

Student Work

---

12-1-1995

**An investigation of Nebraska art teachers' perceptions and usage of internet technology.**

Donalyn M. Heise

Follow this and additional works at: <https://digitalcommons.unomaha.edu/studentwork>

---

**Recommended Citation**

Heise, Donalyn M., "An investigation of Nebraska art teachers' perceptions and usage of internet technology." (1995). *Student Work*. 2965.

<https://digitalcommons.unomaha.edu/studentwork/2965>

This Thesis is brought to you for free and open access by DigitalCommons@UNO. It has been accepted for inclusion in Student Work by an authorized administrator of DigitalCommons@UNO. For more information, please contact [unodigitalcommons@unomaha.edu](mailto:unodigitalcommons@unomaha.edu).



**AN INVESTIGATION OF NEBRASKA ART TEACHERS' PERCEPTIONS  
AND USAGE OF INTERNET TECHNOLOGY**

**A Thesis  
Presented to the  
College of Education  
and the  
Faculty of the Graduate College  
University of Nebraska at Omaha**

**In Partial Fulfillment  
of the Requirements of the Degree  
Master of Arts in Secondary Education  
University of Nebraska at Omaha**

**by  
Donalyn Heise  
December 1995**

UMI Number: EP74427

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI EP74427

Published by ProQuest LLC (2015). Copyright in the Dissertation held by the Author.

Microform Edition © ProQuest LLC.

All rights reserved. This work is protected against unauthorized copying under Title 17, United States Code

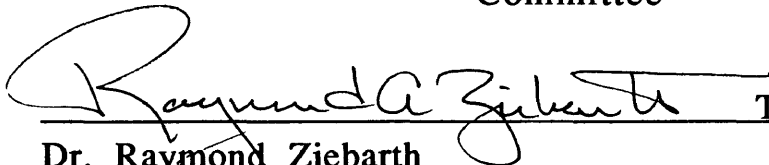


ProQuest LLC.  
789 East Eisenhower Parkway  
P.O. Box 1346  
Ann Arbor, MI 48106 - 1346

## THESIS ACCEPTANCE

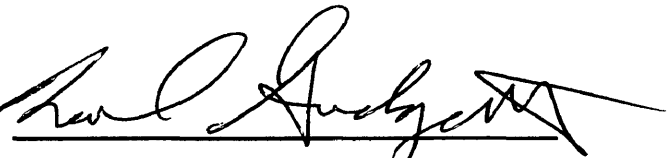
Acceptance for the faculty of the Graduate College,  
University of Nebraska, in partial fulfillment of the  
requirements for the degree Master of Arts in Secondary  
Education, University of Nebraska at Omaha.

### Committee

  
\_\_\_\_\_  
Teacher Education  
Dr. Raymond Ziebarth

  
\_\_\_\_\_  
Teacher Education  
Dr. Jim Akers

  
\_\_\_\_\_  
Teacher Education  
Dr. Neal Topp

Chairperson   
\_\_\_\_\_  
Dr. Neal Grandgenett

Date November 7, 1995

## ABSTRACT

### AN INVESTIGATION OF NEBRASKA ART TEACHERS' PERCEPTIONS AND USAGE OF INTERNET TECHNOLOGY

In order to prepare students to be life long learners in a rapidly changing global and technological society, educators need to promote the use of appropriate technology to support quality learning. Art students, as well as all of today's students, need to be effective communicators, creative problem solvers, and be able to access and manage information in an electronic world. Although Nebraska is already a national leader in telecommunications and telecomputing, the extent to which technology is used and will be used in specific disciplines is as yet unclear. An important first step in supporting the future use of Internet in the art classrooms of Nebraska is to determine the current use and perceptions by art teachers. The purpose of the present study is to explore the perceptions and usage of the Internet by current art teachers in the state of Nebraska.

A survey was distributed in March 1995 to approximately 588 public school art teachers who were certified in the state of Nebraska. All participants were presently teaching art all or part of the day. The survey combined a series of Likert scale and open ended questions to determine usage and perceptions of the Internet, as well as some more traditional computer tools. By March 24, 1995, a total of 294 surveys were returned, which represented a 50 percent return rate. To help validate the survey responses, 20 structured interviews were conducted.

Survey and interview data revealed positive perceptions of Internet; but low usage, limited access, frustration with using this new technology, and a general lack of knowledge on how to successfully integrate Internet technology into the art curriculum. The study results also indicated greater need for Internet access in the classroom, enhanced and specialized Internet training for art teachers, and more specialized curriculum development that reflects the potential use of the Internet in the art classroom.

This study also revealed positive perceptions towards Internet implementation despite teacher frustration in learning and using these new technologies. If effective training is provided for Art and Internet integration, art teachers seem willing to use Internet in the classroom to enhance student learning. The results of this study encourage longitudinal research regarding perceptions and usage of Internet in the art classroom, as well as research investigating Internet usage in all academic disciplines.

## ACKNOWLEDGMENTS

I would like to express my sincere appreciation to my thesis chairperson, Dr. Neal Grandgenett for his encouragement, guidance, and support in the preparation of my thesis. His professional expertise has influenced me tremendously. I would also like to thank the members of my thesis committee, Dr. Neal Topp, Dr. Jim Akers, and Dr. Raymond Ziebarth for their advice and encouragement, but especially for sharing their enthusiasm for educational applications of the Internet.

I am grateful to all my friends and family for their support and encouragement. I thank Dr. Adriene Hoard for inspiring me to pursue a career in art education. A special thanks goes to Frances Addy, my friend and editor, and my dear friends Nancy Luke, Mary Heise, Deana Houston, and Jennie McCleskey.

I would like to acknowledge the people who instilled motivation for learning. In particular, I would like to acknowledge my father, Don Militello, and my mother, the late Marilyn Militello, who always believed in me, and my brother and sister, whom I always admired.

My sincere appreciation goes to my family for graciously allowing me to borrow some of our family time to work on this thesis. I would especially like to thank my children, Dena, Dawn, Jeremy, and Phillip, for their smiles and hugs, which helped me maintain perspective. My greatest appreciation goes to my husband, Dave, whose love and constant support has made all this possible.

**TABLE OF CONTENTS**

<b>TITLE PAGE</b>	<b>i</b>
<b>THESIS ACCEPTANCE</b>	<b>ii</b>
<b>ABSTRACT</b>	<b>iii</b>
<b>ACKNOWLEDGMENTS</b>	<b>v</b>
<b>TABLE OF CONTENTS</b>	<b>vi</b>
<b>LIST OF FIGURES</b>	<b>ix</b>
<b>CHAPTER ONE</b>	<b>1</b>
Introduction	1
Research Question	4
Definitions of Terms	4
Assumptions	5
Delimitations	5
Summary	6
<b>CHAPTER TWO</b>	<b>7</b>
Literature Review	7
Call for Inclusion of Technology in Art Education	7
Teacher Attitudes Towards Technology in Art	8
Role of Internet Technology in Art Curriculum	11
Importance of Teacher Attitudes for Inclusion of Technology	14
Summary	16
<b>CHAPTER THREE</b>	<b>18</b>
Methodology	18
Participants	18



Survey	18
Interviews	19
Analysis of Data	20
Summary	21
<b>CHAPTER FOUR</b>	22
Presentation and Analysis of Data	22
Presentation of the Results	22
Data Presentation	23
Quantitative Data	23
Qualitative Data	29
Phone Interview Summary	35
Summary	36
<b>CHAPTER FIVE</b>	38
Discussion of Results, Conclusions, and Recommendations	38
Review of Study Methodology	38
A Review of the Survey Results	38
Conclusions	40
Limitations	44
Recommendations for Further Research	44
<b>BIBLIOGRAPHY</b>	47
<b>APPENDICES</b>	50
<b>Appendix A:</b> Survey: Internet in the Art Classroom Survey	50
<b>Appendix B:</b> Nebraska K12 Internet Evaluation Telecomputing Survey	54
<b>Appendix C:</b> NAEA National Registry Computer in the Art Room Survey	62

<b>Appendix D: Telephone Interview Forms</b>	64
<b>Appendix E: IRB Approval Forms</b>	66
<b>Appendix F: Raw Survey Data</b>	75
<b>Appendix G: Survey Data Graphs</b>	78

**LIST OF FIGURES**

	<b>PAGE</b>
FIGURE 1: Respondent perception of Internet	24
FIGURE 2: Describe your Internet training.	26
FIGURE 3: How often do you use FTP with your students?	27
FIGURE 4: How often do you use Gopher with your students?	27
FIGURE 5: How often do you use Telnet with your students?	28
FIGURE 6: How often do you use the World Wide Web with your students?	28

## CHAPTER ONE

### Introduction

The Internet is the largest international network of computers. It was initially designed to support the communications of the U.S. Department of Defense. It was born in 1969 and was called ARPANET, and in the 1980's it was expanded to include scientific and educational applications. The Internet is continuing to expand and it is projected that by the year 1998, at least 100 million individuals will be using the Internet (O'Connell, 1994).

The United States government has recognized the importance of the Internet to the nation, now, and in the future. Described as an "information superhighway" by Vice President Al Gore, the Internet is seen as an important component of tomorrow's educational environment. The Vice President described a vision for the educational use of the Internet in a speech to the nation's leaders in the communications industry:

*"Today, we have a dream for a different kind of superhighway that can save lives, create jobs and give every American young and old, the chance for the best education available to anyone, anywhere. I challenge you...to connect all of our classrooms, all of our libraries, and all of our hospitals and clinics by the year 2000." Vice President Al Gore, speaking to communications industry leaders, January 11, 1994 (National Institute of Standards and Technology, 1994, p.57)*

Many K-12 schools and school districts are beginning to realize the benefits of telecomputing in the area of student learning. During the last few years, teachers have begun to explore the use of telecomputing in their classrooms. The Internet offers many resources to teachers, such as electronic

mail, on-line searches of world libraries, curriculum ideas, software, journals, instructional games, weather data, and general information related to politics, global issues, and other cultures.

The state of Nebraska is emerging as a national leader in the use and potential of the Internet in the K-12 schools. The use of the Internet within the classrooms of Nebraska is currently supported by the Nebraska Educational Service Units. The Nebraska Educational Service Units (ESU's) were established in 1966 to provide resources and information to the state's public schools. In 1993, the Nebraska Legislative Bill 452 authorized the ESU's to collect a tax levy to support Internet server equipment and teacher training in the state, and in 1995, Nebraska Legislative Bill 860 authorized classroom connectivity. This statewide K-12 Internet effort is currently underway, and soon most local school districts will have Internet access (Nebraska Department of Education, 1993).

In 1993 the Internet Studies Office at the University of Nebraska at Omaha was formed with the purpose of evaluating the impact of statewide Internet implementation on Nebraska K-12 education. This evaluation was funded by the United States Department of Education and the Nebraska Educational Service Units. The evaluation is comprehensive and formative in nature, and includes data related to teacher perceptions, network access, and innovative classroom uses. The evaluation project is seeking to determine the impact of the Internet activities, supported by the ESU's, on teaching and learning in the state.

In the art classroom, Internet access offers many valuable resources for art education. In particular, rural schools with little opportunity for field trips

can now electronically “visit” art museums and galleries via the Internet. The work of famous artists is immediately available for art history or aesthetic education. Students can also create art and transfer images electronically to other classrooms around the world, thus allowing for the mutual sharing of ideas and inspiration. Students and teachers can also research databases on the Internet to find important information on artists or periods in art history. They might even communicate with some contemporary artists through the use of electronic mail and bulletin boards.

The introduction of the Visual Arts Standards, presented to the United States Secretary of Education, states that for the arts, technology can offer the means to accomplish artistic, scholarly, production, and performance goals. Discovery and experimentation in the classroom can also be supported by technology, and can be a significant catalyst for the development of creative thinking skills. The Visual Arts Standards suggest that the computer can provide an interesting and challenging learning environment for all levels of students in art education (NAEA, 1994).

There are many resources available to art teachers and students on the Internet. Yet, are art teachers aware of this impressive new tool for the art classroom? How many art teachers are using the Internet or plan to use it? It would seem that art teachers need to be aware of the available resources and feel comfortable in using the Internet as a classroom tool, before they will actually use the Internet in their classrooms. The purpose of the present study, then, is to explore the perceptions and usage of the Internet by current art teachers in one particular state, Nebraska.

### Research Questions

This study was designed to investigate the following two research questions: 1) What are the current perceptions of the Internet by Nebraska art teachers? and 2) What is the current usage of the Internet by Nebraska art teachers?

