University of Wisconsin - Stout Faculty and Academic Staff

Members' Use of Computer Technology

in their Courses

by

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A Research Paper
Submitted in Partial Fulfillment of the
Requirements for the
Master of Science Degree
in

Career and Technical Education

Approved: 2 Semester Credits

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The Graduate School

University of Wisconsin-Stout

December, 2005

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Title: ***University of Wisconsin-Stout Faculty and Academic Staff Members' Use of Computer Technology in their Courses***

Graduate Degree/ Major: MS Career and Technical Education

Research Adviser: **Hector T. Cruz, ED.D.**

Month/Year: **December, 2005**

Number of Pages: **87**

Style Manual Used: **American Psychological Association, 5th edition**

ABSTRACT

The results of this research indicate instructors support the use of computer technology in their courses at UW-Stout when it is applicable. Instructors use computer technology in the planning and delivery of instruction. The areas researched were: barriers to use of technology, degree, level and scope of computer technology use by UW-Stout instructors, and instructors overall support of UW-Stout's efforts in being a digital learning environment. A survey was developed and distributed online to 438 UW-Stout instructors in the fall of 2005. The return rate was 32.6%. The data compiled in this research was from 143 completed and submitted surveys. The survey gave respondents an opportunity to voice their personal opinion on these issues. The quantitative results indicated instructors appreciate the technology and being on the cutting edge of academia. Instructors are integrating technology into their teaching, noting that it is a motivator to both students and teachers. The quantitative data indicated that instructors

feel there is still a ways to go to be effective and efficient. There are concerns among educators at UW-Stout regarding the use of computer technology in their courses, including pressure from administrators and students, frequent changing of software and course delivery systems, lack of reliability (particularly Internet connectivity issues), students inappropriately using laptops during class, increased workload, techno stress, and issues of time.

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Acknowledgements

I would like to start these acknowledgements by thanking Todd Richter. I am so thankful for his support throughout my graduate studies. He truly believed in me and encouraged me to keep plugging away. I would also like to thank him for the continuous example he provided as a hard working, selfless, intelligent, and caring human being.

I would like to thank my mom, Phyllis Turgeson. She is the most giving and loving person I have ever known. All she has ever wanted for me was to be happy. To her I am so thankful for her undying love and gracious heart.

I would like to extend a heartfelt thank you to Dr. Hector Cruz. This project was large in scope, but your calm and inspiring demeanor made each meeting and conversation a positive experience. I wish you all of the best in life for you and your family. Upon your retirement, I wish you many quite days and peaceful long walks in the woods. UW-Stout is a better place because of you and your commitment to lifelong learning.

I would like to thank Bill Wikrent. He exceeded my expectations of an instructor at UW-Stout. His willingness to work with me individually and understand my learning style greatly impacted my success in graduate school. Thank you for all of your support, guidance, and technology expertise.

Three other people that I need to personally thank are Meridith Wentz, Christine Ness and Chris Rivard. Your help with implementing my online survey and analyzing my data were greatly appreciated. I thank you for your time and efforts.

I would also like to extend my gratitude to Dr. Orville Nelson, Jane Henderson and Dan Riordan. Conducting this research study was an incredible learning experience for me. I value your expertise and I appreciate your willingness to read my survey tool and make suggestions. Jane was a valuable resource for me throughout all of my graduate studies. Thank you for being so understanding and sitting down with me at the beginning of my first semester and showing me the basics of e-scholar.

Finally, I would like to thank April Pierson. Working with you towards the end of this project was the best thing that could have happened to me. I have learned a lot from you. You gave me hope when I felt hopeless. You gave me support when I felt alone. Thank you for your expertise and guidance.

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Chapter I: Introduction

The use of technology in education has increased dramatically in the past decade. During the mid 1990's, several advances in computer based technologies came together and allowed teachers to use technology to support their teaching in an increasing variety of ways. Whereas instructional uses of computers had been limited largely to word processing and computer programming, teachers are now able to perform multimedia presentations and computer-based simulations. With the introduction of the Internet into the classroom, teachers were also able to incorporate activities that tapped into the World Wide Web (Bebell, Russel, & O'Dwyer, 2004). Technology has been integrated into classrooms, curriculum, as well as learning and teaching strategies. The challenge is to use it in innovative ways that keep students engaged, attentive, and able to retain information (Lindquist, 2004).

The University of Wisconsin-Stout (UW-Stout) is a digital campus and all faculty and staff are expected to use available technology in their positions including course delivery. A member of the University of Wisconsin System, UW-Stout has approximately 8,000 students enrolled in 17 graduate and 27 undergraduate programs (UW-Stout: Center for Assessment and Continuous Improvement, 2005b). The university is located in Menomonie, Wisconsin, 60 minutes east of Minneapolis-St. Paul on Interstate 94. Located in the Chippewa Valley Region (population base of more than 186,000), Menomonie is a city of 15,000 surrounded by lakes, streams and woods. In 2001, UW-Stout was the first university to receive the prestigious Malcolm Baldrige National Quality Award, considered America's highest honor for performance excellence and quality achievement. UW-Stout supports a progressive, learning-centered, quality-

based educational environment that is focused on continuous improvement. Increasingly, courses are offered via alternative time frames and delivery methods, such as online and self-paced courses. UW-Stout faculties are responsible for teaching, advising, research and scholarly activity, and service (UW-Stout, 2000). With the implementation of the Laptop Initiative, the use of computer technology has become a priority at UW-Stout. All incoming freshman are issued a laptop computer. The intent of this initiative is to encourage more extensive use of computer technology for instruction.

Along with the laptop initiative, an effort was made at UW-Stout by the Teaching and Learning Center to learn more about faculty and student attitudes toward the use of technology for instructors. A Learning and Technology Student Focus Group was conducted in October of 2004 (UW-Stout: Budget, Planning, and Analysis Institutional Research, 2004b). Approximately 54 students were selected. The students shared their opinions about learning and the use of technology. Through the focus groups it was learned that students and faculty at UW-Stout agree that technology, more specifically laptop computers, has increased accessibility, communication, and availability of resources. Students and faculty also agree that more training is needed, although there was a disagreement on who needs the training. Some students expressed concern that instructors are not trained enough to use the technology. However, faculty members say that it is the other way around; students need more training on how to use the technology. Both students and instructors agreed that there was a need to expand training and help instructors and students acquire more knowledge of technology and software.

According to a Learning and Technology Faculty Focus Group in the fall of 2004, Instructors at UW-Stout felt pressured by the students, parents, and administrators to use

the computer during class (UW-Stout: Budget, Planning, and Analysis Institutional Research, 2004a). They were also concerned that laptop computers could not be used effectively during class for some classes. Also, instructors felt they must spend more time preparing for class and answering emails. Teaching in a digital learning environment also raised concerns among UW-Stout instructors because students have greater expectations of them to use technology in the classroom.

With the demand for more course content involving computer technology, it is unclear what is expected of the faculty at UW-Stout. There are visible inconsistencies in proficiency among educators. As our technological world advances, educators at UW-Stout must remain competitive and influential in computer technology proficiency and performance and effectively integrate computer technology into their instructional practices and teaching methodology.

Statement of the Problem

Expectations for expanded use of computer technology in the instructional process have raised questions concerning the appropriate use of computer technology by the instructors at UW-Stout. Some instructors believe computer use is not appropriate in their courses, that it has increased their workload, and increased stress levels because of pressure from students, parents, and administrators to use computer technology during instruction. Consequently, some instructors are reluctant to integrate computer technology for instructional purposes. While computers have been oversold as a vehicle for reforming educational practices and are generally underused as an instructional tool by all teachers at all levels of education, there is little evidence that teachers resist new technological innovations just because they fear or dislike technology (Ouzts & Palombo,

2004). However, there is a belief that instructors at UW-Stout have an opinion toward the use of computer technology in their courses. If this is correct, is it impacting their appropriate use of computer technology in their courses, and what steps need to be taken to help UW-Stout instructors become efficient in a digital learning environment? There is a need to learn more about the perceptions of faculty in this regard.

Purpose of the Study

The purpose of this study is to examine UW-Stout faculty and academic staff members' use of computer technology in their courses. Although this is a sensitive issue for educators, this does not diminish the need to examine the consistencies and inconsistencies regarding the use of computer technology by UW-Stout educators in their courses. This study will provide instructors at UW-Stout with an opportunity to describe their feelings, attitudes, and beliefs toward computer technology and how it may be impacting them. It will also afford them an opportunity to indicate their skill level, perceived needs for professional development, and if they feel computer technology applies to their discipline. This study will examine the extent to which UW-Stout instructors have integrated computer technology and software programs such as Learn@UW-Stout into their instructional practices. It is also intended to give university officials valuable information that will afford them an opportunity to better define their expectations of UW-Stout instructors regarding the appropriate use of computer technology in their courses. The results of the survey should provide the Teaching and Learning Center at UW-Stout with valuable information that will assist in the planning of programming and professional development for instructors at UW-Stout.

Objectives

1. What are UW-Stout instructors' barriers regarding computer technology use as an instructional tool?
2. To what degree are UW-Stout instructors utilizing computer technology within their instructional methodology?
3. What are the level and scope to which UW-Stout instructors are integrating computer technology into their instruction, including planning and delivery?
4. Do instructors at UW-Stout support a digital learning environment? Why or why not?

Assumptions of the Study

1) It is believed that every instructor that is surveyed at UW-Stout has been impacted by computer technology in one way or another.

2) This study assumes the questions will be answered truthfully and honestly by those surveyed.

3) It is assumed that every UW-Stout instructor has an attitude or belief that is either negative or positive toward technology.

4) This study assumes that previous studies conducted at UW-Stout regarding computer technology are credible.

5) A significant sample of UW-Stout instructors will take part in the research.

Definition of Terms

The following definitions were identified in the progress of this study.

Email. "Electronic mail; means of exchanging messages, which may include enclosed files and graphics, depending on sophistication of the system" (Pastan, 1996, p. 3).

