THE BLACKBOARD™ JUNGLE: A CASE STUDY OF INSTRUCTOR AND STUDENT
PERCEPTIONS OF THE LEARNING TECHNOLOGY TOOL BLACKBOARD™.

A Thesis by

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I have examined the final copy of this thesis for form and content, and recommend that it be
accepted in partial fulfillment of the requirement for the degree of Master of Arts with a major in
Communication.

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DEDICATION

To my wife, Judy, whose love and support made this work possible

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ABSTRACT

This case study investigates instructor and student perceptions of the learning technology

tool Blackboard Academic Suite™ (hereafter known as Blackboard™). A questionnaire was used

to gather responses from instructors (n =21) and students (n=260) at Wichita State University in

Wichita, Kansas, regarding their experiences in using Blackboard™. The questionnaire

contained both quantitative and qualitative elements, allowing for a triangulated approach to the

study. The literature suggests that successful integration of new technologies is dependent upon

instructor enthusiasm and expertise. The study found a generally positive experience with

Blackboard™, but also found some drawbacks and hurdles that will need to be overcome with

regard to its use. Instructors' reluctance to adopt new methods and technologies, instructor

training on innovative uses of Blackboard™, and the level of user-friendliness of the program

stood out as areas needing improvement. Further research in this area could be a great aid to

those who are developing and implementing both software and hardware for the instructional

setting.

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CHAPTER 1

INTRODUCTION/LITERATURE REVIEW

One of the most profound uses of communication is to impart, or pass on, knowledge. As understanding has grown, so has the need to pass on what was learned to others. The discoveries of one generation have been the building blocks of knowledge and discovery for the next. Thus, teaching has been, and will continue to be, an honored and much needed vocational pursuit.

Technological innovations have long been a part of the teaching environment. These innovations have provided breakthroughs in the delivery of knowledge to those who would learn. One of the greatest single innovations that aided this process was the printing press. It made possible the mass production of print materials at a modest price (Usher, 1988). Now, the various information and communication technologies available are the modern-day equivalents of the printing press (Schultze, 2001). They are taking information availability and dissemination a quantum leap forward.

The inception of the Internet will be marked by history as one of the watershed events of the 20th century. Born as a communication tool for the military and for university researchers, the Internet has, depending on your perspective, either grown up or run amok (Shannon, 2007). Whether or not the founders of the information superhighway saw its possibilities, it has now become the one pervasive communication tool of this generation. Users can find anything from the profane and obscene to the sublime and inspirational. One thing that can be predicted with a fair amount of certainty: this technology, and its availability, will continue to evolve and grow.

However, the Internet is not the only technology that has shaped our culture. The 20th century has seen the birth of mass communication (Grossberg, Wartella, Whitney, and Wise, 2006). From the telephone to the wireless to broadcast radio to television, humanity has

advanced its ability to communicate to an almost incomprehensible degree. All of these new

technologies are now being brought to bear on the process of education. In these opening years

of the 21st century, the questions that these new Information and Communication Technologies

(ICT) pose for the modern educator are at once promising and daunting (Prain & Hand, 2003;

Montelpare & Williams, 2000). How can these new technologies best be utilized to provide an

environment wherein real learning can take place? What is the effect of using technology in the

classroom upon both the teacher and the student? Does technology enhance the learning

environment?

Those who are proponents of technology integration point to the promise of creating the

ideal learning environment where teachers are freed by their electronic wonders. Students will

just naturally desire to learn more, and that desire will be met. But what is the ideal learning

environment or situation? Foreman (2003) points to five learning-theory ideals. He believes that

the ideal learning situation 1) is customized to the very specific needs of the individual, 2)

provides students with immediate feedback, 3) is constructive, 4) motivates students to persist far

in excess of any externally imposed requirements, and 5) builds enduring conceptual structures.

In discussing online discussion forums, Greenlaw and DeLoach (2003) noted that these virtual

gathering places promoted critical thinking on the part of the participants. They further state that

these forums combine or utilize the best aspects of both written response and group discussion.

However, to achieve this type of approach will place a great deal of responsibility on the

instructor. It also runs counter to most of the common practices of teaching.

Current Trends

The inadequacy of lecture.

Each day millions of teachers and students around the world file into their classrooms and begin anew the time-honored traditions of learning. The well-worn format of the lecture is firmly cemented in the instructional psyche of most institutions of learning. However, new paradigms of instruction are emerging that challenge the validity of the lecture as an effective form of transmitting knowledge and, more importantly, understanding, from the instructor to the learner. In a world where knowledge doubles every seven years and 10,000 scientific articles are published every year, the current system where the teacher is the primary source of information is simply inadequate (Hargis, 2001). In fact, the lecture has been shown to be one of the least efficient methods of instruction. Why is that? As Twigg (1999) points out, the lecture method is a "push technology." Not all learners learn in the same way. There are a few who can thrive within a lecture format. However, some are more oriented to a visual presentation of the material. Others must have a hands-on experience in order to learn. A few have the ability to gain the proper knowledge through simple reading. The styles, and their various combinations, are as unique as the individual students. However, lectures treat all students the same with no regard for their unique learning styles (Foreman, 2003). Students come to the classroom with varying degrees of ability to learn, interest in the subject matter, academic preparation, and motivation. The lecture simply cannot adapt to all of these variables (Prain & Hand, 2003). As a result, students often remain disengaged from the learning process. They do not learn because they do not fit into the mold of learning that lecture requires. Neither are they motivated to seek the help they need. Further, when they do seek help, instructors are often not readily available. Therefore, learning with understanding is often a hit-or-miss proposition, where only the most motivated students truly succeed.

Meaningful patterns of classroom practice.

With the current groundswell of concern about the apparent lack of learning in schools, the concern for communication researchers has to be finding more effective methods of transmitting knowledge from teacher to student that result in true learning and understanding. One possible solution that has been proposed, and implemented with varying degrees of success, is the integration of ICT within the classroom. The most important question to answer at this point is "What is technology integration?" Dockstader (1999) begins by defining what it is not. Integration is not just placing computers in the classroom and calling it good. It is also not simply using pre-packaged programs and trying to make the curriculum fit those programs. She defines technology integration as "incorporating technology in a manner that enhances student learning." The curriculum must determine what technology will result in that learning, and not vice-versa. Too often, technology is seen as an add-on activity – something to be done by students in their spare time to "enrich" in a general way. However, this approach is not truly integrating technology in the classroom.

Technology that is used and supported by the "real world" is of greater value and use to students. Kozma (2003) identifies several meaningful patterns of classroom practice with regard to ICT integration. Students in these classrooms are more likely to search for information, solve problems, publish results, and assess their own work, as well as that of their colleagues. They use productivity tools to create products and consult with other students. By working with technologies that are current, students are better prepared to compete. Real-world problems must be presented and their solutions sought through the use of such integrated technology. Teamwork and collaboration are key concepts that can be taught to great effect using ICT. Also, student-centered instruction is another sign that ICT is being implemented in the best sense.

Computer-Mediated Communication

It is this "real world" type of collaborative effort that is fleshed out in what is known as Computer-Mediated Communication (CMC). Within this venue, students are able to communicate and collaborate on projects regardless of physical proximity. Instructors can post class notes, assignments, exams, announcements, and other evaluative and supplemental materials.

Computer-mediated communication comes in two types – synchronous and asynchronous. Asynchronous CMC is independent of time and place, as instructors and students can communicate with each other from different locations and at different times (Lavooy & Newlin, 2003). This type of correspondence generally takes place in one of three forms – a course website, a course bulletin or discussion board, and E-mail. Lavooy & Newlin (2003) have found that each has its strengths and weaknesses. The course website is useful for posting general information for either enrolled students, or for potential students who show interest in the course. It does not, however, provide a satisfactory platform for feedback from the end user – the student. The bulletin board is a more interactive forum where messages can be posted and responded to. This allows all members of the group to at least monitor, and hopefully join in, the ongoing discussion. It is not a private form of communication, so postings must be regarded as public material (at least for the members of that class who have access to the bulletin board). Finally, E-mail provides a very effective way for an instructor and a student to confer on specific issues that relate to that student. The depth of response that is possible with E-mail is greater than most instructor notes that are scribbled on assignments. This is an added benefit, and since E-mail is readily available to anyone with Internet access, it is a benefit that is further enhanced by its ubiquity.

Synchronous CMC shares many of the attributes as asynchronous, but with one major difference. While it is also not bounded by geographical constraints, it does bring the participants together at the same time for a real-time discussion. The most well known example would be the chat room. This capability is built into the two most widely used web-based course management systems, WebCT™ and Blackboard™. This synchronous discussion forum can easily accommodate an instructor's office hours if so desired, creating what Lavooy & Newlin (2003) called "cyber office hours." Also, while the lecture has already been mentioned in less than glowing terms, this synchronous forum does present the possibility of web lectures, which can prove especially helpful for coursework where the students are spread over a large geographic area.

The Potential of ICT and CMC

<u>*Optimal course selection.*</u>

What are the courses that lend themselves most readily to the integration of information and communication technologies? Twigg (1999) suggests that good target subjects include remedial and basic math, as well as other general education courses. Subjects that are visual in nature are also well suited to using new technologies. However, Kozma (2003) points out in his review of several international case studies that information technology has a broad range of uses across the educational spectrum.

Marcketti (2006) found that CMC greatly enhances her presentation of material in classes at Iowa State University in the Textiles and Clothing Program, College of Human Sciences. She found that CMC provided "opportunities for student acquisition, articulation and application of course work" (Marcketti, 2006, p. 216). Students could acquire course-related materials and

notes online, participate in online discussions about course readings where their critical thinking skills were further enhanced, and make real-world application of the course materials. Lavooy & Newlin (2003) brought CMC to bear on their psychology research courses at the University of Central Florida. They found that student interactivity increased with the use of CMC, rather than decreasing it as conventional wisdom would seem to dictate. They made particularly good use of synchronous forms of CMC. However, they do caution that good andragogy must precede a course design that is driven by technology use. According to Connor (2004), andragogy describes education that is learner-focused, regardless of the age of the learner.