### Definitions of Terms

**art teachers** - those Nebraska teachers who are certified to teach art in grades K-12 and are teaching art all, or part of, the day.

**explanatory** - techniques or methods used for the purpose of teacher explanation, such as computer presentations, or information downloaded from the Internet for teacher presentations.

**exploratory** - learning through the use of exploration, such as student centered activities that require students to search for information on the Internet.

**perceptions** - teachers' attitudes towards Internet usage as indicated by the Art and Internet Survey developed by the researcher.

**usage** - the frequency and patterns of Internet usage by teachers, as indicated by teacher self-reported estimates.

### **Assumptions**

For the purpose of this study the following assumptions were made:

1. It was assumed that all teachers surveyed were properly certified and fully qualified in art education.
2. It was assumed that the training sessions held by the Nebraska Educational Service Units were effective as an initial introduction to the Internet.
3. It was assumed that the participants were truthful and accurate in their responses to the survey and interviews.

### **Delimitations**

For the purpose of this study the following delimitation is identified:

1. This study was limited to the art teachers in Nebraska, consequently, generalizations to other teachers in other states may be limited due to Nebraska's unique approach to Internet integration.



## Summary

In order to prepare students to be life long learners in a rapidly changing global and technological society, educators need to promote the use of appropriate technology to support quality learning. Art students, as well as all of today's students, need to be effective communicators, creative problem solvers, and be able to access and manage information in an electronic world. Although Nebraska is already a national leader in telecomputing, the extent to which technology is used and will be used in specific disciplines is as yet unclear. An important first step in supporting the future use of Internet in the art classrooms of Nebraska is to determine the current use and perceptions by art teachers. Background information and the current research related to this task is described in Chapter Two.

## CHAPTER TWO

### Literature Review

The purpose of this chapter is to examine and review previous research related to teacher attitudes towards the Internet. Various research studies have been conducted regarding computer technology in the classroom, but because of the new use of the Internet in education, little research is specific to this topic. However, the use of more general technology in art education has been examined by researchers.

This discussion will be organized into the following subsections: 1) the call for inclusion of technology in the art curriculum, 2) teacher attitudes towards technology in the art classroom, 3) the role of Internet technology in the art curriculum, and 4) the importance of teacher attitudes for effective inclusion of technology.

#### **Call for Inclusion of Technology in the Art Curriculum**

In the past several decades, art education has struggled to become an integral part of the core curriculum. Though educational reform remains in the forefront of the nation, the arts continue to hold only a marginal position in our schools. With the National Visual Arts Standards inclusion into Goals 2000, art educators seem to have reason to celebrate, as well as a renewed responsibility to establish and maintain excellence in art instruction (NAEA News, 1992).

Art teachers are being encouraged by the National Art Education Association and the Arts Endowment to explore opportunities related to new technologies, particularly the Internet. These organizations suggest that new technologies offer students and teachers a means to achieve a wide range of artistic, scholarly, production, and performance related goals. It is suggested that technology has the power to expand students choices and provide opportunities and ways to access information. (NAEA News, 1994)

It would indeed seem that art teachers need to be aware of the implications and applications of computing, and have as much responsibility as instructors of other disciplines to explore the opportunities of new technologies (Scott, 1992). With the emergence of Discipline Based Art Education (DBAE) programs, art education has moved away from limiting itself to art production, and now includes aesthetics, art history, and interpretation. New paradigms of teaching and learning are becoming necessary (Scott, 1992).

### **Teacher Attitudes Towards Technology in the Art Classroom**

There is considerable controversy on the specific role of technology in the art classroom. Although teachers may be receptive to incorporating new technologies in their classrooms, the expense and lack of skill or knowledge in this area may make progress frustrating and difficult (Hubbard, 1989; Swartz, 1990). In a conventional art class, a traditional lesson with goals and objectives often gives students specific steps and procedures. However, with computers, students often have many more choices as they engage in

problem solving and discovery procedures. Teachers sometimes fear that the decreased structure can create problems in student art outcomes (Hubbard, 1989). At the heart of the problem would seem to be a lack of understanding of the computer medium, and the fact that many educators often lack even an adequate vocabulary and the basic skills to use the computer effectively.

Some art teachers reject electronic media because they fear the danger of placing form over content, and a loss of the spirituality associated with art. Using a computer (machine) lacks the intimate involvement of artist and the media (Hubbard, 1989). The problem also lies in many art teachers attitudes, which hold that computers are for sharing factual information and conducive to academic subjects like science and math, but should not be used for the study of aesthetics.

Teachers need to understand and become proficient with this new media, if they are to meet the renewed responsibilities expressed by the National Art Education Association and the Arts Endowment. Davies states one of the keys to successful implementation of technology is ongoing training and support, with targeted inservice to prevent teachers from feeling frustrated or ill prepared for working with technology (1995). He also states that commitment and positive attitudes towards technology integration contributes to effective integration. A few teachers will always be eager to learn of new opportunities in education, yet there is a great opportunity for teachers of all disciplines, including art, to work together to use the computer effectively for instruction (Hubbard, 1989).

Access to the Internet requires investment, training, skills, and understanding. This powerful network includes a vast amount of visual and

text based information. However some art teachers see the possibility of inequality, fearing that only the select strata will have access to the Internet and that "information have-nots will be at a disadvantage" (Arts Endowment, 1994). Leadership in the arts and Internet based technology should be given a high priority. Access to full Internet capabilities can benefit students in their art instruction and allow for life long art based learning. Ross suggests that telecommunications will change the world whether we like it or not (1994). Change and adaptation is essential in art education, as well as in telecommunications and technology (Arts Endowment, 1994).

Positive attitudes towards technology in the art classroom also exist. Many educators have taken advantage of technology and computer activity in the classroom for almost 15 years. Yet a large amount of computer use is typically limited to general graphics and the use as a media production tool (Ettinger, 1988).

The computer is often used by art teachers as a visual art medium. Draw and paint programs, as well as photography software, allow a student artist to interact with the computer and make decisions as to the process and product of the piece. The artist is also able to easily revise, analyze, and re-design their creations. Three dimensional art forms, combined with sound, also expand the opportunity and the definition of art making, and changes the role of artist from passive to active (Ettinger, 1988).

Computers benefit art students by opening up a whole new realm of possibilities in communications, manipulation of images, image exchange, and exploration (Hubbard, 1989). Art teachers depend on images in order to be able to communicate adequately about imagery. Many teachers use slides,

videos, or reproductions in books, and each teacher has their own set of lessons and activities. However, since art teachers typically have limited budgets, many times they often lack adequate resources related to visual images.

The Arts Endowment is beginning to encourage that art finds its way onto the information highway (Arts Endowment, 1992). Two suggestions from a panel for the Arts Endowment are: 1) creating learning environments in which users and the next generations of artists are trained to take advantage of the Internet; and 2) establishing and maintaining excellence in this new environment.

### **The Role of Internet Technology in the Art Curriculum**

Should the computer be used as a tool for making art, or as a tool for art education? Is the computer appropriate for the educational situation at hand? Many questions related to technology exist for art educators. Art teachers need to consider the appropriateness of the technology, examine the tasks at hand, ask how the computer might be used, and decide how best to approach these specific tasks (Ettinger, 1988).

The use of Internet in the art classroom is consistent with the National Art Standards and the goals of Discipline Based Art Education (NAEA News, 1994). The use of Internet can help students explore, critique, and analyze works of art housed in various museums and galleries around the world. Art history can be explored in any classroom with access to Internet.

International communication about the arts is also possible, with actual citizens of the culture being studied using electronic mail.

Some art teachers are aggressively using computer technology in their classrooms and challenging their students to create new art forms using unconventional art media (Wilson, 1994). The art department at San Francisco State University has developed a Conceptual Design and Information Arts area of the Art Department. This program incorporates art and technology in a collaborative blended approach.

The Internet can be a valuable artistic experience for students. It requires active discovery learning and can open up new avenues of creativity and expression. The students can therefore become active participants in exploring new areas of learning. Ettinger suggests that computer technology can serve as a tool for research and instruction in art history, art appreciation, and aesthetics (1988). The Internet helps students to simulate art based roles including artist, art historian, and art critic. The use of Internet can challenge students, accommodate individual cognitive styles of learning, and provide alternatives for differing interests and learning styles. Ettinger also suggests that computers won't make great art or intelligent artists, but they can indeed be an effective tool for instruction (Ettinger, 1988).

With the Internet, students and teachers also have the ability to discuss topics related to the arts with others of similar interests. For instance, "listserv" groups allow teachers and students to share information at no cost to the user. These groups work automatically off of "lists" of interested individuals, and "serve" them by allowing them to share information by "posting" information to the group. Art teachers can subscribe to Teachart, a

national listserv dealing with art education reform, or ARTnet, a Nebraska listserv that links art teachers across the state for the purpose of collaboration.

Teachers and students can obtain information related to the arts through the use of discussion groups, called Usenet. K12Art, Kidlink, and Educom are a few examples of such newsgroups available on the Internet. A gopher site called KIDART Computer Art Gallery is also a popular resource. This site enables students ages 10 to 15 to engage in a global dialog, and students may express themselves in both text and graphic form.

On the World Wide Web there are many sites of interest to artists and art educators. If the unit of study is African art, students and teachers can access the artwork and text exemplifying African aesthetics and moral principles from the University of Virginia (<http://www.lib.virginia.edu/dic/exhib/93.ray.aa/African.html>). Australian art and text can be found at Monash University (<http://www.monash.edu.au/visarts/diva/diva.html>), and Egyptian Art and Archaeology can be found at the University of Memphis in Tennessee (<http://www.memst.edu/egypt/main.html>). Students can access these sites easily using a World Wide Web browsing program such as Netscape or MacWeb. These network browsing programs offer point and click operations to access Internet sites. However, a direct connection to the Internet is typically required to use these programs. Art teachers and students can also access, and retrieve works of art from the Smithsonian Museum (<ftp.sunet.se/pub/pictures/art>). Famous works of art, such as those of Van Gogh, Renoir, Degas, and Albers can be downloaded for classroom use.



There is still considerable discussion and confusion related to the appropriate role of technology in the art classroom. While some teachers are beginning to incorporate telecomputing and other technologies into the art classroom, many others continue to resist all technology, clinging to traditional art education methods and materials. It is imperative that we understand art teachers reasons for using or not using the new technological tools represented by the Internet. In doing so we may better clarify the issues related to their concerns, and better meet the needs of both teachers and students in this changing, information based society.

### **Importance of Teacher Attitudes to Effective Implementation of Technology**

Successful implementation of computers and related technology into the classroom is highly dependent upon the positive attitudes of teachers and administrators (Stevens, 1982; McMahon, T.A. & Duffy, T.M., 1993). It is important that teachers become confident in their use of computers and model positive attitudes toward technology with their students (Pina and Harris, 1993). The teacher plays a central role in determining the use of technology in the classroom, and therefore has to be informed on how it can be used successfully. The mere presence of a computer, or related technology, is not a guarantee that it will be used successfully (Henry, 1993). Sheingold and Hadley (1990) also listed teacher motivation and commitment as important factors which contribute to successful implementation of technology. Some studies have shown that it often takes three or more years for teachers to make a substantial change in teaching (Hord & Huling-Autin,

1987), with the first stage often consisting of awareness and preparation (Kell, Harvey, and Drexler, 1990).

A study conducted in West Virginia investigated factors which contribute to the implementation of technology in the classroom. This study showed that the type of training is not a significant factor, although it was a related variable. Instead, the teacher's confidence in his/her own ability to implement the technology was a strong predictor in the amount of technology use (Henry, 1993). Even with access to equipment, administrative support, and adequate time, the teacher must have a positive attitude towards the implementation.

Teacher commitment and positive attitudes are important for the effective implementation of computer technology. This is well illustrated by a project in the state of Washington. In 1988, the Colton School District in Washington State initiated a 6-year project to incorporate technology into all aspects of the education system (Johnson, 1992). The teachers voted unanimously to become personally involved in the project. The project goals were to give all students a technological advantage, improve curriculum and teaching skills, use technology as an everyday working tool, and to develop a model of a technologically-advanced district. At the beginning of the project most teachers had little technology skills, but an extensive staff development program helped teachers learn the necessary skills. Some opposition came from the parents, due to lack of facts, understanding the role of technology, and lack of a personal point of reference. Consequently, a parent development and education program was developed to demonstrate the appropriateness of computers in the classroom.

