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Examining collaboration in the classroom through the use of weblogs

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EXAMINING COLLABORATION IN THE CLASSROOM
THROUGH THE USE OF WEBLOGS

Thesis

Submitted to

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UNIVERSITY OF DAYTON

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The Degree

Master of Arts in Communication

by

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UNIVERSITY OF DAYTON

Dayton, Ohio

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ABSTRACT

EXAMINING COLLABORATION IN THE CLASSROOM THROUGH THE USE OF WEBLOGS

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The purpose of the present study was to investigate the potential utility of weblogs within the classroom environment. The specific questions of interest surrounding use of weblogs in group projects included (1) influencing students' anxiety related to group work, (2) assisting groups in meeting their expectations and achieving success, and (3) understanding how students perceived the weblog as a communicative tool within a small group context.

Ninety undergraduate students attending a private Midwestern university participated in the study. All participants were enrolled in one of the multiple sections of the communication module course, Group Decision Making. Participants completed both a pretest and a posttest designed to measure students' general level of anxiety when working in groups, expectations for the group project, and familiarity with forms of technology.

In general, the use of weblogs had little influence on students' level of anxiety, expectations, or group communication. While the lack of student postings to the weblogs during the group projects was a significant limitation to adequately addressing the research questions, the work does have important implications for future study with weblogs in classroom environments. The potential reasons for students' lack of use included (1) length of the module courses, (2) need for additional instruction on use of weblogs, and (3) requiring that posting on the weblog be mandatory rather than voluntary. Additional recommendations for future research are also discussed.

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CHAPTER I

INTRODUCTION

Collaboration has been described by Roschelle and Teasley (1995) as "a coordinated, synchronous activity that is a result of a continued attempt to construct and maintain a shared conception of a problem" (p. 24). Multiple skills can be acquired when working in a collaborative learning environment. Students learn to set goals, delegate work, and deal with conflict. In addition, group work allows students to improve their communication, problem solving, leadership, and technical skills (Eastman & Swift, 2002). Traditionally, collaboration has been considered an activity that involved all parties communicating face-to-face. Interactive tools (e.g., weblogs, e-mail, message boards, chat rooms, instant messaging, and video conferencing), however, have the potential to facilitate collaboration on projects in academic and workplace environments without requiring face-to-face communication.

The purpose of the present research is to examine the use of weblogs as a collaborative tool in the classroom. Weblogs are personal journals that are created online and may be viewed by anyone who uses the Internet. Those who view a weblog can post comments to the journal entries. Educators are beginning to explore the ways this technology can assist groups in their

collaborative efforts. Their aim is to have students use this technology to extend their communication with group members beyond the classroom. Weblogs have the potential to enhance an e-learning environment (where students never meet in a classroom) or a blended learning environment (e-learning phases alternating with face-to-face phases).

Research has yet to indicate how effective these forms of technology are in assisting groups in accomplishing their goals. Are they providing users with the same rich communication that they have when talking face-to-face? Or is something lost when a student receives the message via a computer screen?

Purpose of the Study

Educators are becoming aware of the weblog's ability to reach audiences. They see the possibility for weblogs to reshape the ways students approach writing assignments, journal entries and online discussions (Carlson, 2003).

The overarching goal of the present study is to explore the potential utility of weblogs within the classroom environment. Given that the benefits of a weblog are maximized when there is rich communication shared within a strong community of people, the present study will examine weblog use during group projects. As with most forms of computer-mediated communication, there are a number of variables that potentially affect the way weblogs impact communication. The variables of interest for this study include the following: (1) students' levels of anxiety as a function of working in groups, (2) students' expectations of success surrounding the group project, and (3) students'

perceptions and experiences when using weblogs as a communicative tool during the group project. An examination of these variables may determine how effective the weblog is as an educational tool.

The next section provides background information on weblogs. It reviews the literature on the other forms of computer-mediated communication and how such technologies have been incorporated into the classroom. Finally, there will be a review of the research conducted on collaboration and how it relates to weblogs.

CHAPTER II

REVIEW OF LITERATURE

Despite the popularity of blogging in the typical household,¹ there have been few academic articles written on the technology. As recently as 2003, a search on a number of popular academic journal search engines (ProQuest, EBSCO and Gale) only yielded 30 results related to weblogs (Williams & Jacobs, 2004). This chapter will explore the origins of weblogs and the research that has been conducted in this area. There will also be a review of the literature on other forms computer-mediated communication and their uses in education. This review will provide a foundation for how to research the use of weblogs in the classroom. This chapter will conclude with a review of the concept of collaboration and how it is studied in the classroom.

Origins of the Weblog

Weblogs – more commonly known as “blogs” – are a new form of computer-mediated communication quickly growing in popularity. Technorati Inc., a weblog-tracking company, reported that as of October 2004 there had been 4.2 million weblogs established worldwide (Rosenbloom, 2004). That is approximately one million more than were reported during the previous year.

¹ The term blog was the most searched for definition on Miriam-Webster.com in 2004. (Taylor, 2004)

Doctorow et al. (2002) define a blog as "a web page that contains brief, discrete chunks of information called posts. These posts are arranged in reverse-chronological order (i.e., the most recent posts come first). Each post is uniquely identified by an anchor tag, and it is marked with a permanent link that can be referred to by others who wish to link to it" (p. 1). These websites provide users with an online journal that is used for the posting of any content they wish and is accessible to all who navigate the Internet. In contrast to the limited voices of traditional opinion editorialists and columnists, anyone who has a computer and Internet access can now be heard (Metz, 2003).

There are three basic types of weblogs: filters, personal journals and notebooks (Herring et al., 2004). Weblogs that are considered filters contain only material that is external to the blogger. These sites only have posts that provide links to outside sources. None of the information found on these blogs comes personally from the blogger. When blogs were first created they were all filters (Blood, 2002). In contrast, personal weblogs contain journal content that is from the blogger. This content is made up of the author's personal thoughts and feelings. Rather than external content, the personal journal only contains internal content. Personal journals have now emerged as the most common type of weblog (Herring et al., 2004). Finally, the notebook form of weblogs is a combination of internal and external content. Some links are provided from outside material, along with the blogger's personal opinions on the external information they are providing. Notebooks are distinctive from the other types of

weblogs because they will have longer, more focused essays, whereas filters and personals journals provide shorter posts.

One reason for the weblogs rise in popularity is its ability to avoid the problems found in other forms of computer-mediated communication. For instance, in comparison to a personal web page, a blog site does not require users to know HTML, which means almost anyone can create a blog site. This may be particularly important for educators who are resistant to bringing new forms of technology to the classroom. Weblogs also have an advantage over personal web pages when it comes to providing news that is current. Blog sites place the newest posts at the top of the page, allowing the reader to easily access the most recent information. Nardi et al. (2004) report, "Several informants saw [personal] homepages as more 'static' than blogs, more formal and carefully considered, and somewhat less authentic" (p. 43). Finally, a weblog can provide people with a way to communicate on the computer that doesn't involve a rigorous feedback process. Nardi et al. (2004) found that bloggers prefer having the ability to post and share their thoughts without the intensive feedback that is found in other forms of computer-mediated communication, such as email or instant messaging.

Blogs made their first appearance back in 1996, but it was not until 1999 that they began increasing in number (Herring et al., 2004). Blogs gained national notice during the aftermath of the 9/11 attacks. Bloggers were providing visitors to their sites with information more quickly than they could obtain via

traditional media sources. There are now a number of blogs that break news stories before they reach the airwaves. Some of the most talked about news stories in 2004 (e.g., the Iraqi prisoner abuse scandal and the controversy surrounding CBS News' documents on President Bush's service in the National Guard) were first posted on blogs (Rosenbloom, 2004).

Another reason for the proliferation of weblogs surrounds public distrust of news media. Johnson and Kaye (2004) suggest, "Observers relate the rise in blogs to growing distrust and dislike of the traditional media, particularly after 9/11, which saw the number of blogs increase due to the perception that traditional media coverage was overly sympathetic to Arab nations and their peoples. Most bloggers and their readers are conservative, viewing the media as liberal, and tend to see blogs as a new and better journalism that is opinionated, independent and personal" (p. 624).

There are a number of reasons an individual would want to create a weblog, including the ability to document one's life or to post personal commentary on topics of interest (Nardi et al., 2004). By being a virtual loudspeaker or soapbox, the weblog provides people with the opportunity to speak out on a national level. If there is no one listening or responding, however, there is no motivation to keep it up. This is why the concept of community is so important to the success of weblogs.

If a blog site can have a specific focus or subject matter, it can bring together a community of Internet users who want to read and talk about that

topic. These forums can create communities at the local, regional or national level. For instance, Democratic candidate Howard Dean created a blog site (www.blogforamerica.com) during his run for the presidency where he could debate and discuss the issues with voters (Rubenking, 2003).

The strong sense of community found in weblogs would make it seem likely that they would work well in education, specifically in group work. The weblog would provide students with an easy forum to communicate with one another, outside of the classroom, on the specifics of their assignments. Given the blog's specific focus (the group's project/assignment), students would seemingly have few problems immediately posting their thoughts on what the group needs to do to be successful. However, there is no research thus far to support this claim.

Given the lack of research conducted on weblogs in education, it is important to review the research conducted on other forms of computer-mediated communication. The review of this literature will provide a foundation for establishing what needs to be examined in future studies on weblogs in education.

Computer-Mediated Communication

Computer technology now provides individuals and groups with new ways to communicate with one another – communication that does not require face-to-face contact. This ability to exchange messages over the computer is referred to as computer-mediated communication (Dietz-Uhler & Bishop-Clark, 2002).