Gateway. "A computer system that joins and translates between two otherwise incompatible networks or applications" (Pastan, 1996, p. 3).

Hypertext. "The basic concept behind the World Wide Web (Web), whereby one resource can be linked to any other information elsewhere on the Web" (Pastan, 1996, p. 3).

Internet. "The worldwide distributed network of computers connected using TCP/IP, or similar protocols" (Pastan, 1996, p. 2).

IP number. "The unique number for a machine on the Internet." (Pastan, 1996, p. 3).

Learn@UW-Stout. "Integrated software for online course development" (UW-Stout: Learning Technology Services, 2005, para. 1).

Multimedia. "A document or program that integrates text, graphics, audio and video." (Pastan, 1996, p. 3).

Packet. "The basic unit of data transmitted over the Internet, packets are transmitted independently and then reassembled at their destination" (Pastan, 1996, p. 4).

Protocol. "A means by which different types of computers communicate with each other" (Pastan, 1996, p. 4).

Server. "A computer, or a program on the computer, acting as an Internet site whose data is available to the client" (Pastan, 1996, p. 4).

Transmission Control Protocol/Internet Protocol (TCP/IP). "The communication program common to most connected Internet computers" (Pastan, 1996, p. 4).

Technology. "Mechanisms for distributing messages, including postal systems, radio and television broadcasting companies, telephone, satellite and computer networks" (World Bank Group, n. d., para. 15).

World Wide Web (Web). "A hypertext-based Internet service that provides information and resources" (Pastan, 1996, p. 4).

Limitations of Study

It is believed that due to the subject matter of the study and the implications that it may suggest, faculty may be reluctant to participate because of fear of rules or regulations that may be implemented. Because of the sensitivity of this issue, UW-Stout

instructors may not want to fill out a survey conducted by a graduate student. Respondents may feel nothing will be done with the results. Some instructors may view the survey as repetitious. The study utilizes a survey instrument designed by the researcher. The results of the study are limited to instructors only UW-Stout. The financial resources are limited.

Chapter II: Literature Review

This chapter begins with information on technology in higher education. The literature review then explains how educators can best utilize computer technology in their courses. It will explore the evolution of Internet-mediated course delivery in post-secondary educational institutions. It will also examine the phenomenon of a digital learning environment, followed by implementation of the Laptop Initiative at UW-Stout. Finally, it will conclude with UW-Stout's national recognition for being a digital campus.

Technology in Higher Education

The use of technology in education has increased dramatically in the past decade. During the mid 1990's, several advances in computer-based technologies came together and allowed teachers to use technology to support their teaching in an increasing variety of ways. Whereas instructional uses of computers had been limited largely to word processing and computer programming, teachers are now able to perform multimedia presentations and computer-based simulations. With the introduction of the Internet into classrooms, teachers are also able to incorporate activities that tap into the Web (Bebell, Russel, & O'Dwyer, 2004). In today's world of higher education, technology is the power tool. Course management systems to support in-class and online instruction are bringing learning to life in new and exciting ways (Milliron, 2004). Technology has been breaking down the classroom walls for years, but the next step is to go beyond the school grounds and provide wireless access to administrative, planning, teaching and learning tools from virtually anywhere (Lindquist, 2004). As technology advances, administrators, teachers, parents, and students will have a "no boundaries" approach to communicating and learning. As we use these advances, it is important to remember that

technology should be an enabler in education, allowing teachers to provide incredible learning environments that will grab the attention of tomorrow's students in exciting new ways. Schools nationwide are demonstrating that it is not a matter of choosing between multimedia, traditional technologies such as word processing, or long-established approaches to education. Instead, successful learning environments combine the best of all three. Students who can use technology to improve communication and enhance their learning will have an advantage over students lacking those skills (Looney, 2005).

At UW-Stout, a Learning and Technology Student Focus Group was conducted in October of 2004. Approximately 54 students were selected. The students shared their opinions about learning and the use of technology. Through the focus group it was learned that students and faculty at UW-Stout agree that technology, more specifically laptop computers, has increased accessibility, communication, and availability of resources. Students and faculty also agree that more training is needed, although there is a disagreement on who needs the training. Some students expressed concern that instructors are not trained enough to use the technology. However, faculty members say that it is the other way around; students need more training on how to use the technology. Nonetheless, there is an agreement that there is a need to expand training and help faculty and students acquire more knowledge of technology and software (UW-Stout: Budget, Planning, and Analysis Institutional Research, 2004a).

Computer Technology and Educators

Throughout the country, in large and small schools alike, the biggest impediment to widespread integration of technology into curricula remains teachers' lack of comfort and familiarity with the digital tools at their disposal (Furger, 2001). While some

envision technology ushering in an era of unlimited potential in education, others see the use of technology in education range from optimism about the opportunities awaiting students and teachers through computer and Internet use to pessimism about the future of literacy and education in the advent of these new technologies (Ouzts & Palombo, 2004). Dr. Mark David Milliron, Executive Director, Education Practice, SAS Institute Senior League Fellow, League for Innovation in the Community College, reflects on his own experiences with technology and came up with the following ten insights for those who want to make the most of our modern teaching, learning and leading power tools (2004).

- Consider Many Best Ways – Research and practice increasingly make it clear that there is not one best way to teach, reach and learn. Nor is there one way to use technology tools. Be open to an abundance of models for learning and be thoughtful in valuing diversity.
- Remember the Human Touch – While technology is often demonized as dehumanizing education, in fact, it is often technology that brings the human interaction back into learning. This call for increased focus on the human touch is echoed by educators across the educational spectrum.
- Champion Digital Democracy – It is our commitment to helping students access learning through technology and to embrace learning beyond technology – i.e., critical thinking, problem solving, decision making, global awareness and community involvement – that may help them live not only well, but free.
- Learn for a Lifetime – Part of making this digital democracy work is our broad embrace of learning for a lifetime. It is not enough to learn about technology; we need to learn with it to better understand its potential. We are blessed with an

abundance of tools that bring learning to our fingertips. Call it professional development, career advancement or professional growth – by any name, learning is now a lifetime activity. It is not just the students who need to hear this call.

- Integrate Your College – You need to find tools and techniques to bring the often uncooperative data systems, learning management tools and other applications together to support learning in a more unified and seamless way for students.
- Welcome Dynamic Balance – It is clear that many of the best practices long associated with teaching and learning also apply in the online and asynchronous worlds. Not surprisingly, organization, clarity, participation, interaction, stimulating different learning styles, multimodal assessment, and making cognitive connections between learning material and learning experience emerge as important for online and hybrid learning. Put simply, it is a dynamically balanced approach to organizational culture and strategic practice throughout research, planning and implementation that can make or break our important efforts to leverage technology to improve learning.
- Embrace Expanding Markets – Without online learning experiences, many students would not be attending college at all. We are not dividing but expanding the pie through online courses, programs and degrees. Moreover, online work-force education options are providing training to those who could never have stopped their lives to obtain advanced certification or other, even basic skills such as team building or leadership training.

- Dog the Details – As our technology systems become prime-time elements of our programs and services, we need to ensure they are up to standards. This will likely mean treating the infrastructure much like our other major systems, more through planning, documented and systematic implementation, careful evaluation and external audits.
- Put Learning First – The resounding call from educators nationally and internationally is to use technology, not to be used by it. Asking hard questions about whether or not online learning tools and technology in general are improving and expanding learning seems to be essential for us to be most effective with our educational programs and practices. In essence, learning is our key Return on Investment. It is often a simple truth such as this, learning must be at the heart of every policy, practice and technology, and that brings clarity to our collective journey in education.
- Envision Exciting Horizons – What a great time to be an educator. It is not hyperbole to say that there has never been a time when education has been as essential and accessible, thanks in no small part to technology tools.

Technology has been integrated into classrooms, curriculum, as well as learning and teaching strategies. The availability of technology which enables access beyond the classroom is a fundamental shift that is breaking down barriers and enabling new instructional approaches. The challenge is to use it in innovative ways that keep students engaged, attentive, and able to retain information (Lindquist, 2004). The technology tool known as the Internet has changed the face of education.

Evolution of the Internet

The Internet began as project built for the Department of Defense in 1969 by the Advanced Research Project Agency (ARPA). The Internet grew out of an experimental network, called ARPAnet. This was based on a so called packet-switching network. This is where data such as an email message is broken up into packets of information. These packets were forwarded individually by adjacent computers on the network, acting as routers and were reassembled in their original form at their destination. Packet switching allowed for information to be sent by multiple users across a network both efficiently and simultaneously. Using this technology, military communications could be maintained in the event that a nuclear war or sabotage was to interfere with communication lines. Over the 1970's and early 1980's the Internet Protocol (IP) was implemented on many different kinds of computers. The decade of the 1980's saw growth that included the development of international network systems, refinements to computer file and data transfer protocols, the introduction of domain names, and the formation of listserv and newsgroups. In 1982, the word "Internet" was used for the first time. In 1983, ARPA changed the original Network Control Protocol, which governed how the electronic message is broken up and reassembled across the network, to the Transmission Control Protocol (TCP). The widespread use of TCP together with IP allowed many networks to become interconnected with ARPAnet through devices called gateways. Connecting networks, technically known as internetworking, gave rise to the term Internet (Pastan, 1996). Its developers could hardly have imagined how global the system would become.

In 1986, the US National Science Foundation (NSF) established a national network based on ARPA TCT/IP protocols to connect five supercomputer hubs with a high-speed network back-bone using commercial phone lines (Pastan, 1996). Regional, local and campus networks could connect to the NSFnet via the closest hub. The NSFnet brought computer networking to a much larger science research community, and in 1990, officially replaced the ARPAnet as the framework for the Internet. By the late 1980's the scientific community had adopted the Internet as a communications and information sharing tool. Though faster and less expensive than traditional mail service or international travel, the early Internet was burdensome to use and it was difficult to keep communications organized. Most of the files, logs, and transcripts were maintained manually.

