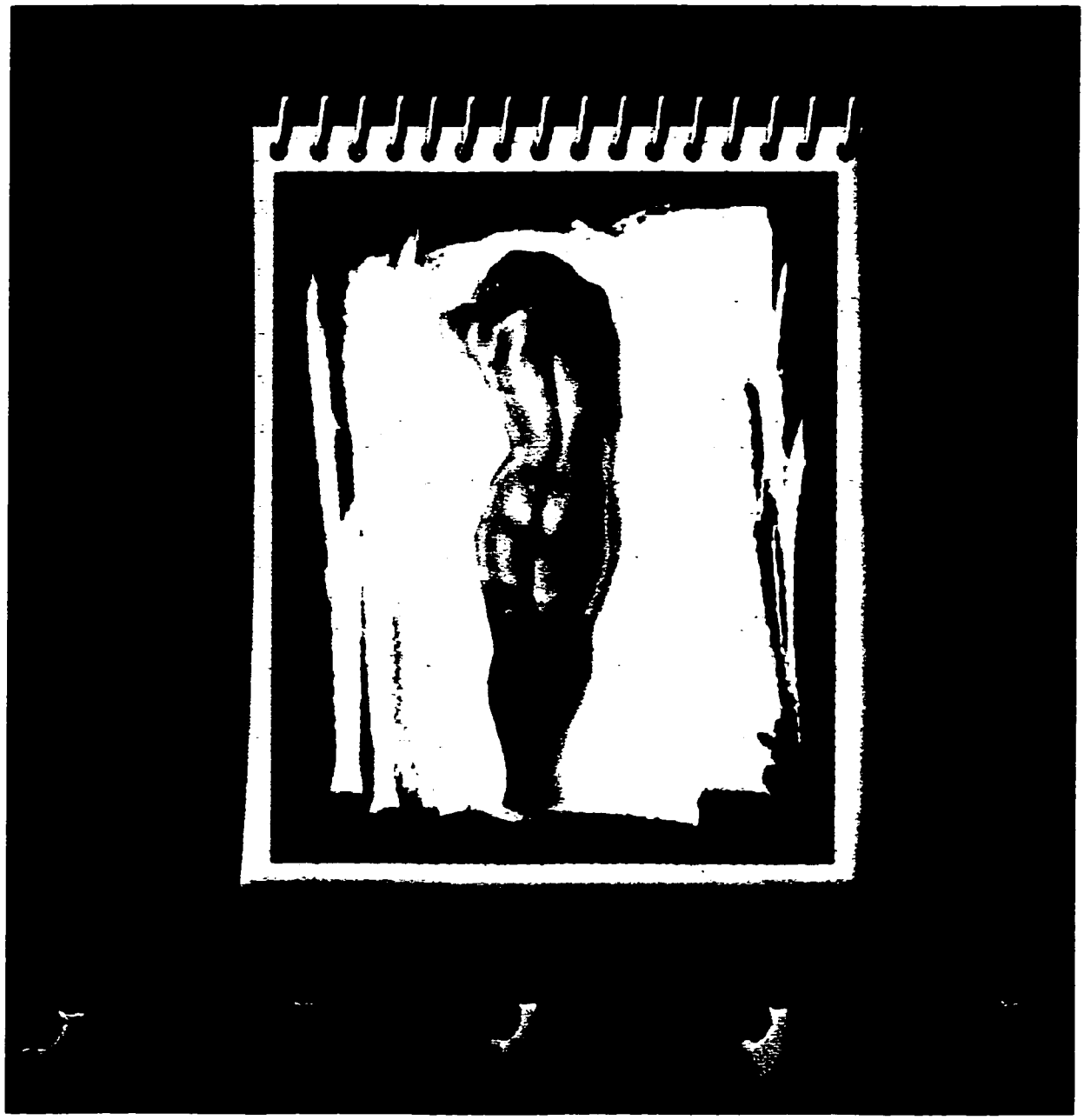
[6] Mies van der Rohe

how little was on the market, I realized my own experience would be a valuable one to communicate to other artists and teachers and felt that a CD-ROM would be the best tool to accomplish that. Next, I approached one of my students who had a strong programming ability, to help enter the data for all my interfaces and artistic concepts. I then designed all the interfaces, icons, and text so we would incorporate the whole into a final piece. Hence, it became a collaboration for a seemingly harmonious process.

Initially, I had envisioned illustrating a virtual studio where the user would actually paint an image using an airbrush, while having the option of selecting a full color palette and different brush sizes (See image 1). Slowly I discovered that the technological constraints were more complex than originally anticipated. It was impossible to script in Lingo (a computer language) to simulate the functionality of an airbrush to produce the desired effects. The most we got was a thick paint blob bouncing clumsily across the screen. I discovered that in order to achieve a functional airbrush, we would have to invent a painting software where the programming went far beyond Lingo scripting, dealing with algorithms and advanced C++ technology. Consequently, I had to re-adapt my initial idea to the demands of the immediate technology at hand and find a quick solution or abandon the idea all together. Slowly, we began discovering another method for achieving a virtual studio. Unfortunately, all the initial artwork had to be changed as a result causing another delay in the production process.