Faster feedback and increased collaboration.

Kozma (2003) points to the speed of communication with new technologies that allows for greater feedback to students. Often, their performance on a given assignment can be monitored, and the instructor can provide an ongoing critique. This technology also allows for increased collaboration between teams of students. Thus, students are able to acquire the skills that are needed for the 21st century, such as the ability to handle information, solve problems, and collaborate in doing so. Again, this is where CMC shines.

Diverse paths.

Another of the great strengths of information technology is its ability to cater to diverse student pathways for learning (Prain & Hand, 2003). As already seen, not every student learns in the same way. Technology allows for instruction that is more responsive to the individual student's needs and interests. Self-directed independent study is enhanced through the use of these new tools. Chou (2004) points to "learner-centered principles" (LCP) that help guide the

instructor in developing a web-enhanced course of instruction that takes students' needs, skills, interests and backgrounds into account.

Pitfalls of ICT & CMC

<u>*Possible decline in quality.*</u>

It must also be noted that these new methods are not without potential drawbacks. As Twigg (1999) points out, there is a fair amount of concern in academic circles that the use of CMC, especially within higher education, will actually threaten the quality of the instruction. This view generally stems from a fear that machines will replace, or at least reduce, the human touch that a teacher brings to the classroom. In an article appearing in the Chronicle of Higher Education, Carnevale (2000) reported that Representative Nick Smith, the Chairman of the House of Representatives science subcommittee on basic research, was concerned that "students who take courses online don't interact as much as their peers in traditional courses, and that they may walk away with knowledge but not with an understanding of how to think for themselves." Other educators have voiced similar concerns. Yet, these concerns have not been backed up with empirical research.

Technologies such as E-mail and electronic bulletin boards have been shown to be highly effective in maintaining communication between students and teachers (Chen, Wong, & Hsu, 2003). Thus, while the "physical" touch may be lessened, the effective use of technology can still provide viable channels of teacher/student interaction. Where CMC has been effectively integrated into a well-thought-out plan of study, student-content, student-instructor and student-student interactivity has increased (Lavooy & Newlin, 2003; Chou, 2004).

<u>*Technical support concerns.*</u>

There is also a greater need for adequate technical support that must be addressed. Lefor, Benke and Ting (2003) point out in their study of technology-delivered education to adult students at Empire State College that moving to technology-delivered courses brings with it the concurrent need for maintenance of the technical equipment, both hardware and software, used to interact with the students. Also, they cited a concern that not all students, or teachers for that matter, are equally computer literate. Instructors must remain alert for the student or students who fall behind simply because they do not know how to use the computer, or they do not have Internet access.

Positives not assured.

Kozma (2003) continues that while there are many positive aspects of integrating technology into the classroom, it must be remembered that a positive impact is not automatic. The greatest determining factor for success seems to be how teachers use CMC in the classroom. Just placing computers in the classroom and hooking them up to the Internet is not a guarantee of successful integration. In fact, one national study done in the U.S. found a negative relationship between how often computers are used in the classroom and overall school achievement (Wenglinski, 1998). Thus, the effective technology integrator will be the instructor who has a plan that is well conceived, and diligently works with that plan.

Teacher resistance to change.

Further complicating the picture is the natural human tendency to resist change. As Prain & Hand (2003) point out, the inertia that must be overcome to move teachers toward adopting these new methods is considerable. In addition, they cite the often-overwhelming financial burdens that accompany a move to increased technological integration. While hardware costs are

formidable, they do not tell the whole picture. Effective ICT integration and CMC use takes a great deal of planning before the first piece of hardware is purchased.

The Role of the Teacher

Adequate training and professional development.

The most important factor in the effective use of information technologies and CMC in the classroom is the teacher. In order for teachers to be effective users of computers, personal digital assistants (PDAs), digital cameras, projectors, interactive web sites, and other resources they must be involved in an intense and ongoing course of training and professional development. School districts, colleges, and universities are ill served by the instructor who is given the latest tools such as Blackboard™ and WebCT™, but who does not know how to effectively integrate them into the classroom-learning environment (Pierson, 2001).

Student-centered learning.

Teachers must also abandon the old ideology that the only effective classroom communication is that which is dispensed by the teacher. Research suggests that the most effective teachers will be those who move from being the primary source of information to being one who provides structure and advice, monitors progress, and assesses accomplishments (Kozma, 2003). These are the very areas where CMC shows its strength. Moore (1989) describes three types of interaction that are all centered on the student: learner-content, learner-instructor, and learner-learner. As the learner engages the content he/she experiences intellectual growth and change in perspectives. Encountering the instructor interaction acknowledges the integral role of the instructor to tailor the learning experience to the student as much as possible. Collaborating with other students fosters teamwork and relationship building in completing the

common task. A fourth interaction, the learner-interface, suggests that the instructor must help the learner to master the technical challenges in order to fully utilize the potential of CMC (Hillman, Willis, and Gunawardena, 1994).

Teacher expertise a factor.

Effective CMC use hinges on both the andragogical expertise of the teacher, as well as that teacher's understanding of technology and its many uses. Expert teachers are better able to assess the classroom environment and make adjustments in lesson choices as needed. They are multi-taskers who can monitor multiple events at one time, perceptively analyzing and shifting emphasis when needed. Repetitive teaching practices are bounded by a set of routines that flow from an organized store of teaching knowledge (Pierson, 2001).

In her case study, Pierson (2001) points out that exemplary technology teachers took these traits of the expert teacher and combined them with a high degree of technology knowledge to produce the best results for students. They spent a good deal of personal time becoming familiar with technology trends, and seeking out opportunities to become competently trained. They also maintained a high level of expectation for student performance, and sought ways to focus the learning activities of the classroom on the students' needs. Activities were designed to promote independent, self-guided learning rather than whole-group instruction.

Pierson (2001) formulated five assertions that illustrate the ways the teachers in her study taught with technology. First, their personal definitions of technology integration determined the ways in which they utilized technology in the classroom. The teacher with lower andragogical expertise but greater technology know-how would see technology as an activity unto itself, while the higher level teacher whose technology skills were minimal would see the computer as an aid to do a traditional learning activity in a new way. However, the fully integrated expert teacher

would plan for seamless movement into the use of the computer to complete an activity or lesson only when the technology would truly augment learning.

Secondly, teachers who are at the lower levels of either teaching abilities or technology knowledge would alter their planning habits when planning to include technology in a learning opportunity. They tended toward a more deliberate approach to planning their lessons, and experienced difficulty in envisioning how the lesson would be helped by including the technology.

Third, the teacher's personal learning strategies influenced how they taught with and about technology. For instance, a teacher who preferred an experimental, trial-and-error approach to learning about technology would emphasize this approach in the classroom. Conversely, a teacher who tended toward a more bookish approach to learning about technology would strive to provide a very structured learning environment for his or her students. The more technologically integrated teacher would tend to employ an eclectic approach, using whatever method the situation called for.

Fourth, teachers also are directed in their management of student computer use by their definitions of technology integration. Integrated teachers know that technology is an invaluable learning tool, and they make room for its use whenever the specific needs of the students dictate. Less integrated teachers are more structured and limiting in how they allow technology to be used and accessed within their classroom.

Finally, less integrated teachers alter their perspective on assessment when looking at student use of technology. Expert teachers who are technologically knowledgeable tend not to assess student technology use as a separate component of the overall project grade. However,

less-equipped teachers will often view technology use as something to be graded independently from the rest of the students' projects.

According to Sandholtz, Ringstaff, and Dwyer (1997), there is a five-stage process that the teacher must go through in order to be a well-rounded integrator of technology.` Stage one is the entry stage, where the teacher uses only text materials to supplement the lessons. In the adoption stage the instructor begins to use keyboarding and word processing along with drill-and-practice software. Stage three is the adaptation phase. In this phase the student's involvement in using new technologies greatly increases in scope and frequency. The appropriation phase sees the increase in project-based instruction where the students work with the technology frequently. Finally, in the invention stage, learning becomes more student-centered, with greater use of multi-disciplinary tools, peer mentoring, and individually paced instruction.

All of this is aiming to establish a style of instruction that is much more student-centered. Within this framework, the role of both teacher and learner will be fundamentally changed. Students will be encouraged to engage with the material independent of time and location. Differing learning styles will be better accommodated, and instruction will become available "on-demand," at the convenience of the student. All of this is potently wrapped up in computer-mediated communication.

Computer-mediated communication is part of a larger domain known as electronic discourse (ED). The key factor that sets ED apart from oral or written communication is its ability to transcend time and space constraints. CMC can take place in real time over a synchronous connection where time is concurrent, but spatial relations can be global in scope. Examples of this kind of communication include chat rooms, video conferencing over the

Internet, and virtual classrooms where the instructor can be miles away from students. Similarly, asynchronous CMC is communication that is neither time nor space constrained. E-mail, bulletin boards, web sites, and weblogs are but a few examples of asynchronous CMC. A message can be left at any time by anyone for retrieval at a later time by anyone who can be anywhere there is a computer and Internet access (Grossberg, Wartella, Whitney, and Wise, 2006; Hough, Smithey, and Evertson, 2004).

In examining the literature, several salient points spring to sharp focus. First, it is reasonable to conclude that the new technologies that have sprung up over the past two decades are here to stay. Their adoption and effective use in the classroom is imperative. Public and private schools, colleges, and universities can not ignore the possibilities that exist for better communication and transmission of knowledge. The potential for student and teacher collaboration is now global. Time and distance have been compressed by CMC technologies, which now make it possible to conduct a class without needing a physical room in which all can gather. Both instructors and students have access to vast repositories of information that were simply too difficult to find just a few short years ago. Furthermore, students can now produce work that would not have been possible without an overwhelming financial investment. This study measures student and instructor perceptions of Blackboard™, a CMC learning tool at Wichita State University. The methodology used for this project is discussed in Chapter Two.