There are two types of computer-mediated communication: synchronous and asynchronous. Synchronous communication happens when the delivery and receipt of a message occur almost simultaneously. When there is a delay between the delivery and receipt of the message, one participates in asynchronous communication (Dietz-Uhler & Bishop-Clark, 2002). Examples of synchronous computer-mediated communication include Internet chats, video conferencing and instant messenger. Weblogs, e-mail, online bulletin boards and listservs would be considered forms of asynchronous computer-mediated communication.

Significant numbers of users are choosing to communicate online. By the end of 2004, researchers for the Pew Internet and American Life project were reporting that, on an average day, 70 million American adults were logging on to use the Internet (Rainie & Horrigan, 2005). In comparison, only 51 million Americans were going online in 2000. This increase in computer-mediated communication (CMC) has prompted researchers to examine differences between CMC and face-to-face communication. Researchers have used a number of different variables in order to determine the extent and type of differences.

One important variable under consideration is deindividuation, or the degree to which anonymity influences communication behaviors. Do individuals communicate differently when they are anonymous? To investigate this issue, Dietz-Uhler and Bishop-Clark (2002) created three environments in which all the

students were asked to discuss a topic: face-to-face, non-anonymous virtual chat and an anonymous discussion board. The students first discussed the topic (homosexuality) in the classroom, continued their discussion in the chat room where everyone was identified but no faces could be seen, and finally completed their discussion on an anonymous discussion board. The researchers discovered that, as the level of anonymity increased, the students' responses became more open and lively. In the face-to-face atmosphere, the conversation was mild and no one said anything too shocking. By the time they reached the anonymous discussion board, students were more candid with their responses in either condemning homosexuality ("I think the whole theory of homosexual tendencies are wrong it says it in the Bible" p. 27) and in defense of it ("There are a lot of things said to be wrong in the Bible, but people still do them everyday! Single mothers and getting a divorce is also wrong, but they still do it everyday!" p. 27-28). The difference in tone between the three sections appears to be an effect of deindividuation. In a post-test discussion with the students, they were reported as saying that they believed they could express 'riskier' views, even if they didn't personally endorse them when they were in the deindividuated setting.

The concept of deindividuation is also important as it relates to the status of power amongst communicators. Spears and Lea (1994) developed the social identity and deindividuation model, which examines the effects CMC has on power relations. They explain that, when users are in a deindividuated setting,

their anonymity allows them to be selective in the information they share with others. Through this anonymity, as well as the ability to be selective, participants are less aware and less likely to be influenced by any power differences that may exist among them. This may be important in group communication, as people could communicate in a deindividuated setting without having to be concerned with power struggles.

In essence, a weblog is another form of anonymous CMC. Similar to the discussion board mentioned in the above study, bloggers can post comments on a weblog anonymously. This can either be done by not leaving any name with the comment or by creating a pseudonym. Even those bloggers who use their real names remain relatively anonymous unless readers know that blogger personally. Resembling the anonymous discussion board used in the Dietz-Uhler and Bishop-Clark (2002) study, a blog can provide a deindividuated setting where users can share opinions that appear to be their honest and frank thoughts.

Another study examining the differences between face-to face (FtF) and CMC, conducted by Tidwell and Walther (2002), focused upon the uncertainty and disclosure found in these forms of communication. Through their initial research, they developed four hypotheses. The variables examined in these hypotheses were (1) the amount of uncertainty reduction strategies used in both forms of communication, (2) the appropriateness of the uncertainty reduction strategies as judged by the FtF and CMC interactants, (3) the effectiveness of

the strategies as assessed by the interactants, and (4) the levels of self-disclosure demonstrated by the interactants. To test their hypotheses, researchers paired college students with persons whom they had never met and placed them in either face-to-face or online chat room conversations. This research found that uncertainty reduction strategies were used at a higher rate in CMC. More importantly, they concluded that statements shared in face-to-face conversations were more indirect, while participants using CMC contributed a higher number of intimate questions during their conversations.

However, some research has reported findings to the contrary. Mallen, Day, and Green (2003) explored the differences between face-to-face communication and CMC in the initial meetings of two strangers by examining relational and discourse variables. Similar to the Tidwell and Walther (2002) study, the methods for this study involved pairing college students who were strangers, placing them in either a face-to-face or online setting, and instructing them to "get to know each other". Mallen et al. (2003) found that, "participants in the face-to-face condition felt more satisfied with the experience, attained a greater level of closeness or interconnectedness with their partner, and self-disclosed more often than participants in the online condition" (p. 160).

A possible explanation for the difference in findings between the two studies may be the amount of time provided to participants. In the Mallen et al. (2003) study, participants were given the same time limit in both groups (30 minutes). Tidwell and Walther (2002) felt that typing a statement took longer

than saying it. In their study, they accounted for this by asking the face-to-face participants to talk to each other for 15 minutes and the online participants were allowed to speak for 60 minutes. Additional time may have allowed the online group more opportunity to disclose to one another.

The issue of time is important to consider for the development of relationships on weblogs. On one hand, the creator of the blog site can be very open in his or her communication right away. For there to be any connection between bloggers and their readers, there needs to be continual communication. It is only after visitors to a blog site see a number of posts by the blogger that they will begin to understand who this person is. Soon, everyone who communicates on the blog site will become part of a 'community'. Kumar, Novak, Raghavan, and Tomkins (2004) explain this further by saying, "In this view of the worldwide blogging network, a 'community' is a set of blogs linking back and forth to one another's postings while discussing common topics. Each community may exhibit different levels of activity over particular periods of time; for example, a community may show a burst of rapid-fire discussion during a three-week period, then lie dormant for several more weeks before the next burst of activity" (p. 38).

Another variable that has been examined when comparing face-to-face communication with CMC is the sharing of emotional content. According to Mantovani (2001), CMC was believed to be inadequate in comparison to face-to-

face communication because there was a lack of social presence and nonverbal cues were diminished.

Two theories have been developed as a result of the research conducted on the emotional content in CMC. Social presence theory (Short, Williams, & Christie, 1976) examines how technology presents a sense of other communication participants' motives and goals. Forms of communications, such as face-to-face and video/speech, are considered to be high on the Social Presence Scale (Whittaker, 2002). Examples of forms that are low on the Social Presence Scale would be text-based forms of communication. A weblog would be considered low on the Social Presence Scale. Whittaker (2002) suggests, "According to social presence theory, using a technology that fails to communicate social presence will change the content and outcome of communication for tasks that require access to interpersonal information" (p. 26). In other words, communication that does not have any sort of visual aid cannot provide interpersonal information from actions like facial expressions and gaze.

Social information processing theorists (Walther, 1992) argue that communicators are savvy enough to work around the lack of visual aids and nonverbal behaviors. Tidwell and Walther (2002) explain that "communicators adapt their relational behaviors to the remaining cues available in CMC such as content and linguistic strategies, as well as chronemic and typographic cues" (p. 319). Unlike social presence theory, social information processing theorists suggest that communicators do not accept that they are disadvantaged when

communicating in a text-based format. Instead, they use the tools around them to acquire knowledge about what the sender is saying and feeling. For example, there are a number of ways bloggers can express emotion through their site. First, they have the ability to design the look of their sites. Based on their choices of color scheme, fonts and pictures for the site, they can convey certain feelings and emotions. In addition, many blogging servers, such as LiveJournal, allow bloggers to choose from a number of emoticons (graphical facial expressions) to place underneath the subject of their post to express their current mood.

These theories are important because they demonstrate how CMC may be used successfully despite the lack of nonverbal cues. Also, these theories may explain how a user may have his or her anxiety reduced when communicating on a computer. If the medium provides a layout and design that is pleasing and comfortable to the user, he or she will likely be more willing to communicate.

The results of the research reviewed so far on the differences between face-to-face and CMC have been mixed. In order to gain a better understanding of the value of the different forms of communication, a review of their application is needed. The next section will survey the literature that has been written on CMC in education. It will explore the level of success educators have experienced in using CMC in the classroom. Specifically, there will be a review of how weblogs have already benefited students in certain courses.

Computer-mediated communication in the classroom

Although the introduction of technology into the classroom has not come without debate, scholars have published articles showcasing the benefits of using technology to assist students in completing their course requirements and communicating with others (Engelbrecht & Harding, 2005; Lane & Shelton, 2001; Larson, 2005).

Key differences have been noted between CMC and face-to-face communication when deciding when to incorporate technology in the classroom (Althaus, 1997; Harasim, 1990). These differences include place dependence, time dependence, structure of communication and richness of communication. In face-to-face communication, people must be together to talk to one another. CMC, in contrast, allows people to be separated geographically and continue to communicate with each other. When considering the variable of time, face-to-face communication requires that both parties be available at the same time to talk. Only one person can speak at a time. Both of these issues can be resolved through CMC. In asynchronous forms of CMC, the individual (sender) can communicate when convenient and his or her message will remain for the recipient to see until he or she is available to respond. CMC also allows both sender and receiver to speak at once. As one individual types a message, he or she can be reading what the other has just said.

Communication in the classroom can be structured in three different forms: one-to-one, one-to-many, or many-to-many. Typically, instructors will

structure their communication in the form of one-to-many, as the instructor will dominate the conversation as he or she talks to the students. According to Althaus (1997), "Instructor-centered discussions may appear to be collaborative, but the style an instructor uses to moderate discussions can often keep students from interacting with one another" (p. 160). In an online setting, there is a greater opportunity for balanced communication with students having more opportunities to communicate with the teacher as well as their fellow classmates.