Results of the project reported increased communication between teachers and students, including communication with teachers and students of other grades and content areas. There was increased involvement with teachers and students from other schools, both in this country and in other regions around the world. Teachers reported that sharing their expertise and attitudes during presentations had a positive impact on their attitudes about technologies, as well as their own professionalism and their basic attitudes about the school.

Positive attitudes toward technology, district programs, and teaching in general, were also noted in the project. The teachers also experienced a reduction in the general anxiety they felt about using computers. There was also a significant increase in the number of teachers who purchased a computer for their home after the project. All of the teachers reported that they now use computers everyday in teaching and related activities, as opposed to only one teacher at the onset of the project. This project illustrates that effective computer based classroom innovation often includes a teacher and classroom level commitment, with careful consideration of current teacher attitudes.

### **Summary**

As the state of Nebraska works toward implementing the Internet in art classrooms, it is important that we assess the current teacher attitudes and activities related to this innovation. It is only then that we can address the strategies for effective implementation. An examination of the current uses

and perceptions of Nebraska art teachers would seem to be an important first step, and the focus of the methods of this research study, which are described in Chapter Three.

## CHAPTER THREE

### Methodology

The goal of this study was to investigate Nebraska art teachers' perceptions and usage of the Internet. This chapter describes the specific methodology used to determine the teachers' perceptions and usage. Chapter subsections describe the design of the survey based approach for data collection.

#### Participants

A list of all the art teachers presently teaching in the state of Nebraska was obtained from the Nebraska Department of Education data center. A survey was sent to all public school art teachers in the state of Nebraska, which resulted in a mailing of 588 surveys. All participants were certified in art K - 12, and were presently teaching art all or part of the day. Participants were apprised of the nature of the study through a letter approved by the University of Nebraska Institutional Review Board (see Appendix E).

#### Survey

The survey, a 28 item instrument, was developed and refined by the researcher to examine art teachers' perception and use of the Internet in the classroom. The survey was modeled upon the NAEA National Registry:

Computers in the Art Program survey, (NAEA, 1990) the Telecomputing Survey used by the Office of Internet Studies at University of Nebraska at Omaha, (Topp, Grandgenett, Mortenson, Ostler, Lown, Heise, Luke, 1995) and the Cognitive and Affective Computer Attitude Scale developed by Bannon, Marshall, and Fluegal (Bannon, S.H., Fluegal, S. and Marshall, J.C., 1985).

The survey combines a series of Likert scale and open ended questions to determine usage and perceptions of the Internet, as well as some more traditional computer tools. Using a five-point Likert scale, the teachers were asked to reflect on teaching experiences using technology as well as traditional materials. The instrument was field tested with 46 teachers, kindergarten through grade twelve, and the feedback and suggestions were used as a basis for modifications, related to item clarity (see Appendix A for instrument).

The researcher attached a cover letter which contained a brief purpose of the study and an approximate time frame to complete the surveys. Directions for completion of the surveys and procedures for its return were also included, and are given in the appendix. The survey with a self addressed stamped envelope and due date request, was mailed to all participants through the U.S. Postal Service.

### **Interviews**

To help validate survey responses, the researcher also conducted 20 interviews with classroom art teachers from across the state of Nebraska. The researcher randomly selected 10 names from the list of art teachers who responded to the survey and 10 names from the list of teachers who did not

respond. The interviews were structured in nature and consisted of the following five question areas:

1. What materials and methods are used in your art class?
2. What is the nature of technology use in your classroom?
3. Do you use the Internet? Why or Why not?
4. What are the positive aspects of Internet usage in the art classroom?  
Negative?
5. What would you recommend to other teachers who are considering the use of Internet activities in the classroom?

The interviews were conducted informally, over the telephone, at a time convenient for the participant. The main purpose of this interview was stated as inquiring to the methods and materials presently used in the art classroom as well as to assess teachers' perceptions and use of the Internet in the classroom. A follow-up letter was sent to the teachers who were interviewed to thank them for their participation.

### **Analysis of Data**

**Survey Data.** Data from the survey was summarized using descriptive statistics and percentages. Open items were summarized by first listing all responses within a word processing file, and then grouping similar responses.

**Interview Data.** Responses from the telephone interviews were summarized by the teachers who responded, and then highlighted (with underlines) for significant perceptions and usage related phrases.

### **Summary**

This study examined the perceptions and usage of the Internet by art teachers in the state of Nebraska. The study used a survey and interview based methodology to collect data related to this investigation. The results of this data collection process are described in Chapter Four.



## CHAPTER FOUR

### Presentation and Analysis of Data

The purpose of this study was to investigate the perceptions and usage of the Internet by current art teachers in the state of Nebraska. Within this study two types of data were examined related to the research topic. These data types consisted of survey data and telephone interview responses.

This chapter provides the quantitative and qualitative data analysis and results. Quantitative data from the survey is presented with accompanied graphs. Qualitative results from the survey and telephone interviews are summarized using actual responses that are representative of the total responses.

#### Presentation of the Results

In December of 1994 a mailing list of all certified public school teachers who were presently teaching in the state of Nebraska was requested from the Nebraska Department of Education. A list was obtained which reflected the list of teachers from the previous year. On March 10, 1995, a total of 588 surveys were mailed to all public school art teachers in the state of Nebraska. The respondents were asked to return the survey by March 24, 1995. This gave them 14 days to complete and mail the survey in the pre-addressed, postage paid envelope. A copy of the survey and cover letter are included in Appendix A. The 28 item survey was developed by the researcher to examine art teachers' perception and usage of Internet in the art classroom. The

survey combines a series of Likert scale and open ended questions to determine art teachers perceptions of computer related technologies, usage of Internet related technologies, and general background and teaching information. The return rate of responses to the surveys was 50 percent.

Individual responses from the survey were entered into a spreadsheet. Descriptive statistics were used to summarize the responses, and the complete totals are available in Appendix F.

Twenty phone interviews were also conducted with classroom art teachers across the state from April 16 to May 4, 1995. Ten names were randomly selected from the list of art teachers who responded to the survey, and ten names were randomly selected from the list of non-respondents. The interview questions were designed to help validate the survey by assessing teachers' usage and perception of Internet technology in the art classroom. The specific telephone interview protocol is included in Appendix D.

### **Data presentation**

Listed in Appendix F is a summary of the responses to each question asked on the survey. Related graphs are available in Appendix G.

### **Quantitative Data**

The responses revealed information that was categorized related to 1) teacher perceptions, 2) access to Internet, 3) training, and 4) usage of Internet.

Several interesting results were noted from the quantitative questions on the survey. Each category is described in the following narrative.

### Perceptions

Teacher attitudes and perceptions are important components of successful integration of any new technology, as suggested in Chapter Two (Davies, K.J., 1995; Stevens, D.J., 1982; McMahon, T.A. & Duffy, T.M., 1993; Kell, D., Harvey, G., & Drexler, N.G., 1990; Henry, M.J., 1993; Johnson, M.J. Vaughan, S., 1992). Therefore, the art teacher perceptions of Internet technology were assessed by the survey. When asked to describe their perception of Internet, 64% of the 294 respondents reported that they had heard of the Internet but don't use it often. Only 4 % reported that they used the Internet often. See Figure 1.

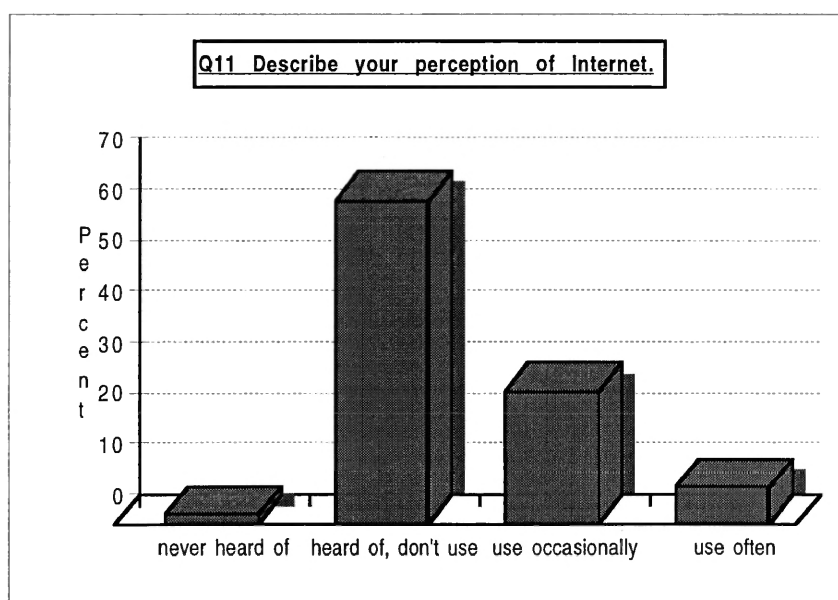


FIGURE 1. Respondent perception of Internet

It appeared that art teachers were generally more familiar with basic computer use in the classroom than with specific Internet applications in art education. Although 43% of the 294 respondents were undecided when asked if they thought Internet technology was useful for teaching art skills, 73% said they agreed or strongly agreed that computers were useful for teaching art skills. Also, while 74% of the respondents said that Internet was an effective instructional tool, 20% said that they didn't know enough about the Internet to answer that question accurately. Only 14 % reported that they were knowledgeable in how to use the Internet in the art classroom.

### **Access**

Without access to the computer hardware and software, Internet integration is impossible. Access to computers is an integral part of potential Internet usage, as well as an Internet direct connection. While many teachers (75% of the 294 responses) had access to Internet at their schools, only 13 percent of teachers reported currently having a computer in the classroom. This would imply that access within the art classroom itself is limited.

### **Training**

Positive teacher perceptions and access to the Internet may be important components in integrating this new technology. It is important to see if teachers with such access and positive attitudes are deciding to use the Internet in the classroom. While many teachers had heard of the Internet, only 43% of the 294 teachers who responded had received Internet training. The data analysis indicated that 37% had participated in the basic Internet

training through the Educational Service Units. See Figure 2. These training classes focused on how to use basic Internet resources and did not focus on any particular discipline or curriculum development.

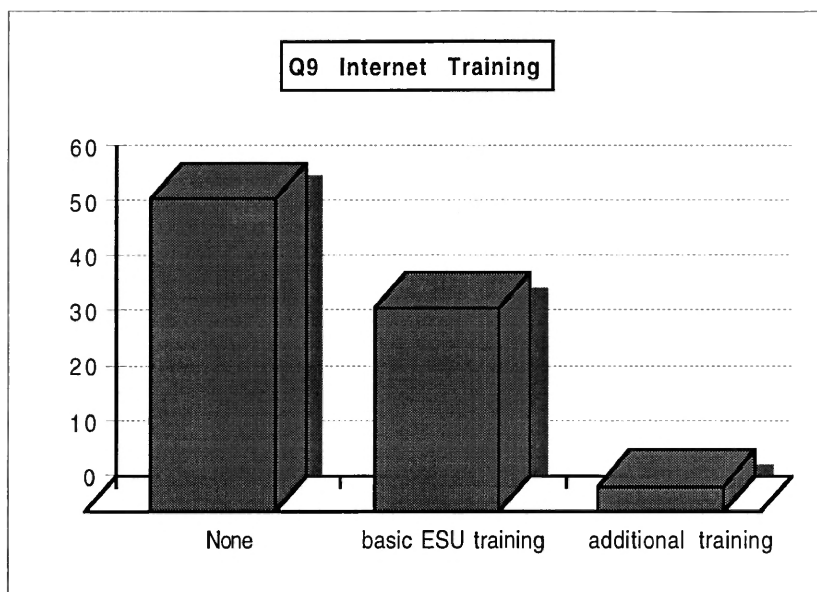


Figure 2. Describe your Internet training.

### Usage

Computer use in the classroom by survey respondents was higher when engaged in non-Internet applications. The analysis indicated that 43% of the 294 respondents used computers in the classroom, though generally not related to Internet applications. A small number of respondents, 11%, used electronic mail with students. Other Internet applications such as Gopher, Telnet, World Wide Web, and Ftp (File Transfer Protocol), were used more than once per month by only 4-7% of the teacher respondents. Figures 3 through 6 show the very limited uses of these resources.