To illustrate this progression, here are four renditions of the initial interfaces and the evolution that resulted.

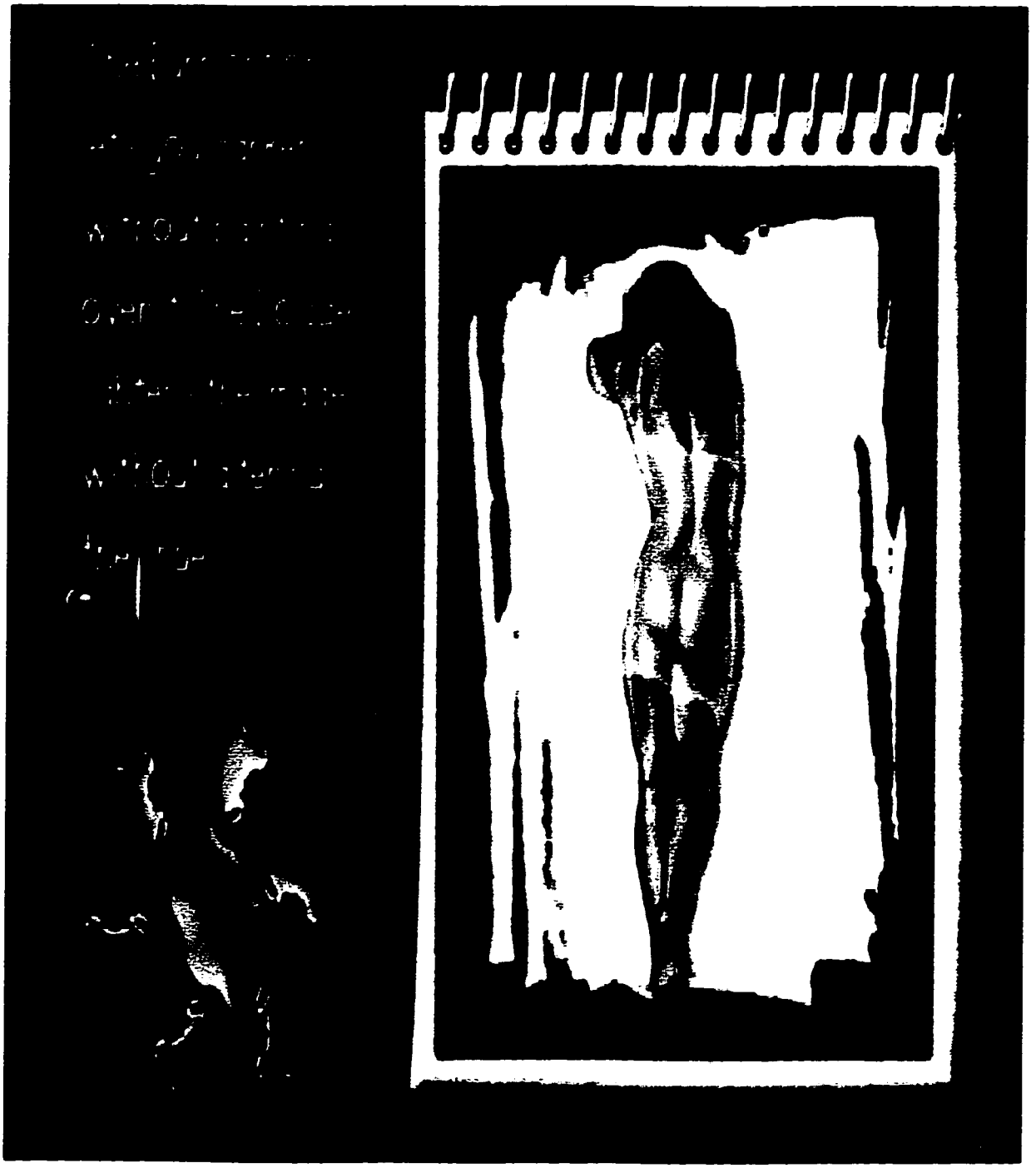
Interface 1.