However, some researchers argue that the richness of the communication in computer-mediated environments may be lacking (Webster & Hackley, 1997). Daft and Lengel (1984) developed Media Richness theory, which proposed that communication media vary in their ability to resolve ambiguity and facilitate understanding between communicators. Criteria were created to establish how rich each communication medium was in its ability to process ambiguous communication. These criteria included the medium's availability for instant feedback, its ability to transmit multiple cues (e.g., body language, inflection and voice tone), its use of natural language, and the personal focus of the medium. Based on these criteria, face-to-face communication is the richest communication medium. On-line discussions, however, do have advantages over communicating face-to-face. Harasim (1990) suggests that people who communicate through computers often become more reflective than verbal communicators, are more attentive to the messages of others, and are also put on more equal social footing with one another.

Current research on computer-mediated communication in the classroom

Technology may have the potential to improve the quality of education and communication in the classroom, but it must first be embraced by students (Selim, 2003). The same is likely true for instructors. Early research conducted on the functionality of CMC found that social contact and the sharing of information were the main reasons that university students were using CMC (McCormick & McCormick, 1992). The primary reason students reported that they would not use it was if they perceived CMC as lacking in practicality. Hacker and Wignall (1997) examined how students grow to accept new forms of educational communication. They developed a pretest, posttest study design for students who were using a listserv² for a communication conference. In the pretest, the researchers asked each student questions related to his or her amount of computer experience, inhibitions in communicating through a computer, opinions on how he or she valued CMC as a useful alternative form of communication, and the effects each perceived CMC would have on the course. The posttest assessed these same areas and also included questions related to the value students found in the conference. Hacker and Wignall (1997) concluded that the most significant predictors of acceptance were how interesting CMC made the course, how disinhibited students were using CMC as an educational tool, and students' initial level of CMC acceptance.

² An electronic overseer which automatically responds to specific incoming commands and basically organizes and controls human interactions on a list.

Incorporating technology in the classroom also calls for assessments of effectiveness. Does technology assist instructors and students in meeting their goals and facilitating learning? Webster and Hackley (1997) examined the effectiveness of CMC in distance learning courses. Their findings indicated that, when instructors utilized the capabilities of the media incorporated into the course to their fullest, the students experienced more positive learning outcomes. In addition, they concluded that instructors need to give students an opportunity to feel comfortable with the technology and learn how to control it. Finally, they mentioned that the instructors should begin to use interactive teaching styles and project positive attitudes about the technology.

Other studies have examined the benefits of CMC in a blended learning environment. Althaus (1997) set up special electronic mail accounts for students to conduct computer-mediated discussions related to the material they were learning in their sociology course. These mail accounts consisted of the same basic features that would be found in a listserv mail system. After the course had been completed, the students completed a survey that asked them to evaluate their discussions. A test was also designed to examine the relationship between a student's participation in the discussion and his or her class performance. The results indicated that students reported that they learned more when involved in the on-line discussion and that they also enjoyed taking part in the discussion.

McComb (1994) conducted a similar study and found positive results. In addition to improving student learning outcomes, she suggested that CMC

extends learning beyond the classroom by increasing everyone's availabilities to communicate, allowing teachers more opportunities to demonstrate caring towards their students and including outside experts in classroom discussions. CMC also has the ability to create a balance of power between instructor and student by increasing a student's responsibility and requiring initiative on his or her part (McComb, 1994). Despite these positive findings, McComb (1994) warns that "CMC is not a panacea or a cure-all for traditional linear models of instructional communication, nor is it a replacement for face-to-face communication" (p. 169).

Research on CMC in the classroom has also examined its affect on certain sectors of the student population. Gasker and Cascio (2001) examined the affect CMC had on female students as they interacted in the classroom. Through their research, they found that men and women were writing an equivalent number of messages during the online discussions. Previous research had shown that, during in-class discussions, men dominated the conversation and prevented women from equally participating (Hall & Sander, 1982). Gasker and Cascio (2001) also found that "female students were particularly adept at forming and maintaining relationships with their peers and the instructor" (p. 310). These results help demonstrate that women can overcome a male-dominated environment and become empowered through participating in CMC in the classroom.

Another group of students who have been examined in terms of their use of CMC is African-Americans. A study by Griffin and Lewis (1998) explored the concept of using CMC as a way to increase the connection between an instructor and their students. One of the specific purposes of their research was "to determine if African-American students' perceptions of online communications indicated an enthusiasm for CMC and for their active participation in the learning process" (p. 11). As they examined e-mail conversations between students and instructors they were able to draw some conclusions. They reported that, because communicating on-line was perceived to be informal by African-American students, they felt more comfortable in expressing themselves with their instructors, as well as their peers, and did not feel the threat of being evaluated or graded. Communicating through email gave them a sense that they were in a house environment as opposed to a classroom environment. Because of this feeling, they began to feel that the emphasis was on working to solve problems, making discoveries, and learning together.

Another study, done by Jelfs and Colbourn (2002), examined CMC's affect on students based on the students' approaches to learning. Students were classified as taking a 'deep' approach, a 'surface' approach, or a 'strategic' approach to learning. Those labeled as 'deep' were students who preferred a teaching method that encouraged and challenged understanding. 'Surface' students liked teaching which directed learning towards assessment requirements. Finally, 'strategic' students were associated with organized

studying and time management, as well as achievement motivation. All subjects were asked questions that evaluated their opinions on the technology being used in their course. The results found that "deep learners, rather than strategic or surface learners, were both more comfortable with technology assisted learning and more commonly derived greater enjoyment from the course" (p.50).

The written responses that the students provided about working with the technology gave even more insight into how the groups differed. Some of the comments from the 'deep' learners included, "Gave me time to assimilate the ideas, whereas actual seminars required me to think at speed" and "Prefer Virtual Seminars because can take own time" (p. 49). Based on their responses, these students would benefit from the use of asynchronous CMC in the classroom. Having that additional time to read what everyone has said and then clearly communicate what the student thinks would be a great asset to such learners. Comments from the 'surface' learners focused on how they did not get involved with the technology because they were not forced to do so. 'Strategic' learners mentioned that they did not care for the technology because it did not provide enough structure. Educators should be aware of these variables when they try to incorporate new forms of technology into the classroom.

Weblogs in the classroom

Communication tools including e-mail and chat rooms have received significant attention from scholars interested in the utility for improving learning outcomes. A more recent form of communication – the weblog – is also finding

its way into the classroom. Farrell (2003) has identified five primary ways in which blogs can be used in education. First, blogs can be used to replace standard class webpages. Information presented on a blog site and a standard webpage may be very similar. Both sites would provide students with the necessary information for the class (i.e., class times and rules, assignment notifications, suggested readings, exercises and syllabi). The blog site, however, would provide instructors with an easier form of posting information. When a blogger wants to submit a new post to his or her site, the blogger simply types the information in a text box, similar to the ones found in most e-mail programs. Also, weblogs are more time efficient. Even if an instructor is well-versed in HTML, the creation of the design and layout for a web page could take days. Most weblog providers allow users to choose from a series of standard designs. This enables users, even novices, to create a weblog within a matter of minutes.

Weblogs also have an advantage over other forms of learning technology, such as WebCT and Blackboard. Instructors can create online versions of their course and provide students with many of the same tools they would find in a classroom. Some of the tools provided through these programs include the following: grade storage and distribution, electronic conferencing, chat rooms, e-mail, presentation areas, student self-evaluation, online quizzes, student progress tracking, and course content searching (Hutchins, 2001). The limitation of programs like these is that they must be purchased and accepted by the

school or university. A weblog, however, can be created independently by any instructor or student.

Blog sites also allow instructors to attach links to related material on their sites. Students can open these links and access additional web pages which contain information related to the subject they are learning. For instance, at Mesa Community College, one archeology professor created a blog site to be used as a supplement to the college's archeology webpage. On his blog site, he provides links and short essays regarding information that is related to the course (Downes, 2004).

Blog sites can also be used in education to organize and initiate classroom discussion. The blog site provides a starting point for instructors to direct classroom discussion. By providing links related to the course topic, students can read what has been posted and then comment on the blog site. As students read each other's comments on the blog site, they begin to realize who does and does not share their ideas. Guay (as cited in Downes, 2004) says, "The students get to know each other better by visiting and reading blogs from other students. They discover, in a non-threatening way, their similarities and differences. The student who usually talks very loud in the classroom and the student who is very timid have the writing space to voice their opinions. It puts students in a situation of equity" (p. 18). Once this common ground has been established through the blog site, it produces more thoughtful and lively discussion between students when they meet again in the classroom.

The fourth use of blog sites in the classroom is related to their ability to organize and provide summaries of the readings for the course. Students and teachers work together on these blog sites to provide a comprehensive explanation of the readings that are assigned. As everyone comments on the readings, a summary begins to compile. Students then can read everyone's comments and get a better understanding of the concepts being discussed in the course readings. Students may improve their individual summarizing skills, as well. In reading other students' comments, they can begin to understand how to formulate their own opinions. Some students will even ask their fellow classmates to look over what they have written and request advice or help in how to improve it (Glenn, 2003).

Finally, some instructors have students write their own blogs for a course grade. As opposed to one central site that the instructor creates for the class, some instructors have their students develop one individually and post their own thoughts and links on the subject matter. Once students have completed the assigned reading, instructors ask them to post short summaries of their thoughts related to the content they have just read. Each student's blog site address is available to the entire class, allowing all students access to individual blogs containing students' responses to the readings. For example, an English professor at Quinnipiac University has each of her students create a blog site for her creative-writing class. Once a week they are to add a new entry to their blog.