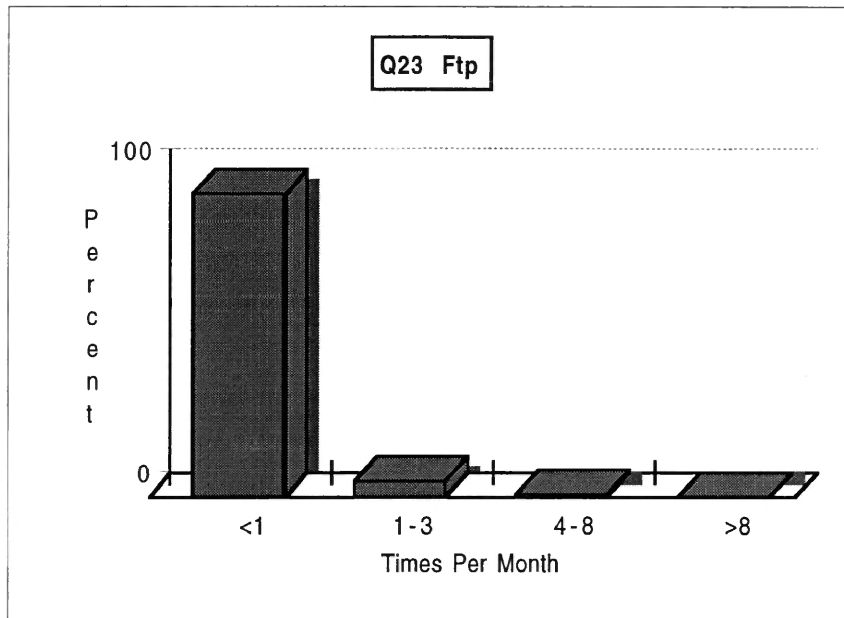


Figure 3. How often do you use FTP with your students?

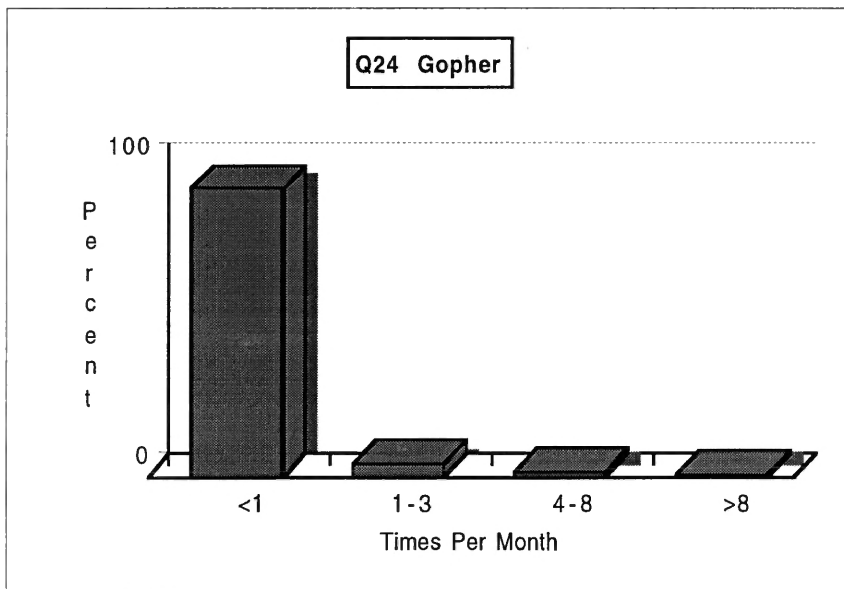


Figure 4. How often do you use Gopher with your students?

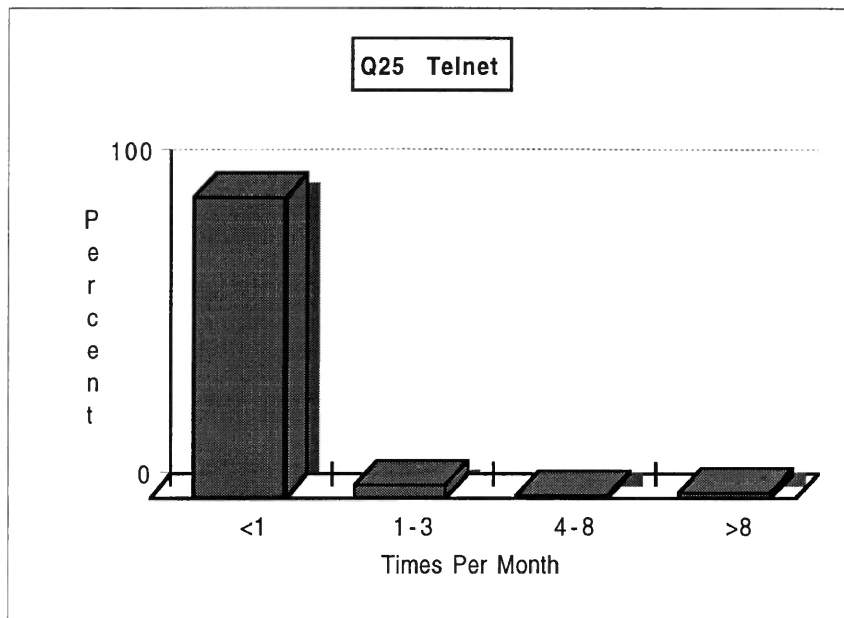


Figure 5. How often do you use Telnet with your students?

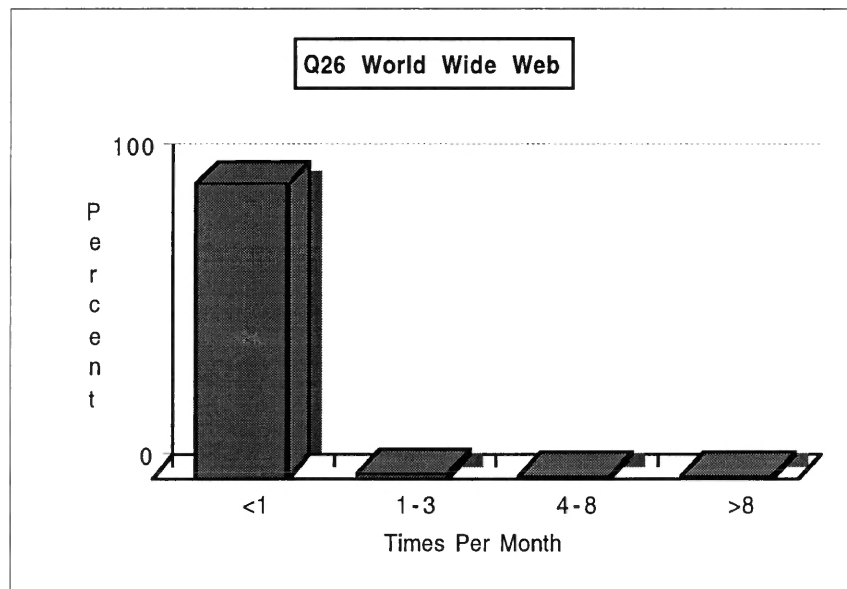


Figure 6. How often do you use the World Wide Web with your students?

### Qualitative Data

Qualitative data was collected from the two sources, including open-ended, narrative questions on the survey, and teacher interviews. Further summarization from the narrative questions, included the emergence of several categories from the types of responses. The responses related to the narrative survey questions follow.

**Q27 a. ("Do you feel that the Internet is an effective instructional tool?)**

**Q27 b. Why or why not?"**

When analyzed, 15% of the complete sample of 294 respondents left this question blank or said "I don't know". Of those who responded "Yes" to 27a., the following were representative of the responses identified:

"seems to have a great deal of potential, but I am not sure how to use it in my classroom".

"By itself it isn't, but with an instructor who knows how to use the Internet and knows how to use it effectively in the classroom, it can be."

"I think it could be effective, but I have no knowledge of computers."

"current information and communication makes education enjoyable!"

"research for art history and art methods"

"because of the vast amount of information available from all over the world"

"Communication with other art teachers and students."



"Because of the diversity of materials available."

"Resources!"

"Teachers and students can access images from museums around the world."

"Great lesson ideas."

"The Internet would be effective because it would be another tool to allow students to explore other aspects of art."

"When questions regarding art related issues arise, answers can be found on the Internet. Art history research, communication with artists and art schools."

"It would give us access to information we don't have in our immediate area."

"New advanced technology is important in today's society. Need to keep up in job related areas."

"Yes, but I am not familiar enough with it at this time."

Responses seemed to confirm that teachers used computers in the art classroom generally for computer graphics and record keeping, but most didn't know how to integrate Internet technology into the art curriculum.

Many respondents felt that the Internet was an effective instructional tool because it provided access to a variety of art resources. Others felt that communication between teachers, students, and/or professionals, was a priority. Some teachers specifically stated that access to resources and increased communication was an important preparation for students entering the Information Age.

The following types of responses were identified from those respondents who answered "no" to question 27a. (Do you feel that the Internet is an effective instructional tool?):

"not familiar with it."

"Not at this point in our school system. It is not available to teachers in our building."

"I believe a better understanding of Internet and it being available in the classroom might make it an effective tool."

"sometimes for certain areas such as commercial art, but most techniques are hands-on and cannot be taught through a computer."

"I probably am more undecided. I haven't connected with enough sources to evaluate what is available. My main concern is students ability to interact with limited reading level and keyboard experience."

"It could be, but I have discovered that it is never good to use a wrench as a hammer! It would have taken me 30 minutes to send this message by email!"

"I want it to be effective. It takes a lot of time."

"depends on the individual"

"I will know more after I use it"

"I would have to see how it can be used and have the technology to do it!"

"possibly on a limited basis"

Such results indicated that access and general knowledge of the Internet were seen as potential problems to the classroom integration of these resources.

**Q28 "What barriers are confronting you regarding Internet use in your classroom?"**

The analysis indicated that 8% of the 294 respondents left this question blank or said, "I don't know". Of those who responded, the following were the types of responses identified:

"We're not hooked up yet!"

"The school system doesn't subscribe to Internet"

"I do not have any training in its use or how it can be used related to art. I do not have any computers in my art classroom."

"I have one computer and teach 7 out of 8 classes which leaves me no time to prepare and teach the students how to use the Internet."

"No computer in the art classroom."

"Our training was very poor quality and the instructor did not use good techniques. Our teachers were confused and frustrated."

"People are intimidated and don't want to take the time to learn."

"As exciting as computers can be, I still believe in art basics and work with my students to develop techniques and personal style."

"With clay dust flying, I just can't see putting a computer in the art classroom."

"We have a computer teacher who doesn't believe computers belong in the art room, and he has control over who gets the computer."

"No training on Internet, and no knowledgeable person is willing to train teachers."

"I am not even aware there is Internet in my classroom, nor am I aware of what I'm missing by not having it."

“Students abusing the unsupervised areas of Internet”  
 “No phone line or modem.”

“Budget - I have \$500 to buy supplies for both art and pottery.”

“Time needed to learn, practice, plan with others, develop programs,…”

“I think it is important but I don’t get any support from the superintendents.”

“Computer classes currently dominate the technology lab.”

“I am just learning. I am not comfortable yet teaching students.”

Some of the responses could be collapsed into more specific categories related to classroom barriers. The three most common general barriers, when collapsing categories more completely were the following: access, time, and training.

### **Access**

Of the 270 people who responded to question number 28, (What barriers are confronting you regarding Internet use in your classroom?) 180 mentioned “access” as a barrier to Internet use in the art classroom. Many respondents had no computers in the art classroom or the school. A large majority, 87%, stated that there was no Internet connection in the art classroom, and the art classes did not have priority in reserving the computer lab. Some had computers but no phone lines for modem connection. Some only had one computer in the classroom.

Many teachers reported that current hardware or software constraints prevented them from using the Internet effectively. Lack of available funds

for hardware, software and training was also reported. The analysis showed that 27 people specifically mentioned money or budget constraints as a major barrier to Internet use. The majority of the art budgets were used for art supplies and materials, with little or none left for computer hardware or software.

### **Time**

There were 46 statements regarding the lack of time as one barrier that prevented teachers from learning the new technology. Some had participated in Internet training, but had not had enough time to utilize and feel comfortable with the new technology. Many were trying to find the time to attend Internet training sessions. Of those who understood how to retrieve information on the Internet, many expressed the frustration with how to incorporate this into the art curriculum.

### **Training**

Many expressed frustration from lack of training on how to use the Internet. One common concern was the lack of knowledge on how to incorporate Internet into existing art curriculum. A large number of respondents, 118, reported lack of training or lack of adequate training as a major barrier to Internet use. Many of the responses also suggested that the training needed to be more specific to the art discipline.

### Phone Interview Summary

Phone interviews were conducted with 10 art teachers who responded to the initial survey, and 10 art teachers who did not respond. The names were selected using a table of random numbers. The teachers were contacted by phone and asked to participate in the interview. A summary of the telephone interview results follows.