In Chapter Three, findings are discussed. Chapter Four discusses the relationship between the findings and the study's theoretical framework. And Chapter Five identifies recommendations, conclusions, and areas of future research.

CHAPTER 2

METHODOLOGY

The theoretical framework for this study was developed by the American Psychological Association (APA) in the early 1990s as a result of the work of the Task Force on Psychology in Education. This task force, appointed by the APA, had the partial task of integrating research and theory from psychology and education in order to arrive at general principles that stood the test of time. These principles could then be applied to school redesign and reform. While the purpose of this study is not to suggest educational reform, it is interested in gaining insight into user perceptions of what could be a key communication component in advancing educational pursuits. This framework, called Learner-Centered Psychological Principles (LCPP), outlines fourteen fundamental principles about learners and learning (APA Work Group of the Board of Educational Affairs, 1997). While not all of these are directly applicable to the research in this study, there are several that have either direct or indirect bearing upon it.

The fourteen learner-centered principles are placed in four domains: cognitive and metacognitive factors, motivational and affective factors, developmental and social factors, and individual-differences factors. From each of these domains comes a principle that speaks to the endeavors of this study. First, from the cognitive and metacognitive factors, principle number six states that "Learning is influenced by environmental factors, including culture, technology, and instructional practices" (APA Work Group of the Board of Educational Affairs, 1997, p. 4). This principle speaks to the context of learning, and has bearing on this study since it is looking at the interaction of technology and learning practices. From a communication standpoint this study is interested in how the computer mediated communication activity is perceived as a tool vis-à-vis enhancing the learning environment. If indeed learning is influenced by these two factors, this research has potentially broad implications for future educational paradigms.

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Next are the motivational and affective factors present principle number nine. This principle states, "Acquisition of complex knowledge and skills requires extended learner effort and guided practice. Without learners' motivation to learn, the willingness to exert this effort is unlikely without coercion" (APA Work Group of the Board of Educational Affairs, 1997, p. 5). This principle is talking about how motivation prompts effort. A well-motivated student is one who will likely seek information and knowledge on his or her own. According to the theory, that student is also more likely to make use of whatever tools are available to them. Conversely, the student who is not motivated to learn is not likely to utilize CMC tools unless they are forced to do so.

Principle number eleven comes from the developmental and social factors. It deals with social influences related to learning, and says, "Learning is influenced by social interactions, interpersonal relations, and communication with others" (APA Work Group of the Board of Educational Affairs, 1997, p. 5). As previously stated, one of the key arguments against E-learning is that it does not have a human touch. The theory states the importance of social interaction, relationships, and communication. Thus, for learning to be positively influenced, these types of interactions should be evident. Blackboard™ does have features that are designed to facilitate these interactions. This study looks to see if those features are being used.

Finally, from the individual-differences factors, principle number 12 states, "Learners have different strategies, approaches, and capabilities for learning that are a function of prior experience and heredity" (APA Work Group of the Board of Educational Affairs, 1997, p. 6). Certainly there can be no argument that there are differences in human beings. Whether those differences are caused by heredity or environmental factors has long been a topic of discussion and research. This theoretical principle, however, does not seek to enter that particular debate. Rather it says that both are factors. Within the bounds of this study there is no way of testing hereditary factors, and measures of prior experiences are also very limited. However, the study

should be able to get some kind of feedback as to students' prior experiences within their college exposure.

This study suggests a link between instructor and student perceptions of Blackboard™ and its use. This statement springs from two hypotheses that are examined in this study:

H1: How instructors and students use Blackboard™ has a direct effect on their perceptions of it.

H2: Blackboard™ is perceived as a valuable learning tool by instructors and students.

What Is Blackboard?

An overview of Blackboard™ will give a greater understanding of this study's findings: what it is, its features, and its history at Wichita State University. Blackboard™ is a company that makes a group of computer software products designed for use in all levels of education, as well as business institutions. Its primary function is to provide tools for distance-learning. The relatively new field of E-learning, where instruction is accomplished by computer mediation, is its target market. Blackboard™'s mission statement says it wants "to enable educational innovations everywhere by connecting people and technology." Blackboard™ was founded in 1997, and released its first software product, an online learning application, in 1998. In 2006, Blackboard™ merged with its chief competitor, WebCT, making it the largest provider of online learning applications to learning institutions in the United States (Blackboard.com, 2007).

The features of Blackboard™ are many and growing. They can be used as a supplement to a traditional classroom instructional environment. They are also powerful enough to support a completely "online" classroom where students and instructors may never meet face-to-face. As configured for use at Wichita State University, Blackboard™ allows instructors to post course documents such as a syllabus, assignments, lecture notes, PowerPoint presentations, links to

websites, announcements regarding the course, and a course calendar. Blackboard™ also contains a grade book feature where instructors can record grades. These grades can then be made available to the students if the instructor desires. For the instructor, a visual student roster shows pictures of students taken from student id photos. Depending on the course needs, an instructor can administer assessments through Blackboard™ if desired. Blackboard™ also contains an E-mail feature where all student addresses from their admission information are automatically stored. The instructor can send one E-mail to the whole class, or to selected individuals. There is also a discussion board feature that allows the instructor to set up a threaded asynchronous discussion, and a collaboration tool that allows for live, synchronous discussion.

Blackboard™ was first brought to the campus of Wichita State University in 2000. At that time, a comparison testing program was put in place to decide between Blackboard™, WebCT™, and Web Course in a Box (another E-learning tool). Blackboard™ was chosen over the other two programs. When initially installed, system administrators chose to only make course shells as instructors requested them. Also faculty using Blackboard™ for their classes were required to attend training on the software. In 2003, the university purchased a major upgrade to Blackboard™ along with a new server to handle Blackboard™ use for the campus. Then, in the spring of 2006, another major update was installed, and course shells for every course offered at the university were made regardless of faculty requests. This meant that the default on campus was in favor of having a Blackboard™ page available to every instructor for every section of each class. This was a major step forward with regard to availability. However, it came at the price of mandatory training. With so many courses now available, there was simply no viable way for the entire university faculty to receive adequate training. Therefore, training became an option, but was still offered for anyone who desired to take it. The summer of

2006, saw further integration of Blackboard™ with other campus systems, specifically a new system called "Banner." This system is used to keep track of most of the administrative tasks with respect to student and faculty records. With this upgrade, Blackboard™ would receive automatic updates to class rosters.

Usage across campus has risen steadily since Blackboard™'s adoption in the year 2000. At that time approximately 200 courses were supported. By 2005, the last year where only faculty-requested course shells were created, the number had risen to more than 2,000 courses supported. With the change to course shell creation for all courses regardless of faculty requests, that number has jumped to 7,949 courses supported as of the Spring 2006 semester. Almost half of these courses (3,416) were in the College of Liberal Arts and Sciences. The College of Education was second with 1,252 courses, and the College of Fine Arts was third with 1,130 courses (above information from Wichita State University Media Resource Center/New Media Department, 2006).

Research Questions

To test the hypotheses, three research questions were addressed. First, how is Blackboard™ used? Second, how is Blackboard™ perceived by instructors and students that use it at WSU? Finally, is the learning technology tool Blackboard™ perceived by instructors and students at WSU as a valuable learning tool?

How Blackboard™ is used is central in laying the foundation upon which the other questions will build; answering this question establishes a kind of baseline for measuring the qualitative responses that the other questions require. The study wanted to see how increased use correlates with instructor and student perceptions of the platform itself. For example, it might expected to find that a casual user might not be overly impressed with Blackboard™, perhaps

because he/she is not familiar with the program and its capabilities. Instructors who do not use the program extensively or effectively may be hindered by something they perceive in the user-friendliness of Blackboard™. Students may not be using it due to lack of instructor use or input. It may become evident that "power users" are those who recognize the potential and take the time to explore and learn how to utilize Blackboard™. However, those kinds of perception questions cannot be answered without first understanding usage patterns.

Next, the study wanted to see how instructors and students perceived Blackboard™ as a learning technology tool. This question is aimed at revealing measures of the aforementioned user-friendliness of the program. Do instructors and students find it easy to access the program and make use of its many features? This is an important factor, since it is highly unlikely someone will use a program, no matter how powerful it may be, if they find it to be too cumbersome or confusing to operate.

The final question seeks to learn if instructors and students who use Blackboard™, and who perceive it as a functional platform, also perceive any educational benefits for themselves or their classes. A program may be easy to use, but not perform the function for which it was created adequately. Conversely, it may not be the easiest tool to use, but when properly applied to the andragogical challenge, may prove to be a very effective learning tool.

Why should perceptions be investigated along with actual use patterns? Wagner and McCombs (1995) point out that behavior is a function of such perceptions and evaluations of events and circumstances. These perceptions and evaluations are arrived at relative to personal goals and interests. Therefore, a person's perceptions can tell us much about that person's goals and pursuits. These in turn shape and trigger behavior. So, it is imperative that the internal

motivations of instructors and students to utilize CMC be understood. This is best measured by looking at perceptions, which are the outward manifestations of inner motivations.

Further, the study is not measuring something static, but rather a dynamic, living equation. Each individual is not standing still, developmentally speaking. This "is a dynamic growth process that serves inherent needs for mastery, control, and belonging" (Wagner and McCombs, 1995, p. 34).

A study conducted at the University of Hawaii looked at student ratings of online discussion forums. In this case, students were using WebCT™, a program similar to Blackboard™. The study found that student adaptation to new technology progressed in four stages:

- The WOW stage: student fascination and excitement at what the technology is capable of is at its peak.

- The FUN stage: students begin using the programs for simple tasks and exhibit a "this is fun" attitude.