Once the students have placed entries on their websites, they are to view their peers' blog sites, read the entries and post comments to them (Carlson, 2003).

The research reviewed above illustrates how weblogs are being used in the classroom. One area which has not been explored is using weblogs as collaborative tools for students who are working in groups. This is important for two reasons. First, by providing students with an additional medium to communicate, there is a possibility that any communication anxiety that exists among members would be reduced more quickly. Second, the organized nature of the weblog may assist students in succeeding on group projects.

Collaborative Learning

CMC not only involves discussions between instructors and students but also amongst students. Because of this, one important aspect in teaching that should be examined as it relates to CMC is collaboration. According to Kreijns, Kirschner, and Jochems (2003) the following are characteristics of collaborative learning:

- learning is active;
- the teacher is usually more a facilitator than a 'sage on the stage';
- teaching and learning are shared experiences;
- students participate in small-group activities;
- students must take responsibility for learning;
- students are stimulated to reflect on their own assumptions and thought processes; and
- social and team skills are developed through the give-and-take of consensus building.

If instructors are to incorporate technology that allows students to communicate through the computer, there must be evidence that it provides a benefit to students' collaborative learning. Phillips and Santoro (1989) conducted a study in which researchers selected students from a group problem solving course and gave them a number of objectives to complete. Students were placed in groups and asked to use a form of CMC in order to complete the tasks. Phillips and Santoro assessed the effectiveness of using CMC by collecting course evaluation data and outside instructor evaluations of students' work. Instructors assessed the students' reports by labeling them as, "better than average", "worse than expected" or "as expected" in comparison to similar reports from students who did not have CMC capability. The results indicated high course evaluations in the CMC group when compared to departmental averages and positive correlations between a group's use of CMC and the instructor's rankings of their reports.

Olaniran, Savage and Sorenson (1996) reported that, while participants were able to generate more ideas when communicating through the CMC system, they felt that communicating face-to-face was more effective, more satisfying, and an easier process. However, they did conclude that both methods were valuable ways for teaching group dynamics and group decision making.

There are different types of variables that can influence how successful a group will be in their collaborative efforts. One example would be socio-emotional variables. These variables involve an individual's attitudes and how

they affect the group's collaboration. If variables such as motivation and anxiety are not properly dealt with by the group, they may negatively affect the climate for learning (Hiltz, Coppola, Rotter, & Turoff, 2000). This effect is further explained through the theory of emergent motivation. According to Csikszentmihalyi and Rathunde (1993), several factors determine whether a task experience is a positive one or a negative one. These factors include the individual's level of determination to complete the task, the individual's level of interest in the task, and the individual's level of anxiety while working on the task.

Dobos (1996) examined the affects of students' expectations and apprehensions on their motivation as they worked in a group. She administered a questionnaire to students to determine their levels of anxiety before they began their group tasks. The questionnaire also asked about the students' expectations for the task they were about to complete. The individual scores on the questionnaire were then compared against the scores of other group members. If a student had scores that were above average in both the anxiety and the expectancy variables, they were placed in the 'high' category. If they were below average on both variables, they were in the 'low' category. Students in the 'high' category were more likely to have a positive experience during a collaborative learning session, whereas students in the 'low' category were more likely to have a negative experience during their session.

Another variable examined in studies on collaboration and CMC is the format of the communication. The structure and layout of a group's messages

will differ based on the type of technology they choose. These differences in structure can affect the effectiveness of the communication. Crook (2000) described this as "the ecology of collaboration". He suggests that examining the actual spaces in which collaborations are either constrained or stimulated can help us determine the circumstances that will lead people to work together or by themselves. Eastman and Swift (2002) indicated that "these tools [discussion boards and chat rooms] can enhance and empower student learning and collaboration as well as increase communication and problem solving skills" (p. 39). Other studies, however, have taken a more in-depth look at the various forms of technology in order to determine if differences exist among them. Barile and Durso (2002) placed teams of students into one of three forms of communication: face-to-face, synchronous CMC, or email. These three-person teams were then assigned to write a term paper using their assigned forms of communication. The findings suggest that email groups were less effective at writing collaboratively. "Email group members fail to attend to questions asked by other group members. Also, email groups seem to have trouble coordinating their tasks as indicated by the large number of coordination remarks in email groups. Interruption in flow of communication (interactivity) seems to be a large contributor to email group problems" (Barile & Durso, 2002, p. 189). This lack of coordination in the communication of the email groups is likely a result of the asynchronous nature of the technology.

Schweizer, Paechter, and Weidenmann (2003) conducted a similar study but utilized an asynchronous newsgroup, a synchronous chat group, a synchronous videoconferencing group, and a face-to-face group. The variables examined included the students' extent of online activity, the groups' task performance, and the coherence of the group discourse. The results of their work provided detailed information on the effects of each form of communication on a group's performance. Researchers did not recommend one form over the other, but simply provided the positive and negative aspects of each.

In the studies that focused upon how different forms of communication can affect a group's communication, most researchers concluded that asynchronous forms of communication did not provide as many communicative benefits as did synchronous forms of communication. Asynchronous communication does not provide the context clues a person would gain from communicating face-to-face (e.g., body movement, facial gestures, nonverbal behavior). The length in between responses can also be detrimental to a group's effective collaboration. Some members may be very motivated and write many responses in an asynchronous form of communication. However, if enthusiasm is lacking for the project, the motivated group member may not receive responses to his or her original comments. Asynchronous communication may also lack coordination. As Barile and Durso (2002) mentioned in their study, the groups that used email for their collaborative task had a difficult time organizing their messages.

Weisgerber (2000) yielded different results when studying the difference between synchronous and asynchronous forms of CMC. Weisgerber's goal was to see if synchrony played a role in people's self-disclosure. The method for the study was similar to those that have investigated the differences between face-to-face and CMC. College students were randomly paired with people they had never met and asked to get to know each other via their predetermined communication environment -- e-mail for asynchronous communication and a chat room for synchronous communication. They were told "to try to get to know their study partner and to talk to them until they felt like they got to know one another" (p. 11). After the subjects were finished, they were asked to complete a questionnaire which involved demographic information, the Unwillingness to Communicate Scale, the Revised Self-Disclosure Scale, and a measure of interpersonal attraction and relational development. The study failed to find differences due to the level of synchronicity of CMC. Similar levels of honesty of self-disclosure, perceived depth of self-disclosure, positivity/negativity of self-disclosure, interpersonal attraction and perceptions of the relationship were found in all three groups. Weisgerber points out the lack of a time limit and the low reliability of Wheelless and Grotz' (1976) Revised Self-Disclosure Scale as potential limitations to the research.

The literature on collaboration using CMC includes examples of both successes and failures. One area in which researchers report limited success is in collaboration via asynchronous communication tools. The weblog falls within

that category; however, it contains characteristics that are not found in other forms of asynchronous communication. For instance, the layout of the weblog provides structure for all of the comments that group members submit. Unlike email, where there is a lack of coordination, the weblog provides users with a layout that makes it easy to determine the flow of the conversation. Weblogs also require a central user to initiate communication. The format of the weblog is designed so that only the creator of the site is able to generate new discussion topics. While everyone in the group is free to comment at any time on whatever was originally posted, it is up to the central user to produce the original threads.

The research on collaboration indicates that there are many socio-emotional variables which can affect students' performance when working on a group task. In an attempt to discover whether a weblog can be an effective tool for collaborative learning, it is important to measure some of these variables as students communicate through this technology. For the present study, the variables that are examined are anxiety and expectancy fulfillment.

Communication anxiety can be very detrimental toward group communication. If one of more members within a group is afraid to speak, a group can develop problems including groupthink and prolonging the completion of the project. However, when group members feel comfortable communicating, they can brainstorm more ideas and accomplish their goals more expediently.

An examination of expectancy fulfillment is necessary to learn what role a weblog has on the outcome of group work. If a group that uses a weblog

exceeds their expectations, it may be inferred that the weblog was a part of their success. Likewise, groups that report that they did not do as well as they hoped may have their failures attributed to the communication medium.

Based on these variables, the following questions are posed:

RQ1: Is there a difference in the level of anxiety felt by group members who use weblogs versus those who do not as they work together on their projects?

RQ2: Are groups who use weblogs more successful in meeting the expectations they established before they began their projects than are groups that do not use weblogs?

RQ3: Is there a difference between the groups who use weblogs and those who do not in their perceived level of success?

The next section of this paper will address these questions. Because these questions deal with variables that are examined over time, a pretest and posttest were administered to the participants of this study. In this next section, there will be a review of the sections of each these tests and an explanation regarding how the tests attempt to answer the research questions above.

CHAPTER III

METHOD

Subjects

The sample for this study consisted of ninety undergraduate students enrolled at a private Midwestern university. All participants were students enrolled in one of the multiple sections of the communication module course, Group Decision Making. This five-week course focuses on communication processes in small decision-making groups. It emphasizes the development of skills in leadership, group roles, conflict management, agenda setting, problem analysis and research, and critical thinking.

Thirty participants (33%) were 18 years old; forty-one (46%) were 19 years old; and 16 (18%) were 20 years old; one (1%) subject was 21 and one (1%) was 22 years old. Forty-four participants (49%) were male and forty-five (50%) were female; one participant did not respond to the item requesting participant gender. Forty-five (50%) reported that they were first-year students; thirty-nine (43%) were second-year; four (4%) were third year; and one (1%) was fourth year. Eighty-five participants (94%) were living on campus, while four (4%) were commuting to their classes.