In the early years of the Internet, it is unlikely anyone could have predicted its impact on education and the world. The Internet is a worldwide connection of more than 72 million computers that use the IP to communicate. Every computer on the Internet has a unique IP address. To make IP addresses easier for human beings to remember, a Domain Name System (DNS) was invented to permit the use of alphabetic characters instead of numbers. Domain names have the format: *hostname.subdomain.top-level-domain.* In the U. S., top-level domains normally consist of the following:

.edu	*educational*
.com	*commercial*
.gov	*government*
.mil	*military*
.net	*network support centers*

.org *other organizations*

In the rest of the world, top-level domains are usually country codes, such as *fr* for France. The sub-domain refers to the network to which a computer is connected, and the host name refers to the computer itself (Hofstetter, 2001). More than 190 countries and territories around the world are similarly connected to the Internet, forming a worldwide telecommunications network. This technology has revolutionized the way we communicate and obtain information. Of these conveniences, the Web is the newest available, and has spawned tremendous growth of Internet services (Pastan, 1996).

The Web is a networked hypertext system that allows documents to be shared over the Internet. Developed by Tim Berners-Lee at the European Particle Physics Center in Geneva, Switzerland, the Web's original purpose was to let researchers all over the world collaborate on the same documents without traveling (Hofstetter, 2001). When the Web started, it was purely text-based. In 1993, the National Center for Supercomputer Applications (NCSA) released Mosaic, a graphical user interface that made the Web extremely easy to use. In addition to text, Mosaic allowed Web pages to contain pictures, with multimedia links of audio and video as well. This led to the Web becoming the most popular service on the Internet.

Today, learning is no longer bound to a fixed location such as a classroom. Thanks to some innovative technology trends, the educational landscape is transforming into a "digital campus" an information rich and seamlessly connected environment that brings the world to a student's fingertips and lets the student freely move about the globe (Jones, 2005). Evolutionary changes in educational technology and pedagogy will be seen as educational institutions move toward the digital environment (Hiltz & Turoff, 2005).

Phenomenon of a Digital Learning Environment

In 1945, Vannevar Bush, a professor from Massachusetts Institute of Technology, MIT, and President Roosevelt's chief science adviser, wrote his seminal article, "As We May Think" (Siegel, n. d.). In it he described Memex, a "memory extension" machine, complete with images, sound, text, and "associated links" between items of information that users could access interactively. Bush was ahead of his time. His article predicted the hypermedia revolution, and today, millions of people use a global networked system we call the World Wide Web. But the Web, perhaps the prototypical example of multimedia computing, is an example of only one digital delivery system for this class of computing. Multimedia computing is the integration of multiple media, text, graphics, animation, video and sound. These various types of media may be captured in computer-based learning systems, online journals, information kiosks, virtual fieldtrips, and electronic entertainment. Multimedia computing will likely lead to significant changes in the way professors teach, students learn, and the way content is delivered.

> No longer will the teacher serve as disseminator of information via lectures and textbooks. Rather, the teacher will adopt the role of facilitator, tutor, and learner. Similarly, the student will abandon the role of solitary memorizer of facts and principles for the role of researcher, problem solver, and strategist. Additionally, students will complete many learning activities in groups, which foster development of interpersonal collaborative skills. (p. 1)

The following are some of the benefits institutions can expect once they go digital (Jones, 2004):

- Greater Accessibility – At the core of the digital campus is an infrastructure that enables greater reliability, greater scalability, and most important, greater access.
- Self-Service and Convenience – Through portals and single-sign on, students, staff, teachers, and researchers have a single point of access for all of their informational needs.
- Streamlining Back-Office Processes – Just as the portal makes life easier for students, teachers and faculty, administrators can also benefit from integrating disparate systems, such as human resources and accounting, within a single, unified architecture.
- Resource and File Sharing – Through grid-computing technologies, academic institutions are becoming research machines.
- Anytime, Anywhere Access – Providing mobility to students, teachers and administrators is critical to the success of a digital campus.
- Digitization of Content and Critical Information Assets – This opens students and teachers to a new world in education.

Today, there are over 100 laptop campuses; most are in the U. S. and Canada (Brown & Petitto, 2003). Within the larger universities are another 50 plus subgroups, especially colleges of business and engineering that require commonly configured laptops of students and faculty. Beyond the universal laptop programs, at least half of the colleges and universities in the United States are "practicing ubiquity" – that is, teaching proceeds on the assumption that every student and faculty member has appropriate access to the Internet. Faculties in most institutions throughout the developed world have decided that it is intolerable to "dumb down" teaching and learning to accommodate

those few students who shun Internet use. Just as for decades faculty have assumed that students will have access to textbooks, library resources, and laboratory facilities, so the new assumption is that all students will have reasonable and regular access to the Internet. For decades developed societies have presumed that almost everyone can be reached by phone, so today a majority of academic communities are presuming that students and faculty communicate via e-mail and Web pages (Brown & Petitto, 2003).

While there is a movement among higher educational institutions to progress toward a digital learning environment, there are concerns and additional responsibilities among the individuals who teach in those institutions. The main problem is that university faculties already have teaching, research, and publishing requirements, and working to integrate technology takes time away from these activities. Also, faculties often become discouraged because they do not receive credit for their work in adding significant technology components to their courses (Marx, 2005).

In viewing the current and future impact of computing in higher education, we must assume the technology of online learning will produce learning systems of a blended nature that are far better than the prior "gold standard" of the face-to-face class (Hiltz & Turoff, 2005). A Learning and Technology Faculty Focus Group was conducted at UW-Stout in the fall of 2004, a total of 21 instructors participated. The focus group was about learning and the use of technology in the classroom. Faculty members expressed a mix of positive and negative comments with regard to the use of laptop computers in the classroom. Positive themes that were repeated across several focus group questions included "instant access" and the changing roles of instructors, students and support staff. Overall negative themes that surfaced were the additional workload

associated with learning new technology and preparing for courses, as well as concerns about the need to continue to focus on enhancing student learning through a combination of technology and face-to-face interaction. Some instructors expressed concern that there are times when laptop computers are not needed, especially for certain disciplines, and that different learning styles are not as responsive to learning solely with computer technology. Additionally, educators at UW-Stout expressed concern that face-to-face interaction is important and that the use of laptop computers in the classroom isolates people. Some instructors felt pressured by students, parents and administrators to use computer technology during class time. They suggested that UW-Stout work to change the expectations on the part of students regarding instructor use of computer technology in the classroom (UW-Stout: Budget, Planning, and Analysis Institutional Research, 2004a). In November of 2001, prior to UW-Stout becoming a digital campus, the Laptop Implementation Committee distributed a survey to help determine the campus outlook on the laptop learning initiative (UW-Stout, 2002). The report highlighted concerns instructors had relative to the laptop project which follow:

- Technical support for computer hardware, the network, and software, including support for integration into day-to-day instruction.
- Sufficient, appropriate training for students and faculty on how to use the hardware, software, and the network.
- Adequate classrooms and public areas to accommodate laptop use.
- Maintaining and using existing computer laboratories.
- Housing a network that has the capacity to address classroom connectivity needs.

- A lack of uniformity of laptop models.
- Working with mixed classes of laptop and non-laptop students.
- A lack of standards or minimum expectations regarding how the laptops will be used to deliver instruction.
- Communicating measures for security against theft to the students.

Implementation of the Laptop Initiative at University of Wisconsin-Stout

As of September, 2002, UW-Stout became a digital campus. All faculty and staff were expected to use available technology in their positions including course delivery. All incoming freshman were required to own a laptop computer, which they leased through UW-Stout. To fully realize its Laptop Initiative, UW-Stout technically updated the entire campus, joining a growing number of institutions nationwide that have become fully wireless connective. In the fall of 2002, UW-Stout introduced its new portal, e-Scholar, which allowed students to access individualized information about their schedules, registration, email, and more. Providing training for faculty was essential to the success of implementing the Laptop Initiative.

At UW-Stout, the digital learning environment has prompted new methods for facilitating the learning experience for students. Several resources are available for faculty and instructors that support their work in facilitating new and enhanced teaching practices that improve student learning through the use of technology (UW-Stout, 2005). The Teaching and Learning Center at UW-Stout also addresses technology concerns in its "Lessons Learned" sessions and Web camps for faculty and staff (Kempfert, 2002).

The e-Scholar Program is the digital learning environment at UW-Stout which offers students a variety of opportunities to be successful in achieving their academic

goals (UW-Stout, 2005). The digital culture at UW-Stout is emerging as a dynamic agent for changing ways we learn. Students are provided with the tools that they will need to be technology literate in this environment. The e-Scholar Program ensures that students and faculty have a standard set of tools - both hardware and software - that meet a majority of their wireless computing needs, thus producing a wireless laptop campus environment. UW-Stout leases laptop computers and issues them to e-Scholars on a two-year replacement cycle, meaning a student will not have a laptop more than two years old. Students enrolled in three or more credits receive a laptop, and the cost is included in the tuition for attending UW-Stout. The laptop is distributed to students during specific deployment sessions three times a year and includes training to assist students with the use of the laptop and campus computing resources. Students receive a laptop computer, backpack and a variety of cords/accessories during deployment. The e-Scholar Program includes software, wireless and wired connectivity on campus, portal and course management systems, service and support, training, network storage, email, Web page space, and multimedia classrooms.

