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## Student Perceptions of Distance Learning using WebCT

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## Student Perceptions of Distance Learning using WebCT

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### Abstract

What is the perception of Web-based learning compared to that of learning in a traditional classroom by a group of students who have experienced a Web-based course?

Student Perceptions of Distance Learning using WebCT

This Graduate Research Paper  
Is Presented in Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts  
to the  
Division of School Library Media Studies  
Department of Curriculum & Instruction  
College of Education  
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by  
Nicole M. Weber

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Has been approved as meeting the research paper requirements for the degree of Master of Arts.

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## CHAPTER 1

### Introduction

#### Background

In recent years there has been an expansion in higher education of opportunities for distance learning. Distance education is not a new phenomenon and has been presented through various modes, such as correspondence classes, professors traveling to off-campus sites, courses offered through public broadcast systems, the use of distributed video and audiotape, and more recently through interactive television. With personal computers becoming increasingly popular it was only a matter of time before courses would be offered over the Internet using e-mail and eventually incorporating the World Wide Web.

The formal history of distance learning began in Berlin, Germany in the year 1856 when Charles Toussant and Gustav Langenscheidt created a correspondence school in order to teach languages (Watkins & Wright, 1991, p.2). The history of American distance education, however, did not begin until 1877 when Illinois Wesleyan University began to offer correspondence courses leading to bachelor's, master's, and doctoral degrees to those adults throughout the United States whose financial difficulties or current careers restricted them from attending the campus. In 1906 the program was terminated because of concerns over quality of the education (p.4). During these years many other midwestern Universities began offering distance education programs. One such university was the University of Kansas which believed that correspondence courses could reach a wide audience including those students wishing to complete high school,

college students who could not otherwise attend school on campus, teachers, businessmen, farmers, and anyone seeking more knowledge and education (p.19).

The next major landmark in distance education came between the years of 1910-1920 when instructional technology came into play. It was during this time that motion pictures and lanternslides were beginning to emerge in society and to be used in distance education. It was also during this time there were new hopes of using the radio to transform distance learning. However, because of fierce competition from commercial radio stations and due to low enrollment rates educational radio broadcasting was soon forced out of business (Watkins, & Wright , 1991, p.25-28).

The 1930s and the Great Depression created another need for correspondence learning due to the lowered economic status of the citizens of the nation. It was during this era that recent high school graduates who were unable to afford setting up residence on campus were able to receive their college educations through the mail. It was also during this time that distance educators had the chance “to earn legitimacy and respectability” (Watkins, & Wright, 1991, p.29). Eventually, because of the dramatic decrease in state funding in education (especially in correspondence learning) these programs were forced to become self acting entities or cease to exist (p.29).

The 1940s saw this decline in distance education continued; with low funding and low pay, correspondence programs attracted clerical secretaries as administrators rather than persons with academic training. Doubled with this declining level of leadership was a lack of structure in most courses offered through these programs. In fact some courses lacked any syllabi and were simply a matter of receiving coursework in the mail completing it, sending it back and receiving another assignment (Watkins & Wright,



1991, p.39). It was also during the 1940s that the military became interested in distance education. Lieutenant Colonel William R. Young's research and recommendations that led to the Army institute at Madison Wisconsin officially opening on March 27, 1942 (p.30). "From 1942 until it closed in 1974, USAFI enrolled more than seven million servicemen and -women in thousands of high school courses and was the largest adult education program in the 1950s" (p.30).

Since its establishment The University of Maryland has been offering distance learning opportunities for non-traditional students. Following World War II many returning soldiers who had full time employment enrolled in these courses. In 1949 the University of Maryland responding to the request of the Department of Defense began to offer courses to United States military personnel stationed in Europe. Today there are over 20,000 military personnel in various countries throughout the world taking hundreds of courses through the University of Maryland (Rubin, 1997, p.A55).

In the 1950s distance education gained momentum especially with the advent of implementing television into distance education. It was also during this time that debates about instructional television being a method or a tool for teaching began. Misgivings over the quality of instruction using television also became apparent with emerging studies about its effectiveness on student learning, as well as concerns about the amount of student feedback to students instructional television would allow (Watkins & Wright, 1991, pp. 43-44).

The 1960s and 1970s brought an increase in the cost of education along with the need for informal training as well as discontent with educational institutions. This resulted in an increasing need for distance learning (Watkins & Wright, 1991, pg.45).

While in most American universities correspondence courses were taught in combination with traditional classes it was apparent that there was a need for full fledged distance programs and degrees. In 1971 New York State's Empirical State College became the first United States open university allowing students who were otherwise unable to attend college, to receive courses off campus. Despite concerns over quality and student learning, adult education, and studies in nontraditional learning, another still persistent skepticism about quality was that the level of education of the instructors in distance learning ranged from "marginally qualified clerks to distinguished professors" (Watkins & Wright, 1991, p.50). During this time there were advances in providing support services for distance learners as well as increased attention to providing quality guidelines.

Technological advances were also being made towards the end of this era. "In the late 1970s and early 1980s cable television came into use as a delivery medium for independent study course programming. With an expanded library of high-quality telecourses developed by PBS, the Annenberg/CPC project, and the International University Consortium, to name a few, a number of institutions began using cable television to support their educational programs" (p.59). During the mid 1980s computers were seen as a way to change distance education dramatically through the use of TYMNET phone transmissions, allowing students and instructors to connect to one another's personal computers with hopes of "using computers and electronic bulletin boards to link students and instructors, thereby reducing the time necessary for the flow of lessons in independent studies" (p.60). While this experiment of the 1980s failed

because of software problems and lack of funding it has become a reality of the 1990s through the incorporation of the Internet and World Wide Web.