The ninety participants were all asked how familiar they were with five forms of technology: Internet, e-mail, weblogs, chat programs, and webcams. Participants were asked about their familiarity on these forms of technology using a five-point scale that ranged from 1 (very unfamiliar) to 5 (very familiar). The average score for familiarity of the Internet was 4.70. For e-mail, the participants' mean was 4.71. Participants had an average score of 2.59 for their familiarity with weblogs. The mean for participants' familiarity of chat programs was 3.34. Finally, 2.00 was the mean for participants' familiarity with webcams.

Procedures

Participants completed both a pretest and a posttest. The pretest was administered during the first week of the Group Decision Making course before students were assigned to their project groups. Four sections of this course were used for this study. Each section was taught by a different instructor. However, the requirements for the main project were standardized. In all four sections, students were assigned to groups consisting of four or five members. They were instructed to choose a public policy, either local or national, that they felt should be changed. The students had to analyze the problem they chose, brainstorm possible solutions to the problem, choose the best solution, and then interview an expert in that field about the solution they had selected. At the end of the course, they gave a twenty-minute presentation based on the work they had done. The objectives for this project were to have students learn how to (1) plan, organize, and articulate their ideas in a small group context, (2) practice and improve their

critical listening/thinking skills, and (3) analyze the process of problem-solving in a small group. Students in two of the four sections of the Group Decision Making course were given verbal reminders throughout the five weeks to use weblogs as they worked in their groups. To assist the students who were unfamiliar with how to create and use a weblog, the researcher (an instructor from one of the sections that used weblogs) worked with the class during the first week to give them a tutorial. After the tutorial, the researcher assisted one member from each group in creating a weblog for their group. The students in the other two sections were given no guidance in how to communicate with their fellow group members using any alternative technologies.

Following the group presentations, participants completed the posttest. All students answered questions assessing their levels of anxiety as they worked with their fellow group members and how they perceived their group's success. The participants who were encouraged to use the weblogs answered additional questions on the posttest. These questions, both quantitative and qualitative, asked the participants to reflect on their experiences using the weblog for their group project.

Measures

Participants completed both a pretest and a posttest designed to measure multiple communication variables. The pretest questionnaire assessed students' general levels of anxiety when working in groups, their expectations for the group project, and their familiarity with forms of technology. The posttest questionnaire

assessed students' levels of anxiety as they worked on their group projects and their perceptions of the group's levels of success on the project.

Pretest

The pretest was administered to the participants before they were assigned to their groups. The five-item version (Levine & McCroskey, 1990) of the group discussion component of McCroskey's (1982) Personal Report of Communication Apprehension (PRCA-24) was administered to assess general apprehension when working in groups. Two additional items were incorporated to measure students' perceptions of how much they learned when working in groups. These two items were created by the researcher. All items were measured on a 5-point scale that ranged from 1 (strongly disagree) to 5 (strongly agree). The seven items that addressed group apprehension were: (a) *I am tense and nervous while participating in group discussion*; (b) *learning in a group is better than learning individually*; (c) *generally, I am comfortable while participating in group discussions*; (d) *I think that group learning produces a greater amount of knowledge*; (e) *I am calm and relaxed while participating in group discussions*; (f) *engaging in a group discussion with new people makes me tense and nervous*; and (g) *I like to get involved in group discussions*.

To determine participants' expectancies for their group projects, a twelve-item scale developed by Dobos (1996) was administered as part of the pretest. This scale was a modified version of a previous scale that had been used for research on face-to-face, written and electronic messaging in the work place

(Dobos, 1992). Participants were asked to complete this questionnaire, which measured characteristics necessary to succeed in their group. All items were measured on a five-point scale ranging from 1 (very unimportant) to 5 (very important). The twelve items were: (a) *coordinating your activities*; (b) *building or maintaining relationships*; (c) *generating new ideas*; (d) *sharing information about your activities*; (e) *working together as a team*; (f) *being creative in what you're doing*; (g) *finding out what's been accomplished up to now*; (h) *learning how your individual work fits into the big picture*; (i) *being able to respond quickly to new ideas and information*; (j) *exchanging feedback about your project*; (k) *cooperating with other people to reach your goals*; and (l) *learning how you compare to others who do similar work*.

The final section of the pretest focused on subjects' familiarity with technology. A simple five-point Likert-type scale was created by the researchers with responses ranging from 1 (very unfamiliar) to 5 (very familiar). These items were as follows: (a) *using the Internet*; (b) *using E-mail*; (c) *using weblogs*; (d) *using chat programs*; and (e) *using a web cam*.

Posttest

The posttest enabled participants to respond to questions assessing anxiety experienced during the duration of the group project and fulfillment of the expectations they described in the pretest. Those participants who were in the weblog groups answered additional questions that dealt specifically with their weblog experiences.

One of the variables examined in the posttest of this study was state anxiety. A seven-item version of the State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, & Lushene, 1970) was used to measure the anxious feelings participants experienced while working within their groups. All items were measured on a four-point scale ranging from 1 (almost never) to 4 (almost always). The seven items were: (a) *I felt tense*; (b) *I felt at ease*; (c) *I felt calm*; (d) *I felt jittery*; (e) *I felt relaxed*; (f) *I felt worried*; and (g) *I felt confident*.

Post-interaction expectancy fulfillment was assessed using the same twelve-items that were used in the pretest. Again, the items were measured on a five point scale, however, this time they ranged from 1 (very unsuccessful) to 5 (very successful).

Finally, those participants that used the weblog for their group project answered questions related to their experience with it. These questions were specifically designed for this study. Participants were asked both quantitative and qualitative questions in this section. The first three questions assessed how frequently each participant used the group's weblog. The next four questions assessed the kind of influence the weblog was perceived to have had overall on the group, as well as its specific influence on the group's cohesion and success on the project. The final five questions addressed participants' feelings surrounding the features of the weblog and their likelihood of using a weblog again in future group projects. The questions were open-ended. These

questions assessed frequency of weblog use and participants perceptions of the value of weblogs as they related to working in a group.

CHAPTER IV

RESULTS

Overview

A total of 90 college students (18 to 22 years of age) participated in this study. Forty-four were men and forty-five were women (one student did not report gender). These students were enrolled in one of four group decision making courses offered at their university. Two of these sections were instructed on how to use a weblog to assist them in their group project and the other two sections were not. All students responded to questions in a pretest and posttest measuring a variety of issues related to group work.

Table 1 provides the descriptive statistics for both groups on the statements that dealt with anxiety on the pretest. For this section, the reliability was .784. The statement that both groups most strongly agreed upon was, "Generally, I am comfortable while participating in group discussions" ($M = 3.70$, $SD = .954$ for weblog group, $M = 3.67$, $SD = 1.040$ for non-weblog group). Both groups also most strongly disagreed on the same statement, "I am tense and nervous while participating in group discussion" ($M = 2.23$, $SD = .813$ for weblog group, $M = 2.40$, $SD = .979$ for non-weblog group).

Table 1

Pretest Anxiety Differences Between Individuals Who Used Weblogs and Those Who Did Not Use Weblogs

Anxiety measure	<u>Weblog Group</u>		<u>Non-Weblog Group</u>		df	t
	M	SD	M	SD		
Preanx #1	2.23	.813	2.40	.979	88	-.853
Preanx #2	2.91	1.018	2.95	.975	88	-.183
Preanx #3	3.70	.954	3.67	1.040	88	.132
Preanx #4	3.32	.958	3.38	.909	87	-.311
Preanx #5	3.60	.925	3.51	.985	88	.418
Preanx #6	2.70	1.121	2.72	1.221	88	-.076
Preanx #7	3.36	1.031	3.40	.955	88	-.160

* $p < .05$.

Another section on the pretest evaluated which aspects of group work the students found to be most important to have a successful group experience. The Cronbach's alpha score for these statements was very high ($r = .891$). The descriptive statistics for these statements are found in Table 2. Of the twelve statements, both groups felt that "cooperating with other people to reach your goals" ($M = 4.53$, $SD = .881$ for weblog, $M = 4.67$, $SD = .522$ for non-weblog) and "working together as a team" ($M = 4.49$, $SD = .906$ for weblog, $M = 4.70$, $SD = .513$ for non-weblog) were the two most important. The statements "learning how I compare to other who do similar work" ($M = 3.77$, $SD = .813$ for weblog, $M = 3.30$, $SD = .939$ for non-weblog) and "building or maintaining relationships" ($M = 3.91$, $SD = .905$ for weblog, $M = 3.74$, $SD = .875$ for non-weblog) were found to be the least important by both groups.

The final section of the pretest asked for the students' familiarity with various forms of computer technology. For these statements, the reliability was .636. Descriptive statistics for these statements are show in Table 3. Students in the weblog group reported being more familiar with using the Internet ($M = 4.70$, $SD = .623$), while students in the non-weblog group said they were more familiar with using e-mail ($M = 4.76$, $SD = .431$). When asked how familiar they were with using a weblog, the weblog group was more familiar ($M = 3.00$, $SD = 1.054$) than the non-weblog group ($M = 2.14$, $SD = 1.026$). Students were not placed in the weblog group for their familiarity with the technology, however.