In the first interface we can see how the scanned image lay on a virtual sketchpad with paint tubes illustrating the various navigational icons. Initially, I wanted to create a

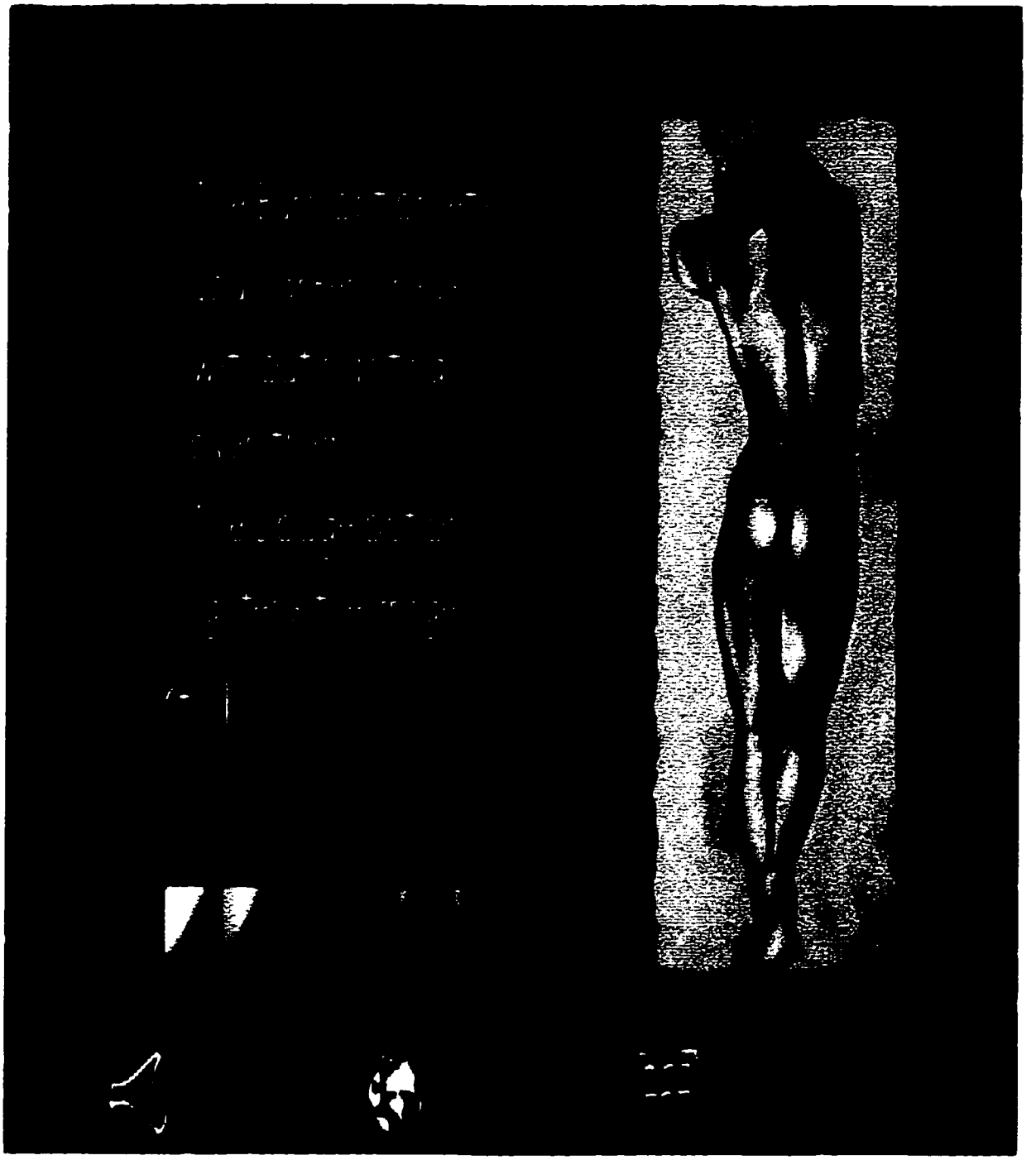
familiar environment simulating traditional tools and iconography. What's more, different sizes of brushes and a selection of colors would be accessible for users to choose from thereby enabling a functional airbrush.

Interface 2.



In interface 2, we can see the icons/tubes have been slightly modified to represent the color wheel. (See title 1) Also, a short text box would appear each time a filter was chosen.

Interface 3:



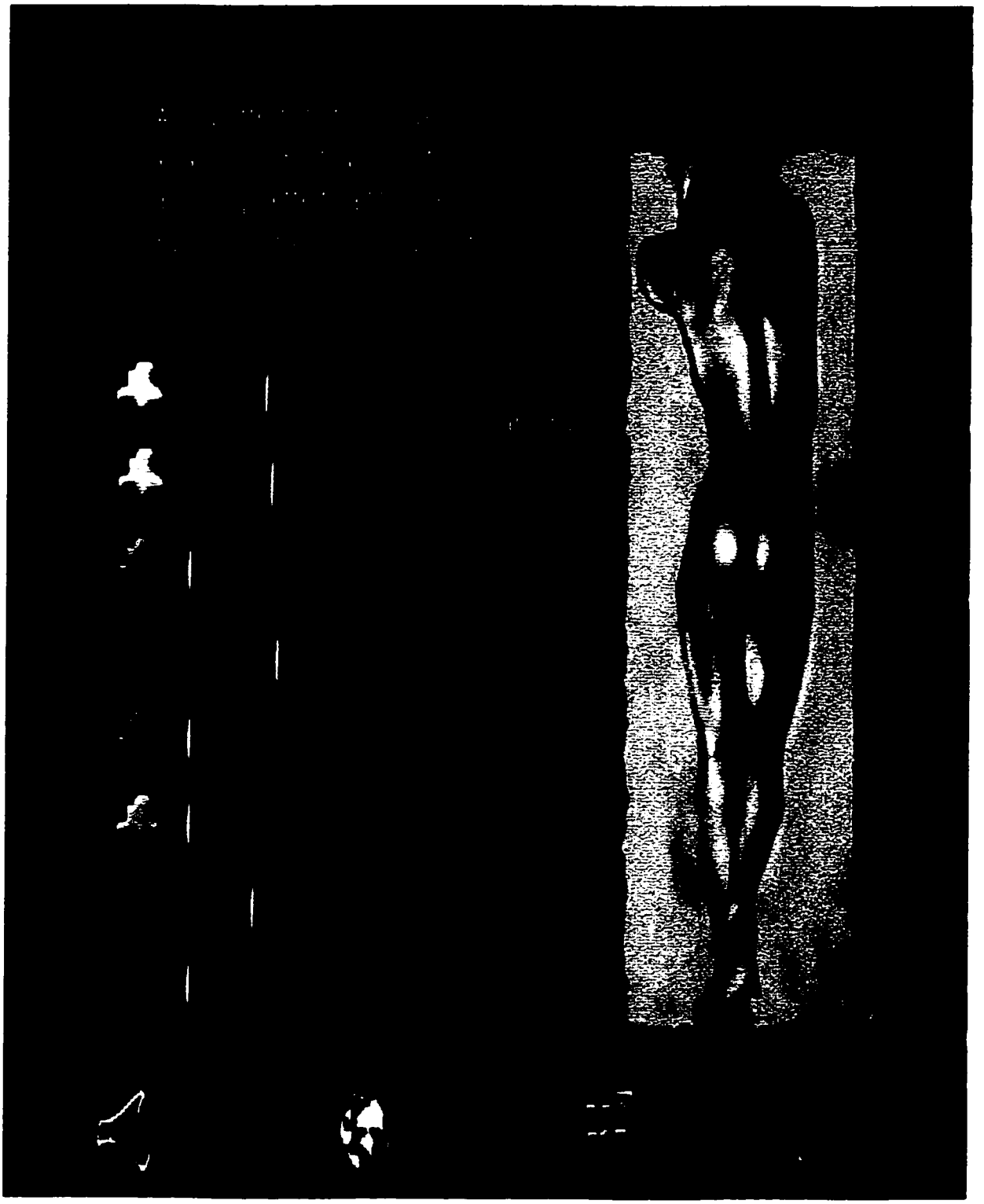
In interface 3, we can see the evolution of the icons finally appearing at the bottom of the screen allowing for proper navigational functionality. The first scroll bar is accessible enabling the user to alter or modify the opacity with a selected color.

The final content of the CD-ROM contains a virtual studio as the main interface where the user has a series of eight sliders to choose from in order to manipulate and alter the opacity of a selected color. This process involves a similar method of working in watercolor thereby having the possibility to produce an effect of transparency from an overlay of colors overlapping one another. "Watercolor brushes and computer programs are tools used to create surfaces of color. The assumption is that people make art, machines do not make art.[7]

7 Hicks, John (November 1993) . Technology and Aesthetic Education: A Crucial Synthesis. The National Journal of Art Education 46 (6), p. 42

To illustrate, here is an example of the final studio interface:

Final Interface



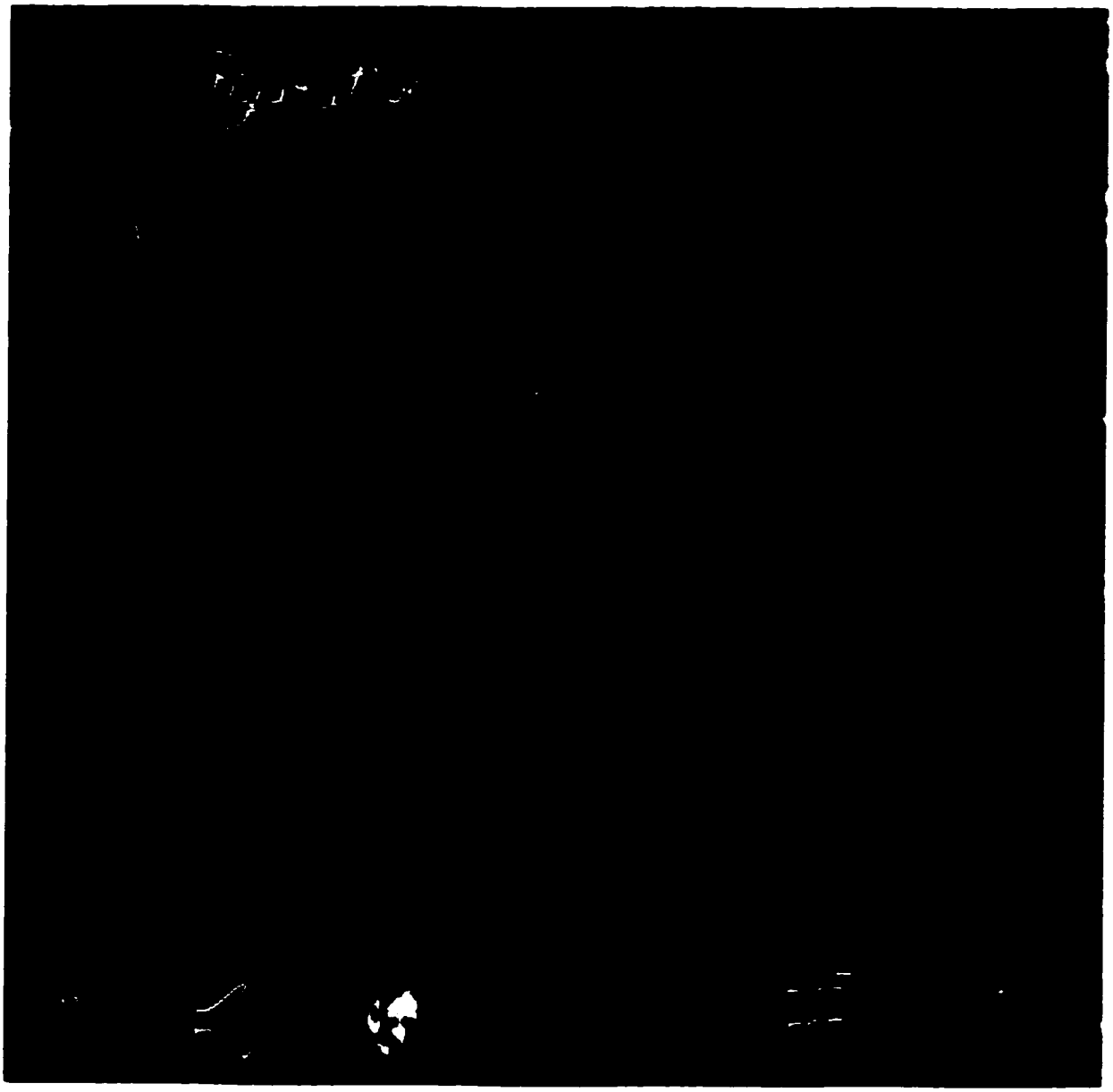
This is what resulted from the previous trials and errors. Sliders for each color have been added in order to change, add or remove the opacity. Here you can see an example of sliders adjusted in a combination of blue, yellow and white to achieve this effect. A scroll text box at the top permits the user to understand the process involved through a concise and didactic tutorial. Additional tools have been added to simulate different filter effects commonly found in a painting software.

Therefore, the initial concept of the airbrush was transformed into another way of working with colors. Accordingly, I discovered that digital interactive media provided another approach to the creative process.

The second section of the CD-ROM is an Art Gallery with five sub-categories of my artwork: *Digital Art, Abstract Art, Figurative Art, Landscape Art*, and *Portraits*. This section shows how my creative process remained consistent despite the medium that I used. I chose a sketch that I had drawn in 1995 to manipulate digitally; in 1999. It can be viewed in the *Figurative Art* and in the *Digital Art* section of the Gallery in the CD-ROM. As a result of working with this drawing, I slowly discovered my creative process functioned similarly regardless of the medium that I chose. Because I have worked with the same image using various tools, it became apparent to me that my creative process followed an instinctual visual language.