The telephone interviews of the survey respondents revealed low usage of Internet technology in the classroom, and some positive attitudes towards its effectiveness in the art classroom. All of the respondents used traditional materials in their art classrooms, such as acrylic paints, charcoal, pencil, clay, paper, etc. Two of the art teachers reported that their class used computers in the school computer lab for draw and paint programs. Two of the respondents had used Internet in the classroom, but only for downloading images for presentations in art history. None of the respondents used Internet on a regular basis. Only one teacher reported having a computer in the art classroom. Most respondents had access to a computer lab, but didn't know if it had an Internet connection. When asked about what they thought was the negative aspects of Internet usage in the art classroom, seven reported lack of time to learn the technology, while four mentioned lack of funds for hardware, software, and Internet connections.

The telephone interview responses of those who did not respond to the initial survey were similar to those who did. While most of the art teachers had heard of the Internet, they had little knowledge of how to use it in the art classroom. All of the teachers used traditional materials in the art

curriculum, such as paint, charcoal, clay, and paper, but only one had used the computer lab for an introduction to a computer draw program. Though one teacher had access to a portable computer that could be used in the art classroom, and eight teachers reported access to a computer lab, none reported ever having used the Internet in any art classes. When asked about the positive aspects in Internet in the art classroom, one teacher reported that he didn't see a need for a computer in an art classroom, primarily because of the dangers to the computer from clay dust and other art chemicals found in an art class. Two teachers responded that they didn't know enough to answer, while six suggested that it might be useful for teaching art history and art criticism. When asked about the negative aspects of Internet in the art classroom, eight mentioned lack of time to learn the technology, while six said expense was a major barrier to Internet implementation.

### **Summary**

This study sought to investigate the perceptions and usage of Internet technology of Nebraska Art Teachers. Qualitative data from the survey, and qualitative data from the telephone interviews appeared to support the quantitative data collected from the survey.

The results revealed a generally low level of Internet use in art classrooms, with the need for additional training, time, and access to this new technology. While many teachers had positive perceptions regarding the Internet, most did not know how to successfully integrate this new technology into the existing art curriculum.

The following chapter, Chapter Five, offers discussion and conclusions about this investigation. Recommendations are also made for areas of further research.



## CHAPTER FIVE

### **Discussion of Results, Conclusions, and Recommendations**

In this chapter the results of a study designed to investigate the Nebraska art teachers' perceptions and usage of Internet in the classroom are interpreted. The discussion will include a review of the study methodology, a review of survey results, conclusions, and limitations. Recommendations are also offered for further study in this area.

#### **Review of Study Methodology**

This study investigated the perceptions and usage of Internet technology of Nebraska Art Teachers. A mailing list of all public school art teachers was obtained from the Nebraska Department of Education in January 1995. A survey was mailed to all public school art teachers who were presently teaching art all or part time in the state of Nebraska. The survey included Likert and open ended questions related to teacher perceptions of Internet technology and usage in the classroom. Follow-up phone interviews were also conducted with 10 respondents and 10 non-respondents.

#### **A Review of the Survey Results**

Survey and interview data revealed positive perceptions of Internet; but low usage, limited access, frustration with using this new technology, and

lack of knowledge on how to integrate Internet technology into the art curriculum.

Teachers reported enthusiasm for Internet technology, and stated reasons they believed the Internet could be useful in the art classroom, but rarely used it. They stated access to resources and increased communication as advantages to Internet integration. However, there were some teachers who taught primarily art production who did not think Internet was a necessary part of the curriculum. Other teachers who taught using a Discipline Based Art Education program stated access to museums through the Internet was an excellent resource for teaching art history. The increased communication possible through the Internet was suggested as a possibility for incorporating art interpretation and aesthetics.

Usage was often limited to explanatory techniques and methods. For instance, teachers reported that they used the Internet to retrieve files that might be useful for explaining information to students. Very little direct student use of Internet was reported. Exploratory methods were rare (learning through the use of exploration, such as student centered activities that require students to search for information on the Internet). Teachers seemed to lack the skills and confidence necessary for using Internet technology, and therefore have not initiated student centered projects which integrate Internet technology.

Limited access was a major factor regarding Internet use in the art classrooms. While many schools had Internet access in the school, it was apparent that computers were needed in the classroom to facilitate successful implementation into the art curriculum.

Though basic Internet training was offered through the Educational Service Units, teachers reported that this was inadequate in establishing use specifically in art. Teachers lacked the knowledge of how to integrate Internet into the art curriculum and related instructional activities.

### **Conclusions**

The study results indicated greater need for Internet access in the classroom, enhanced and specialized Internet training for art teachers, and more specialized curriculum development that reflects the potential use of the Internet in the art classroom.

The Internet is a popular topic in education. In order to use this new technology, schools need to be connected to the Internet. Appropriate hardware and software is necessary to Internet integration. Art teachers who are connected to the Internet through modem connections face frustrations due to slower retrieval of files, and to the limited number of students who are able to connect at one time. A direct connection to the Internet is preferred because it allows many users to access the Internet simultaneously with faster retrieval time.

Schools that are connected to the Internet need to provide computers in the art classroom. The teachers in this study reported frustrations due to lack of time and scheduling problems when Internet could only be accessed in the computer lab. With computers in the classrooms, teachers are more apt to experiment with Internet, and use it for innovative student projects.

However, it appears to not be enough to just provide Internet access for a successful implementation into the art curriculum of this resource. Art teachers in this study reported the need for more specialized training and support for using Internet technology in the art classroom. This training should focus on enhancing the existing art curriculum. Art teachers will need to be assisted in developing strategies in using these new technologies effectively to help their students learn and reach their full potential.

Professional development to increase general teacher efficacy related to technology would also seem necessary. The research results revealed a need to improve teacher skills in educational technology, and a need to increase the quality of training sessions for Internet. Multiple options for teachers to engage in discipline based technology training would seem useful to all teachers.

Art teachers want to be comfortable in using the technologies themselves before using them with their students. However, a paradigm shift is necessary for successful implementation of Internet in the art classroom. With students rapid exposure to a variety of technologies, it may be imperative that we provide them with the skills necessary to most effectively use these new technologies. New paradigms may require classrooms to be redesigned to include opportunities for students and teachers to increasingly communicate with each other, their peers, and experts in the content areas, as they interact through Internet technology. The role of teachers and students may blend, with both interacting with each other as partner learners and investigators. The teacher will no doubt remain as the guide and facilitator of learning.

If the art teacher values the students abilities and attitudes, these students may indeed be the art teachers greatest asset in this classroom, simply because they often lack the fear of learning new technologies. Restructuring how students learn and what is important for them to learn is an important issue. Students will need information from varied sources, and they will need to be active learners. As students are presented with new and varied information, they will need guidance in transforming that information into knowledge.

In order to prepare students for the twenty first century, we must expose them to the such new technologies in all disciplines, including art. As they compete for jobs in the twenty-first century these technology skills no doubt will be extremely important for them. With the multitude of information available to students through the Internet, art teachers will not be able to master all the information in every database, nor be prepared on every topic. Art teachers can not afford to wait until they have mastered the skills of Internet technology, or the topics accessible through this medium, before they introduce it to their students.

Technology can empower art students to reach their potential, develop new art related skills and competencies necessary to be responsible citizens, and especially productive in the global environment. With the new technologies, students of today are presented with immediate information, and are not limited to the art resources available in their school building. They can now access the most current art information around the world.

However, it is not enough to provide the equipment and Internet connections for the teachers. For effective implementation of this new

technology, art teachers need to be assisted in seeing the relevance of the resources and in developing positive attitudes towards the Internet. They must also be given adequate time and appropriate training on how to find relevant information on the Internet as well as how to integrate it into the art curriculum.

The Internet is indeed exciting for art educators, as often indicated by the teachers surveyed and interviewed in the study. The potential of art related resources available on the Internet is seemingly limitless. Such positive teacher perceptions are very important for the successful use of Internet in the art classroom.

As suggested by the review of literature, any teacher plays a central role in determining the use of technology in the classroom, and therefore has to be informed of how it can be used successfully. The results of the survey and interviews in this study validated Henry's statement that the mere presence of a computer or related technology is not a guarantee that it will be used successfully (Henry, 1993).

Other studies have shown that positive attitudes are important for the successful implementation of any new program, as suggested in Chapter Two (Pina, A.A., & Harris, B.R. 1993; Johnson, M.J., & Vaughan, S., 1992). This study has revealed positive perceptions towards Internet implementation despite teacher frustration in learning and using these new technologies. If effective training is provided for art and Internet integration, art teachers seem willing to use Internet in the classroom to enhance student learning.

### **Limitations**

This study was limited to the art teachers in Nebraska, consequently, generalizations to other teachers in other states may be limited due to Nebraska's unique approach to Internet integration. Nebraska had in place a comprehensive state plan and process for technology and integration in K-12 schools and was already a national leader in K-12 Internet integration.

### **Recommendations for Further Research**

Based on this study, several recommendations are made related to future research. In particular, the research design should be modified and used as a longitudinal study. This study was conducted as a one time study. Other studies have shown that it often takes three or more years for teachers to make a substantial change in teaching (Hord & Huling-Autin, 1987). Therefore, it is recommended that this study be conducted as a longitudinal research project.

With the availability and increasing usefulness of Internet technology, art education itself also has the potential for significant changes. Some of these changes appear to be already underway. They are being met with enthusiasm from some teachers and resistance from others. The result of these changes may be the creation of a new medium that makes possible new methods of teaching and learning and new paradigms for developing knowledge. Those who have positive attitudes towards innovative use of

technology in art education are the most likely to be pioneers of Internet technology. Therefore, it is imperative that we continue to assess and research the attitudes of teachers for successful implementation of these new technologies.

This study should also be replicated using other disciplines in k-12 education. We are in the process of rapid technological advances in our society, and it is critical to understand what is happening to people as they interact with technology in order to make a successful transition. This should not be a one-time study but rather will require an on-going effort of many different disciplines. We need to focus on the perceptions of Internet technology, as well as the barriers to successful usage in k-12 classrooms. Other disciplines, such as math, science, language arts, social studies, music, physical education, and should also assess teachers perceptions and usage of Internet technology for effective implementation across the curriculum. This is particularly important given the continual emphasis on multi-disciplinary lessons in all classrooms.

This study was actually conducted on the "frontier" of this new technology. Many schools in Nebraska were in the process of getting wired for the Internet. Teachers had little or no training on using the Internet. However, some organizations, such as Prairie Visions, which is the National Center for Leadership and Collaborative Practice in Discipline-Based Art Education (DBAE), offer Internet training and curriculum development for classroom teachers and art specialists. Such training focuses on DBAE curriculum and professional development as well as Internet integration into the arts. Participants are part of a growing electronic network designed to



provide assistance and support to school districts and individual teachers as they implement DBAE. The network is maintained through regional professional development activities planned by participants, annual video-conferences, and on-site technical assistance. Participants network electronically with peers and mentors through ARTnet, an Internet program that functions as a listserv and world wide web site. A similar study which compares perceptions and usage of Nebraska art teachers to past participants of Prairie Visions Institute, would be beneficial in making comparisons at different levels of training, and produce insights for planning effective training and support for teachers as they implement this new technology.

It would appear that further research related to art teachers' perceptions and usage would be an important component to continual advancements in the art discipline. The Internet may well break down the walls of the art classroom, bringing technology based resources to all students, and providing the potential for continuous communication between the students of art in all nations.

## BIBLIOGRAPHY

- Bannon, S.H., Fluegal, S., and Marshall, J.C., (1985). Cognitive and affective computer attitude scales: A validity study. Educational and Psychological Measurement, pp. 679-681.
- Arts Endowment (1994). *Art and technology: Making the transition*. Arts Endowment panel discussion [On-line]. Available Gopher. [gopher.tmn.com:70/1/Artswire/Govarts/NEA](http://gopher.tmn.com:70/1/Artswire/Govarts/NEA)
- Davies, K.J. (1995). From dreams to reality - Implementing a computer plan. Learning and Leading With Technology, 2(2), 54-55.
- Ettinger, L.F. (1988). Art education and computing: building a perspective. Studies in Art Education, 30(1), 53-62.
- Henry, M.J. (1993). Profile of a Technology Using Teacher. Paper presented at the annual convention of the Eastern Education Research Association, Clearwater Beach, Florida.
- Hord, S.M. & Huling-Austin, L. (1987). Effective curriculum implementation: some promising new insights. The Elementary School Journal, 87(1), 97-115.
- Hubbard, G. (1989). Art and technology: potential for The future. NASSP Bulletin, 73(519), 30-34.
- Johnson, M.J., Vaughan, S. (1992, April 20-24). Empowering teachers through technology: Developing the rural school of the 21st century. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, (ED347039).
- Keens, W. (1991). Future tense/future perfect. Art Education, 44(5), 22-24.
- Kell, D., Harvey, G. , & Drexler, N. G. (1990, April). Educational technology and the restructuring movement: Lessons from research on computers in classrooms. Paper presented at the annual meeting of the American Education Research Association, Boston, MA. ED326195.
- Koroscik, J.S. (1992). A comparative framework for designing visual art curricula. Arts Education Policy Review, 94(1), 17-22.