- The OH-OH stage: as more complex tasks are assigned, student frustration rises as they are not yet proficient enough to complete the tasks with ease.

- The "Back-to-Normal" stage: students become more proficient or more comfortable with the frustrations and technical difficulties, seeing them as inevitable when dealing with technology (Chou, 2004).

Therefore, this approach should yield results that will be helpful in advancing knowledge and development in CMC for educational uses. The more positive the perceptions of both students and instructors, the more likely they are to use CMC technology.

Method

The research method chosen for this study was a questionnaire of students and instructors at Wichita State University (see Appendices A and B). Respondents were asked to indicate their level of Blackboard™ engagement and usage. The questionnaire contained a section that allowed respondents to indicate what features of Blackboard™ they use, and how often they use them. They were also given an opportunity to answer some open-ended questions that more readily reflect the attitudes toward and perceptions of Blackboard™. This approach provided both a good quantitative and qualitative picture students' and instructors' usage patterns, and perceptions of Blackboard™.

The use of a survey or questionnaire is common in communication research. It is primarily a quantitative method, yielding data that is useful for various kinds of analysis. Further, this type of instrument yields data that is reproducible, therefore, verifiable. They are also relatively quick to construct and execute, allowing for timely testing. With their focus on large groups or populations, their findings are more easily generalized over a population than are other methods. The researcher is able to bring a great deal of control over what is to be tested by using a survey. There are, however, several drawbacks to using a survey. First, they are an artificial way of measuring. They may or may not accurately reflect a respondent's beliefs and/or actions. Often respondents will create response sets where they circle or indicate the same response for all questions in order to get through the survey more quickly. Secondly, surveys are prone to self-reporting problems. There is no way to really tell if the person has responded in a completely honest manner. Even if they are completely open and honest in their responses, not all people self-monitor equally. For example, a survey may ask how many calories a person consumes on an average day. The respondent may know exactly, or have no idea whatsoever. Thirdly, surveys are not a good instrument to measure complex issues or ideas. There are simply

too many variables for which to account. Finally, the validity of the data is dependent on the quality of the sampling procedure (Babbie, 2004; Frey, 1992).

While most of the literature dealing with surveys and questionnaires tend to not make a distinction between these two terms, for this study's purposes a distinction will be made in how these two terms are operationally defined. Surveys are designed to get at quantifiable results, while questionnaires usually pose open-ended questions designed to elicit qualitative responses. Since one of the goals of this research is to take quantitative measures regarding frequency of use of features within Blackboard™, questions were asked that are not open-ended to get at that information (see Appendix A). However, this study was also interested in user perceptions. To measure these, this study used open-ended questions that invited more introspective responses from the respondents, rather than simply indicating whether or not the respondents used certain features. Therefore, this study used a questionnaire that contained some closed-ended questions for quantitative measuring, and open ended questions for the qualitative responses.

To explore the quantitative aspects of the research, both students and instructors were asked to first indicate how often they used any Blackboard™ feature in conjunction with their classes. Frequency options included *daily, 3-5 times/week, 1-2 times/week,* and *rarely.* They were then given a list of Blackboard™ features and asked to indicate by checking a box which features they used, and how often they used that feature. Frequency options included *daily, 1-2 times/week, every other week,* and *rarely.* Finally, only the instructors were asked to indicate which features were most requested or desired by their students. To provide a qualitative component to the research, students and instructors were then asked to respond to open-ended questions designed to gauge their perceptions of Blackboard™. These responses were then coded on a five-point scale from *very positive* to *very negative* in order to get a quantitative sense of

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that perception. All responses were coded by the principal researcher, therefore, there were no intercoder reliability issues.

In coding the responses, the researcher followed a specific procedure. For example, the first student question "Do you find Blackboard™ useful? If so, how?": a response of "Yes" followed by any positive remarks, or "I find it useful because…" was rated as a "positive" on the scale. Those who were more effusive in their positive remarks (e.g., using qualifying words such as "very," punctuation such as exclamation points, or emphasizing with capitalization) were coded as "very positive." Responses of "No" or "Not really" were rated as a "negative," with stronger remarks (e.g., using phrases like "Absolutely not!", or similar devices as mentioned above) receiving a "very negative." Those who responded that they did not use the program often enough to have a set opinion on its usefulness were rated "Neutral." This pattern of coding was utilized throughout both student and instructor questionnaires. One interesting note needs to be brought up regarding the second open-ended question on the student questionnaires. When asked, "Do you think your instructors use Blackboard™ effectively?" many students responded that "some do, and some don't." This response was coded as "neutral."

A purposive approach was chosen for the sampling strategy for the student questionnaires, utilizing readily available subjects. These subjects were enrolled in 100 to 300-level classes at Wichita State University. These classes were predominantly communication classes and general education classes. Student participation was encouraged by instructors, who awarded extra credit grades for completing the questionnaire. Participation was, however, strictly voluntary. This sampling approach was the most advantageous for this study, as it relies upon knowledge of the general population. The purpose of the study also enters into the decision to choose this sampling method (Babbie, 2004). Since the study was interested in Blackboard™

user perceptions, it was imperative that classes where Blackboard™ was used be sampled. The instructor sampling was a self-selected one, wherein instructors were invited to participate in the study via a campus-wide E-mail newsletter sent to faculty on a regular basis. However, these groups offer a unique chance to observe perceptions of CMC at the university level. Further, this group is readily available for study. Results are discussed in the next chapter.

CHAPTER 3

RESULTS

So how is Blackboard™ used? What does the data tell us about Blackboard™ use and perceptions? In this section, findings regarding students will be addressed first, and findings regarding instructors will be second.

Student Use and Perceptions

Of 260 student responses 55, or 21.2% used Blackboard™ daily, 38.5% (100) used it 3-5 times per week, 27.3% (71) accessed it 1-2 times per week, and the remaining 13% (34) described their use as infrequent (biweekly or less). The most used features by students were *Course Documents* (73.5%), *Announcements* (65.8%), *My Grades* (55.4%), and *Course Information* (40%). These figures represent those who said they used the feature at least once a week. Therefore, the vast majority (86.9%) is accessing Blackboard™ at least once a week. It is interesting to note here that the *Assignments* category had the highest rated response for daily use (67 responses, or 25.7%), but came in fifth when including responses for at least once-a-week usage.

Another interesting aspect of the data becomes evident when contrasting the different user groups (grouped by frequency of access to Blackboard™) looking specifically at the top four features used. When their use is expressed as a percentage of their respective group, these percentages drop almost uniformly from the highest access-frequency group to the lowest (see figure 1). Each percentage represents those who access that particular feature at least once a week. As frequency of access to Blackboard™ rises, so do the percentages of those who access these features within each group.
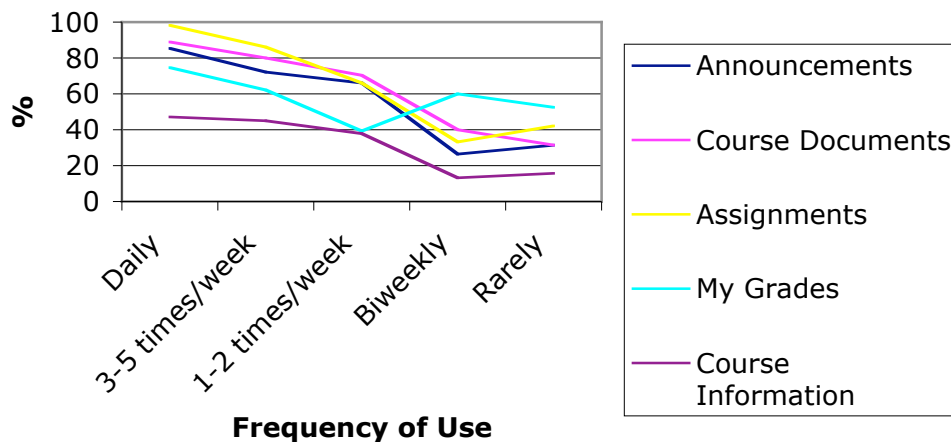
Figure 1. Student use trends for top five Blackboard™ features.

However, usage does not automatically suggest a healthy or positive perception of the software by those using it. How do students and instructors perceive Blackboard™? Do they see it as a valuable learning tool? The research does suggest that the general pattern of perception is a positive one. Student responses to the five open ended questions included in the questionnaire showed a number of trends. Positive responses decreased and negative responses increased with less frequent users.

Question 1: Usefulness of Blackboard™.

The first question asked students (n=260) if they found Blackboard™ useful, and if so, how. Among daily users of Blackboard™, 96.4% responded either positively or very positively, 3.6% were neutral, and no one responded negatively. Among those who used Blackboard™ 3-5 times/week, 93% were positive responders, 5% were neutral, and 2% were negative. Those who used Blackboard™ 1-2 times/week reported 87.3% positive, 7% neutral, and 5.6% negative. Biweekly users were 73.3% positive, 6.7% neutral, and 20% negative. Finally, those who only reported rare use of Blackboard™ responded 47.4% for both positive and negative, and 5.2%

neutral (see figure 2). Almost all of the comments as to how they found Blackboard™ useful said that features such as *Announcements, Assignments, Course Documents,* and *My Grades* were most helpful. As one student put it, "I find it useful because teachers are able to post syllabus, grades, and assignments, as well as notes." The overwhelming response for these types of features would seem to indicate that students appreciate the flow of basic course information and grading feedback. However, no one mentioned any of the other more complex functions of which Blackboard™ is capable.
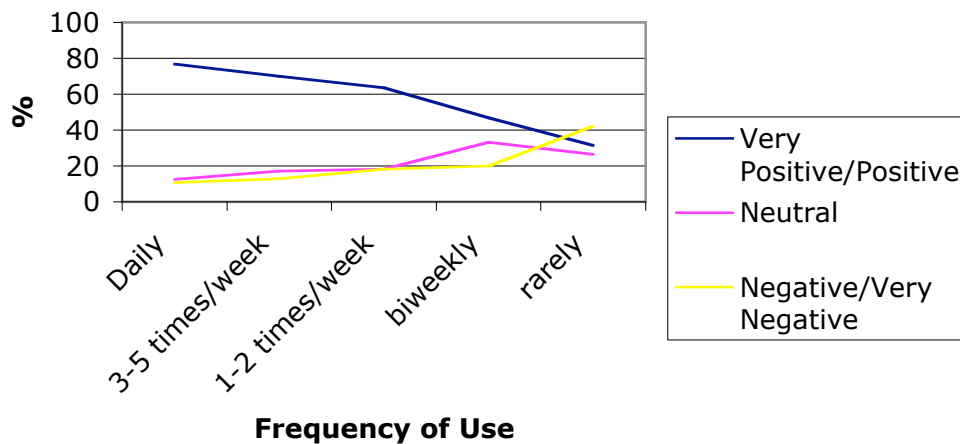

Figure 2. Student responses ranking usefulness of Blackboard™.