Malcolm Baldrige Award Recipient

UW-Stout has seen results from the Laptop Initiative through national recognition. It is the kind of teamwork that has always been a characteristic of UW-Stout faculty and staff-and that helped UW-Stout become the first higher education institution to win the prestigious Malcolm Baldrige National Quality Award which is considered America's highest honor for performance excellence and quality achievement (Kempfert, 2004). Named after the 26th secretary of commerce, the Baldrige Award was established by Congress in 1987 to enhance the competitiveness of American businesses. Five

awards are given each year for manufacturing, service, small business and, added in 1999, education and health care (UW-Stout: Center for Assessment and Continuous Improvement, 2005a). UW-Stout's achievements fit the Baldrige categories for academic organizations:

- Leadership: The collaborative Chancellor's Advisory Council, which includes representation from students, faculty, staff and administration, was formed to guide decision-making.
- Strategic planning: UW-Stout implemented a comprehensive annual planning process that aligns campus priorities with resource allocation.
- Student, stakeholder and market focus: UW-Stout conducts numerous surveys to determine expectations and satisfaction levels, including the ACT Student Opinion Survey and the National Survey of Student Engagement, as well as annual surveys of alumni, employers and the UW System Board of Regents.
- Information and analysis: UW-Stout implemented Datatel, an integrated information system that provides faculty and staff with widespread access to data. Committees, councils and taskforces base their decisions on this information.
- Faculty and staff focus: UW-Stout faculty and staff are involved in committees, councils and taskforces that cut across departments, colleges and divisions. Involvement may be in standing committees, such as the Curriculum and Instruction Committee, or in special taskforces, such as the Women's Equality Initiative Steering Committee.
- Process management: UW-Stout has implemented systems to design, implement and review academic programs and support services.

- Organizational performance results: UW-Stout tracks progress on key student indicators, such as retention rates, placement rates and student satisfaction. Trends are also determined from maintained financial results and employee information. Comparisons are made to peer institutions, other UW comprehensive universities and external agencies when appropriate.

The evolution of the digital age is apparent all around the UW-Stout campus, from students sitting at various eateries typing on their laptops, to computers on every floor of the library learning center. But for faculty, integrating computer technology goes far beyond getting a new laptop computer, delivering a lecture with an animated PowerPoint presentation or winning a prestigious award. For many, it means restructuring their entire curricula to accommodate new technological innovations while maintaining their core teaching beliefs and methodologies. Integrating technology into the courses of faculty and instructional staff at UW-Stout will take time and patience. Technological innovations and software will continue to improve over the next decade and digital learning environments will continue to evolve. Educators must remember that encouraging students to be in charge of their own learning is essential. Computer technology is a learning tool used by instructors, just as group projects, in-class discussion and field trips are. Instructors need to use computer technology to help prepare college students for the working world, to simulate how the students themselves will be using technology as a professional, in real-world situations. Educators should not use computer technology just because they are required to or feel pressured to. As educators, we need to support each other and our individual teaching styles. We need to accept change and seek support and professional development. Just as technology will

continue to evolve and broaden, so must the attitudes of university instructors, administrators and students.

Chapter III: Methodology

The purpose of this chapter is to identify the methods used to collect data and analyze that data for statistical significance. This study is intended to examine University of Wisconsin-Stout faculty and instructional staff members' use of computer technology in their courses.

This chapter will include information about the subject selection and description, instrumentation, data collection procedures, data analysis, and limitations. The study is both qualitative and quantitative in its methods. The research questions for this study are:

1. What are UW-Stout instructors barriers regarding computer technology use as an instructional tool?
2. To what degree are UW-Stout instructors utilizing computer technology within their instructional methodology?
3. What are the level and scope to which UW-Stout instructors are integrating computer technology into their instruction, including planning and delivery?
4. Do instructors at UW-Stout support a digital learning environment? Why or Why not?

Subject Selection and Description

The subjects will all be educators at the University of Wisconsin-Stout in the fall of 2005. They include faculty and academic staff. Academic staff will be broken down into two groups: those who spend 50% or more time teaching and those who spend 50% or less of their time teaching.

Instrumentation

The survey was designed by the researcher, with consultation by Dr. Orville Nelson, Meridith Wentz, Bill Wikrent, Dan Riordan and Jane Henderson. The survey questions were generated from a number of sources: reviewing of existing literature on the subject, conversations with UW-Stout faculty and staff, conversations with other UW-Stout students, and personal experiences.

Chris Rivard, Web Designer from University Relations, administers phpESP, an open-source software that lets non-technical users create surveys, administer surveys, gather results and view statistics. He set up an account for this research study and explained how to use the program. After the researcher converted the survey to an online format, Chris Rivard activated the online survey and created a link to facilitate conducting this study.

Data Collection Procedures

The University of Wisconsin-Stout is a digital campus. All UW-Stout faculty and academic staff communicate daily via email. Because of the subject matter of the survey, computer technology use, it was a logical decision to administer this survey electronically. Jeanne Stoeklen from the UW-Stout Graduate School provided a current email list of faculty and academic teaching staff at UW-Stout. There were 438 employees on that list. An email message was sent in conjunction with the University of Wisconsin-Stout Budget, Planning and Analysis office to all faculty and instructional staff who teach at the University of Wisconsin-Stout, asking for their participation in the study. If they chose to participate, they could click on a link that would bring them to a 27 question survey. The researcher determined three weeks to be an adequate amount of

time for all surveys to be back. At week two, with one week left, a reminder email is sent out to encourage maximum participation by faculty and staff.

Data Analysis

Once the survey is completed the results will be automatically stored in a data base that is only accessible by the researcher. SPSS will be used to analyze data frequencies, means, and percentages for appropriate questions. The fill in the blank questions will be analyzed to determine common themes.

Page one of the survey deals with demographic questions and independent variables. Page two has questions with multiple or unique choice answers that offers nominal data. Page three of the survey has ordinal data and offers dependent variables. Page four allows for respondents to write out their answers in a text box format.

Limitations

It is believed that due to sensitivity of this issue, UW-Stout instructors might not have wanted to take the time to fill out a survey regarding their attitudes and beliefs, in the event nothing would be done with the results. Some instructors could have viewed the survey as repetitious. The study utilized a survey instrument designed by the researcher. The results of the study were limited to instructors at UW-Stout in the fall of 2005. On question five of the survey, the directions give the respondent a Not Applicable (NA) option. However, this was not reflected in the scale and might have caused confusion.

Summary

In summary, this survey uses a combination of multiple choice and fill in the blank questions. It is assumed that all of the questions were answered truthfully. It is also assumed that the survey results reflect the attitudes and beliefs of University of

Wisconsin-Stout faculty and academic staff regarding the use of computer technology in the planning and delivery of their courses.

Chapter IV: Results

A survey tool was designed to examine the use of computer technology by UW-Stout instructors in their courses. UW-Stout is a digital campus and all faculty and staff are expected to use available technology in their positions including course delivery. It is believed each respondent has an attitude, feeling, or belief regarding the use of computer technology in their courses as well as an opinion of their perceived skill level and need for professional development. This chapter outlines results of the survey, both statistically in the form of average ranks, percentages, and number of responses as well as qualitatively by using information that was reported by participants.

The following research questions were addressed in this study.

1. What are UW-Stout instructors' barriers regarding computer technology use as an instructional tool?
2. To what degree are UW-Stout instructors utilizing computer technology within their instructional methodology?
3. What are the level and scope to which UW-Stout instructors are integrating computer technology into their instruction, including planning and delivery?
4. Do instructors at UW-Stout support a digital learning environment? Why or why not?

Demographics

The response rate was 32.6%. The data included 143 respondents, both females (n=58) and males (n=85), out of 438 educators at UW-Stout during the fall of 2005. The respondents were from one of three groups that included faculty (n=111) and academic staff (n=32). Academic staff was broken down into two groups, those who spent 50% or

more of their time teaching and those who spent 50% or less of their time teaching. The respondents were asked to select their highest level of education and were given three choices: masters, doctorate, and other. Under the category "other," respondents working on attaining their masters degree were categorized in the masters category (n=55) and those working on attaining their doctorate degree were categorized with those who had their doctorate. UW-Stout is comprised of three colleges including the College of Arts and Sciences (n=62), College of Human Development (n=20), and College of Technology, Engineering and Management (n=42), and one school, the School of Education (n=19). Respondents were asked to select one in which they do most of their teaching. The following is an analysis of the results.

Research Question One

1. What are UW-Stout instructors' barriers regarding computer technology use as an instructional tool?

Survey questions six, seven, 10, 13, 19, 21, 23 and 25 relate to this research question and will each be discussed in detail.

Survey question six. This question asked instructors about their level of skill when using computer technology in their instructional practices. See Table 1 for the average ranks for each type of computer technology. A five point Likert-type scale was used. A response of one indicated "cannot do," two was "can do with a lot of help," three was "can do with some help," four was "can do without help," and five was "can teach it to others."

Table 1

Instructors' Skill Levels

Type of Technology	Average Rank
Presentation Programs (i.e., PowerPoint)	4.4
Outlook	4.3
UW-Stout Online Library Resources	4.0
ACCESS Stout	4.0
Spreadsheet	3.8
Multimedia Applications (i.e., audio and video production tools)	3.7
Learn@UW-Stout	3.6
Database	3.4
Access	3.3

Overall, instructors seemed fairly independent in their use of computer technology with average ranks in the "can do with some help" and "can do without help" categories. The results indicated instructors' perceived highest level of skills were with using a presentation program like PowerPoint and Outlook. Instructors perceived lowest level of skills were with using Access, databases, and Learn@UW-Stout.