It was also during the early 1980s that "several [Iowa] community colleges planned and installed separate educational telecommunications networks using a combination of technologies" (Iowa Communication Network [ICN], par. 1,A). Soon the Iowa Legislative Council, driven by the need for more equal access of education by rural Iowans, decided that in order to enhance these programs as well as promoting efficiency it would be wise to connect the statewide communications systems. It was with this idea that the Iowa Communications Network (ICN) was born. In 1991 after "a series of various plans and requests for proposals (RFP), a schedule for Parts I and II of the fiber optics network project was adopted and construction began" (ICN, par.2,A). But it wasn't until 1995 that the final step in completing the ICN system was approved by the Iowa General Assembly (ICN,par.5,A). Today "the ICN is truly a statewide network with more than 3,000 miles of fiber optic cable reaching into all 99 counties, putting every citizen within 15 miles of a video site" (ICN, par. 4,B). A major advantage to the implementation of the ICN is the capability for interaction between students at different sites and the professor.

### Quality Issues

Throughout its history two major factors have influenced the course of distance education. The first has been that of societal needs, and the second has been that of technology. However, there has also been a third overriding apprehension, not only about the quality of education but about the quality of distance education. Quality is not an easily defined term but Robert M. Pirsig states it best when he says, "if you can't say what

Quality is, how do you know what it is, or how do you know that it even exists? If no one knows what it is, then for all practical purposes it doesn't exist at all. But for all practical purposes it really does exist. What else are the grades based on? Why else would people pay fortunes for some things and throw other things in the trash pile? Obviously some things are better than others....but what's the 'betterness'? (Pirsig, 1974, p.184)

Quality in postsecondary education may be as difficult to define. There are however, five distinct yet commonly accepted views about quality in higher education. The first view is that the quality of a program may be viewed by the quality of its faculty. In other words if there is a well educated faculty this will result in well educated students. The second view is that if a quality school it will attract students with high academic backgrounds therefore further enhancing the quality of the school. The third view is that a quality program or school will have a vast amount of resources both physical and financial. The fourth view is that a quality program or school is one that has rigorous academic standards. The final view is that a quality program or school will have a combination and balance of these four criteria. (Haworth,. 1996). In other words in this fifth category results in the definition that “high quality programs are those in which students, faculty, and administrators engage in mutually supportive teaching and learning: students invest in learning, and faculty and administrators invest in learning as well as teaching” (Haworth & Conrad, 1997, p.27). But does this fifth category directly apply to classroom instruction and learners? Again in order for this type of learning and teaching to occur there must be five integrated characteristics of the program: “diverse and engaged participants, participatory cultures, interactive teaching and learning, connected program requirements, and adequate resources” (Haworth & Conrad, 1997, p.28). There

has always been a continual tension in higher education and distance learning over concerns with sacrificing quality for convenience. In any discussions about quality of distance education courses and programs, the inevitable comparison is with instruction in the traditional classroom.

How effective is web based learning compared to the traditional American college classroom? In the traditional classroom there is face to face interaction from teacher to student as well as student to student, instruction may be whole or small group. Many courses offer discussion as a means of learning, here students may ask questions of their professor or peers over concepts learned and may offer some of their own ideas and thoughts. The professor may provide for cooperative group learning allowing students to interact with one another and take advantage of peer learning, as well as using various types of multimedia to enhance the course. Often there are also labs, giving students the opportunity to have hands on experience. The course is usually organized with a syllabus describing course work, due dates of assignments, expectations, and objectives for the class. Assignments are handed directly to the teacher for feedback and grading and then returned. In the traditional classroom class time and placed are prescribed (Relan & Gillani, 1997, pp. 41-42).

### The Web

Many people in both education and business believe that the Internet and Web based learning will help to improve distance education and training. "Because of the interactive, multimedia capabilities of the Internet, and especially the Web, distance learning is gaining popularity with new groups of learners, educators, and trainers. Educational and training materials can be stored on a Web site so

that learners everywhere have access to information at any time. There is also a greater potential for sharing information through the Internet than through other means of transmitting and receiving information” (Porter,1997, p.30).

Today the World Wide Web is expanding the capabilities of distance learning by providing a multitude of new tools. While text may still be the primary medium on the Web, other multimedia may also be used such as sound, graphics and video (Porter, 1997, p.30). Web CT, “a tool that facilitates the creation of sophisticated World Wide Web-based educational environments by non-technical users” (Web CT,1999, par.1), in particular, is promoting these types of learning tools with the capability to add photographs and even videos with sound. But, does multimedia improve distance education?

Students have their own reasons for taking Internet courses, one major factor seems to be that “On-line education makes it possible for students all over the world to study at prestigious U.S. schools without leaving their homes.” (Gubernick, & Ebeling,1997, par. 15). This also holds true for students in rural areas such as farmer and rancher Richard Porter who, “....seeks to become the first farmer to complete Kansas State’s [Kansas State University's] Master in Agribusiness degree program through distance learning” (Reichenberger, 1998, par. 5). Farmers in Iowa can also obtain a Master of Agriculture degree through distance learning opportunities. Iowa State University's extended and continuing education program allows students to obtain this degree through the use of the Iowa Communication Network, while students from both the United States and Canada may obtain their degree by taking courses via videotape, and the World Wide Web (Iowa State University, 1998).