- McMahon, T.A. & Duffy, T.M. (1993, January). Computers extending the learning environment: Connecting home and school. Proceedings of selected research and development Presentations at the convention of the Association for Educational Communications and Technology Sponsored by the Research and Theory Division. ED362187.
- NAEA News. (1994). National visual arts standards presented to the U.S. Secretary of Education. 36(3), 2-13.
- NAEA Update. (1990) NAEA national registry: computers in the art program. Survey.
- National Institute of Standards and Technology. Putting the information infrastructure to work: Report of the Information Infrastructure Task Force Committee on Applications and Technology. Washington, D.C.: U.S. Department of Commerce, 1994.
- Nebraska Department of Education (1993). NEnet: The Implementation of LB452. In the Nebraska Department of Education Newsletter: The Circuit, Nebraska Department of Education, P.O. Box 94987, 301 Centennial Mall South, Lincoln, Nebraska, 68509.
- O'Connell, K. (1994 May). E-mail and art education. School Arts. 10-11.
- Pina, A.A., & Harris, B.R. (1993, April). Reducing Preservice Teachers' Computer Anxiety. Paper presented at the annual conference of the Arizona Educational Media Association, Phoenix, AZ.
- Pina, A.A., & Harris, B.R. (1993, November). Increasing Teachers' Confidence in Using Computers for Education. Paper presented at the annual conference of the Arizona Educational Research Organization, Tucson, AZ. ED 365648.
- Ross, R., (1994). Virtual Arts Communities. Art, Culture, and Technology in the 21st Century: And the NII. [On-line]. Available gopher. gopher.tmn.com:70/1/Artswire/Govarts/NEA
- Scott, T. (1992). Computer-mediated art education: extending the paradigm of computer art. Arts Education Policy Review, 94(1), 27-33.

- Sheingold, K. & Hadley, M. (1990). *Accomplished teachers: Integrating computers into classroom practice*. New York: Bank Street College of Education.
- Stevens, D.J. (1982). Educators' perceptions of computers in education: 1979 and 1981. *AEDS Journal*.
- Swartz, D. (1994) The Internet: pushing the envelope of current knowledge. *Information Searcher*. 4(4),15 - 17.
- Tomaszkiewicz, F. (1988). Holography in the junior high. *Art Education*, 41(5),20-24.
- Topp, N.; Grandgenett, N.; Mortenson, R.; Ostler, E.; Lown N., Heise, D.; Luke, N. 1995. Nebraska K-12 Internet Evaluation Progress Report - 18 months, July 30, 1995.

**APPENDIX A**

Survey: Internet in the Art Classroom Survey



University of  
Nebraska at  
Omaha

51

Teacher Education Department  
Omaha, Nebraska 68182-0163  
(402) 554-3666

March 10, 1995

Dear colleague,

I am an art teacher working on a thesis at the University of Nebraska at Omaha related to the current perceptions and usage of the Internet by art teachers. I am working with the Office of Internet Studies at UNO. The purpose of my survey is to gather usage and attitudinal information regarding the Internet, so as to better understand the needs of new users, and to assist in the more effective use of the Internet system in art education.

All data collected in this survey will be kept in the strictest confidence. No individual will be reported in any report, and only group information will be analyzed and described. Individuals have the full right to participate or not participate in the survey as desired, without any repercussions of any kind for this decision.

Your response is very important to the completion of my thesis and for a better understanding of Internet use in art education. Completing the survey should require no more than 10 minutes. I very much appreciate your completing and returning the survey by **March 24** in the enclosed, postage-paid envelope.

**If you mail the survey by Friday, March 24, you will also receive an unabridged copy of my Guide to Visual Art Resources on the Internet, which provides a list of useful sites related to art education.**

Thank you!

Donalyn Heise, Graduate Assistant  
dheise@unomaha.edu  
University of Nebraska-Omaha

## Internet in the Art Classroom Survey

**Purpose:** The purpose of this survey is to gather usage and perceptions information regarding Internet technology from art teachers in the state of Nebraska. This will help educators better understand the needs of new users, and to assist in the more effective use of the Internet system in education.

**Anonymous and Voluntary Participation:** All data collected in this survey will be kept in the strictest confidence. No individual data will be reported in any report, and only group information will be analyzed and described. Individuals have the full right to participate or not participate in the survey as desired, without any repercussions of any kind for this decision.

### I. Background & Teaching Information: Circle the most accurate response

1. What is your age? a. under 30    b. 30-39    c. 40-49    d. 50-59    e. 60 or over
2. How many years have you taught school?  
a. 1-5 yrs    b. 6-10 yrs    c. 11-15 yrs    d. 16-20 yrs    e. >20 yrs
3. What is your degree status at this time?  
a. BA/BS    b. BA/BS+15    c. masters    d. masters +15    e. doctorate
4. What grade level are you presently teaching?  
a. preK-3    b. 4-6    c. 7-8    d. 9-12    e. K-12
5. Do you have a technology coordinator?  
a. yes    b. no
6. What is your gender?  
a. female    b. male
7. Do you have access to the Internet within your classroom?  
a. yes    b. no
8. Do you have access to the Internet within your school?  
a. yes    b. no
9. What is your level of Internet training:    a. no training    b. basic ESU training    c. additional training
10. Do you teach using a Discipline Based Art Education Approach?    **a.yes**    **b.no**
11. Circle the most accurate statement:  
a. I have never heard of the Internet.  
b. I have heard of the Internet, but don't use it.  
c. I use the Internet occasionally.  
d. I use the Internet often.

### II. Perceptions of Computer-Related Technologies

To what extent do each of the following statements characterize your attitudes toward computers and computer-related technologies in the art classroom? Using the categories below, please circle the letter which indicates the extent you agree or disagree with each statement.

SD	D	U	A	SA
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

#### **Perceptions of Computers and the Art Discipline**

- |  |    |   |   |   |    |
|--|----|---|---|---|----|
| 12. Computers are very important in art education                  | SD | D | U | A | SA |
| 13. Computers are useful for teaching art skills                   | SD | D | U | A | SA |
| 14. I do not feel comfortable using computer-related technologies  | SD | D | U | A | SA |
| 15. Compared to other teachers, I am quite skilled in computer use | SD | D | U | A | SA |
| 16. Art teachers do not need to know how to use a computer         | SD | D | U | A | SA |

(number used to send Guide to Visual Art Resources on Internet #\_\_\_\_\_)

**Perceptions of the Internet**

17. Internet technology is useful for teaching art related skills SD D U A SA
18. I think art teachers have very little need for the Internet SD D U A SA
19. I am knowledgeable about the Internet SD D U A SA
20. I am knowledgeable about how to use the Internet in the art classroom. SD D U A SA

**III. Usage of Internet Related Technologies**

To what extent do you use Internet related technology in your art classroom? Please refer to the categories below, and **circle** the response that represents how often you use these technologies in your classroom.

<1 less than one time per month	1 - 3 One to three times per month	4 - 8 Four to eight times per month	> 8 More than eight times per month
---------------------------------------	--	---	---

**How often do you use the following with your students?**

	<1	1-3	4-8	>8
21. Computers in general	<1	1 - 3	4 - 8	>8
22. Electronic mail	<1	1 - 3	4 - 8	>8
23. Ftp (File transfer via Internet)	<1	1 - 3	4 - 8	>8
24. Gopher	<1	1 - 3	4 - 8	>8
25. Telnet	<1	1 - 3	4 - 8	>8
26. World Wide Web	<1	1 - 3	4 - 8	>8

27. Do you feel that the Internet is an effective instructional tool? **yes** **no**  
Why or why not?

28. What barriers are confronting you regarding Internet use in your art classroom?

If you have any questions or comments regarding this survey, please feel free to e-mail me at: [dheise@unomaha.edu](mailto:dheise@unomaha.edu)

**Thank you for your input!**

PLEASE RETURN By 3-24-95 to: Donalyn Heise, University of Nebraska-Omaha,  
KH 208, Omaha Nebraska, 68182-0163  
phone: (402) 554-3679



**APPENDIX B**

Nebraska K12 Internet Evaluation Telecomputing Survey

# Telecomputing Survey

**Purpose:** The Internet telecomputing network has an exciting potential for use in the K-12 classroom, and may well be one of the most innovative new technology tools of the information age. Yet very little is known about how to most effectively help teachers to learn to access the full potential of this powerful new tool. The purpose of this survey is to gather some general demographic and attitudinal information from teachers beginning training on this system, so as to better understand the needs of new users, and to assist in the more effective use of the Internet system in education.

**Anonymous and Voluntary Participation:** All data collected by this survey will be kept in the strictest confidence. No individual data will be reported in any report, and only group information will be analyzed and described. Individuals have the full right to participate or not participate in the survey as desired, without any repercussions of any kind for this decision.

**User Id:** \_\_\_\_\_

The Internet User Id is requested for purposes of examining long range Internet usage patterns, and will be assigned an intermediate identification number for purposes of anonymity.

*Survey coordinated by:*

*Neal Topp, UNO*

*Neal Grandgenett, UNO*

*Bill Menuousek, ESU#3*

## Background and Teaching Information

Some information about your background is necessary for this research. Please answer the following seven questions on the lines provided on this page of the survey booklet.

What is your age? \_\_\_\_\_

How many years have you taught school? \_\_\_\_\_

Approximately how many students are in your school district? \_\_\_\_\_

What area are you assigned?

\_\_\_\_\_ Administration

\_\_\_\_\_ Language Arts

\_\_\_\_\_ Foreign Language

\_\_\_\_\_ Industrial Technology

\_\_\_\_\_ Math

\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Media Specialist

\_\_\_\_\_ Music

\_\_\_\_\_ Physical Education

\_\_\_\_\_ Science

\_\_\_\_\_ Social Studies

What grade level(s) are you assigned? \_\_\_\_\_

How do you plan to use the Internet for yourself? \_\_\_\_\_

How do you plan to use the Internet for students? \_\_\_\_\_

For the remainder of the survey, please use the bubble sheet and a #2 pencil.  
First, please complete the name portion of the bubble sheet.

Fill in the corresponding bubble on your answer sheet to the letter which best answers each item.

1. What is your gender?
  - A. Female
  - B. Male
2. What is the highest degree you have earned?
  - A. Bachelors
  - B. Masters
  - C. Doctorate
3. How often do you use cooperative learning groups in your classroom?
  - A. Less than one time per month
  - B. One to three times per month
  - C. Three to eight times per month
  - D. More than eight times per month
  - E. This question is not applicable
4. How often do you have students develop projects?
  - A. Less than one time per month
  - B. One to three times per month
  - C. Three to eight times per month
  - D. More than eight times per month
  - E. This question is not applicable
5. How often do you lecture or demonstrate to your students?
  - A. Less than one time per month
  - B. One to three times per month
  - C. Three to eight times per month
  - D. More than eight times per month
  - E. This question is not applicable
6. How often do you have students use the computer in class or for class assignments?
  - A. Less than one time per month
  - B. One to three times per month
  - C. Three to eight times per month
  - D. More than eight times per month
  - E. This question is not applicable
7. How often do you have students research (on their own) a topic?
  - A. Less than one time per month
  - B. One to three times per month
  - C. Three to eight times per month
  - D. More than eight times per month
  - E. This question is not applicable

8. Do you have a computer at home?
  - A. Yes -> go to question #8
  - B. No -> go to question #10
  
9. What kind of computer do you have at home?
  - A. Apple II+, IIe, IIGS, or IIc
  - B. Apple Macintosh
  - C. DOS (IBM type)
  - D. Other
  
10. Do you have a modem at home?
  - A. Yes
  - B. No
  
11. Do you have a computer readily available at school?
  - A. Yes -> go to question #11
  - B. No -> go to question #13
  
12. What kind of computer do you have available at school?
  - A. Apple II+, IIe, IIGS, or IIc
  - B. Apple Macintosh
  - C. DOS (IBM type)
  - D. Other
  
13. Do you have a modem readily available at school?
  - A. Yes
  - B. No
  
14. How fast can you type?
  - A. Very Slowly (Less than 10 words per minute)
  - B. Slowly (10-20 words per minute)
  - C. Moderately (20-30 words per minute)
  - D. Rapidly (30-40 words per minute)
  - E. Very Rapidly (Over 40 words per minute)

## Your Proficiency in Using Computer-Related Technologies

We would like you to rate your current **proficiency** in using the following computer-related technologies. Using the following scale, please mark the bubble on the answer sheet that best describes your proficiency in using each item.