Survey question 25. This question asked respondents specifically about their experience with Learn@UW-Stout, whether it has increased or decreased their workload, and what UW-Stout could do to address any issues instructors have with Learn@UW-

Stout. The quantitative results of the Likert scale for question six did not correlate with the qualitative results indicated by the respondents. The statistics reflected that instructors experienced some issues with responses closer to "can do without help." However, there were significantly more comments made by instructors that reflected a sense of frustration and ill feeling toward the software. Themes of negative comments regarding Learn@UW-Stout included wasted faculty and student time, increased student expectations, constantly changing software, not intuitive, required a lot of training, designed poorly, a lot of internal errors, constantly got booted off, print too small - caused eye strain and poor technical support. The following were examples of comments made by UW-Stout instructors. The question stated *"Some instructors have expressed concerns that the Learn@UW-Stout program has increased their workload. Do you agree? If yes, what could UW-Stout do to address this issue? If not, Why?"*

> "Absolutely – students expect a quick turn around in their responses – it is not unusual for me to not only deal with my Stout email and then deal with 110 messages on Learn. My family is tired of the time I spend in front of the computer."
>
> "ABSOLUTELY! STOUT MUST REPLACE LEARN@UW-STOUT ASAP WITH BLACKBOARD.COM OR EQIVALENT. ANY ANTICIAPTED COSTS SAVINGS VAPORIZES WHEN YOU CONSIDER WASTED FACULTY & STUDENT (REMEMBER THE CUSTOMER) HOURS IN ADDITION TO MORALE HITS FOR ONLINE LEARNING."

"Learn@UW-Stout can be a bit burdensome when setting up a course. Also, because it is not particularly intuitive, it requires a lot of training in order to use all its features."

"Fix the thing so there aren't so many internal errors and we're not booted off so frequently."

"Absolutely! Teaching online is 3 – 4 times as much work as in person class, the emails are ridiculous! Keeping the coursework, links, etc updated is a huge work load. UW needs to recognize that this takes up instructor's time and compensate for this time loss. The whole system, tenure, expectations, performance, demands have to change along with new technologies in the classroom/out of class."

"Yes. I will not use Learn@UW-Stout for my smaller classes in the future. Learn@UW-Stout would be great if (1) it worked and (2) the web developers would listen to my concerns and ideas for upgrades. It is a powerful tool, but could be made so much better if there was an open dialogue with the users. Now, there is a miserable help desk in Madison. Not much help!!"

"Yes. It takes hours to set up a class and more hours to walk students through it. I have no idea what can be done except stop using it."

"Be committed for 4 years to it or something like it so I don't have to keep changing and re-doing stuff. I did an online course this summer, and some students said it was their 4th CM [course management] 'tool.'"

For the second part of question 25, instructors gave suggestions for university officials to address some of the issues they had with Learn@UW-Stout. Some of the

suggestions were to provide prompt responses to technical support questions, reduce course loads, provide support and release time for online course development and link ACCESS Stout grade submittal to Learn@UW-Stout.

Although many comments were negative, some participants did have positive comments. Positive themes were as follows, easy to learn and use, enhanced course, decreased workload, minimized handouts and other paper documents, shifted responsibility to students, more efficient, and more time for student/teacher interaction. Some of the positive comments from UW-Stout instructors regarding Learn@UW-Stout were as follows.

> "No. Learn @ has allowed me to be more efficient and economical in the delivery of instruction. I believe that every faculty member at Stout could utilize at least one aspect of Learn@ capabilities."

> "No. Since I integrated technology into my classes, I have much more time to give individual help to the students who need it. I do not consider helping such students an "increase" in workload. I'm doing my job more efficiently and helping more students learn."

> "No, actually I find that it decreases my workload over the semester. It takes additional time "upfront" to post information, but I put my syllabus, lecture outlines, and study guides online and then leave it to the students to download if they want the materials. It places more responsibility on the student to gather information and I don't spend time photocopying many of the things I did in the past (include copies of the syllabus that students have misplaced). I also post

grades online which has greatly reduced the number of students standing outside my door wanting to know where they stand in class."

"No, I find it helpful to post course materials here, and the grade book is well designed."

"I think it allows instructors to organize their work, and it works beneficially for them."

"I think the workload balances out: The first time you teach a class using this tool, there definitely is a considerable increase in preparatory work. Subsequently, the workload decreases, as you just need to tweak and refine in later editions of the course."

It is the researcher's assumption that the program Learn@UW-Stout could be considered a barrier for some instructors at UW-Stout regarding computer technology use as an instructional tool.

Survey question seven. This question asked instructors to rate their need for professional development with integrating computer technology into their instructional practices. A five point Likert scale was used. A response of one indicated "not needed," three was "would be helpful," five was "urgently needed." The researcher assumed respondents would understand two indicated a range between "not needed" and "would be helpful" and four indicated a range between "would be helpful" and "urgently needed." The respondents could have also selected NA for "not applicable". See Table 2 for the average ranks as instructors perceive their need for professional development.

Table 2

Instructors' Needs for Professional Development

Type of Technology	Average Rank
Learn@UW-Stout	2.7
Multimedia Applications (audio and video prod. tools)	2.4
Database	2.1
Access	2.1
UW-Stout online library resources	2.0
Presentation Programs (PowerPoint)	1.9
Outlook	1.9
ACCESS Stout	1.8
Internet	1.7

Overall, instructors felt confident with their computer technology skills. On a scale where three indicated professional development "would be helpful," instructors gave Learn@UW-Stout a rating of 2.7. The qualitative information relating to this question was also examined. Suggestions for specific topics for professional development on Learn@UW-Stout were the basics, engaging learners in an online environment, collaborative learning activities, time management tips, audio and video technology to enhance online courses, creative testing strategies and tools and techniques. Suggestions for specific formats for the professional development on Learn@UW-Stout included bi-weekly workshops, daily "bull" sessions, a website showcasing examples, small group seminars, discussion forums, mini workshops and teaching stations in

classrooms to help those who were trying to use the technology, and encourage those who were not using it to start using it more.

It is the researcher's assumption that instructors at UW-Stout felt they needed more professional development on how to better use Learn@UW-Stout. Not being properly trained and not using the program to its full capability could be considered a barrier regarding computer technology use as an instructional tool.

Survey question 10. This question asked instructors if they felt pressured to use technology during instruction. The respondents were given an opportunity to choose one answer: strongly disagree, disagree, neutral, agree or strongly agree. See Table 3 for results.

Table 3

I Feel Pressured to Use Computer Technology During Instruction

Response	N (143)	Percentage
Strongly disagree	14	9%
Disagree	28	19%
Neutral	30	21%
Agree	38	27%
Strongly Agree	33	23%

The highest number of participants chose "agree," followed by "strongly agree" and "neutral." Instructors were given an opportunity to comment on their feelings of being pressured to use computer technology. The following were examples of those statements.

"Get top level administrators off of our back with regard to shoving the use of technology in our faces for use in the teaching of our students. If they want it used so badly, then tell them to come back into the teaching environment and use it themselves."

"I like using technology in the classroom, but see several serious problems. First, our leaders, the people who put us under stress to use technology, don't understand it themselves. They have a one-size fits all attitude and expect the technology to be used whether it's appropriate or not (or if they don't feel this way, everyone thinks they do, which might as well be the same thing)."

"Stout should not be pushing everyone to use a laptop in every class; it's just not appropriate everywhere."

"Learn@UW-Stout is very poor software and it is often not running. I feel I can communicate with my students better without it. Yet, I feel pressured to use it. I feel the same, to a lesser extent about e-scholar."

"There is a strong pressure to use computer technology in courses – by both students and the schools reputation. We need to be able to not use technology and feel ok with it! It needs to enhance instruction – and we need to have proof. More research! I enjoy using technology and learning new skills and applications – but I also like the freedom to choose."

"I feel pressured by students but not by anyone else."

> "I should feel the protection of academic freedom, but am not sure the net is there for me, since I am a member of the academic staff. In other words, I should be able to use whatever approach I want without fear of reprisal."

The respondents shared a similar thought regarding the feeling of being pressured to use computer technology in their courses. Some believed that there were courses where it was appropriate to use computer technology and some courses where it was not appropriate to use computer technology. Here was one example.

> "Instructors feel they are going to be evaluated on how much they use technology, with 'more' being seen as better regardless of whether or not it's inappropriate or actually gets in the way of the lesson."

The results indicated that feelings of pressure to use computer technology in their courses negatively affected their attitude toward computer technology. The data indicated instructors feeling pressured to use computer technology affected their overall morale. This may have caused a negative effect toward the use of computer technology by instructors in their courses and could be considered a barrier.

Survey question 13. This question asked instructors if they were equipped with the computer technology they needed to work efficiently in their classroom at UW-Stout. Respondents were given an opportunity to choose one answer: strongly disagree, disagree, neutral, agree or strongly agree. See Table 4 for results.

Table 4

I am Equipped With the Computer Technology I Need to Work Efficiently in my Classroom at UW-Stout

Response	N (143)	Percentage
Strongly disagree	10	7%
Disagree	17	11.9%
Neutral	26	18.2%
Agree	61	42.7%
Strongly Agree	28	19.6%

Out of 143 respondents, 27 people felt they were not equipped to work efficiently in their classroom (strongly disagree or disagree), 26 were neutral, and 89 people felt they were equipped to work efficiently in their classrooms at UW-Stout (agree or strongly agree). Although results indicated educators felt technologically equipped, some felt their classrooms were not technologically equipped. Instructors indicated classroom technology was outdated, consisting of old VCR's that did not work well, poor availability of portable proximas as well as unreliable and poor wireless connectivity, especially noted in Harvey Hall. Here is an example of a comment.

> "I am equipped with the computer technology I need to work efficiently in my classroom at UW-Stout – the problem I have is that I normally use classrooms that are not media equipped. This means that I have to use a portable proxima. There are not enough of these to go around and many are very old, and do not work well. This greatly limits my ability to use technology and forced our

students to have technology, we have shorted the classrooms and instructors by not making the proper technology available to them."

A number of respondents felt the computer technology they had was sufficient in their classroom. The instructors felt connectivity issues attributed to a lack of dependability; consequently, this greatly influenced their inability to plan daily lessons that integrated the Internet. Respondents felt this was a stressor for them. The researcher determined this to a barrier regarding computer technology use as an instructional tool. This issue was directly related to the next survey question to be discussed.

Survey question 19. This question refers to the term "techno-stress," which is an increase in stress levels brought on by the use of technology. Instructors were asked if they feel they suffer from techno-stress when using computer technology in their courses at UW-Stout. Respondents were given an opportunity to choose one answer: strongly disagree, disagree, neutral, agree or strongly agree. See Table 5 for results.