Question 2: Students on instructors' use.

The second question asked students if they thought their instructors used Blackboard™ effectively, and to give their perceptions as to why or why not. Positive responses here stayed more stable when moving from daily users to rare users. However, negative responses saw a marked increase as frequency of use decreased. Daily users reported 42.9% positive, 37.5% neutral, and 19.6% negative. Those who used Blackboard™ 3-5 times/week were 47% positive, 34% neutral, and 19% negative. Users who accessed Blackboard™ 1-2 times/week were 30.9%

positive, 25.4% neutral, and 43.7% negative. Biweekly users were 33.3% positive, 6.7% neutral,

and 60% negative. Rare users said they were 42.1% positive, 5.3% neutral, and 52.6% negative

(see figure 3). Many students responded that their experience was a bit mixed; that some teachers

did use it effectively, but an equal number did not. These responses were coded as a neutral, thus

resulting in the high neutral percentages in the first three groups. As to why they thought their

instructors did or did not use Blackboard™ effectively, most said it was either due to inadequate

training, or unwillingness on the part of the instructor to learn Blackboard™'s features and take

full advantage of them. One student summed up their frustration by saying, "I think either

teachers need to use it regularly or never – if you post a message that there's no class on

Monday, yet you've never used it before, it's not helpful." Another student responded, "No! I

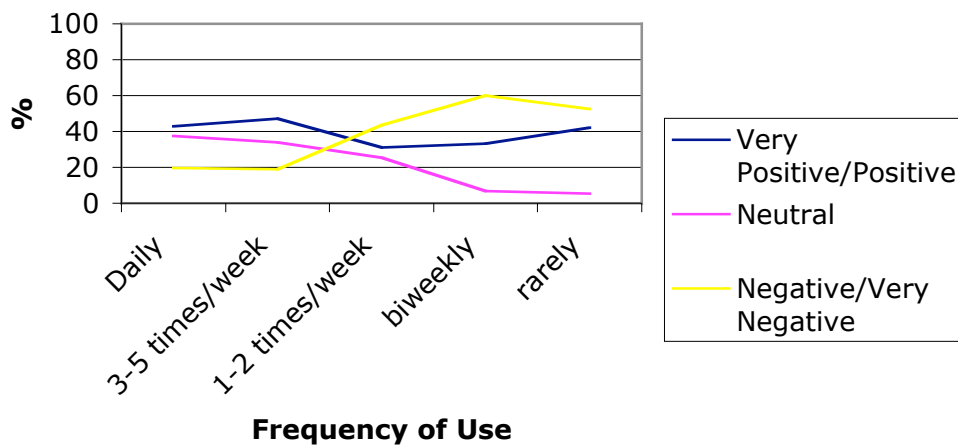still have instructors that don't know how to use the system…Frustrating!"

Figure 3. Student responses ranking instructor effectiveness in using Blackboard™.

Question 3: Students on Teacher Effectiveness.

Next students were asked if they felt that instructors who used Blackboard™ were more

effective teachers. Here the trends seen in the first two questions are generally in evidence as

well. Daily users responded 69.6% positive, 10.7% neutral, and 19.7% negative. Those who used

Blackboard™ 3-5 times/week had 59% positive, 10% neutral, and 31% negative comments.

Students who accessed Blackboard™ 1-2 times/week were 70.4% positive, 4.2% neutral, and

25.4% negative. Biweekly users reported 53.3% positive, 20% negative, and 26.7% negative,

Finally, those who use Blackboard™ only rarely responded 36.8% positive, 15.8% neutral, and

47.4% negative (see figure 4). Those who responded positively commented that their view of

teacher effectiveness hinged on whether or not the teacher made things easier for the students by

using Blackboard™. Those whose perception was more negative often said that a teacher's

effectiveness did not really hinge on any one particular tool or method, such as Blackboard™.

One respondent commented that "…it doesn't effect (sic) how they teach, but it does help that I

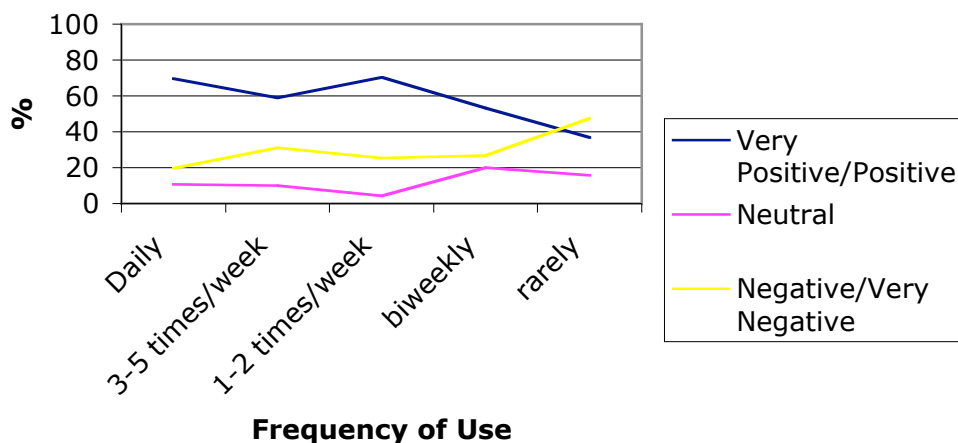feel like I know what is going on in class."

Figure 4. Student responses ranking whether or not Blackboard™ use made teachers more
effective.

Question 4: Blackboard™'s effectiveness.

The next question asked students how they would rate Blackboard™'s effectiveness as an

instructional tool. This question gets right to the heart of the hypotheses, and yielded some

interesting individual responses. Trends among all responses once again followed the same pattern previously seen. Daily users responded 76.8% positive, 12.5% neutral, and 10.7% negative. Those who used Blackboard™ 3-5 times/week had a 70% positive, 17% neutral, and 13% negative response. Among those who accessed Blackboard™ 1-2 times/week, 63.4% were positive, 18.3% neutral, and 18.3% negative response. For biweekly users there was a 46.7% positive, 33.3% neutral, and 20% negative response. Finally rare users were 31.6% positive, 26.3% neutral, and 42.1% negative (see figure 5). The negative response grew swiftly among less frequent users. What is intriguing is that some of the negative responders said they did not see Blackboard™ as an instructional tool at all. One student wrote, "Is it supposed to be an instructional tool?" Others echoed this sentiment, saying that Blackboard™ was a pretty effective way of keeping a class organized and materials readily available. However, they did not see the instructional value being exhibited in their classroom experiences.
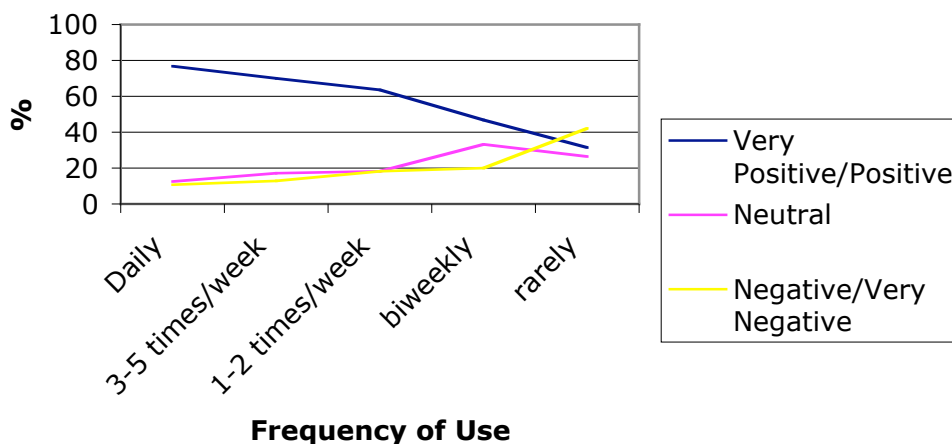

Figure 5. Student responses ranking Blackboard™'s effectiveness as an instructional tool.

Question 5: Blackboard™ & Classroom Performance.