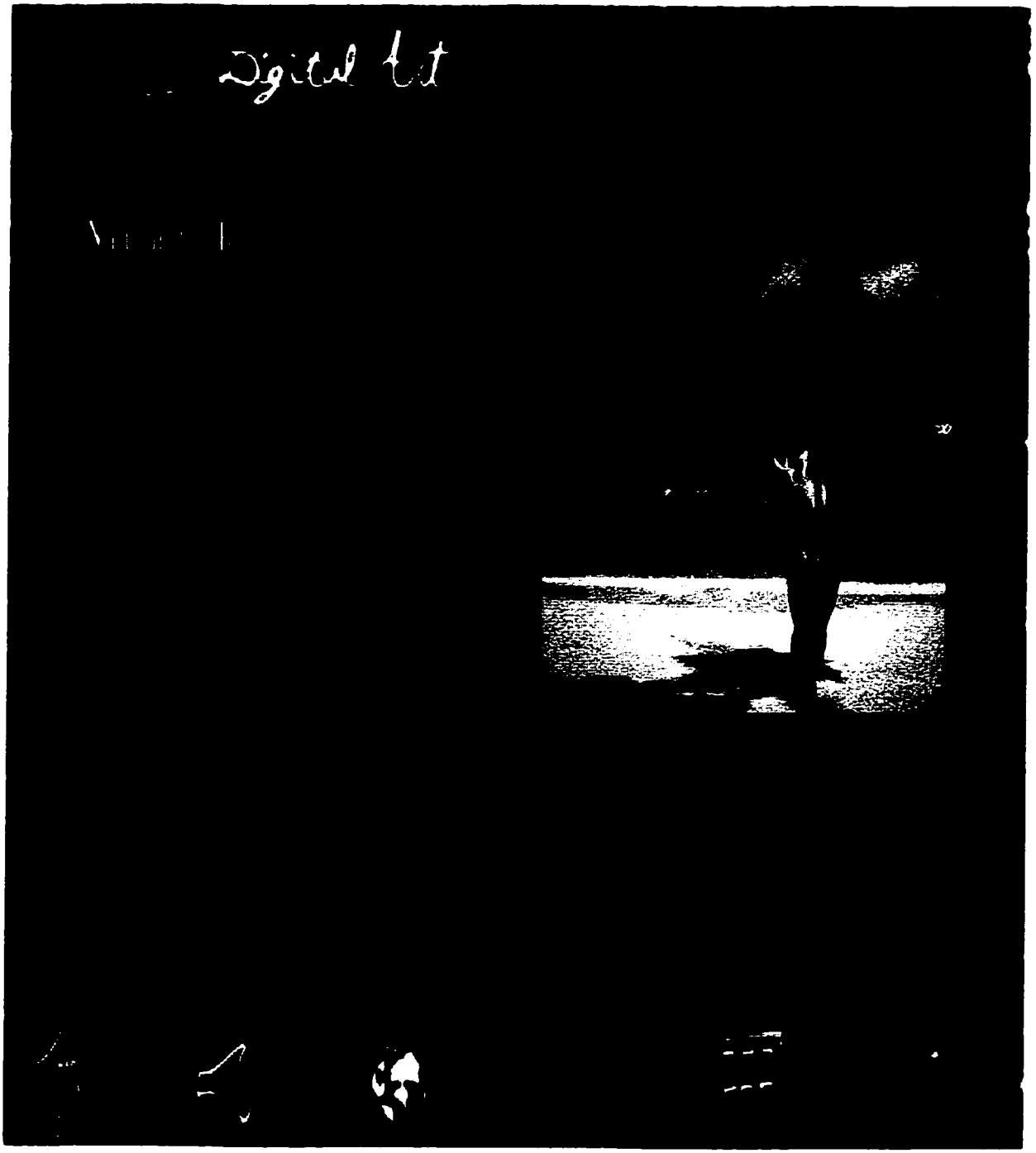
Following are two representations of the same drawing used in different media and at separate intervals.

"Vanity" created in 1995



In 1995, I drew the initial sketch in black & white and then used it for a painting composition in Acrylic on Canvas. The technique in Acrylic that I used to color the drawing was the same as that of using Digital tools.

"Nude in the beach" 1999



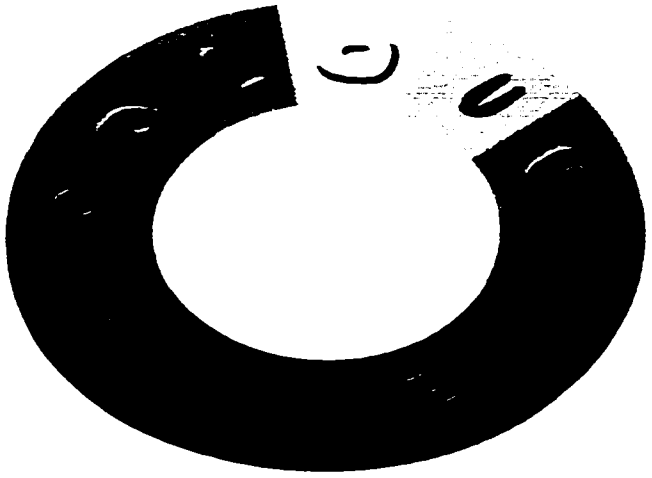
Nude on the beach contains the drawing scanned, and colored in an image retouching software. The coloring process with digital tools resembled techniques found through Acrylic painting, Pastel drawing or Oil painting.

Finally, a third section links directly to the World Wide Web, provided the user has an Internet connection. Here, the user will have a series of relevant links such as: art sites, artists' sites, tools and software. As an aid for the educational component in using digital media, there will be tips and short tutorials that I will continue to refresh periodically. There will also be the possibility for direct access via email for instant communication and feedback. Because of the permanence of the CD-ROM, links to the Web are an essential tool due to the fast and ever expanding speed of the technology of computers.

Additionally, another perspective of the designing process presented itself when it came time to decide on a title. Yet, it was not until the completion of the CD-ROM that the title became apparent. First, I wanted to use a title that could illustrate traditional tools with computer art. Originally, I came up with the title "Color Wheel" (See Title 1) that combined elements familiar to artists who had been using it for centuries. However, I found that the image of a color wheel did not adequately represent the fusion of technology and tradition that I had been exploring. Next, the word "Virtuality" (See Title 2) came to mind, describing the methods of working with computer art in a virtual environment. Unfortunately, when I researched this word on the Internet, I discovered that it was a term used in hundreds of places from technological companies, book titles as well as design firms across North America. At last, I arrived at the final title (See Final Title) that illustrated perfectly my feelings using typography as a visual component.