Table 5

I Feel I Suffer From Techno-Stress

Response	N (142)	Percentage
Strongly disagree	20	14%
Disagree	42	29.4%
Neutral	31	21.7%
Agree	34	23.8%
Strongly Agree	15	10.5%

The data indicated that out of 143 respondents, 62 respondents felt techno-stress was not an issue for them in their instructional practices at UW-Stout (disagree and strongly disagree), 31 people indicated they were neutral, and 49 respondents felt they suffered from techno-stress (agree and strongly agree). Those 49 respondents gave specific examples of how and why they feel techno stress affected them in their instructional practices. Instructors were very open about this subject. A significant amount of qualitative data was collected regarding the personal opinions and experiences of UW-Stout instructors with techno-stress.

Instructors documented that felt they suffered from techno-stress because they spent too much time trying to get technology to work, especially at the beginning of the semester. The data indicated that instructors could not fully embrace the digital learning environment, because they could not rely on the availability and functionality of everyday tools. Technological glitches, lack of technical support and unreliable technology including connectivity, both wireless and wired, caused a great deal of stress to instructors, especially if they spent a significant amount of time preparing highly technological lessons. UW-Stout educators indicated they experienced techno-stress due to constantly changing software products, noting that it was time consuming and stressful to learn programs like Blackboard, e-Scholar and Learn@UW-Stout or D2L (Desire to Learn), in addition to teaching students and redesigning coursework every year because of changing software requirements.

A common theme or cause of techno-stress for UW-Stout instructors was an increased workload attributed to answering emails, creating PowerPoint presentations for every lesson, and training students on Learn@UW-Stout. Another cause of techno-stress

was attributed to pressure from administrators and students to use computer technology in their courses. Educators indicated they felt university leaders expected them to use computer technology in their courses whether it was appropriate or not. They also felt students were under the assumption they were available 24 hours a day, seven days a week. Noting, students expected their emails to be answered immediately and in detail. Instructors felt this was time consuming and frustrating because students were less likely to seek the answers out on their own.

Although statistics from this survey said techno-stress was not an issue for most instructors at UW-Stout, the qualitative responses by instructors indicated that it was clearly a very serious concern. The researcher feels techno-stress can be considered a barrier and it causes anxiety for many and should be addressed.

Survey question 21. Instructors were asked if a physical disability affected their efficient use of technology. The respondents were given an option of selecting yes or no. Out of 143 respondents, seven people had a physical disability that affected their use of computer technology in their instructional practices. The vast majority of instructors at UW-Stout who participated in the study (136) did not report having a physical disability that affected their use of computer technology in their courses. If instructors had a physical disability, the survey tool provided contact information in the event they were interested in getting an assessment done to explore technological tools that could help them become more efficient in their classroom and instructional methods. The data indicated some instructors felt the repetitive use of computer technology was the cause of physical injuries such as carpal tunnel, eye strain, neck and back pain, tendonitis, and hand and arm problems.

The researcher determined that having a physical disability is a barrier to only those who noted they had one. It is the researcher's hope that the respondents that do have a physical disability use the contact information to explore technological innovations that may enhance their teaching experience.

Survey question 23. The survey asked instructors if they relied on students to resolve computer technology problems in their classroom. The respondents were given choices of yes or no. See Table 6 for results.

Table 6

Do You Rely On Students to Fix Technology Issues?

Response	N (143)	Percentage
Yes	47	33%
No	96	67%

The majority of instructors said they did not rely on students if a technology issue arose. One instructor noted,

"I don't rely on students, although I will ask if they can help when I have a problem. There are students who are much more tech savvy then me about many aspects of computer use."

If the instructors relied on students to resolve technology issues they commented on why and explained their answer.

"Occasionally I learn things from students."

"Occasionally students will have a resolution for a problem that I am not aware of. It is great to learn from them; however, it can be embarrassing."

"Often they know more than I do."

"Definitely – it becomes a collaborative effort and students can interact, not only with me but peers."

"Ask 5000...which are students. However, they are never able to help."

"Students generally have a much better understanding of new equipment and solve problems quicker and more efficient."

It does not appear that relying on students to fix technological problems is a barrier for UW-Stout instructors. Although instructors would like to be able to fix technology problems by themselves, they understand students are more tech savvy and are willing to accept help to continue class.

This concludes the discussion of research question number one.

Research Question Two

2. To what degree are UW-Stout instructors utilizing computer technology within their instructional methodology?

Research question two refers to the frequency of instructors' use of computer technology within their instructional practices. Survey questions five and 12, relate to these research questions and will each be discussed in detail.

Survey question five. This question asked instructors to indicate how much they were using computer technology in their instructional practices, including planning and delivery. See Table 1 for the average ranks for each type of computer technology. A five point Likert-type scale was used. A response of one indicated "never," three indicated "weekly" and five indicated "daily." The researcher assumed respondents would understand that two indicated between "never" and "weekly" and four indicated between

"weekly" and "daily." The instructions for question five said respondents could select NA for "not applicable." However, the respondents were not able to select "not applicable" due to an error in the formatting of the survey. See Table 7 for average ranks of each type of technology.

Table 7

How Much Instructors are Using Computer Technology in Their Instructional Practices, Including Planning and Delivery of Instruction

Type of Technology	Average Rank
Outlook	4.0
Presentation Programs (i.e., PowerPoint)	3.6
Learn@UW-Stout	3.1
Spreadsheet	3.0
Multimedia Applications (i.e., audio and video prod. tools)	2.9
UW-Stout Online Library Resources	2.9
ACCESS Stout	2.8
Database	2.3
Access	2.2

Overall, instructors used Outlook the most out of the examples given. The data indicated they used Outlook between daily and weekly. Instructors indicated that out of the examples given for computer technology, they use PowerPoint in their instructional practices second most frequently. Most of the examples were used by instructors on a weekly basis with the exception of Access and a database, which were used less frequently. The data clearly indicated that instructors were not using any of the identified technology on a daily basis. Even though UW-Stout is a digital learning environment, this may not constitute poor practice, but may be an indication on personal preference of what constitutes good practice.

Survey question 12. The instructors were asked if their knowledge of computer technology affected how much they used it in their teaching. The respondents were given an opportunity to choose one answer: strongly disagree, disagree, neutral, agree or strongly agree. See Table 8 for results.

Table 8

My Knowledge of Computer Technology Affects How Much I Use It In Teaching

Response	N (143)	Percentage
Strongly disagree	13	9.1%
Disagree	10	7%
Neutral	18	12.6%
Agree	51	35.7%
Strongly Agree	51	35.7%

The data indicated that 73.4% of UW-Stout instructors agreed their knowledge of computer technology affected how much they used it in their instructional practices. As a result, instructors were likely to use computer technology on a more frequent basis if they had greater knowledge of computer technology.

This concludes the discussion on research question two.

Research Question Three

3. What are the level and scope to which UW-Stout instructors are integrating computer technology into their instructional practices, including planning and delivery?

Research question three refers to the broader picture of use of computer technology in instructional practices such as kind and complexity. Survey questions eight, nine, 11, and 15 relate to these research questions and will each be discussed in detail.

Survey question eight. Instructors were asked to rate their interest level for integrating multimedia applications into their instructional practices. The respondents were given four options of multimedia applications to choose from. A five point Likert-type scale was used. A response of one indicated "lowest or no interest," three was "average or mild interest," and five was "highest or great interest." The researcher assumed respondents would understand two indicated between "no interest" and "mild interest" and four indicated between "mild interest" and "great interest." See Table 9 for the average ranks for interest level for integrating multimedia applications.

Table 9

Interest Level for Integrating Multimedia Applications

Type of Technology	Average Rank
Audio and video production tools	3.5
Photography/digital imagery	3.4
Online simulations	3.1
Internet conferencing	2.8

Instructors indicated they were most interested in integrating audio and video production tools into their instructional practices. They also indicated they wanted to integrate more photography and digital imagery tools into their instructional practices.

The respondents showed interest in learning more about online simulations so they could integrate them into their courses. Instructors showed some interest in Internet conferencing but were less enthusiastic about it than the others.

The data indicated that instructors were interested in integrating more multimedia applications into their instructional practices. The researcher did not ask instructors to rate the level and scope to which they were currently using multimedia applications in their instructional practices. However, survey question eight and survey question nine suggested the instructors wanted to learn more about this technology so they could integrate more multimedia applications into their instructional practices.

Survey question nine. There were more multimedia technology options available for educators on the market, other than the ones indicated by the researcher in question eight. Therefore, the researcher asked participants to expand on their response to question eight and make suggestions for other multimedia applications they would like to integrate into their instructional practices. The following were examples of those suggestions: teleconferencing, video streaming, web page design, blogs, ichat and animation. It was noticed that some of the examples that instructors gave were actually specific programs included under the categories offered by the researcher.

Survey question 11. Instructors were asked if they incorporated computer technology into their instructional practices. The respondents were given an opportunity to choose one answer: strongly disagree, disagree, neutral, agree or strongly agree. See Table 10 for results.

Table 10

I Incorporate Computer Technology Into My Teaching

Response	N (143)	Percentage
Strongly disagree	6	4.2%
Disagree	5	3.5%
Neutral	6	4.2%
Agree	55	38.5%
Strongly Agree	71	49.7%

A large majority, 88.2 % of the teaching population indicated that they did incorporate computer technology into their instructional practices. Neutral responses made up 3.5% of the responses, which indicated they did not have strong feelings, and 7.7% indicated they did not incorporate computer technology into their instructional practices. The reason for that small population not using computer technology in their courses could be a direct result of survey question 15.

Survey question 15. Instructors were asked if integrating computer technology into their courses was difficult because of the subject matter they taught. The respondents were given an opportunity to choose one answer: strongly disagree, disagree, neutral, agree or strongly agree. See Table 11 for results.