The final question for students asked them if they thought Blackboard™ had a positive effect on their classroom performance. Again, the same trends in positive and negative responses are evident. They break down as follows. For daily users, 87.5% were positive, 5.4% neutral, and 7.1% negative response. Of those who accessed 3-5 times/week there were 76% positive, 12% neutral, and 12% negative. For 1-2 times/week users, 61.9% were positive, 12.7% neutral, and 25.4% negative responses. Biweekly users reported 60% positive, 6.7% neutral, and 33.3% negative. Those who rarely accessed Blackboard™ rated its effect on their classroom performance as 26.3% positive, 15.8% neutral, and 57.9% negative (see figure 6). Of those who responded positively, most said that their ability to track their grades was a positive influence on their performance; allowing them to make adjustments in their efforts.
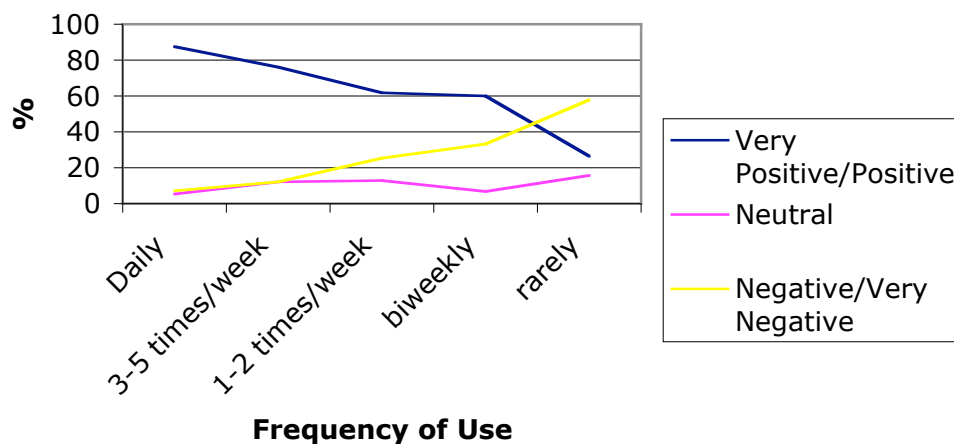
Figure 6. Student responses ranking whether or not Blackboard™ had a positive effect on their classroom performance.

The more important factor, however, is what was said in these responses. Interestingly, students who voiced praise did so more readily if their instructor was using Blackboard™ regularly and consistently. As one response put it, "Half of my classes use Blackboard™, half do not. [I] wish it was consistent." They were most impressed with the ability to keep up with

assignments and grades as often as fit their needs. One student commented, "I find it useful because teachers are able to post a syllabus, grades, and assignments as well as notes." Those whose teachers did not use Blackboard™ consistently voiced the greatest frustrations. Another student said, "I have one professor who actively uses Blackboard™. It seems to me that effectiveness would require use."

Instructor Use and Perceptions

The sample for instructor responses (n=21) was self-selected. Instructors were invited to participate in the study by way of a campus-wide E-mail solicitation. Those who responded positively were sent the study questionnaire. This procedure yielded 21 responses, and the instructors showed a slightly more robust usage pattern. Daily users were 38.1%; 3-5 times per week 19%; 1-2 times per week 33.3%; infrequent users numbered 14.3%. Their most frequently accessed features were *Course Documents* (66.6%), *Gradebook* (47.6%), *Send E-mail* (42.9%), and *Announcements* (38.1%). These figures represent those who said they used the feature at least once a week. Thus, like their students, the majority of instructors (90.5%) are accessing Blackboard™ at least once a week.

As with the student respondents, responses were grouped according to frequency of access for Blackboard™ and found similar trends from group to group (see figure 7). There were, however, two notable anomalies in this trend. The *Send E-mail* usage dropped to zero among those who accessed Blackboard™ 3-5 times/week, then rebounded among those who access Blackboard™ 1-2 times/week. Also, *Course Documents* use did not continue to trend downward among those who accessed Blackboard™ 1-2 times/week. Rather, it jumped sharply upward, almost matching the use among those who access Blackboard™ daily.
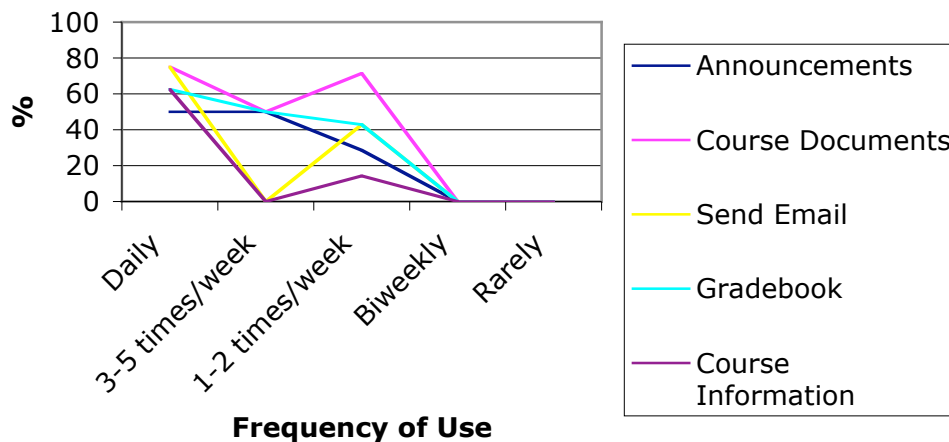
Figure 7. Instructors' use trends for top five Blackboard™ features.

Looking at instructor responses to perceptual measures also reveals a generally positive perception of Blackboard™. Those measures showed that positive responses consistently outweighed negative ones. However, the data do find that as frequency of access to Blackboard™ decreases, negative perceptions increase. Specifically, the data found that most instructors did not track their students' use of Blackboard™. This was true for all user groups. Seventy-one point four percent of all instructors responded negatively to this question. Most of these responses were simple "no's," while one instructor said they had tracked specific items on a couple of occasions, but their use was rare. Another said they did not use the feature, but they knew how to do so if they ever wanted or needed to. When asked if they thought their students used Blackboard™ effectively, 61.9% said they thought their students were effective users. Eighty point one percent said they thought their students found Blackboard™ to be a helpful tool. However, probably the single most important question to measure instructor perceptions asked them to rate Blackboard™'s effectiveness as in instructional tool. Here the results were more mixed. Forty-seven point six percent of respondents rated Blackboard™ positively or very positively, 33.3% had a negative or very negative response, while 19.1% were either neutral or

had no response. Finally, when asked if they thought that Blackboard™ use had a positive effect on student performance, 38% said they thought it did have a positive effect, 38% did not believe there were any positive effects on their students' performance, and 24% either had no opinion, or felt they had no way to make a causal link between the two.

As with students, instructors also saw the need for consistent use. Those who were using Blackboard™ consistently in their classes reported more favorable perceptions, both for themselves, and from their students. One instructor related how they posted their PowerPoint lectures for students to download before class. Students were also "very thankful for constant grade updates so they had an idea of where they were in the class." That instructor experienced "great feedback" from students about Blackboard™. Another instructor indicated their students were mixed in their response to the offerings on Blackboard™: "Some students took advantage of Blackboard™ as I offered it (grades, course documents, etc.) but several students never even logged into Blackboard™."

Some instructors said they would use Blackboard™ more if they only knew how to use it. When asked if they thought students used Blackboard™ effectively, one instructor said, "Yes, for what I make available. My knowledge is limited, so the students probably would utilize even more if I knew how." Another teacher said, "There appear to be more tools on [Blackboard™] than I am familiar with." Still another response said that Blackboard™ was "not user-friendly for an instructor."

Both instructors and students said that Blackboard™ was a helpful and effective learning tool that enhanced student performance, provided the student and the instructor were committed to its proper use. One instructor responded: "The students who regularly checked their grades were more aware of their needs in the class and didn't wait until the end of the semester to talk to

me about their grades." Another respondent said that students who download lecture notes and bring them to class "have been paying more attention during the lecture and seem more involved with the classroom discussion."

The trends suggested by the qualitative responses are discussed in greater detail in the next chapter.

CHAPTER 4

DISCUSSION

One overriding trend emerged through this study: the higher the frequency of use, the more positive the ratings for Blackboard™, both for students and instructors. This finding echoes what Chou (2004) discovered in her research of patterns of online interaction. Whether the online communication was synchronous or asynchronous, she found that increased use correlated positively with more positive perceptions of the technology. In the findings of this study of Blackboard™, it is abundantly clear that with regard to positive perceptions of Blackboard™ on the campus of Wichita State University, the more often a person accesses the program, the more likely that person is to have just such a positive perception.

There are, however, some very interesting developments in the data. The quantitative data in the questionnaires suggests that there are certain features that have an overwhelming advantage over others in their usage. These features deal primarily with communicating what this paper will call the "maintenance information" for the class. Students were most likely to access those features that give them certain types of information: that which enabled them to keep up with class progress, lecture notes, and PowerPoint presentations. They were most interested in accessing their grades, and in downloading notes and assignments for those class times that they missed. Students largely overlooked those features that have far greater potential for developing the kind of online communication that is most productive for learning. These features include *Discussion Board, Collaboration,* and even *Send E-mail*. New educational paradigms stress the need for a partnership that makes the learning process more collaborative and less one-way in the flow of information. The instructor becomes a partner with the student in learning, and the student becomes a partner with the instructor in developing a pathway for learning that is tailored

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to the learner, often very specifically. This is the heart of Learner-Centered Psychological

Principles (LCPP). Thus, the indicators of the student questionnaires suggest that Blackboard™

has yet to realize its full potential.

Cognitive and Metacognitive Factors

In light of the LCPP theoretical framework previously discussed here, this data suggests a

number of things. The first principle of LCPP says that learning is influenced by environmental

factors, including culture, technology, and instructional practices (APA Work Group of the

Board of Educational Affairs, 1997). The data indicate several things in this regard. First, the

culture of instruction at Wichita State University is firmly rooted in the methodologies that have

traditionally served well, but that are now being challenged. As already noted, students show by

their usage that Blackboard™ is not yet being properly exploited. They further point out in their

open-ended responses that Blackboard™ is a useful tool for them, but mainly for keeping abreast

of their standing academically in their courses. They often stress that one of their chief

frustrations with Blackboard™ is that not all of their instructors use it, and that those who do use

it often are not adequately trained to fully exploit its features. They also say that some of their

instructors are resistant to using Blackboard™. One student wrote, "Some use it effectively while

others do not. Some say it lessens the class experience and makes attendance go down."