Table 2

Pretest Expectation Differences Between Individuals Who Used Weblogs and Those Who Did Not Use Weblogs

Expectation Measure	<u>Weblog Group</u>		<u>Non-Weblog Group</u>		df	t
	M	SD	M	SD		
Preexp #1	4.07	.952	4.23	.751	87	-.916
Preexp #2	3.91	.905	3.74	.875	88	.908
Preexp #3	4.23	.813	4.28	.549	88	-.305
Preexp #4	4.06	.895	4.02	.801	88	.226
Preexp #5	4.49	.906	4.67	.522	88	-1.173
Preexp #6	4.13	.947	4.16	.754	88	-.194
Preexp #7	4.00	.752	3.91	.840	88	.554
Preexp #8	4.11	.840	3.98	.988	88	.672
Preexp #9	3.98	.897	3.93	.632	88	.294
Preexp #10	4.23	.960	4.30	.674	88	-.387
Preexp #11	4.53	.881	4.70	.513	88	-1.077
Preexp #12	3.77	.813	3.30	.939	88	2.509*

*p < .05.

Table 3

Familiarity of Technology Differences Between Individuals Who Used Weblogs
and Those Who Did Not Use Weblogs

Form of Technology	<u>Weblog Group</u>		<u>Non-Weblog Group</u>		df	t
	M	SD	M	SD		
Internet	4.70	.623	4.69	.517	87	.095
E-mail	4.66	.635	4.76	.431	87	-.879
Weblog	3.00	1.054	2.14	1.026	86	3.859*
Chat program	3.43	1.137	3.24	1.265	87	.736
Webcam	2.06	1.187	1.93	1.091	87	.557

*p < .05.

For the posttest, students were given a list of feelings to help describe how they felt while working with their fellow group members. A reliability of .784 was found for this section of the posttest. Table 4 provides the descriptive statistics for this section of the posttest. Both groups responded similarly on all seven statements. On items such as "I felt tense", "I felt jittery", and "I felt worried", both groups had means close to one, which meant "almost never". For the items, "I felt at ease", "I felt calm", "I felt relaxed", and "I felt confident", the means for both groups were above three. This indicated that they often or almost always felt that way.

In the pretest, students were given a series of statements and asked how important each statement was to a successful group experience. In the posttest, the students were given the same twelve statements, but this time they were asked to explain how successful they were at achieving these goals through their group work. Reliability for this set of items was .944. The statistics for this section of the posttest can be found in Table 5. The results found that the weblog group was most successful in "cooperating with other people to reach your goals" ($M = 4.36$, $SD = .743$). The non-weblog group reported being more successful at "working together as a team" ($M = 4.44$, $SD = .821$). The two groups also differed on where they were the least successful. The least successful aspect of group work for the weblog group was "Coordinating your activities" ($M = 3.72$, $SD = 1.050$). The least successful aspect of the non-weblog group was "being creative in what you're doing" ($M = 3.95$, $SD = .944$).

Table 4

Posttest Anxiety Differences Between Individuals Who Used Weblogs and Those Who Did Not Use Weblogs

Anxiety measure	<u>Weblog Group</u>		<u>Non-Weblog Group</u>		<u>df</u>	<u>t</u>
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
Postanx #1	1.36	.668	1.13	.339	76	1.923
Postanx #2	3.49	.683	3.54	.555	76	-.364
Postanx #3	3.49	.683	3.54	.600	76	-.352
Postanx #4	1.41	.818	1.36	.743	76	.290
Postanx #5	3.44	.641	3.26	.850	76	1.053
Postanx #6	1.55	.795	1.44	.502	75	.772
Postanx #7	3.08	.749	3.38	.544	75	-2.053*

* $p < .05$.

Table 5

Posttest Expectation Differences Between Individuals Who Used Weblogs and Those Who Did Not Use Weblogs

Expectation Measure	<u>Weblog Group</u>		<u>Non-Weblog Group</u>		df	t
	M	SD	M	SD		
Postexp #1	3.72	1.050	4.23	.810	76	-2.415*
Postexp #2	3.79	.864	4.13	.833	76	-1.735
Postexp #3	3.79	.801	4.21	.801	76	-2.263*
Postexp #4	4.05	.759	4.28	.826	76	-1.285
Postexp #5	4.13	1.128	4.44	.821	76	-1.377
Postexp #6	3.95	.826	3.95	.944	76	.000
Postexp #7	4.00	.761	4.10	.968	76	-.520
Postexp #8	4.00	.858	4.10	.821	76	-.539
Postexp #9	4.08	.703	4.00	1.000	76	.393
Postexp #10	4.10	.821	4.26	.993	76	-.746
Postexp #11	4.36	.743	4.38	.935	76	-.134
Postexp #12	3.79	.801	4.08	.900	76	-1.462

* $p < .05$.

Anxiety

Independent samples t-tests were used to address the first research question, which focused on perceived differences in level of anxiety by group members who used weblogs versus those who did not use weblogs. There were no significant differences between these groups on perceived anxiety assessed during the pretest. Similarly, no significant differences were found when comparing the means of the two sections that used weblogs. In comparing the means of the two sections that did not use weblogs, only one statement was found to be significant. The test showed that students differed on the statement, "Generally, I am comfortable while participating in group discussion" ($t(35.697) = -2.454; p < 0.05$). The means for the two groups were 3.32 ($SD = 1.171$) and 4.05 ($SD = .740$). While some differences may exist in the anxiety between the two non-weblog groups, the degree to which one group of participants is more uncomfortable in participating in group discussions is not great enough to find a significant difference between the weblog and non-weblog groups. This indicates that the participants all have similar levels of anxiety before beginning their group project.

Independent samples t-tests were also used to analyze the post-test items assessing perceived anxiety. When comparing the means of the weblog versus non-weblog groups on statements related to the individual's feelings on working with their fellow group members, a significant difference was found for the statement, "I felt confident" ($t(75) = -2.053; p < 0.05$). Participants who did

not use weblogs reported feeling confident more often ($M = 3.38$, $SD = .544$) than those who did use weblogs ($M = 3.08$, $SD = .749$) in their groups. Based on these results, it appears that those who did not use weblogs felt significantly more confident while working in their groups than those who used weblogs. There were no differences in perceived anxiety between the two sections that used weblogs. A comparison of the two sections that did not use weblogs indicated a significant difference for the statement, "I felt relaxed" ($t(37) = -2.588$; $p < 0.05$). The means for the two groups were 2.95 ($SD = .921$) and 3.61 ($SD = .608$). These results are consistent with the results found in the pretest. The same group that did not feel comfortable participating in group discussions was found to be significantly less relaxed. This would indicate that there was no improvement in the participants' level of anxiety over the course of the group project.

Expectancy Fulfillment

Questions surrounding expectancy fulfillment were analyzed using independent samples t-tests. Analyses of the pretest items indicated that participants who used weblogs ($M = 3.77$, $SD = .813$) differed from those who did not ($M = 3.30$, $SD = .939$) in how important they felt "learning how I compare to others who do similar work" was to having a successful group experience ($t(88) = 2.509$; $p < 0.05$). In an examination of the two sections that used weblogs, participants differed on how important they felt "sharing information about your activities" was to their group's success ($t(45) = -2.196$; $p < 0.05$). The t-tests

failed to show significant differences on all of the statements between the two sections that did not use weblogs. This, of course, is good, as it was important to have both groups on an equal level so that differences in the post-test results can be more easily recognized.

Independent samples t-tests were used to analyze post-test items on expectancy fulfillment. In a comparison of participants who used weblogs versus those who did not, a difference was found in how the groups evaluated their success on coordinating their activities ($t(76) = -2.415; p < 0.05$) and in generating new ideas ($t(76) = -2.263; p < 0.05$). The means for these two statements were 3.72 (SD = 1.050) and 3.79 (SD = .801) for those who used weblogs and 4.23 (SD = .810) and 4.21 (SD = .801) for the groups that did not use them. Based on these means, the groups that did not use weblogs reported significantly greater success on those two statements. A comparison of the means between the two sections that used weblogs did not yield any significant differences for any of the post-test items on expectancy fulfillment. Participants in the two sections who did not use weblogs differed in how they evaluated their success in coordinating their activities ($t(37) = 2.138; p < 0.05$).

Expectancy fulfillment differences

An independent samples t-test was used to assess the differences in the degree with which groups fulfilled their expectations. There was a significant difference on how much those that used weblogs exceeded their expectations versus how much those that didn't use weblogs exceeded their expectations for

one statement. A difference was found for the statement, "learning how I compare to others who do similar work" ($t(76) = 2.831; p < 0.05$). The means for the two groups on this statement were .0256 for those that used weblogs and -.6923 for those that did not. The standard deviations were 1.111 and 1.127, respectively. This means that the groups that used weblogs slightly exceeded their expectations in learning how their work compares with others while those that didn't use weblogs were not as successful in this area. The differences for each of these statements were then summed and compared. The t-test indicated that there was no significant difference between the two groups. Overall there was no cumulative difference between the groups that used weblogs and those that didn't in the way they met their expectations.

Blog Use

The participants who used weblogs in their group were asked additional questions on the post-test related to their use of weblogs and the influence it had on them. One question asked the participants how many posts they made on their group's blog. The average number of posts was 0.96 with a standard deviation of 1.127. There were also two Likert-type scale statements related to how often they visited ($M = 2.64, SD = 1.448$) and how long they stayed on the blog site ($M = 1.64, SD = .994$). This translates into participants visiting the site every other week and staying for a couple of minutes on average. Three Likert-type scale statements asked about the blog's influence in general ($M = 1.37, SD = .751$), the blog's influence on the group's cohesion ($M = 2.06, SD = 1.298$), and

the blog's influence on the group's success ($M = 2.31$, $SD = 1.491$). Based on these data, it does not appear that the blog was a strong influence on the group and their cohesion and had only a moderate influence on its success. Finally, participants were asked to answer a 5 point Likert-type scale statement on their likelihood for using a weblog in future group projects that ranged from 1 (very unlikely) to 5 (very likely). The mean for this statement was 1.46, with a standard deviation of .836.