“There is no question that distance learning over the Web is becoming a hot topic” (Shein, 1997, par.4). What sacrifices are we making for convenience? In Shein's 1997 interview with student Gwen Witham, “the convenience of grabbing online instruction on the fly makes up for any concerns about losing the face-to-face interaction of a traditional classroom.” Yet there is evidence that, “when the Internet is used in distance learning courses, learners can also gain that personal touch by sending e-mail messages to their instructor or to other learners. Chat rooms and mailing lists can connect groups of learner to discuss a topic and share ideas. Assignments can be sent electronically instead of through the mail, and feedback can be provided more quickly. Materials from learners can be added to the Web site to share with others taking the same course and new information can be added quickly to the Web site” (Porter, 1997, p.36).

How do universities feel about this new mode of learning? “ ‘It goes against what Harvard stands for in terms of the learning process,’ huffs James Aisner, a spokesman for the Harvard Business School. ‘Being together, talking to people in the dorms or residence halls, is an essential part of the learning process here’” (Gubernick,& Ebeling,1997, par.20). Oxford University’s Geoffrey Thomas, director of the university’s department for continuing education seems to have a different philosophy towards this new mode of learning suggesting "it would help ensure Oxford’s position as a leading university is reinforced via the global medium of the Internet” (Targett, 1998). Oxford hopes to continue its tradition of private tutorials via the web rather than through face-to-face instruction with dons.

Proponents of web based learning believe there are actually some benefits from this type of learning that the student would not get in the traditional classroom. Course

discussions via chat rooms and bulletin boards requires students to put their ideas and comments in written form. “Writing gives learners time to think about what they want to say and to formulate their arguments more effectively” (Kessler, Rosenlad, and Shepard, 1999, par. 17). Many distance programs are accredited by the Distance Education and Training Council (DETC) who have a vested interest in rigorous evaluation of distance programs” (Gillespie, 1997, par.6).

One particular distance learning educational program claims a determination for both quality and accessibility is Western Governors University. In fact “the principle mission of Western Governors University (WGU) is to improve quality and expand access to postsecondary educational opportunities by providing a means for individuals to learn independent of time and place and to earn competency-based degrees and other credentials that are credible to both academic institutions and employers” (Western Governors University, 1999, par.1). While Western Governors University is a “competency-based, degree-granting virtual university that delivers more than 300 college-level distance learning courses from 30 affiliated universities and education providers” (T.H.E. Journal, p.8) it has its own criteria and review council for affiliation. The basis of the criteria is that an institution that wishes to become affiliated with WGU must first be regionally accredited as well as recognized by the U.S. Secretary of Education and offer distance learning courses. The institution must also comply with the distance learning standards of WGU. Some of these published (but undefined) standards include: quality instruction, up to date materials, use of technology, complying with copyright laws, self evaluation of its distance education program, and high quality student work.



## Experience at UNI

The University of Northern Iowa (UNI) has also considered the quality and accessibility of its distance education program and in its *Task Force for Education Report* (Bodenstiener et al., 1998) outlined many of the goals and standards for different types of distance learning including the Iowa Communications Network (ICN) and World Wide Web. "Criteria of quality include administrative leadership, program objectives, the level and type of faculty, the standards required of students for admission and graduation, facilities, library resources, equipment and support service (secretarial, computer, advising, placement, tutoring, registration, travel), class organization and size, and curricular vigor" (p.26). Some of the recommendations in terms of faculty criteria include having distance education teachers attend special workshops on teaching on the ICN and the World Wide Web (both beginning and advanced) peer evaluation of teaching by those who understand and have taught using these same technologies, extra compensation, credit towards tenure, and limited course load.

In terms of courses themselves "low on-campus enrollment should not be the sole determinant in whether a course should be offered over the ICN simply because off-campus enrollment may increase size to a reasonable size" (Bodensteiner et al., p.54). As far as size the total class size should be limited to 30 students for ICN, 15 students for web-based courses and 25 students for distance on-site classes (p.30). "All of these complex elements combine to present us with our perception of the University of Northern Iowa as an institution that places an important emphasis on teaching, as a place where professors establish an effective learning environment involving opportunities for close interaction between students and instructors. The questions, then, are how do we

go about extending access to a UNI education while ensuring quality distance learning and how do we go about measuring that quality" (p.27). Throughout the document UNI continually states that it will not give in to convenience and profit over quality education.

Dr. Marjorie Pappas, former Associate Professor and now Visiting Professor in the University of Northern Iowa's Division of School Library Media Studies, gives her own view of web-based learning, "Web-based instruction extends graduate course opportunities for students who often live great distances from a university, obliterates the time and space constraints of the traditional classroom, and fosters a networking relationship among students who bond through their conferencing and chat room discussions"(Pappas, 1999, par.1).

Dr. Pappas goes on to discuss her own experiences teaching an entirely web-based course for school library media students using the web-based tool Web CT. "Seminar: Integrating Information Skills Across the Curriculum was the first course I offered online. The first semester I taught this course I used a listserv to enable communication with students and the instructor. I found that method less than satisfactory because there was no feasible way to organize messages into common threads or topics. I realized I needed software that would provide for a threaded discussion by topic. In the spring semester, 1998 I began using Web CT which offered many Web-based features including a threaded bulletin board, chat rooms, and private email. Once the software was operational and the Web class was established, the next challenge was encouraging students to communicate using the bulletin board. Eventually students grow more comfortable with the virtual learning environment and their writing becomes reflective. The role of an instructor in this environment is that of coach and

facilitator. The discussion is initially fostered through essential questions which are part of the course syllabus. As a coach I respond to student messages and ask additional questions, always with the intent of enabling a thoughtful conversation related to the course concepts. The coaching role is also important through private email and within the chat rooms. Interaction is the foundation of this Web-based course which is a critical understanding for instructors in this form of distance learning.”