Three instructors expressed regret via E-mail that they could not participate in the study

because they did not use Blackboard™ at all. They are not included in the 21 responses

previously mentioned. Instructors also pointed out that they feel inadequately trained. Training

for instructors is primarily an online tutorial. To date, no systematic process is in place to fully

educate instructors on the many facets of Blackboard™.

This identifies one of the chief problems with the implementation of Blackboard™ at

Wichita State University. Thus far, instructors have been the deciding factor in adopting

Blackboard™ for use in their courses, and they have determined the depth of that implementation. Prior to the 2006-2007 academic year Blackboard™ was available, but not automatically so. Instructors who wished to utilize it could do so, but the initiative had to be theirs. However, progress has been made in that beginning with the 2006-2007 academic year, all sections were set up with the shell necessary for the instructor to make use of Blackboard™ in their class. This has overcome one of the greater barriers for instructors. However, there still remains a learning curve that must be mastered if students are to receive the full benefit of this program. The key to that mastery is first establishing a more receptive attitude among instructors toward a new culture of learning that is open to the communicative method or tool as it will enhance the learning environment.

Secondly, this study suggests that technology influences learning. Wichita State University's investment in technology is substantial. Every section offered in each term has an opportunity by default to utilize Blackboard™. This places a vast amount of information at the disposal of both instructors and students. It is evident by student responses that they enjoy having access to class information, assignments, notes, and grades at any time of the day or night. They do point out, however, that instructors who do not maintain and update that information on a regular basis are a source of great frustration. Many responses said that they saw Blackboard™ as a valuable resource when their teachers used it. They also said that many of their teachers did not use it as extensively as they would like.

Finally, instructional practices are a prime determiner of learning. The most powerful paradigms in education indicate that the LCPP approach is the most effective. That approach places the center of emphasis on the learner. Thus, old "push" technologies of instruction will simply not be adequate any more. The lecture has some value still, but is not the best method for most situations. Therefore, instructional practices have to evolve. Students indicate that they are most happy when their instructors use Blackboard™ extensively, and would welcome even more

use of this technology. Instructors also indicate their desire to do more with the tool, but they also point out their frustration with mastering the program.

Motivational and Affective Factors

The next principle of LCPP says that acquisition of complex knowledge and skills requires extended learner effort and guided practice. Without learners' motivation to learn, the willingness to exert this effort is unlikely without coercion (APA Work Group of the Board of Educational Affairs, 1997). Does Blackboard™ enhance learner motivation? Even more to the point, does Blackboard™ sufficiently exploit learner motivation in a way that enhances this acquisition of complex knowledge and skills? The obvious correlation between usage and perception would seem to indicate motivated students desire a tool like Blackboard™. They repeatedly mentioned that they viewed instructors who utilized Blackboard™ as more competent and involved with regard to student learning and achievement. They felt better connected to the coursework. Conversely, those students who were not motivated to access Blackboard™ on a regular basis voiced the more negative opinions of the program. They usually did not find its features helpful, and they were most critical of their instructor's performance. Some even indicated frustration that they were forced to access Blackboard™ to retrieve assignments and other course documents. Thus, some instructors are forcing or coercing their students to use Blackboard™. The instructors responded that they often felt that students didn't utilize Blackboard™ as well as they could.

Since the statistical data show us that the majority of respondents access Blackboard™ at least once a week, it is likely that most are predisposed to be motivated learners. Therefore, instructors are presented with an opportunity to extend and enhance student acquisition of complex knowledge and skills through the use of technologies like Blackboard™. It provides a

unique platform for the learner-centered approach. Instructors who will embrace this concept will surely find a receptive audience, for the most part, in their students. And for those students who are not receptive, the opportunity is there to entice, or even force, them to try Blackboard™. Therefore, it is perceived as an effective tool by those who use it often.

Developmental and Social Factors

The third principle of LCPP says that learning is influenced by social interactions, interpersonal relations, and communication with others (APA Work Group of the Board of Educational Affairs, 1997). McCombs and Vakili (2005) point out that the most conducive learning environment is one in which there are supportive relationships for learners, and where those learners can take ownership of and control over the learning process. The learner's behavior is based on his or her perceptions and evaluations relative to personal goals and aspirations. This process of perceiving and evaluating is a dynamic one. It is a process of growth that is never static. It serves the needs of mastery, control and belonging (Wagner and McCombs, 1995). The research findings show both encouraging and discouraging developments in this area. As mentioned earlier, one of the chief concerns of critics of computer-mediated communication in education is that it will result in fewer social interactions, weaker interpersonal relations, and reduced communication with others. The example given above from one student's response shows that there are instructors who are convinced that the use of Blackboard™ will adversely affect the attendance of their class.

The data in the study does not give a clear picture of whether or not students and instructors are finding meaningful social interactions. However, interpersonal relations and communication with others is evidenced. Some students praised Blackboard™ for allowing them to stay in touch with their instructors in a way that was more convenient for both parties. Phipps

and Merisotis (2000), and Sherry and Wilson (1997) point to a need for a partnership between instructor and student that focuses on and encourages two-way communication, technology learning, and feedback relative to course expectations. Both instructor and student comments indicate that these aspects of enhanced learning are at the very least beginning to take shape. Still, the tools that Blackboard™ possesses that would facilitate greater social interaction, even within a class that was totally online, are rarely used at present. Instructors voiced disappointment that students did not use the discussion board or the external links more often. However, this comment must be buttressed by the students' argument that it is the instructors who do not take advantage of these features, either due to lack of training, or an unwillingness to do so.

Individual-Differences Factors

The final principle to examine in the theoretical framework of LCPP is that learners have different strategies, approaches, and capabilities for learning that are a function of prior experience and heredity (APA Work Group of the Board of Educational Affairs, 1997). While this study cannot address genetic issues related to learning capabilities, it does suggest some of the strategies and approaches that flow from prior experience in college. Several students spoke of the improvements in instructor use of Blackboard™ just since the prior semester. Their use of informational features within Blackboard™ indicates developing strategies and approaches based on their experience. They view this information as vital to their success. With Blackboard™ they can track their grade performance in a more dynamic way. This, of course, depends on instructors remaining focused in their grading and grade posting habits. Students also indicate their satisfaction with being able to download class notes, information, and assignments, especially when they are unable to attend class. Conclusions are discussed in the next chapter.

CHAPTER 5

CONCLUSION

To summarize, this study hypothesized that how instructors and students use

Blackboard™ has a direct effect on their perceptions of it. The study further hypothesized that

students and instructors perceive Blackboard™ to be a valuable learning tool. From these two

hypotheses came three research questions: 1) How is Blackboard™ used at Wichita State

University? 2) Among users of Blackboard™ at Wichita State University, how do they perceive

Blackboard™? And 3) do instructors and students perceive Blackboard™ as a valuable learning

tool?

With regard to question one, this study found that Blackboard™ use by students centered

around "course maintenance" features. They were most interested in being able to access their

grades, download lecture notes and assignments, get basic course information such as a syllabus,

and check for announcements. This pattern also held true for instructors. They also recognized

that these were the features most desired by their students. The features that promote a more in

depth use of CMC in an andragogically sound way were not utilized. The Discussion Board,

which facilitates asynchronous classroom CMC, and Collaboration, which allows synchronous,

real-time CMC, were not used by students or instructors. This fact was noted, especially by some

of the students. As one student put it, their instructors "never [had] any groups set up and rarely

[had] discussion board set up." Also, instructors shared some of the same frustrations with using

these functions because they felt inadequately trained to do so.

Question two asked how users of Blackboard™ perceived it. Here the data showed a

definite relationship between frequency of use and perception. Specifically, the data suggested

that those who were the most frequent users of Blackboard™ had the most positive perceptions.

As frequency of use dropped off, the perceptions trended toward more negative responses. While a direct causal link is difficult to establish, the data do suggest that positive perceptions of Blackboard™ follow increased frequency of use. And, again, these positive perceptions revolve most strongly around the "course maintenance" features.

The final question deals with how instructors and student perceive Blackboard™ as an instructional tool. This is probably the most important of the three questions, since this research aimed to discover if Blackboard™, which is described as a tool for enhancing instruction and learning through CMC, actually is perceived in that way. Student responses were positive in this regard. The same trend, where decreasing frequency of use was accompanied by increasing negative perceptions, was identified. However, only those who were rare users showed more negative than positive responses. Instructor responses were very similar, albeit a bit more subdued then their students. Positive responses did outnumber negatives, but by smaller margins than student responses. These responses also trended negatively as frequency of use decreased.

These findings do lead to the conclusion that the hypotheses were correct. Students and instructors who were more frequent users of Blackboard™ were also more likely to perceive it positively. Conversely, those who were less frequent users were more likely to have a negative or neutral perception of Blackboard™ and its usefulness to them. Also, the perception of Blackboard™ as a useful and effective instructional tool is evident in the findings.

To summarize, this study offers insight that, if applied, may positively shape the use of Blackboard on the Wichita State University campus. Recommendations based on these findings include, first, a systematic plan be put in place to acquaint instructors with Blackboard™ and all of its features, and to train them in the proper use. This will be the real challenge as the university moves into a greater integration of technology with course materials. This training

should not be limited to the technical aspects of how to make the various features work. It should also include some degree of instruction on pertinent educational principles that will help instructors to properly apply the use of Blackboard™ to their particular discipline or field. Thus, instructors will have a better understanding of what it means to be learner-centered in their lesson planning. Students will be more actively engaged in the learning partnership, and they will be better motivated to take part in this process. Secondly, more emphasis should be placed on making the most of the group learning experience by encouraging instructors to take advantage of the discussion board or the collaboration feature. This approach will allow students to make self-assessments and share feedback with instructors and peers regarding projects. This will enhance learner motivation as they see their efforts will not go unrewarded. Instructors should also be able to give quizzes and exams electronically, making it easer and faster to relay valuable feedback to students.