Here to illustrate are examples of the titles and the transformations they went through:

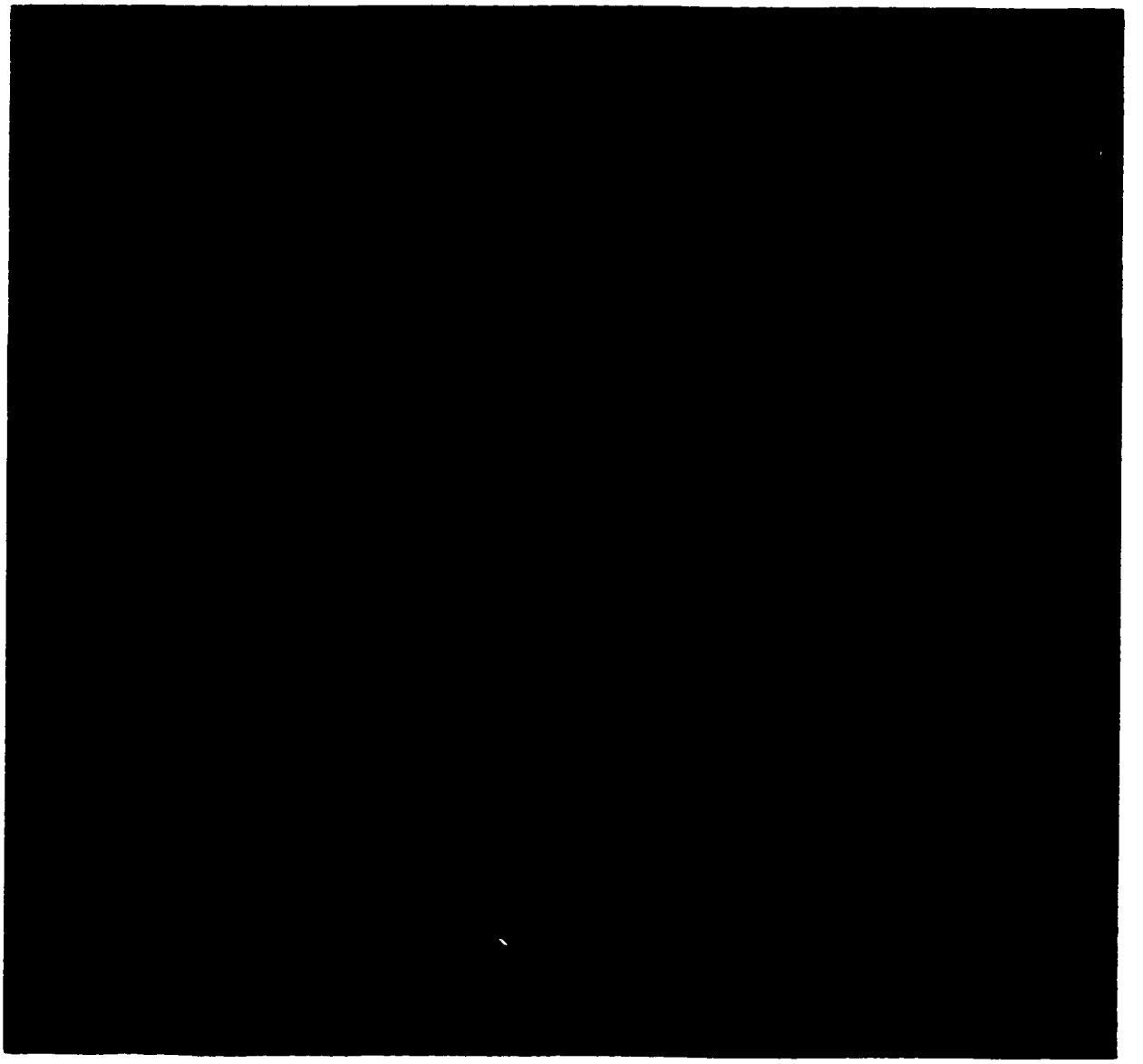
Title 1:



I felt that "Color Wheel" was a good association of what visual artists use in their work regardless of what medium was employed. However, since I wanted to attach computers and technology in the title, I began to play with the words "Cyber Studio" and "Virtuality". Unfortunately, these are terms that have become ubiquitous with the technological jargon and I did not want to mimic commonly used terms.

Here is an example of the "Virtually" title:

Title 2



Although I liked playing with effects with typography, I felt the image held "New Age" associations and did not represent the creative process in either traditional tools or withdigital art.