Table 11

Using Computer Technology in my Course or Courses at UW-Stout is Difficult Because of the Subject Matter I Teach

Response	N (143)	Percentage
Strongly disagree	36	25.2%
Disagree	54	37.8%
Neutral	33	23.1%
Agree	13	9.1%
Strongly Agree	7	4.9%

Out of 143 respondents, 63% did not feel the subject matter they taught hindered the effective use of computer technology in their courses, 23.1% were neutral, which likely indicated they did not have strong feelings on this issue. However, a small population, 14% agreed that it was difficult to use computer technology in their course because of the subject matter they taught. This may have accounted for the small percentage of instructors in question 11 that did not incorporate computer technology in their courses at UW-Stout.

The data indicated that a large percentage of the teaching population at UW-Stout used computer technology in their instruction, including planning and delivery. Qualitative and quantitative data indicated most instructors communicated regularly with students via email and were interested in integrating more multimedia features into their instruction. Of the small population that indicated they did not incorporate computer technology into their instructional practices, it may not constitute poor practice on the

part of the instructor but may be an indication of personal preference and their definition of what constitutes good practice.

This concludes the discussion on research question three.

Research Question Four

4. Do instructors at UW-Stout support a digital learning environment? Why or why not?

Survey questions 14, 16, 17, and 18 relate to this research question and will each be discussed in detail.

Survey question 14. Instructors were asked if they think computer technology is a tool that will improve student learning in their classroom. The respondents were given an opportunity to choose one answer: strongly disagree, disagree, neutral, agree or strongly agree. See Table 12 for results.

Table 12

Computer Technology Can be a Tool to Improve Student Learning in my Classroom

Response	N (143)	Percentage
Strongly disagree	8	5.6%
Disagree	6	4.2%
Neutral	32	22.4%
Agree	46	32.2%
Strongly Agree	51	35.7%

A significant amount, 67.9% of the respondents indicated they believed computer technology could be a tool used to improve student learning, which showed they

supported a digital learning environment. 22.4% were neutral, which likely indicated they did not have strong feelings on this issue. However, a small percentage, 9.8%, that indicated they did not believe computer technology could be used as a tool to improve student learning. Those respondents likely do not support a digital learning environment.

Survey question 16. Instructors were asked if they felt using computer technology in their classroom overshadowed their teaching methodology (i.e. discussion, sharing personal experiences). The respondents were given an opportunity to choose one answer: strongly disagree, disagree, neutral, agree or strongly agree. See Table 13 for results.

Table 13

Using Computer Technology in my Classroom Overshadows my Teaching Methodology

Response	N (143)	Percentage
Strongly disagree	29	20.3%
Disagree	50	35%
Neutral	30	21%
Agree	25	17.5%
Strongly Agree	6	4.2%

Out of 143 respondents, 79 of them did not feel that computer technology overshadowed their teaching methodology (strongly disagree or disagree). Thirty one people did feel that computer technology overshadowed their teaching methodology and likely interfered with class discussion and the sharing of personal experiences (agree or strongly agree). Thirty people were neutral, which likely indicated they did not have strong feelings on this issue.

Survey question 17. Instructors were asked if they supported UW-Stout's efforts to be a digital learning environment. The respondents were given an opportunity to choose one answer: strongly disagree, disagree, neutral, agree or strongly agree. See Table 14 for results.

Table 14

I Support UW-Stout's Efforts to be a Digital Learning Environment

Response	N (143)	Percentage
Strongly disagree	8	5.6%
Disagree	12	8.4%
Neutral	27	18.9%
Agree	49	34.3%
Strongly Agree	46	32.2%

Out of 143 respondents, 95 instructors supported a digital learning environment (agree or strongly agree). There were 20 respondents that did not support UW-Stout's efforts to be a digital learning environment. However, 27 people were neutral. This likely indicates they did not have strong feeling on this issue, or some days they did support a digital learning environment and some days they did not.

Survey question 18. This question asked instructors if their colleagues in their department supported their use of computer technology in the classroom. The respondents were given an opportunity to choose one answer: strongly disagree, disagree, neutral, agree or strongly agree. See Table 15 for results.

Table 15

The Instructors in my Department Support my Use of Computer Technology in the Classroom

Response	N (143)	Percentage
Strongly disagree	3	2.1%
Disagree	7	4.9%
Neutral	27	18.9%
Agree	71	49.7%
Strongly Agree	35	24.5%

A large majority, 74.2% of the population indicated they indeed had support from fellow instructors in their department. Noting, some instructors were more computer savvy than others; however, there did not seem to be any negative feedback from those who were less likely to use computer technology in their classroom. A significant amount of people, 18.9% were neutral on this subject, which likely indicated they did not have strong feelings on this subject. However, there was a small percentage, 7% that did not feel they had the support of other instructors in their department for their use of computer technology in the classroom. The qualitative data indicated that there were instructors who felt pressured by university officials to use computer technology, coupled with negative feedback toward their use of computer technology, and could have accounted for a lack of support from departmental colleagues.

Overall, the data indicated instructors at UW-Stout supported a digital learning environment. Many felt the university was doing a good job of giving instructors the

tools they needed to succeed. However, there were many instructors who felt it was not appropriate to use computer technology on a daily basis. Noting, face to face instruction, class discussion, and group activities were more likely to engage students than daily lectures with PowerPoint presentations.

The results of the survey indicated a significant amount of neutral responses. The researcher assumed that the respondents did not have strong feelings on those particular issues. If the respondents would have agreed or disagreed, instead of choosing neutral, it may have greatly impacted the positive or negative results of the data.

It was evident that techno-stress greatly effected many instructors' work days and lives. Some instructors may have gone through the day without any technological problems, which could have been the days they supported a digital learning environment. On the days that technology problems arose, it could have taken up a lot of time and impacted the outcome of their whole day. Those were likely the days that instructors did not support a digital learning environment.

Many UW-Stout instructors felt supported by colleagues in their department. This in turn, could boost morale and increase instructors' likelihood of using computer technology in their classroom. It appeared that instructors, whom felt supported by fellow colleagues to use computer technology, could have an impact on overall support of UW-Stout's efforts of being a digital learning environment.

This concludes the discussion of research question four.

Chapter V: Discussion

The purpose of this study was to examine UW-Stout faculty and academic staff members' use of computer technology in their courses. This study provided instructors at UW-Stout with an opportunity to describe their feelings, attitudes, and beliefs toward computer technology and how it impacted them. It also afforded them an opportunity to indicate their skill level, perceived needs for professional development, and if they felt computer technology applied to their discipline and could be used in the classroom. The following research questions were addressed in this study.

1. What are UW-Stout instructors' barriers regarding computer technology use as an instructional tool?
2. To what degree are UW-Stout instructors utilizing computer technology within their instructional methodology?
3. What are the level and scope to which UW-Stout instructors are integrating computer technology into their instruction, including planning and delivery?
4. Do instructors at UW-Stout support a digital learning environment? Why or why not?

Limitations

It is believed that due to sensitivity of this issue, UW-Stout instructors might not have wanted to take the time to fill out a survey regarding their attitudes and beliefs, in the event nothing would be done with the results. Some instructors could have viewed the survey as repetitious. The study utilized a survey instrument designed by the researcher. The results of the study were limited to instructors at UW-Stout during the fall of 2005.

Limitations discovered during the data analysis were as follows. First, a high number of neutral responses were given for questions 10 through 19 with no explanation. Second, research questions two and three were similar in their scope making it difficult to determine which survey questions related to each research question. Third, research question number two and three asked to what degree, level, and scope UW-Stout instructors were utilizing and integrating computer technology into their instructional methodology, including planning and delivery, but specific questions were not asked to quantify this. Fourth, survey question five instructed respondents to indicate how much they were using computer technology in their instructional practices, including planning and delivery; but the scale did not specifically measure the respondents' use; the scale was too vague in its increments. The data from this question indicated instructors' computer technology use was close to or less than weekly. This result did not seem accurate considering UW-Stout is a digital learning environment. However, this may not constitute poor practice within the teaching community. It may be an indication of personal preference of what constitutes good teaching practice for those individuals. The instructions on question five indicated instructors would have an option to select NA "not applicable". Due to an error with online formatting NA was not entered as an option. Therefore, they were not able to select this option.

Conclusions

There appears to be a correlation between previous research findings and the results of this study. Findings of this study affirm the concerns of other educators who move toward a digital learning environment. Through focus groups conducted in 2004, it was documented that students and faculty at UW-Stout agreed that technology, more

specifically laptop computers, increased accessibility, communication, and availability of resources. Students and faculty also agreed that more training was needed to help faculty and students acquire more knowledge of technology and software.

The literature review indicated one of the biggest impediments to widespread integration of technology into curricula continued to be teachers' lack of comfort and familiarity with the digital tools at their disposal. The data indicated this problem to be true at UW-Stout as well. While some at UW-Stout envision boundless potential in education because of the technology era, others see the use of technology in education ranging from optimism about the opportunities awaiting students and teachers through computer and Internet use, to pessimism about the future of education. UW-Stout educators' opinions correlated with research that suggested one of the biggest challenges was to use technology in innovative ways that keep students engaged and attentive, and allow them to retain information.

The data indicated that one of biggest correlations between UW-Stout instructors and previous research was that while there is a movement among higher educational institutions to progress toward a digital learning environment, there were concerns among the individuals who teach in those institutions, including additional responsibilities, increased workload, and greater student demands. The main problem was that university faculties already had a full load of requirements and responsibilities and working to integrate technology took time away from those duties. Also, faculties often became discouraged because they did not receive credit for their work in adding significant technology components to their courses.

The following information outlines the conclusions of each research question.

Research Question One

1. What are UW-Stout Instructors barriers regarding computer technology use as an instructional tool?

Overall, instructors seemed supportive of the use of computer technology in their courses. They documented that at times computer technology enhanced their teaching. Other times, they preferred traditional methods like face to face delivery and class discussion. There were some barriers that impacted the use of computer technology use as an instructional tool. The data indicated instructors felt pressured to use computer technology by university officials. This affected morale of the teaching community and caused resistance and negative attitudes toward the use of computer technology by instructors in their courses.