The strengths of this research hinge on the methodology. Survey/questionnaire research has several strengths. The quantitative measures of the questionnaire established a trend or pattern of usage. This pattern gave a foundation for understanding the qualitative measures of the open-ended questions. For instance, even though the study established that greater frequency of access results in a greater frequency of use (which seems to be self-evident), what feature or features are most popular could only be established through the quantitative measures. The qualitative measures employed addressed why those features may be popular. Responses to those questions gave an entirely new perspective that greatly enriched the entire set of data. Using both qualitative and quantitative methods, this study enriched the findings.

A significant weakness in this study suggests further study. Further research should attempt to acquire a sample more representative of the entire student body. A broader survey of a

truly random sampling of the entire student population would provide greater reliability. Also, the instructor sample was a self-selected one, as already mentioned, and a wider sample would be useful. Because of these issues with the sampling, it is important not to generalize too much in the analysis of the data. A random sampling would help to avoid problems of generalizability.

Several other suggestions can be made for further study. While this research gives a good overview of student and instructor perceptions, there is still much more to learn. The same study could be conducted, but on a much broader scale – moving beyond the confines of Wichita State University to test these same perceptions with a much bigger sampling. Additional studies also are suggested by the LCPP theoretical framework. There are several other principles within the framework that speak more directly to andragogical questions, and this study focused more on the communicative aspects of technology use in the instructional setting. There are also many other forms of technology now available for the classroom that go beyond programs like Blackboard™. One might want to know how these tools can most effectively be put to good use. For instance, project-based learning where students must work in groups is very popular in theoretical circles. However, these more holistic approaches to instruction have not been subjected to significant long-term study. They are part of the landscape today, and are worthy of examination.

These technologies hold incredible promise for enhancing the learning environment. In fact, they have already been shown to be effective, yet their acceptance and implementation is far from universal. Schools that have had the foresight to invest in CMC technologies, and the accompanying training necessary to make teachers fully aware of the possibilities they possess, have seen student achievement and satisfaction rise. Still, many more institutions have yet to see

the full spectrum of promise, and make the necessary plans to implement an effective strategy for technology integration.

To be sure, ICT and CMC are not panacea's for all that ails the educational system. There are many hurdles that must be overcome on the road to technology integration. It is abundantly clear from the literature that the most important factor is the instructor. Expert instructors who are committed to using every tool at their disposal will find ways to integrate CMC into their lesson plans. This type of highly motivated educator will spend his or her own time, if necessary, to research and experiment with new programs and hardware, seeking new and innovative ways to inspire a spirit of curiosity and adventure within their students. Conversely, teachers who have yet to develop either sufficient teaching skills, or enhanced technology skills, will find themselves frustrated with the prospect of integrating CMC within their classroom. To these teachers, technology will be, at best, an add-on to more traditional lesson delivery methods. At worst, technology will become something that is a playtime activity, merely a reward for the student who finishes his or her traditional lessons early.

Clearly, the benefits of technology integration outweigh the costs. However, it remains for visionary administrators and instructors to see these benefits realized within the halls of learning. They will not materialize automatically; neither will they take form overnight. But, take form they must.

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APPENDICES

APPENDIX A

STUDENT QUESTIONNAIRE

I would like to thank you for participating in this survey, examining the use of Blackboard™ in your class(es). While I appreciate your participation in this study, your consent is voluntary and you can stop the study at any time without penalty.

Please know that we will take several steps to ensure your privacy. Responses will be viewed only by the principle investigator. Quantitative measures will be transferred directly to a data analysis program. Personal information will not be included in the data file. Upon completion of the study and entry of information into the data analysis program all responses will be destroyed. Further, the purpose of this study is to explore generalities across a population and, as such, individual cases will not be examined. Any presentation or publication of data will discuss these generalities and not reveal information about specific participants. Thank you again for your participation.

How often do you use Blackboard™ in conjunction with your classes?

Daily ❑ 3-5 times/week ❑   1-2 times/week ❑   Every other week ❑   Rarely ❑

Which features of Blackboard™ do you use most? How often?

Announcements ❑   Daily ❑ 1-2 times/week ❑ Every other week ❑   Rarely ❑

Course Information ❑   Daily ❑ 1-2 times/week ❑ Every other week ❑   Rarely ❑

Staff Information ❑   Daily ❑ 1-2 times/week ❑ Every other week ❑   Rarely ❑

Course Documents ❑   Daily ❑ 1-2 times/week ❑ Every other week ❑   Rarely ❑

Assignments ❑   Daily ❑ 1-2 times/week ❑ Every other week ❑   Rarely ❑

Communication ❑   Daily ❑ 1-2 times/week ❑ Every other week ❑   Rarely ❑

Discussion Board ❑   Daily ❑ 1-2 times/week ❑ Every other week ❑   Rarely ❑

External Links ❑   Daily ❑ 1-2 times/week ❑ Every other week ❑   Rarely ❑

Tools ❑   Daily ❑ 1-2 times/week ❑ Every other week ❑   Rarely ❑

Course Calendar ❑   Daily ❑ 1-2 times/week ❑ Every other week ❑   Rarely ❑

Tasks ❑ Daily ❑ 1-2 times/week ❑ Every other week ❑ Rarely ❑

Send E-mail ❑ Daily ❑ 1-2 times/week ❑ Every other week ❑ Rarely ❑

Collaboration ❑ Daily ❑ 1-2 times/week ❑ Every other week ❑ Rarely ❑

Discussion Board ❑ Daily ❑ 1-2 times/week ❑ Every other week ❑ Rarely ❑

My Grades ❑ Daily ❑ 1-2 times/week ❑ Every other week ❑ Rarely ❑

Address Book ❑ Daily ❑ 1-2 times/week ❑ Every other week ❑ Rarely ❑

Calendar ❑ Daily ❑ 1-2 times/week ❑ Every other week ❑ Rarely ❑

Dictionary/Thesaurus ❑ Daily ❑ 1-2 times/week ❑ Every other week ❑ Rarely ❑

Do you find Blackboard™ useful? If so, how?

Do you think your instructors use Blackboard™ effectively? Why or why not?

Do you think instructors who use Blackboard™ are more effective teachers? Why or why not?

How would you rate Blackboard™'s effectiveness as an instructional tool?

Do you think that Blackboard™ has had a positive effect on your class performance? If so, how?

APPENDIX B

INSTRUCTOR QUESTIONNAIRE

I would like to thank you for participating in this survey, examining the use of Blackboard™ in your class(es). While I appreciate your participation in this study, your consent is voluntary and you can stop the study at any time without penalty.

Please know that we will take several steps to ensure your privacy. Responses will be viewed only by the principle investigator. Quantitative measures will be transferred directly to a data analysis program. Personal information will not be included in the data file. Upon completion of the study and entry of information into the data analysis program all responses will be destroyed. Further, the purpose of this study is to explore generalities across a population and, as such, individual cases will not be examined. Any presentation or publication of data will discuss these generalities and not reveal information about specific participants. Thank you again for your participation.

How often do you use Blackboard™ in your classes?

Daily ☐   3-5 times/week ☐   1-2 times/week ☐   Every other week ☐   Rarely ☐

Which features of Blackboard™ do you use? How often?

Announcements ☐   Daily ☐ 1-2 times/week ☐ Every other week ☐ Rarely ☐

Course Information ☐   Daily ☐ 1-2 times/week ☐ Every other week ☐ Rarely ☐

Staff Information ☐   Daily ☐ 1-2 times/week ☐ Every other week ☐ Rarely ☐

Course Documents ☐   Daily ☐ 1-2 times/week ☐ Every other week ☐ Rarely ☐

Assignments ☐   Daily ☐ 1-2 times/week ☐ Every other week ☐ Rarely ☐

Communication ☐   Daily ☐ 1-2 times/week ☐ Every other week ☐ Rarely ☐

Discussion Board ☐   Daily ☐ 1-2 times/week ☐ Every other week ☐ Rarely ☐

External Links ☐   Daily ☐ 1-2 times/week ☐ Every other week ☐ Rarely ☐

Tools ☐   Daily ☐ 1-2 times/week ☐ Every other week ☐ Rarely ☐

Course Calendar ☐   Daily ☐ 1-2 times/week ☐ Every other week ☐ Rarely ☐

Tasks ☐　　　　　　　Daily ☐　1-2 times/week ☐　Every other week ☐　Rarely ☐

Send E-mail ☐　　　　Daily ☐　1-2 times/week ☐　Every other week ☐　Rarely ☐

Collaboration ☐　　　Daily ☐　1-2 times/week ☐　Every other week ☐　Rarely ☐

Digital Dropbox ☐　　Daily ☐　1-2 times/week ☐　Every other week ☐　Rarely ☐

Gradebook ☐　　　　　Daily ☐　1-2 times/week ☐　Every other week ☐　Rarely ☐

Test Manager ☐　　　Daily ☐　1-2 times/week ☐　Every other week ☐　Rarely ☐

Survey Manager ☐　　Daily ☐　1-2 times/week ☐　Every other week ☐　Rarely ☐

Pool Manager ☐　　　Daily ☐　1-2 times/week ☐　Every other week ☐　Rarely ☐

Course Statistics ☐　Daily ☐　1-2 times/week ☐　Every other week ☐　Rarely ☐

Performance Dashboard ☐ Daily ☐　1-2 times/week ☐　Every other week ☐　Rarely ☐

Which features do your students indicate are most desired?

Announcements ☐　Course Information ☐　Staff Information ☐ Course Documents ☐

Assignments ☐　Communication ☐ Discussion Board ☐　External Links ☐　Tools ☐

Course Calendar ☐　Tasks ☐　Send E-mail ☐　Collaboration ☐ Gradebook ☐

Do you track student use of Blackboard™?

Do you think students use Blackboard™ effectively? How?

Do you think students find Blackboard™ helpful? How?

How would you rate Blackboard™'s effectiveness as an instructional tool?

Do you think student performance has improved as a result of using Blackboard™?