- |   |
|---|
| <b>A. Unfamiliar - do not know what this item is</b>                  |
| <b>B Low - little or no skill</b>                                     |
| <b>C. Medium - some proficiency, could use some advanced training</b> |
| <b>D. High - very proficient, use regularly</b>                       |

### -- Computer Based Instruction

	<u>Unfamiliar</u>	<u>Low</u>	<u>Med</u>	<u>High</u>
15. Drill and practice .....	A	B	C	D
16. Tutorials .....	A	B	C	D
17. Educational games .....	A	B	C	D
18. Problem solving / Higher order thinking .....	A	B	C	D
19. Simulations .....	A	B	C	D

### -- Computer Tool Software

20. Word processing .....	A	B	C	D
21. Writing utilities (spell checkers, thesaurus etc.) .....	A	B	C	D
22. Databases .....	A	B	C	D
23. Spreadsheets .....	A	B	C	D
24. Desktop publishing .....	A	B	C	D
25. Graphics/drawing programs .....	A	B	C	D

### -- Other

26. Telecommunications/Distance Learning .....	A	B	C	D
27. Programming .....	A	B	C	D
28. Hypermedia (e.g., Hypercard, Hyperstudio, Linkway, Amiga Vision) .....	A	B	C	D
29. CD ROM .....	A	B	C	D
30. Video Disc .....	A	B	C	D

## Attitudes Toward Computer-Related Technologies

To what extent do each of the following statements characterize your **attitudes** toward computers and computer-related technologies? Using the categories below, please mark the bubble on the answer sheet which indicates the extent to which you agree or disagree with each statement.

	A	B	C	D	E
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

		SD	D	U	A	SA
31.	I think that computers will make my professional work more difficult.....	A	B	C	D	E
32.	I am comfortable in using computer-related technologies for my own work.....	A	B	C	D	E
33.	I think computers make work more enjoyable.....	A	B	C	D	E
34.	It is a struggle for me to learn how to use a computer successfully.....	A	B	C	D	E
35.	Teachers do not need to know how to use a computer.....	A	B	C	D	E
36.	Computer-related technologies are an important part of the future for improving the quality of education.....	A	B	C	D	E
37.	I lack confidence in using a computer to complete my work.....	A	B	C	D	E
38.	I would like to improve my skills in the use of computer-related technologies.....	A	B	C	D	E
39.	I don't feel threatened by computers.....	A	B	C	D	E
40.	The computer is useful for accessing and organizing information.....	A	B	C	D	E
41.	Word processing makes writing more difficult.....	A	B	C	D	E
42.	Computers are valuable tools that can be used to improve the quality of education.....	A	B	C	D	E
43.	Computer-related technologies should be used to improve learning throughout the curriculum.....	A	B	C	D	E
44.	Computers are useful for teaching thinking and problem solving skills.....	A	B	C	D	E
45.	Computer-related technologies should be used by teachers more than they are now.....	A	B	C	D	E
46.	I do not feel comfortable using computer-related technologies.....	A	B	C	D	E

**Attitudes Toward Computer-Related Technologies (continued)**

	A Strongly Disagree	B Disagree	C Uncertain	D Agree	E Strongly Agree			
				<u>SD</u>	<u>D</u>	<u>U</u>	<u>A</u>	<u>SA</u>
47. Computer-related technologies are unnecessary luxuries in most school settings.....	A	B	C	D	E			
48. Computers are of little value in education because they can be used to teach only one or two subjects.....	A	B	C	D	E			
49. Overall, I think the computer is a very important tool for instruction in the classroom.....	A	B	C	D	E			
50. Computer-related technologies are of little value in the classroom because they are too difficult to use.....	A	B	C	D	E			
51. I would like to use computer-related technologies in my future profession.....	A	B	C	D	E			
52. Compared to my peers, I am quite skilled in computer use.....	A	B	C	D	E			

**Attitudes Toward Writing**

Below are a series of statements about writing. There are no right or wrong answers to these statements. Please mark the bubble on the answer sheet which indicates the extent to which you agree or disagree with each statement.

	A Strongly Disagree	B Disagree	C Undecided	D Agree	E Strongly Agree			
				<u>SD</u>	<u>D</u>	<u>U</u>	<u>A</u>	<u>SA</u>
53. I avoid writing.....	A	B	C	D	E			
54. I have no fear of my writing being evaluated.....	A	B	C	D	E			
55. I look forward to writing down my ideas.....	A	B	C	D	E			
56. I am afraid of writing essays when I know they will be evaluated.....	A	B	C	D	E			
57. Taking a composition course is a very frightening experience.....	A	B	C	D	E			
58. Handing in a composition makes me feel good.....	A	B	C	D	E			
59. My mind seems to go blank when I start to work on a composition.....	A	B	C	D	E			

Attitudes Toward Writing (continued)

	A Strongly Disagree	B Disagree	C Undecided	D Agree	E Strongly Agree			
				<u>SD</u>	<u>D</u>	<u>U</u>	<u>A</u>	<u>SA</u>
60.	Expressing ideas through writing seems to be a waste of time.....	A	B	C	D	E		
61.	I would enjoy submitting my writing to magazines for evaluation and publication.....	A	B	C	D	E		
62.	I like to write my ideas down.....	A	B	C	D	E		
63.	I feel confident in my ability to clearly express my ideas in writing.	A	B	C	D	E		
64.	I like to have friends read what I have written. ....	A	B	C	D	E		
65.	I'm nervous about writing.....	A	B	C	D	E		
66.	People seem to enjoy what I write.....	A	B	C	D	E		
67.	I enjoy writing.....	A	B	C	D	E		
68.	I never seem to be able to clearly write down my ideas.....	A	B	C	D	E		
69.	Writing is a lot of fun.....	A	B	C	D	E		
70.	I expect to do poorly in composition classes even before I enter them.....	A	B	C	D	E		
71.	I like seeing my thoughts on paper.....	A	B	C	D	E		
72.	Discussing my writing with other people is an enjoyable experience.....	A	B	C	D	E		
73.	I have a terrible time organizing my ideas in a composition course.....	A	B	C	D	E		
74.	When I hand in a composition I know that I'm going to do poorly..	A	B	C	D	E		
75.	It's easy for me to write good compositions.....	A	B	C	D	E		
76.	I don't think I write as well as most other people.....	A	B	C	D	E		
77.	I don't like my compositions to be evaluated.....	A	B	C	D	E		
78.	I'm no good at writing.....	A	B	C	D	E		

Thank you very much for your input!!



**APPENDIX C**

NAEA National Registry Computer in the Art Room Survey

**NAEA NATIONAL REGISTRY  
COMPUTERS IN THE ART PROGRAM**

63

Name \_\_\_\_\_ Title \_\_\_\_\_

School \_\_\_\_\_ Grade Levels \_\_\_\_\_

Address \_\_\_\_\_ State, Zip \_\_\_\_\_

Do you have a computer lab, access to one? \_\_\_\_\_ Do you have computers in your art classroom?

\_\_\_\_\_ Number \_\_\_\_\_ What type of computers do you use? \_\_\_\_\_

Please give a brief description of your lab or workstation setup. \_\_\_\_\_

List the number and types of peripherals you interface with your computers and the purpose they serve.

What software do you use? \_\_\_\_\_

Please give a description of your program or courses in which the computers are utilized. Include the number of students enrolled \_\_\_\_\_

What prerequisites, if any, do you require before taking a computer art course? \_\_\_\_\_

Do you use a computer art curriculum, or have you created your own? \_\_\_\_\_

If you use one, please identify the source (including author, title, publisher, etc.) \_\_\_\_\_

If you have created a computer art curriculum, would you be willing to share information with others?

\_\_\_\_\_ How would others get in contact with you for copies? \_\_\_\_\_

PLEASE RETURN BY APRIL 30, 1990 TO:

PHONE: (404)765-8242 (Work)  
(404) 948-8209 (Home)

PAULETTE ZELLER  
COMPUTER ART REGISTRY COORDINATOR  
WOODWARD ACADEMY LOWER SCHOOL  
1662 RUGBY AVENUE, BOX 87190  
COLLEGE PARK, GA 30337

**APPENDIX D**

Telephone Interview Forms

## Interview questionnaire

Hello, My name is Donalyn Heise I am an art teacher working on a thesis at the University of Nebraska at Omaha related to the current perceptions and usage of the Internet by art teachers. I would greatly appreciate it if you could spare a few moments to answer some questions about your Internet activity.

1. What materials are used in your art classes?
  
2. What methods are used in your art classes?
  
3. What types of technology do you use in your classroom?
  
4. Are you familiar with the Internet?
  
5. Do you use the Internet? Why or Why not?
  
- (If yes, then proceed)**
6. How do you use the Internet?
  
7. What are the positive aspects of Internet usage in the classroom?
  
8. What are the negative aspects?
  
9. What would you recommend to other teachers who are considering the use of Internet activities in the classroom?

**Thank you for your input!**

**APPENDIX E**

IRB Approval Forms



University  
of Nebraska

Institutional Review Board  
For the Protection of  
Human Subjects

University of Nebraska Medical Center  
Eppley Science Hall 3018  
600 South 42nd Street  
Box 986810  
Omaha, NE 68198-6810  
(402) 559-6463  
Fax (402) 559-7845

March 6, 1995

Donalyn Heise  
Teacher Education  
UNO

IRB # 075-95-EX

TITLE OF PROTOCOL: An Investigation of Nebraska Art Teachers' Perceptions and Usage of Internet Technology

Dear Ms. Heise:

The IRB has reviewed your Exemption Form for the above-titled research project. According to the information provided, this project is exempt under 45 CFR 46:101b, category 2. You are therefore authorized to begin the research.

It is understood this project will be conducted in full accordance with all applicable sections of the IRB Guidelines. It is also understood that the IRB will be immediately notified of any proposed changes that may affect the exempt status of your research project.

Sincerely,

A handwritten signature in cursive script that reads "Ernest D. Prentice".

Ernest D. Prentice, PhD  
Vice Chairman, IRB

EDP:jljg



University of  
Nebraska at  
Omaha

68

Teacher Education Department  
Omaha, Nebraska 68182-0163  
(402) 554-3666

March 10, 1995

Dr. Ernest Prentice  
Institutional Review Board  
Eppley Science Hall 3018  
University of Nebraska Medical Center  
Omaha, Nebraska 68198-6810

Dr. Dr. Prentice,

I am a graduate student in the Department of Teacher Education at the University of Nebraska at Omaha, and will be conducting a survey research study involving human subjects as part of my graduate program within the Department of Teacher Education. Included with this letter is my request for IRB review and my related research prospectus. I have also included your standard exemption form since I believe that the study qualifies for your "exempt" status in accordance with the 45CFR 46:101(b) categories and guidelines.

I can be contacted at 554-3679 during the hours of 10:00 a.m. till 3:00 p.m., or at my home number of 895-7118 during other times. I am also working with Dr. Grandgenett (554-2690) at the University of Nebraska at Omaha, who also would be happy to answer any questions.

Thank-you for your consideration of my request, and I look forward to hearing from you.

Sincerely,

A handwritten signature in cursive script that reads "Donalyn Heise".

Donalyn Heise  
5086 S. 160th Cir  
Omaha Nebraska 68135-1016



EXEMPTION FORM

SECTION 1: APPLICATION DATA

TITLE OF RESEARCH PROPOSAL: An Investigation Of Nebraska Art Teachers' Perceptions and Usage of Internet Technology

STARTING DATE: March 10, 1995

PRINCIPAL INVESTIGATOR: Donalyn Heise

SECONDARY INVESTIGATOR(S): Dr. Neal Grandgenett

DEPARTMENT/COLLEGE: Teacher Education/College of Education

ADDRESS: 5086 South 160th Circle, Omaha, NE ZIP CODE: 68135

TELEPHONE: Home: (402) 895-7118 Work: (402) 554-3679

SECTION 2: CERTIFICATION

CERTIFICATION OF PRINCIPAL INVESTIGATOR: Signature certifies that the research project as described will be conducted in full compliance with University of Nebraska Regulations governing human subject research as stated in the IRB Guidelines for the Protection of Human Subjects. It is understood that the IRB will be notified of any proposed changes which may affect the exempt status of the research.