Final Title

GOING BEYOND CHALK TO PIXELS:
the manipulations of a technochick

This final rendition combines typography with few colors to illustrate perfectly my feelings working with computer art. Seeing how the CD-ROM was already very visual in content, I decided for a more pure interpretation and felt type was the more appropriate choice.

Therefore, working with multimedia design involves not only applying the graphics, the texts and the animations, but also laboring over all the minute details for the interaction to flow perfectly.

The integration of sound is another important element that can influence dramatically the viewing of a CD-ROM. For example, the question whether or not music was going to be heard throughout the CD-ROM, was not resolved until the completion of the project once again. What's more, I wasn't sure if music was going to play during the studio activity or only play during the viewing of the Gallery. I felt that if there was going to be music, it had to come from an original source. I then asked one of my students who is a musician to compose a soundtrack specifically suited for each section. After he looked at the different interfaces and shared his ideas for preferred styles of

music, we decided to offer a selection of ambience music in a jazz-like overtone. Discreet button sounds have been added as well. I created a short narration at the beginning with a simple 2D animation to welcome the user as well as provide a concise explanation for the navigational options.

The Web interfaces were another challenge facing the overall design elements. There were many questions pertaining as to how to make web site to function properly in order to portray what I was trying to achieve. First, could good quality images be downloaded quickly enough, regardless of the speed of the Internet connection? Second, how were the tutorials going to be presented? Function and design were once again questions that needed to be resolved. After numerous interfaces, I opted for a pure design and compromised the overall quality and size of the images so that users could access the site regardless of the software and hardware they were using. In other words, the problem solving involved in making this interactive media synthesized a vision with the technological feasibility, which indirectly influenced the final result.

Conclusion

In summary, the process involved in making this CD-ROM was similar to the production and the collaboration necessary for making a movie. Here I was shooting all the scenes and then directing and editing where they should all go. The montage and the effects were the result of a personal and collaborative vision. In other words, effective multimedia design involves a problem solving approach raised by the different aspects of the various software applications. There are numerous possibilities, and the choices to be made are vast. Nevertheless, the final outcome was achieved as a result of both my personal language and the aesthetic and critical choices of the technology at hand. Likewise, I felt that the medium of computer technology and multimedia design were the best vehicle for representing my work and process. Hence, the problem solving and creative decisions only added another facet of the learning and creative process necessary to gain a wider understanding of the medium.

Consequently, the manner in which I now teach multimedia design has been completely altered. As a multimedia educator, my purpose is to communicate to students the instruction for various software, as well as to assist them in the production a final CD-ROM where all of their software knowledge will be integrated into a final piece. My purpose is to teach them how to successfully design any kind of interactivity in the computing medium that requires balancing technological feasibility with the integrity of the content. An example would be: how to design a CD-ROM so that users can browse, make transitions, and/or play games so that each of these actions can be coordinated to integrate smoothly into a system. Interactivity design comes into play when these actions

intersect. Furthermore, I became a better educator through simultaneous production and activity with my students. Because we shared similar insecurities and accomplishments, we developed another kind of relationship. In other words, the collaboration that transpired transformed the roles of the teacher/student relationship providing a classroom rich in learning, in teaching, and in sharing information. John Hicks states: "Aesthetics redefined within the context of an information age would include an extended vocabulary, a greater focus on process and an openness to collaboration and cooperation".[8] We also discovered that while working with the all the different software available, no one understood or manipulated computers to their full potential. Equally important was the underlining humility that followed when attempting to process the degree of information necessary to use a computer. Consequently, the need for collaboration becomes greater. Unlike a painter who can work long hours in solitude, the digital artist is at the complete mercy of the many technological needs required to gain a proper insight.

Therefore, my aim was to demonstrate my work and process through an interactive vehicle and to explore its potential as an art educational tool. Through the probing and deciphering of the technological feasibility, I discovered other methods of teaching, designing and finally creating from all the various tools that contain unlimited possibilities. The numerous techniques used to create the CD-ROM demonstrate how an art educator can go beyond the medium by applying the same techniques for creative

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8 Hicks, John. (November 1993) . Technology and Aesthetic Education: A crucial Synthesis. The Journal of the National Art Education Association 46 (6), p 44.

expression. I learned that the process and the medium are independent of one another therefore allowing for greater freedom to explore different methods of creation.

This project has reinforced my initial ideas that digital imagery is a perfect vehicle for 21st century art education. The collaboration involved in this type of production holds great potential for art classes in the high school and in the elementary levels as Government funding is placing more and more computers in the classroom. The future development of CD-ROMs to be integrated with other subject content in the schools system has yet to be explored. Ultimately, the CD-ROM will then serve as a model to encourage and inspire art educators and artists to integrate this new medium into their own teaching and creative practice to further their understanding of digital media.

As Edmund Burke Feldman says: " What better place to start than with the media we already know? What better way to study media than through art? What better time to begin than now?"[9]

9 Feldman, Edmund B. (1993). Practical Art Criticism. Englewood Cliffs, NJ: Prentice Hall p. 117

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