While the majority of the students in the Division’s Seminar course were from various parts of Iowa there were also a number from out of state. Guest speakers from around the United States frequented the web-based course participating on both the bulletin board function and the chat room function of Web CT, giving students the opportunity to interact with numerous authorities in the field. The course was further enhanced with pictures and short biographies of not only the students and instructor but also of each guest speaker who visited the class.

### Description of the Problem

What is the perception of Web-based learning compared to that of learning in a traditional classroom by a group of students who have experienced a Web-based course?

### Research Questions

1. Will the majority of the students in *Seminar: Integrating Information Skills Across the Curriculum* using Web CT feel that their web class provided as much instructional direction as in a traditional classroom?

2. Will the majority of the students in *Seminar: Integrating Information Skills Across the Curriculum* using Web CT feel that their web class provided more response and guidance from the instructor than in a traditional classroom?
3. Will the majority of the students in *Seminar: Integrating Information Skills Across the Curriculum* using *Web CT* feel that their web class provided more interactive learning with other students than in traditional classroom?
4. Will the majority of the students in *Seminar: Integrating Information Skills Across the Curriculum* using *WebCT* feel that they learned more in a web based class than in a traditional classroom?
5. Will the majority of the students in *Seminar: Integrating Information Skills Across the Curriculum* using *WebCT* feel that the total quality of instruction in the web based class was superior to that of a traditional classroom?

### Purpose Statement

The purpose of this study was to determine whether students felt that the Web CT course offered through the School Library Media Studies Division at the University of Northern Iowa are perceived as being as beneficial, in terms of learning, to students as a traditional classroom course.

### Definitions

To be certain that there is no misunderstanding about what the writer is discussing, the following terms are defined.

**Virtual Classroom:** interaction currently takes place almost entirely by typing and reading from a computer terminal (though it includes the use of print materials such as textbooks, and may be supplemented by an occasional face-to-face meeting or telephone call, or perhaps videotapes). (Hiltz,1994)

**Traditional Classroom:** most interaction takes place by speaking and listening, though it may be supplemented by writing and reading from a blackboard or from “handouts”. (Hiltz,1994)

**Web CT:** tool that facilitates the creation of sophisticated World Wide Web-based educational environments. (Goldberg, & Salari, 1997)

**Instructional Direction:** providing clear and precise directions on assignments

**Response:** an answer or reply, as in words or some action. (Stein, 1981)

**Guidance:** advice on vocational or educational problems given to students. (Webster, 1983)

**Interaction:** student to student two way communication and reaction, student to professor two way communication and reaction.

### Assumptions

It is assumed that the survey respondents were able to understand the questions posed in the survey and were able to complete the entire survey.

### Limitations

The group surveyed was composed of graduate students studying school librarianship at the University of Northern Iowa. The majority of the school library students were female and tended to be older than traditional students at the university. The participants were not chosen at random but rather were all of the students who took

the Web CT course offered between the spring semester of 1998 through the summer semester of 1999.

There were also chat room difficulties resulting in the use of telephone conference calls.

### Significance

Student perception of Web CT will help to guide the development of further Web CT courses offered in the Division of School Library Media Studies at the University of Northern Iowa and may provide insight to others contemplating the use of this instructional tool.

## CHAPTER 2

### Literature Review

Web based learning has roots in distance learning as well as being closely related to other forms of Internet learning. The related research on these topics has a central theme, that being a focus on what both student's and instructor's perceptions of how technology enhanced or distracted from learning. These studies can be categorized by perceptions of distance learning, perceptions of Internet learning, and finally perception on Web CT in relationship to student learning and satisfaction.

#### Perceptions of Distance Learning

The purpose of Whitworth's study was "to chronicle the experiences of an instructor and her students as they first experience a course delivered at a distance utilizing various technologies" (Whitworth, 1998, p.2) The primary methodology was a case study using a variety of data sources including: "instructor and student journal entries, videotapes of televised classes, and student surveys given at three different times- after the first 3 weeks of class, at midpoint of the semester, and at the end of the semester" (p.3). Subjects included elementary school teachers taking a graduate level science class at Moorhead State University as well as their instructor, Dr. Kern.

The overall results of this study showed positive attitudes about technology by both the students and the instructor. The students listed being closer to home and traveling less as their top reason for taking a distance learning class in the future. However when asked what they valued most about taking their current course, hands on activities and the use of technology were listed as the two most popular reasons. "The distance learning feature they most liked was sharing with the teachers (students) at other

sites. This answer ranked above the convenience of taking a course close to home/work or taking a course normally unavailable” (p.9). While there were many positive aspects of taking a distance learning course students also felt that distance learning had negative points. Some of the top concerns about this type of distance learning included the amount of time used to prepare for presentations at other sites and not enough teacher contact. Perceptions on teacher contact changed throughout the semester as “ students who actively used e-mail to send assignments and correspond with the instructor indicated to Dr. Kern that they felt they had more interaction and feedback on their assignments than in traditional classes” (p. 10).