Signature of Principal Investigator (Handwritten signature of Donalyn Heise)

Date: 2/22/95

Graduate Assistant, UNO College of Education Position

ADVISOR APPROVAL: Student investigators are required to obtain approval from their advisor. Signature of approval certifies the research proposal has been approved and recommended for submission to the IRB.

Signature of Advisor (Handwritten signature of Dr. Neal Grandgenett)

Date: 2/22/95

Dr. Neal Grandgenett Printed Name of Advisor

The IRB requires submission of an original and one (1) copy of the Exemption Form.



### SECTION 3: REVIEW INFORMATION

In order to determine whether your proposal qualifies for exempt status under 45 CFR 46:101(b), the IRB requests submission of the following information. Each subpart must be titled as described below and addressed in the listed sequence. 70

- I. **PURPOSE OF THE STUDY.** State concisely and realistically what the research in this proposal is intended to accomplish.
- II. **CHARACTERISTICS OF THE SUBJECT POPULATION.** Address the following questions in sequence using the listed subheadings.
  - a. **AGE RANGE.** What is the age range of the subjects?
  - b. **SEX.** What is the sex of the subjects?
  - c. **NUMBER.** What is the anticipated number of subjects?
  - d. **SELECTION CRITERIA.** What are the subject selection criteria?
- III. **METHOD OF SUBJECT SELECTION.** Describe the method(s) to be employed in the identification/recruitment of prospective subjects.
- IV. **STUDY SITE.** State the location(s) where the study will be conducted. Attach letters of approval from any non-University of Nebraska study site.
- V. **DESCRIPTION OF PROCEDURES.** Describe all procedures to be applied to subjects. Attach one copy of all surveys, questionnaires, and educational tests.
- VI. **CONFIDENTIALITY.** Describe how and the extent to which confidentiality of data will be maintained.
- VII. **INFORMED CONSENT.** Some technically exempt research projects ethically require informed consent (written or oral). If, in the investigator's opinion, the study requires informed consent, the method used to obtain informed consent should be described and any written consent forms submitted. If the study does not require consent, it should be so stated and justified.
- VIII. **JUSTIFICATION OF EXEMPTION.** The exempt category (1-6) under which the proposal is submitted should be stated and justified.

### SECTION 4: CATEGORIES OF RESEARCH THAT QUALIFY FOR EXEMPT STATUS

Research activities in which the only involvement of human subjects will be in one or more of the categories specified by Federal Regulations 45 CFR 46:101(b) are exempt from the requirements of 45 CFR 46. Only an Exemption Form must be submitted and approved by the IRB. The exempt categories do not, however, apply to research involving deception of subjects (the researcher deceives the subject with regard to the purpose of the research and/or the results of the subject's actions in the study), sensitive behavioral research, or to research involving pregnant women, prisoners, mentally incompetent people and other subject populations determined to be vulnerable.

#### Exempt Categories:

1. Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as: (i) research on regular or special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.  
Educational research protocols are exempt providing all of the following conditions are met:
  - a. All of the research is conducted in a commonly accepted educational setting (e.g., public school).
  - b. The research involves normal educational practices (e.g., comparison of instructional techniques).
  - c. The study procedures do not represent a significant deviation in time or effort requirements from those educational practices already existent at the study site.
  - d. The study procedures involve no increase in the level of risk or discomfort attendant normal, routine educational practices.
  - e. The study procedures do not involve sensitive subjects (e.g., sex education).
  - f. Provisions are made to ensure the existence of a non-coercive environment for those students who choose not to participate.
  - g. The school or other institution grants written approval for the research to be conducted.

**NOTE:** When an educational research project meets all of the above-listed conditions the IRB does not require parental consent. The investigator and/or the school system may, however, decide that parental consent should be obtained. Verbal child assent should be obtained. Educational projects that do not meet the above-listed conditions are not exempt and must be reviewed by either the expedited or full Board method.
2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

personal aspects of the subject's behavior, life experiences or attitudes. Examples include chemical substance abuse, sexual activity or attitudes, sexual abuse, criminal behavior, sensitive demographic data, detailed health history, etc. The principal determination of sensitivity is whether or not the survey research presents a potential risk to the subject in terms of possible precipitation of a negative emotional reaction. An additional risk consideration is, of course, whether or not there is risk associated with a breach of confidentiality should one occur. With respect to potential psychological risk associated with a survey, the presence or absence of subject identifiers is not necessarily a consideration since the risk may be primarily associated with the sensitive nature of the survey as opposed to being dependent upon confidentiality. Subject identifiers do, however, become a factor when confidentiality is an issue.

**NOTE:** When children are involved as subjects in research using survey or interview procedures, the research is not exempt.

**NOTE:** When children are involved as subjects in research using observation techniques, the research is not exempt if the investigator participates in the activities being observed.

**NOTE:** Observation research involving sensitive aspects of a subject's behavior is not exempt.

3. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph 2 of this section, if: (i) the human subjects are elected or appointed public officials or candidates for public office; or (ii) federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.
4. Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.
5. Research and demonstration projects which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (i) public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs.
6. Taste and food quality evaluation and consumer acceptance studies: (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

Institutional Review Board  
EXEMPTION FORM

## Review Information

### I. Purpose of the Study

The purpose of this study is to determine art teachers perceptions and usage of the Internet in the state of Nebraska.

### II. Characteristics of the Subject Population

- a. Age Range: The participants will all be Nebraska licensed teachers over 21 years of age.
- b. Sex: Both male and female teachers will be asked to participate in the study.
- c. Number: approximately 670 surveys will be sent, with an expectation of 20 follow up interviews.
- d. Selection Criteria: Certified art teachers in the state of Nebraska will be asked to voluntarily complete a questionnaire. Another 20 teachers will be asked to be interviewed related to follow up usage and perceptions related questions.

### III. Method of Subject Selection

An anonymous survey (attached) will be mailed to certified art teachers in the state of Nebraska. A letter (also attached) will outline the purpose and ask participants to respond. The participants will voluntarily complete the survey and return it to the researcher.

### IV. Study Site

This study will be conducted from the University of Nebraska at Omaha.

### V. Description of Procedures

The results for the survey will be summarized using descriptive statistics for closed questions, and by grouping responses

for open ended question. Interviews will be structural and collected in a transcript form within a word processor.

## VI. Confidentiality

Individual names and schools will not be provided on the survey. Only group information will be analyzed and reported. All information will be kept strictly anonymous and confidential by the investigator.

## VII. Informed Consent

This study meets informed consent through the use of the survey cover letter describing the study and its voluntary participation.

## VIII. Justification of Exemption

- a. The research is conducted in a commonly accepted educational setting, that of the regular art classroom through surveying art teachers.
- b. The research involves normal educational practices (survey to investigate art teachers attitudes on Internet technology)
- c. The study procedures do not represent a significant deviation in time or effort requirements from those educational practices already existent at the study site, the survey is structured to be 10 minute duration and interviews of 20 minute duration. Participation in on voluntary basis.
- d. The study procedures involve no increase in the level of risk or discomfort attendant normal, routine educational practices. The teachers may complete the survey at a time that is convenient for them.
- e. The study procedures do not involve sensitive subjects. This study examines art teachers use and perceptions related to the Internet.
- f. Students do not participate in this survey. Only the teachers are asked to participate.

- g. The Nebraska Department of Education has given its approval to contact art teachers in the state and has also supplied the mailing labels to help facilitate this contact.**

**APPENDIX F**

Raw Survey Data

**Internet in the Art Classroom Survey**

**Purpose:** The purpose of this survey is to gather usage and perceptions information regarding Internet technology from art teachers in the state of Nebraska, so as to better understand the needs of new users, and to assist in the more effective use of the Internet system in education.

**Anonymous and Voluntary Participation:** All data collected in this survey will be kept in the strictest confidence. No individual will be reported in any report, and only group information will be analyzed and described. Individuals have the full right to participate or not participate in the survey as desired, without any repercussions of any kind for this decision.

**Background and Teaching Information:**

1. **What is your age?**  
 a. under 30 (6.85%)    b. 30-39 (26%)    c. 40-49 (49%)    d. 50-59 (17%)    e. 60 or over (1%)
2. **How many years have you taught school?**  
 a. 1-5 yrs (13%)    b. 6-10 yrs (14%)    c. 11-15 yrs (28%)    d. 16-20 yrs (3%)    e. >20 yrs (1%)
3. **What is your degree status at this time?**  
 a. BA/BS (18.9%)    b. BA/BS+15 (43%)    c. masters (25%)    d. masters - 15 (12%)    e. doctorate (7%)
4. **What grade level are you presently teaching?**  
 a. preK-3(%)    b. 4-6(%)    c. 7-8(%)    d. 9-12 (%)    E. K-12(%)
5. **Do you have a technology coordinator?**  
 a. yes (61%)    b. no (39%)
6. **What is your gender?**  
 a. female (71%)    b. male (29%)
7. **Do you have access to the Internet within your classroom?**    a. yes (13%)    b. no (87%)
8. **Do you have access to the Internet within your school?**    a. yes (75%)    b. no (25%)
9. **Describe your Internet training:**    a. no training (57%)    b. basic ESU training (37%)  
 c. other (5%)
10. **Do you teach using a Discipline Based Art Education Approach?**    yes (72%)    no (24%)  
 sometimes (4%)
11. **Circle the most accurate statement:**  
 a. I have never heard of the Internet. (2%)  
 b. I have heard of the Internet, but don't use it. (64%)  
 c. I use the Internet occasionally. (26%)  
 d. I use the Internet often. (4%)

**Perceptions of Computer-Related Technologies**

To what extent do each of the following statements characterize your attitudes toward computers and computer-related technologies in the art classroom? Using the categories below, please mark the letter which indicates the extent you agree or disagree with each statement.

<b>SD</b>	<b>D</b>	<b>U</b>	<b>A</b>	<b>SA</b>
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

**Perceptions of Computers and the Art Discipline**

12. Computers are very important in art education    SD    D    U    A    SA  
 (0%)    (5%)    (21%)    (46%)    (27%)

13. Computers are useful for teaching art skills	SD (3%)	D (5%)	U (23%)	A (54%)	SA (18%)
14. I do not feel comfortable using computer-related technologies	SD (21%)	D (33%)	U (13%)	A (24%)	SA (9%)
15. Compared to other teachers, I am quite skilled in computer use	SD (15%)	D (31%)	U (20%)	A (22%)	SA (12%)
16. Art teachers do not need to know how to use a computer	SD (53%)	D (37%)	U (4%)	A (3%)	SA (3%)

### Perceptions of the Internet

17. Internet technology is useful for teaching art related skills	SD (1%)	D (6%)	U (43%)	A (39%)	SA (11%)
18. I think art teachers have very little need for the Internet	SD (23%)	D (45%)	U (30%)	A (3%)	SA (3%)
19. I am knowledgeable about the Internet	SD (13%)	D (37%)	U (14%)	A (31%)	SA (3%)
20. I am knowledgeable about how to use the Internet in the art classroom.	SD (25%)	D (45%)	U (16%)	A (12%)	SA (2%)

The following section focuses on your usage of Internet related technology in your art classroom. Please refer to the categories below, and circle the letter that represents how often you use these technologies in your classroom.

<1 less than one time per month	1 - 3 One to three times per month	4 - 8 Four to eight times per month	>8 More than eight times per month
---------------------------------------	--	---	--

### How often do you use the following with your student?

	<1	1-3	4-8	>8
21. Computers in general	<1 (57%)	1-3 (13%)	4-8 (8%)	>8 (22%)
22. Electronic mail	<1 (89%)	1-3 (5%)	4-8 (1%)	>8 (5%)
23. Ftp (File transfer via Internet)	<1 (94%)	1-3 (5%)	4-8 (1%)	>8 (0%)
24. Gopher	<1 (93%)	1-3 (4%)	4-8 (2%)	>8 (0%)
25. Telnet	<1 (93%)	1-3 (4%)	4-8 (1%)	>8 (2%)
26. World Wide Web	<1 (95%)	1-3 (2%)	4-8 (1%)	>8 (1%)
27. Do you feel that the Internet is an effective instructional tool? Why or why not?			yes (74%) maybe (20%)	no (6%)

28. What barriers are confronting you regarding Internet use in your classroom?



**APPENDIX G**

Survey Data Graphs