Another barrier was techno-stress. Instructors felt they spent too much time trying to get technology to work, especially at the beginning of the semester. The results indicated that at times it was difficult for instructors to fully embrace the digital learning environment, because they could not rely on the availability and functionality of everyday tools. Technological glitches, lack of technical support and unreliable technology including connectivity, both wireless and wired, caused a great deal of stress to instructors, especially if they spent a significant amount of time preparing highly technological lessons. UW-Stout educators indicated they experienced techno-stress due to constantly changing software products which forced them to redesign coursework every year because of changing requirements by the university.

There were some issues specifically with the course management program Learn@UW-Stout that should be considered barriers. Instructors commented it was not intuitive, required a lot of training, poorly designed, they constantly got booted off, print was too small, caused eye strain and the technical support in Madison was poor.

The data indicated that having a physical disability was a barrier to only those who noted they had one.

Research Question Two

2. *To what degree are UW-Stout instructors utilizing computer technology within their instructional methodology?*

The results indicated that a large percentage of the teaching population at UW-Stout used computer technology in their instruction, including planning and delivery. Instructors agreed their knowledge of computer technology affected how much they used it in their instructional practices. As a result, instructors were likely to use computer technology more frequently if they had greater knowledge of computer technology. The data indicated that instructors were interested in integrating more multimedia applications into their instructional practices. However, the researcher did not ask instructors to rate the level and scope to which they were currently using multimedia applications in their instructional practices

UW-Stout is a digital campus and the use of computer technology is expected. Instructors did not indicate they used any of the examples of computer technology provided by the researcher on a daily basis. The most frequently used form of computer technology indicated was Outlook, which was a few times a week. This may not have constituted poor practice but may have indicated personal preference on the part of UW-

Stout instructors' to use computer technology at their discretion. There was a small population that did not incorporate computer technology into their instructional practices. The qualitative results indicated some instructors felt their subject matter did not warrant the use of computer technology.

Research Question Three

3. *What are the level and scope to which UW-Stout instructors are integrating computer technology into their instructional practices, including planning and delivery?*

The data indicated that the teaching population at UW-Stout was integrating computer technology into their instruction. The qualitative and quantitative data indicated instructors at UW-Stout use computer technology in a variety of ways for the planning and delivery of instruction. The data indicated instructors communicated regularly with students via email and were interested in integrating more multimedia features into their instruction; however they needed more professional development. Of the small population that indicated they did not incorporate computer technology into their instructional practices, it may not have constituted poor practice. It may have been an indication of personal preference on the part of the instructor.

Research Question Four

4. *Do instructors at UW-Stout support a digital learning environment? Why or why not?*

Overall, the data indicated instructors at UW-Stout supported a digital learning environment. Instructors were able to adapt their subject matter and integrate technology components into their instructional practices. Many of UW-Stout instructors felt

supported by the colleagues in their department. This in turn, boosted morale and developed a sense of a team effort. This increased the instructors' likelihood of using computer technology in their classroom.

The data indicated instructors felt pressured from university officials to use computer technology in their instruction. Added pressure made it difficult to support a digital learning environment because instructors felt like they were being told how to teach.

Recommendations

There has been little research done on educators' attitudes and perceptions regarding the use of computer technology for instruction. It would be the recommendation of the researcher that further studies be done on this topic. The future study should include age demographics to determine if use of computer technology differs between younger and older instructors. Another topic for further research would be techno-stress. It is important to greater understand the impact to which techno-stress is impacting the lives of educators. Finally, further research would be warranted to determine if having a physical disability effects instructors use of computer technology in their courses. Further more, it was discovered during this research study that some UW-Stout instructors feel the increased use of technology has attributed to their physical injuries such as carpal tunnel syndrome, hand, wrist and arm problems, head, neck, and back pain and eye strain. It would be a suggestion of the researcher that a graduate student from the Safety and Risk Management program study the ergonomic concerns of UW-Stout instructors related to use of computer technology.

Based on participants' responses, instructors recommended UW-Stout officials address some of the issues with Learn@UW-Stout. Suggestions were as follows: have

more than one full-time trainer to offer creative teaching and testing strategies, provide handouts prior to training sessions, take it off-line, provide a real-time help desk, provide bi-weekly workshops until everyone gets it, provide prompt responses to technical support questions and link ACCESS Stout grade submittal to Learn@UW-Stout.

Based on participants' responses, the researcher recommends the following issues be addressed further by UW-Stout officials: reduce course loads of instructors, provide support and release time for online course development, offer techno stress coping seminars, develop guidelines for minimum computer technology use by instructors and students, develop strict guidelines for computer technology use by students during class to prevent disruptive behaviors, eliminate rotating software issues by committing to a four year cycle and commit to continual professional development by offering instructors paid time off.

The Teaching and Learning Center at UW-Stout exists to encourage sharing and valuing of teaching and learning. The data indicated the respondents were happy with what was being done by the TLC, but noted they did not have any extra time to spare to go to a training seminar. Instructors were asked what topics and formats they would like to receive future professional development by the TLC, topics were Access, Adobe Acrobat, using audio and video to enhance online courses, engaging learners in an online classroom, time management in a digital environment, keeping students focused during class, creative ways to use technology and how to teach an online course. Format suggestions were daily bull sessions, lunch gatherings where teachers could talk about problems and successes in a very informal atmosphere, discussion forums, mini workshops, bi-weekly e- newsletter and teaching stations in classrooms.

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Appendix A: Survey

Survey of Use of Computer Technology As Used by the UW-Stout Faculty and Staff for Instruction

1. What is your gender?

Female

Male

2. What is your highest level of education?

Masters

Doctorate

Other:

3. College or School? If you work in more than one, please select one in which you do most of your teaching.

College of Arts and Sciences

College of Human Development

College of Technology, Engineering and Management

School of Education

4. Employment Category?

Academic Staff 50% or less

Academic Staff 50% or more

Faculty

5. Please indicate how much you are using computer technology in your instructional practices, including planning and delivery of instruction. Use the following scale:

1 = never; 3 = weekly; 5 = daily; NA = Not Applicable

	1	2	3	4	5	N/A
Using Access						
Using Outlook						
Using a database						
Using a spreadsheet						
Using ACCESS Stout						
Using Learn@UW-Stout						
Using UW-Stout online library resources (i.e. PowerPoint)						
Using multimedia applications (i.e. audio and video prod. tools)						

6. Please rate your level of skill when using the following computer technology in your instructional practices. Use the following scale:

1 = cannot do; 2 = can do with a lot of help; 3 = can do with some help; 4 = can do without help; 5 = can teach it to others; NA = Not Applicable

	1	2	3	4	5	N/A
Using Access						
Using Outlook						
Using a database						
Using a spreadsheet						
Using ACCESS Stout						
Using Learn@UW-Stout						
Using UW-Stout online library resources (i.e. PowerPoint)						
Using multimedia applications (i.e. audio and video prod. tools)						

7. Please rate your need for professional development with integrating the computer technology listed below into your instructional practices. Please use the following scale:

1 = not needed; 3 = would be helpful; 5 = urgently needed; NA = Not Applicable

	1	2	3	4	5	N/A
Using Access						

Using Outlook

Using a database

Using a spreadsheet

Using ACCESS Stout

Using Learn@UW-Stout

Using UW-Stout online library resources

(i.e. PowerPoint)

Using multimedia applications (i.e. audio

and video prod. tools)

8. Please rate your interest level for integrating the following multimedia applications into your instructional practices. Use the following scale:

1 = lowest or no interest; 3 = average or mild interest; 5 = interest or great interest; NA = Not Applicable

1 2 3 4 5 NA

Online simulations

Internet conferencing

Photography/digital imagery

Audio and video production tools

9. In reference to question #8, please list other multimedia applications you have interest in integrating into your instructional practice.

For each of the following statements, please select the level to which you agree or disagree.

10. I feel pressured to use computer technology during instruction.

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

11. I incorporate computer technology into my teaching.

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

12. My knowledge of computer technology affects how much I use it in my teaching.

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

13. I am equipped with the computer technology I need to work efficiently in my classroom at UW-Stout.

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

14. Computer technology can be a tool to improve student learning in my classroom.

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

15. Using computer technology in my course or courses at UW-Stout is difficult because of the subject matter I teach.

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

16. Using computer technology in my classroom overshadows my teaching methodology (i.e., discussion, sharing personal experiences).

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

17. I support UW-Stout's efforts to be a digital learning environment.

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

18. The instructors in my department support my use of computer technology in the classroom.

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

19. The term "techno stress" refers to an increase in stress levels brought on by the use of technology.

I feel I suffer from "techno-stress" when using computer technology in my courses at UW-Stout.

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

20. In the above, 10-19, you were asked questions regarding feelings and attitudes. Please use this area to further explain your answers. Please indicate question number.

21. Does a physical disability affect your efficient use of technology?

Yes

No

22. If yes, please explain. (If you have a physical disability and are interested in getting an assessment to explain computer technology that may help you become more efficient in your classroom, contact Deb Shefchik, Director UW-Stout Disability Services, shefchikd@uwstout.edu, x2995).

23. Do you rely on students to resolve computer technology problems in your classroom?

Yes

No

24. If yes, please explain.

25. Some instructor have expressed concerns that the Learn@UW-Stout program has increased their workload. Do you agree? If yes, what could UW-Stout do to address this issue? If not, why?

26. The Teaching and Learning Center at UW-Stout exists to encourage sharing and valuing of teaching and learning. In what ways can the Teaching and Learning Center assist you in teaching with computer technology? Be specific about topics and format that you would like to receive the information.

27. Personal comments or concerns about the use of computer technology in your courses at UW-Stout.