Another study examined the “correlation of parasocial interaction, traditional interaction and student’s perceived learning with student’s willingness to form questions” (Crouch, 1994, p.6) using a questionnaire with a 1-5 Semantic Differential Scale for both undergraduate and graduate students in four southeastern colleges and universities. Seventy-five questionnaires were compiled from traditional classroom students while 52 were from students in distance learning settings. (p.9) Distance students in this study also referred to those students in Internet classroom settings although the specific number of students taking a distance course via the Internet was not given. A pretest questionnaire was given to 34 students. The results of this study showed a direct correlation between the comfort level of the distance learning student and whether or not she or he would “feel comfortable forming questions in the on-line sessions. These distance students were much more dependent on the sense of relationship with the professor than those students in traditional classrooms.” (p.30) The researcher goes on to contend that the perhaps the



newness of the technology has a direct result on this need for a sense of a need for closeness with the professor.

### Perceptions of Internet Learning

“Many college and university professors are rushing to place their courses on the Internet, for either distance education or as extensions of traditional classroom teaching. As universities make substantial investments in infrastructure, personnel and training to move course content online, it is increasingly important to ask, does network technology improve or impair teaching and learning, and in what ways?” (p.3) This is the question proposed by Koyanagi (1998). The data were gathered for this study through interviews with both faculty members and students at the University of North Carolina at Chapel Hill who are using Internet tools in their classes. Results of the study showed that the faculty found Internet tools beneficial in many areas including: the efficiency of communication, extending class time, and making the classroom more democratic. The faculty also found that Internet technology has problems including: “access to computers, insufficient student computer skill, reduced interpersonal contact and increased class preparation time” (p.20). A number of the faculty also found that “the quality of online student communication was better than traditional in-class participation” (p.30) This study also found that at the faculty level of interaction between the professor and student increased.

A more recent study on distance learning via the Internet studied personal mental models of graduate school library media students at the University of Georgia taking a web-based course using the software TopClass. The researchers chose to use data analysis to study how a student's mental model changed as a result of taking the on-line

class. The participants for this study hadn't taken an on-line course prior to the two courses being studied, and had minimal Internet experience. The results of this study showed that all students no matter what their personal mental model were affected by taking an online course. Some of the positive results in students thinking included: being able to openly communicate their feelings on-line whereas in the traditional classroom they would have been inhibited to do so, a better understanding of community learners, a less restrictive class structure. Some of the student challenges to learning on the web included: self motivation for completing assignments, lack of face to face interaction with other students, and a greater work load (Tallman, and Benson, 1999).

#### Perceptions of Web CT Learning

Although there appeared to be limited studies on the use of Web CT and learning, Goldberg (1997) conducted two studies. The first study focused directly on the problem of evaluating World Wide Web based learning and its acceptance by students, as well as on their academic performance. The students in this study were enrolled in a third-year Computer Science course. "Students enrolled in this course were divided into three groups:

1. those taking the course using only the WWW-based resource (no lectures).
2. those taking the course by attending lectures (no access to the WWW-based resource), and
3. those with access to both lectures and the WWW-based resource" (p.1)

Methodology included comparing test and grade results among the three groups.

In order to have consistency the researcher made certain that all of the groups did the same assignments and took the same final test. There was one discrepancy in the midterm where the web-based course took a different exam than the other two classes but both tests covered the same material. In addition, a questionnaire was used to gather student's opinions and attitudes regarding their course. This was an anonymous questionnaire and

was not viewed until final grades for the course had been submitted. Results of the study seem to indicate that the students who took the class both in the traditional classroom and on the web outperformed the two other groups, while those in the traditional classroom and the web only course scored approximately the same. In terms of student acceptance it appeared that the students who were the least satisfied with the effectiveness of their method of delivery were those in the traditional lecture course. The two other groups ranked the effectiveness of delivery about the same. Other interesting results from the study included what the students liked the most and least about World Wide Web-based learning. Some of the top answers to this question included not having to attend a class, the ability to work at one's own pace, and the ability to learn anywhere and at anytime. When asked what they liked least about the WWW-based course and taking WWW-based courses in general, some of the top points mentioned were motivating one's self, not being able to meet other students, and being the first to use the WebCT program.

A second study by Goldberg (1997,B) explored how first year students would react to using World Wide Web-based learning and specifically WebCT. "This study examines only the student use of, acceptance of, and reaction to the on-line resource" (p.2). A new questionnaire was given to the first year Computer Science class as well as to the third year Operating Systems class. The results of this study showed that the majority of the students felt that the communication tools helped to form a sense of community within the class. It is also of note that the majority of students said that they would prefer to having an on-line resource to their professor rather than an extra office hour each week. The majority of students in each class also felt that the web-based course greatly improved their experience in the class.

In general the studies showed a positive effect on the attitudes of students in relationship to their learning, using distance learning technology. This is especially true when relating to taking a course in collaboration with using the Internet, while the majority of the frustration came from other technological problems relating to the use of the technology. The studies also indicated that students prefer using e-mail as a way to contact their instructor because of the immediate contact personal attention that instructor may be able to give the student. There appeared to be some concern at the efficiency rate in which the instructor replied to the student.

## CHAPTER 3

### Methodology

This study will attempt to elicit the perceptions of Web-based learning compared to that of learning in a traditional classroom by a small group of students who have experienced a Web-based course.

#### Research Design

“A survey is a form of planned collection of data for the purpose of description or prediction as a guide to action or for the purpose of analyzing the relationships between certain variables” (Oppenheim, 1966, p.1). Perceptual studies are also based on attitudes which according to Thurnstone is “the sum total of a man’s inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specified topic” (Thurnstone, 1928, p. 531).

#### Population

The Division of School Library Media Studies began its Internet delivery of courses via e-mail in the spring of 1997 and offered the same course, Seminar: Integrating Information Skills across the Curriculum, on the World Wide Web via WebCT in the fall of 1998 and the summer of 1999. Students enrolled in the three WebCT versions of the course were surveyed.