CHAPTER V

DISCUSSION

The overarching goal of the present study was to investigate the potential utility of weblogs within the classroom environment. The specific variables of interest included assessment of students' anxiety related to group work, expectations of success, and perceptions of the weblog as a communicative tool within a small group context. A significant limitation, however, to adequately addressing these research questions was the lack of student postings to the weblogs during the group projects. The discussion that follows will explore these limitations and propose necessary next steps to better understand the use of weblogs within the classroom.

Research question #1 asked, "Is there a difference in the level of anxiety felt by group members who use weblogs versus those who do not as they work together on their projects?" When the anxiety levels of the two groups (those that used weblogs and those that did not) were compared in the pretest, no significant differences were found indicating that all participants were similar in anxiety level before beginning their project. By having both groups at equal levels of anxiety, the posttest results could more accurately describe what affect, if any, using the weblog had on the participants. However, the results of the

posttest showed very little difference between the two groups. Only one item produced significantly different scores between the two groups ("I felt confident"). In addition, this difference did not support the use of weblogs within group work. Participants that did not use a weblog in their group were reportedly more confident working with their other group members. Statistical tests conducted to compare sections within the two groups also produced non-significant findings. The results from the tests conducted on anxiety indicate that there was very little difference in the levels of anxiety between the two groups. More importantly, the results of the tests did not find any indication that weblogs helped decrease the level of anxiety in participants when they worked in a group.

Secondly, this paper asked, "Are groups who use weblogs more successful in meeting the expectations they established before they began their projects than are groups that do not use weblogs?" The results of the pretests indicated that the two groups significantly differed on one item (the importance of learning how their work compares to others within their group). For the other eleven items, no significant differences were found between the two groups. This indicates that the two groups had similar expectations before beginning the project. In the analysis of the posttest, two items were significantly different between the two groups. The two groups differed in their abilities to generate new ideas and coordinate their activities with the participants who did not use weblogs reporting more success at meeting their expectations in these areas than the participants who did use weblogs. The fact that only two out of the

twelve items demonstrated significant differences does not provide substantial evidence that one group was more successful than the other. However, given that none of the items yielded a significant difference in favor of the weblog group may indicate that weblogs are not useful in improving a group's success.

The final research question asked, "Is there a difference between the groups who use weblogs and those who do not in the way they perceived their level of success?" The goal was to examine how well each group met their expectations and determine if one group significantly exceeded their expectations more than the other. The results indicated that the two groups differed on how they learned how their work compares with others within their group. The difference here was in favor of the group that used weblogs. The results demonstrated that the participants who used weblogs exceeded their expectations, whereas the non-weblog group did not even meet their expectations. This may suggest that the weblog's strength is in its ability to reduce a user's uncertainty about his or her fellow group members. All other items examined for this question provided no significant differences; hence both groups seemed to meet their expectations at similar levels.

The lack of significant findings may not necessarily mean that the weblog has no value in group work. An examination of the use statistics details that the weblog was probably not being used to its fullest potential by the participants in the weblog group. On average, there was less than one post made per student. In addition, participants were only visiting the site once every other week (which

in a five-week course translates into only 2 or 3 visits total) and spending a brief amount of time (i.e., 2 or 3 minutes) on the site per visit. The numbers here are too low for participants to have had rich communication with each other via the weblog. Because students did not use their group's weblogs, it was not possible to adequately address the research questions posed in this study.

This notion that participants underutilized the weblog is supported by their responses to the open-ended questions at the end of the posttest. When asked what influence the weblog had on their communication, many participants were very open in saying that the weblog had little to no influence on them because they never used it. Similar answers were given when the participants were asked to describe their experience working with a weblog. Because many of them had not bothered to make even one post on their group's weblog, they had no experience to report.

An examination of the open-ended questions revealed some explanations for why there were very few postings by the students. One of the over-arching themes throughout many of the students' responses was that they viewed the weblogs as an "extra step". Many did not see the benefit of communicating via the weblog when they could transmit their message faster by communicating face-to-face, via email, or through instant messenger. Thanks to the networking capabilities of the university, many of the steps that are typically taken to send an email are eliminated (i.e., a student can find another student's email address by simply typing their last name in the "To" box). When using the weblog, students

had to go to the weblog page, sign in with their username or password, locate where on the weblog page they wanted to make a posting, type their message, and then finally post it on the weblog. While this is not a difficult process, it was viewed as too time consuming.

Coupled with the idea that the weblog was an unnecessary step in the communication process was the problem that there was no requirement to make posts on their weblog. Posting on the weblog was voluntary for the completion of the group project. Beyond creating the weblog, any future involvement with the weblog was optional. The fact that most students chose not to post is not a surprise.

Multiple students indicated that if the weblog was a required part of the project, they would have used it more. When asked in the posttest, "What could be changed to make you use weblogs more frequently in future group projects?" the responses included, "more structure in what must be pushed on the site" and "make it mandatory". One student also suggested that there be "some sort of activity to get it started". Without this proper motivation or structure, it appears that students decided to rely on more simplistic and familiar forms of communication.

In addition to wanting more structure from the instructor, many students expressed a desire for more participation from their fellow group members. These students felt that they would have used the weblog more frequently had everyone in their group been actively posting to it. These responses indicate that

some students had originally tried initiating a conversation on the weblog, but no one followed their lead, while others were merely "lurkers" who waited for someone else to begin communicating before they joined in. Most recognized that multiple posts were needed if the weblog was to be of any use to them in their projects. Finally, students reported technological difficulties (e.g., with passwords) and a need for additional instructions on how to use the weblogs.

Despite these complaints and difficulties, particular students did provide some insight into potential benefits of using a weblog. For instance, students indicated, "It was the easiest way to tell the whole group something, and it was quick", "Easy posting rather than individual e-mail", and "You didn't have to send individual emails or IMs to have a conversation". Interestingly enough, the participants who never posted or only made one post mentioned frequently that they felt that the weblog was not as easy to use as e-mail or instant messenger. Finally, one participant commented that, "Weblogs would work well for groups who do not have time to meet". Perhaps this is an indication that weblogs are better served for long-distance communication and are of little use for groups that are able to frequently meet in a face-to-face setting.

Limitations

The most significant limitation to adequately addressing the research questions was the lack of postings made by the participants in the weblog groups. Without those participants contributing postings during their group projects, it is difficult to analyze the weblog's influence on group communication.

Despite this lack of use, there are a number of factors associated with the lack of postings that need to be examined. One of the most important factors that affected use of the weblogs was the structure of the class in which this research took place. This was a five-week module course (1 credit hour) as opposed to a typical fifteen-week semester course. Course evaluations tend to suggest that many students approach the five-week module with a different frame of mind, including not taking it as seriously or not contributing as much effort as would be the case in a 3-credit course. For many participants, incorporating the weblog into their group project was not perceived as a new method of communicating with others, but rather as additional work for them. Many groups also procrastinated on their group projects waiting to accomplish all tasks during the final week before presenting their project. This pattern of behavior does not allow students to take advantage of the features that weblogs offer. Through the weblog they can brainstorm ideas, designate roles and provide status reports without having to find a time that all the group members can meet together. When groups wait until the last minute to do their work, they are not going to want to waste their time at that point communicating over a weblog. These groups will be more efficient by simply meeting in person and rushing to get everything finished.

The additional factor leading to little blog use in the present study is that the instructors for the weblog groups did not make using the weblog mandatory and/or for a grade in the course. Because this was optional, many participants

simply opted not to use it for their project. However, based on responses from the open-ended questions in the posttest, some students expressed the fact that they wished posting on their blog would have been a graded assignment. Doing this not only rewards those who provide good comments on their blog, but it also motivates the other group members to use it as well.

Another factor influencing the results of this study comes from the perception of weblogs, specifically about their ease of use or lack thereof. Before the participants in the weblog group began working on their group projects, they were instructed on how to run and use a weblog. Based on the responses given in the posttest, it appears that more such instruction was necessary. Some of the participants reported that they had difficulty logging in to the weblog and therefore never used it. This problem easily could have been resolved had the students approached the instructor with their problems.

Some students argued that there was no reason to use the weblog because they felt other forms of CMC, such as e-mail and instant messenger, were easier to use. These claims are not necessarily true, as many students specifically mentioned that they felt weblogs were very easy to use and were very helpful, as mentioned above. If this is true, then why is there disagreement amongst students? It is likely that many students who reported that they did not use the weblogs because email and instant messenger were easier felt so because they are unfamiliar with weblogs. In fact, data from this research support this claim. In the pretest, all participants were asked their familiarity with

various forms of CMC on a Likert-type scale with 1 being very unfamiliar and 5 being very familiar. Of the participants who were in the weblog group, the mean averages for familiarity for using e-mail and chat programs were 4.65 and 3.46, respectively. However, the mean for their familiarity with weblogs was only 3.00. With perhaps additional education and training on weblogs by the instructor, the students would have felt more comfortable using the program.

Finally, the questionnaire used for the pre- and posttests needs to be reexamined. While taken from reliable scales, the statements used for this questionnaire may not have completely revealed the impact of the weblogs on the students. There are a number of variables in the literature which may better assess students' motivations for using a weblog and how using a weblog could impact their group work.