#### Data gathering Instrument

The design of the perceptual survey was based on the research from the Literature Review. The survey questions will be answered using a Likert-like Scale based on weighted numbers one through five ranging from strongly agree to strongly disagree.

## Procedures

The survey (see Appendix A) was mailed with a cover letter to all students who had been enrolled in the course Seminar: Integrating Information Skills across the Curriculum, between the spring semester of 1998 through the summer semester of 1999. The cover letter (see Appendix B) which was printed on a separate first sheet explained the purpose of this research project. Each survey had a number to identify which surveys had been returned and which ones required a follow-up note. The numbers assigned to each survey were selected in a random matter. A database was created using Microsoft Access in order to keep a list of which number was assigned to each student. As the surveys were returned to the researcher the cover sheet was removed and an X was added to the database to represent the returned survey. When the study was completed the database was deleted in order to further preserve anonymity. Participants were notified about the numbering process and were informed that their individual responses would be kept confidential and the data compiled and described in the final report could not identify individual people. The students were mailed pre-addressed, stamped envelopes in which to return their surveys. They were asked to complete and return the surveys within 10 days of receiving it.

After two weeks from the initial mailing date, students who did not return the survey were sent a follow up letter. Only surveys returned within one weeks after this reminder were included in this study.

The data were analyzed by tallying each question on the survey to determine what the student's attitudes were about the questions posed.

## CHAPTER 4

### Data Analysis

The purpose of this study was to determine whether students felt that the Web CT course offered through the School Library Media Studies Division at the University of Northern Iowa is perceived as being as beneficial to students, as a traditional classroom course, in terms of learning .

Surveys were mailed to the 36 students who were enrolled in and completed Seminar: Integrating Information Skills Across the Curriculum. This group included all of the students who took the Web CT course offered between the spring semester of 1998 through the summer semester of 1999; 94 % of the surveys were returned. All but two students responded to all of the questions, one student did not respond to question 3, and one student did not respond to question 12, the remainder of the respondents completed all questions on the survey therefore all returned questionnaires were used.

Research question one was “Will the majority of the students in Seminar: Integrating Information Skills Across the Curriculum using Web CT feel that their web class provided as much instructional direction as in a traditional classroom?”

Table 1 shows responses to four survey questions that addressed this issue.

Table 1: Instructional Direction

Survey questions 2, 8, 11, 16 were designed to answer this question.

Likeart Like Scale	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		N
	1		2		3		4		5		
	a	%	b	%	c	%	d	%	e	%	
Question											
2	2	6%	10	29%	9	26%	4	12%	9	26%	34
8	7	20%	12	35%	7	20%	4	12%	4	12%	34
11	14	41%	9	26%	6	18%	0	0%	5	15%	34

N= number of students who answered question; a= number that selected 1, b= number that selected 2, c= number that selected 3, d= number that selected 4, e= number that selected 5. Percentages were rounded-up.

Table one shows that the majority of the students in Seminar: Integrating Information Skills Across the Curriculum using Web CT **agreed** or **strongly agreed** that their web class provided as much instructional direction as in a traditional classroom.

Survey question number two however, shows the majority of the students **strongly disagreed** with the statement, “It was satisfactory to receive directions on how to complete the assignments given to me by the instructor in this web-based course as it would have been in the traditional classroom”



Research question two was “Will the majority of the students in Seminar: Integrating Information Skills Across the Curriculum using Web CT feel that their web class provided more response and guidance from the instructor than in a traditional classroom?”

Table 2 shows responses to seven survey questions that addressed this issue.

Table 2: Response and Guidance

Survey questions 5, 9, 10, 12, 13, 14, 15 were designed to answer this question.

Likeart Like Scale	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		N
	1		2		3		4		5		
	a	%	b	%	c	%	d	%	e	%	
Question											
5	0	0%	4	12%	11	32%	8	24%	11	32%	34
9	13	38%	14	41%	2	6%	2	6%	3	9%	34
10	10	29%	10	29%	8	24%	3	9%	3	9%	34
12	2	6%	3	9%	6	18%	12	36%	10	30%	33
13	11	32%	10	29%	8	24%	1	3%	4	12%	34
14	21	62%	8	24%	3	9%	2	6%	0	0%	34
15	6	18%	9	26%	9	26%	4	12%	6	18%	34

Table two shows that the majority of the students in Seminar: Integrating Information Skills Across the Curriculum using Web CT **agreed or strongly agreed** that

their web class provided more response and guidance from the instructor than in a traditional classroom.

Survey question number five however, shows the majority of the students felt **neutral or strongly disagreed** with the statement, “It was easier for me to ask questions of my professor that it would have been in the traditional classroom.”

Survey question number twelve also shows discrepancy with the majority of the students selecting **disagree or strongly disagree** to the statement, “I have had more interactions with my professor than I would have had in the traditional classroom.”

Research question three was “Will the majority of the students in Seminar: Integrating Information Skills Across the Curriculum using Web CT feel that their web class provided more interactive learning with other students than in traditional classroom?”

Table 3 shows responses to two survey questions that addressed this issue.

Table 3: Interactive Learning

Survey questions 4, and 7 were designed to answer this question.

Likeart Like Scale	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		N
	1		2		3		4		5		
	a	%	b	%	c	%	d	%	e	%	
Question											
4	0	0%	4	12%	11	32%	8	24%	11	32%	34
7	12	35%	12	35%	7	21%	1	3%	2	6%	34

Table three shows that the majority of the students in Seminar: Integrating Information Skills Across the Curriculum using Web CT **agreed or felt neutral** that their web class provided more interactive learning with other students than in a traditional classroom.

Survey question number four however, shows the majority of the students **strongly disagreed** with the statement, "I have had more interactions with other students in my web-based course than I would have in the traditional classroom."

Survey question number seven also shows discrepancy with the majority of the students selecting **strongly agree** to the statement, "I found the bulletin board function of WebCt to be useful in terms of learning from other students."

Research question four was “Will the majority of the students in Seminar: Integrating Information Skills Across the Curriculum using WebCT feel that they learned more in a web based class than in a traditional classroom?”

Table 4 shows responses to one survey question that addressed this issue

Table 4: Learning Potential

Survey question 16 was designed to answer this question.

Likeart Like Scale	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		N
	1		2		3		4		5		
	a	%	b	%	c	%	d	%	e	%	
Question											
16	17	50%	6	18%	5	15%	4	12%	2	59%	34

Table four shows that the majority of the students in Seminar: Integrating Information Skills Across the Curriculum using WebCT strongly disagreed that they learned more in a web based class than in a traditional classroom?”

## Chapter 5

### Summary

The purpose of this study was to determine whether students felt that the Web CT course offered through the School Library Media Studies Division at the University of Northern Iowa is perceived as being as beneficial to students as a traditional classroom course in terms of learning.

The data shows that the majority of the students in the WebCT course Seminar: Integrating Information Skills Across the Curriculum agreed that their web class provided as much instructional direction as in a traditional classroom, strongly agreed that their web class provided more response and guidance from the instructor than in a traditional classroom, agreed or felt neutral that their web class provided more interactive learning with other students than in a traditional classroom, and strongly disagreed that they learned more in a web based class than in a traditional classroom.

#### Conclusions

While the data showed the majority of the students agreed that the total quality of instruction in the web based class was superior to that of the a traditional classroom, the majority of the students strongly disagreed that they learned more in a web based class than in a traditional classroom. This may be explained by prior research, which indicated that students participating in distance education courses spend greater time outside of the classroom in self directed learning activities. Traditionally learning has been seen as occurring only when the teacher is present or directly instructing the students, therefore many of the students did not agree that they learned more in a web based class than they would have in a traditional classroom.

Three of the survey questions produced data outside the scope of the research question, but which provided the researcher with interesting supplemental information.

Other factors influencing student responses include the high number of students who had prior experience using computers, 58% of students survey strongly agreed to question one: before taking this course I felt comfortable using computers.

The use of pictures and biographies used in this web-based course may also have had a positive influence on the respondents. 37% of the students surveyed responded strongly agree to: I found the pictures and biographies of the students helpful in getting to know my peers.

The use of weekly chat session on WebCT also appeared to be beneficial to students. 55% of the students that responded strongly agreed to question 10: the chat room has the potential of providing instant feedback from the instructor and among students. While this study was not an interview many of the students added their own opinions on the survey suggesting that smaller groups in the chat room would be beneficial as well as fixing glitches in the software which prevented many chat sessions from occurring.

#### Recommendations for Further Study

Recommendations for further study include; different teaching styles effect on student learning in a web based class, how gender effects learning or perception of learning in a web based class, web based courses effect on long term learning of the subject matter, the role of the subject matter being taught on the perception of learning in a web based class, the design of the web based class and it's impact on student learning.

## References

- Adams, B. (no date). *Biology Department Embraces Interactive Learning* [Online]. Available:  
<http://www.rpi.edu/dept/NewsComm/Review/feb/feb17/biology.html> (1999, May 6)
- Crouch, J.K. (1998, February 11). The effect of parasocial interaction, traditional interaction, and perceptions about learning on question forming in distance learning.  
 Unpublished master's thesis, Regent University, Virginia.
- Gillespie, T. (1997). Web-ed for the information professional. Database. [Online] 20, (51), 31 paragraphs. Available: InfoTrac: Expanded Academic.
- Goldberg, M.W. (1997,A). CALOS: First results from an experiment in computer-aided learning. <http://homebrew1.cs.ubc.ca.webct/papers/csecue/index.html>  
 accessed online 3/26/99
- Goldberg, M.W. (1997,B). WebCT and first year computer science: student reaction to and use of a web-based resource in first year science.  
<http://homebrew1.cs.ubc.ca.webct/papers/csecue/index.html> accessed online 3/26/99
- Gubernick, L., Ebeling, A. (1997). I got my degree through e-mail. Forbes. [Online] 159, (84), 38 paragraphs. Available: InfoTrac: Expanded Academic.
- Iowa Communications Network (1999). *The ICN Story* [Online]. Available: <http://www.icn.state.ia.us/about/story/story.htm> [1999, June 28].
- Iowa Communications Network (1999). *The ICN History* [Online]. Available: <http://www.icn.state.ia.us/about/story/history.html>. [1999, June 24].
- Iowa State University (1998). *Master of Agriculture* [Online]. Available: <http://www.lifelearner.iastate.edu/courses/degree/mag.htm> [1999, July 19].

Kessler,G.C.,Rosenblad,K.,& Stephan Hill Associates Inc. The Web can be suitable for learning. The Computer, [Online] 32, (114), 20 paragraphs. Available: <http://computer.org/computer/IntWatch0299.htm>

Kouanagi, M. (1998, April). The effect of Internet Technology and learning: A qualitative study. Unpublished master's thesis, University of North Carolina, Chapel Hill.

Oppenheim, A.N. (1966). *Questionnaire design and attitude measurement*. New York: Basic Books.

Pirsig, R.M. (1974). Zen and the art of motorcycle maintenance: an inquiry into values.(1981). New York: Morrow.

Pappas, Dr. Marjorie(mpappas@mis.net). (1999, April 16). Research. E-mail to Nicole Weber (webern3572@uni.edu)

Reichenber, L.(1998). Daily pursuit of knowledge: Kansas farmer Rich Porter goes to school everyday-via the Internet. The Successful Farmer, [Online] 96, (28), 19 paragraphs. Available: InfoTrac: Expanded Academic.

Relan, A. & Gillani, B.B. (1997). **Web-based instruction and the traditional classroom: Similarities and differences.** In B.H. Kahn (Ed.), Web-based Instruction (pp.41-46). Englewood Cliffs, New Jersey: Educational Technology Publications.

Rubin, A.M. (1997). All around the world, U. of Maryland offers classes to U.S. military personnel. The Chronical of Higher Education, 43 (28), A55-56.

Shein,E. (1997). Anywhere,anytime. PC Week, [Online] 14, (115), 25 paragraphs. Available: InfoTrac: Expanded Academic.



Stein, J. (Ed.). (1981). The new Random House dictionary of the english language (2<sup>nd</sup> ed.). New York: Random House.

Tallman, J.I., & Benson, A.D. (1999). Learning online...hearing student voices. Unpublished manuscript, The University of Georgia.

Targett, S. (1998, July 20). Oxford to offer degree courses over internet. Financial Times (London Edition)[Online], Front page first section, 383 words. Lexis-Nexis Universe:General News Topics [1999, Feb. 22]

T.H.E. Journal,(1999, Jan.). *Distance learning forges new path*. v26, p8.

Web CT (1999). *Web CT at UNI* [Online]. Available: <http://www.webct.com/> [1999, June 3].

Western Governors University (1999). *Western Governors University An Education Without Boundaries For a Future Without Limits* [Online]. Available: [http://www.wgu.edu/wgu/academics/sh\\_overview.html#mission](http://www.wgu.edu/wgu/academics/sh_overview.html#mission) [1999, February 2].

Thurnstone, L.L. (1928). Attitudes can be measured. The American Journal of Sociology, 33, 529-54.

Whitworth, J.M. (1998, April 21). Looking at distance learning through both ends of the camera. Paper presented at the annual meeting of the National Association of Researchers in Science Teaching, San Diego.

## Appendix A

Using the following scale, rank your perception of the web delivery of the course

*Seminar: Integrating Information Skills Across the Curriculum*. Please circle the number for each item that best represents your feelings.

1) Before taking this course I felt comfortable using computers?

Agree      1            2            3            4            5            Disagree

2) It was as satisfactory to receive directions on how to complete the assignments given to me by the instructor in this web-based course as it would have been in the traditional classroom.

Agree      1            2            3            4            5            Disagree

3) I found the pictures and biographies of the students helpful in getting to know my peers?

Agree      1            2            3            4            5            Disagree

4) I have had more interactions with other students in my web-based course than I would have in the traditional classroom.

Agree      1            2            3            4            5            Disagree

5) It was easier for me to ask questions of my professor than it would have been in the traditional classroom.

Agree      1            2            3            4            5            Disagree

6) I tended to write comments on the bulletin board more carefully than my oral comments would have been offered in a traditional classroom.

Agree      1            2            3            4            5            Disagree

7) I found the bulletin board function of WebCt to be useful in terms of learning from other students.

Agree      1            2            3            4            5            Disagree

8) I was able to determine the learning outcomes for this web-based course.

Agree      1            2            3            4            5            Disagree

9) The instructor provided feedback on the questions I asked her?

Agree      1            2            3            4            5            Disagree

10) The chat room has the potential of providing instant feedback from instructor and among students.

Agree      1            2            3            4            5            Disagree

11) The grading criteria for this web-based course seemed as clear as the grading criteria in a traditional classroom?

Agree      1          2          3          4          5          Disagree

12) I have had more interactions with my professor than I would have had in the traditional classroom.

Agree      1          2          3          4          5          Disagree

13) The instructor gave me adequate feedback on my assignments?

Agree      1          2          3          4          5          Disagree

14) If I had a question or problem I would feel comfortable asking this instructor for help?

Agree      1          2          3          4          5          Disagree

15) I felt that the private e-mail function of WebCt allowed me to correspond with the instructor more easily than I would have been able to in a traditional classroom.

Agree      1          2          3          4          5          Disagree

16) I have learned more by taking this course over the Internet than what I would have learned in a traditional classroom setting?

Agree      1            2            3            4            5            Disagree

17) I would take another Web-based course.

Agree      1            2            3            4            5            Disagree

## Appendix B

Dear WebCT Seminar: Integrating Information Skills across the Curriculum student,

I am studying the student perceptions of web-based learning compared to that of learning in a traditional classroom and would like your help.

By determining how students feel about web-based learning and using WebCT we will be able to help guide the development of further WebCT courses offered in the Division of School Library Media Studies at the University of Northern Iowa.

We would like to ask you to take the next few minutes to complete the enclosed survey. Each survey has been assigned a number in order to assure anonymity. A database was created in order to keep a list of which student were assigned what number. When the surveys are completed the database will be deleted in order to further preserve anonymity. Individual responses will be kept confidential and the final report will not identify individual people.

We appreciate the time you take to fill out this survey. The more surveys that are completed and returned, the more meaningful our data will be. Please return the completed survey in the accompanying envelope within 10 days.

If you have questions about the research and your rights as a research subject you may contact the office of the Human Subjects Coordinator, University of Northern Iowa, (319) 273-2748.

Sincerely,

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