Future implications

It is clear from the present study that additional research is needed to further explore the ways in which weblogs can be used in the classroom. The problem areas discussed in the limitations section provide future researchers with a point from which to continue work in this area. Most importantly will be the structure and length of the class that is used for experimentation. In a course that meets for a full semester, students will have greater opportunity to communicate via the weblog. It is only by having numerous postings within the weblog that an assessment can be made of the value of weblogs for group work.

In this study, only one group really took advantage of the weblog for their work. Their communication gives an example of the potential this form of CMC has for improving a group's communication and their effort (see Appendix A). The group's communication began with one student saying, *"I have been thinking of a few topics like maybe the housing lottery system? I don't really know what you guys want to do but let me know what you think."* This begins a brainstorming session between the group members where they discuss possible project topics and express where their areas of knowledge are. Once they have chosen the topic (the university's computer policy), one student assumes a leadership position through comments like, *"Yeah we really need to start to assign different parts to different people. This is a easy class so I want to get an a..... I dont think that this presentation is that serious, but like I said I am working on getting the background on the Tangent computer suppliers....."* From here, the discussion on the weblog transitions into information sharing. Sources found by individuals are posted on the weblog for the group to see and evaluate. For instance, one student posted the university's computer policy website. This led to another student posting the following, *"I've done some research from the computer website and found the exact software that comes with the computer, the necessary software anyhow. I came to several conclusions..."* Finally, the last few posts dealt with final preparation before their presentation. The student who assumed the leadership role early in the process posted, *"I wanted to add a couple of things. First, hopefully you will get this message before class, I think*

that everyone should dress kinda nice for the presentation. Nothing too dressy, but casual. Secondly, while looking over the powerpoint I think we need to have a set idea about which sides we will be describing. I think the order of discussion should go as follows..."

This group exhibited how a weblog could be used. They showed how to properly follow the steps for group work through their communication on the weblog. In addition, the weblog provided them with a medium for information sharing. The weblog also enabled group members to establish roles and have them be maintained.

An examination of their conversation, however, also provides some areas of concern. For instance, the grammar, spelling and punctuation found in their conversations are not at a level that would be accepted for college level writing assignments. Does the lax approach to proper grammar and punctuation taken by students affect the way they receive the information? Secondly, there was one instance where a student began posting his thoughts and then accidentally hit "Send" before he was finished. Rather than editing that post (which was an available option), the student made a second post that included everything from the first post plus the remaining information he did not send the first time. The extra postings would likely provide unnecessary noise as other group members read the threaded discussion. Finally, most of the students in this group posted anonymously. Such anonymity may alter the way messages are received by the other group members.

There are a number of other issues that need to be examined in future studies related to weblogs. One is the aspect of weblog education. As noted earlier, the students' levels of familiarity with weblogs was lower than it was for e-mail. Perhaps with further knowledge on this new way of CMC students will become acclimated with this technology, and thus begin to use it as regularly as e-mail and chat programs. However, simply knowing how to create a weblog and post on it may not be sufficient. Perceptions about the technology are also important. Are students finding that CMC is simply extra work? Instead of seeing a weblog as an opportunity to have documented discussions about their project, students may perceive communicating on a weblog as an unnecessary step in the group decision making process. Research in the area of usability will be important to help address this issue. Further studies need to be conducted in order to learn if students have this mentality toward weblogs. If so, what changes could be made to weblogs to alter this mindset?

Future research should also examine the structure of the weblog, specifically evaluating what affect the structure has on how students perceive their group and its members. Given that an individual creates a weblog and then allows others to communicate on it, does this automatically establish a hierarchy within the group? The creator of the weblog also has the ability to alter its design and layout. The choices made by the creator related to the design of the weblog may be interpreted as having a broader meaning for how the group is defined.

There are further issues relating to group roles and identity that should also be examined. It is unclear as to how leaders develop through weblog communication. Does the group member who creates the weblog become the leader by default? That was not the case in this study for the group that frequently used their weblog. There may be differences in the group dynamic depending on whether or not the creator of the weblog is also the designated leader of the group. Also, as mentioned earlier, students who used the weblog would frequently post anonymously. This may simply be because the students forgot to log in using their username and password. However, they could be doing this in order to be more open in their comments without being scrutinized by their fellow group members, as the deindividuation research would suggest. Regardless of the reason, the anonymous postings likely influence the establishing of individual roles within the group in some way. Also of interest was evidence of uncertainty reduction occurring among the group members who used the weblog. This is particularly interesting given that many students opted to post anonymously. Future research may indicate what additional factors attribute to the decreased levels of uncertainty when group members communicated via the weblog. It may be simply that the weblog provided an additional means for the group members to communicate and that was enough to decrease their uncertainty. It is also possible that certain characteristics of the weblog enable students to feel more at ease with their fellow group members.

There are a number of issues currently being researched using other forms of CMC (e.g., e-mail and chat programs) that should be explored within the context of weblogs. These include identity formation, norms, disclosure, deindividuation, genre, gender and relationship formation. Given the recent emergence of the weblog into public awareness, very little scholarly research has been published on the weblog's effect on these variables. Simply conducting the research using e-mail or chat programs will not provide sufficient answers. While having some similar characteristics and features to e-mail and chat programs, the weblog is distinct enough that a researcher cannot simply generalize his or her findings across all forms of CMC. There are a number of new areas that have yet to be explored as they relate to weblogs and group communication. Perhaps the present work will help to prompt this exploration.

APPENDIX A

Sample group conversation from a weblog

"I have been thinking of a few topics like maybe the housing lottery system? I don't really know what you guys want to do but let me know what you think."

"Since I commute, I'm not aware of too many bothersome UD policies that relate to living on campus, so I'm willing to do whatever you guys decide, if the policy relates to on-campus living."

"ok. so we have decided to use the computer policy. now we probably should get serious and maybe meet to brain storm some issues and exactly what we want to break down this topic into. maybe divy up some work and get started!"

"Yeah we really need to start to assign different parts to different people. This is a easy class so I want to get an a..... I dont think that this presentation is that serious, but like I said I am working on getting the background on the Tangent computer suppliers....."

"Hey I have been looking at some of these as possible resources. Personally I will be using the tangent website as one of my sources, but feel free to pull any necessary information off of here....."

www.tangent.com

<http://admissions.udayton.edu/computers/default.asp>

I will be pulling the history from the tangent website, but for like ##### and ##### the UD computer page gives the specifications for the different computers offered through the school and the prices. Also #####, you may want to speak to ##### over in the computer store.... He would be able to help you formulate a list of specifications and programs a non-UD computer would have to have to be active on the schools network. Our from looking at the specifications listed on the UD computer website, what makes these Tangent computers more compatible than others..... Just a few places to get started.... Thanks"

"I've done some research from the UD computer website and found the exact software that comes with the computer, the necessary software anyhow. I came to several conclusions...

1.) Most of the software can be downloaded from"

"I've done some research from the UD computer website and found the exact software that comes with the computer, the necessary software anyhow. I came to several conclusions...

1.) Most of the software can be downloaded from software.udayton.edu for free. The only software not included on the website is "Lotus QuickPlace" and "Windows XP."

2.) If you buy a computer from, say, Dell or other manufacturers, you can usually buy a computer WITH Windows XP. Then, all you would have to do is download the rest of the software from software.udayton.edu and buy Lotus Quickplace separately, if it does not already come with Lotus Notes. This I'm not sure of.

3.) If someone buys a new, non-UD computer (with Windows XP) instead of purchasing one from UD, then that computer should be as up-to-date technologically as the Tangent computers that UD offers, if not moreso. Then all the person would have to do to obtain the same software that UD computers have is go to software.udayton.edu and download the software (except Lotus QuickPlace). Since most, if not all, of the computers in the libraries and computer labs are Dells, then the person buying outside of UD should have no problem with the compatibility of their computer with UD computers if they buy a Dell, which should be far cheaper than buying through UD."

"Whew."

"An additional comment. I don't believe that not having Lotus QuickPlace would pose an enormous inconvenience to many UD students. I'm currently a junior and have never had to use QuickPlace, ever.

However, the amount of usefulness of certain software may depend on the major of the student. As a political science major, I've found that not having a UD computer is not a problem at all, because all I really use is Notes via the web. Has anyone else had to use QuickPlace for their majors?"

"I e-mailed ##### from the UD Computer Store about the software issue with people using non-UD computers and this is what he said:

'If a student uses a different computer the only thing they really need is novell and lotus notes. We routinely install these programs for students who use different computers. The only problem we ever run in to is that users who have windows xp home edition have a problem running novell and operating on a network environment. I don't know if that answers your question but if not let me know.'

Conclusion: People using non-UD computers should not buy ones with Windows XP Home Edition. Otherwise, they should be fine."

"Hey guys, I sent you all a message, and we need to discuss how we are going to present our project. Again I am sorry about the other day, but we still need to get going. We need to start pulling all of our info together to see what else we need to work on. Also, have the Surveys been made yet? Those need to be going out like right away....."

"Hey guys,

I wanted to add a couple of things. First, hopefully you will get this message before class, I think that everyone should dress kinda nice for the presentation. Nothing too dressy, but casual. Secondly, while looking over the powerpoint I think we need to have a set idea about which sides we will be describing. I think the order of discussion should go as follows: slide #1& #2--> ##### (I will read the slide then give a little background information on the policy issues). Slide #3 & #4 --> ##### (Basically just read the slides). Slides #5 --> ##### (Read slide and give the information you obtained about computers and prices), Also ##### kinda back up ##### with some of your info!. Slide #6 --> ##### (Talk about the issues concerning hardware, and info from ##### relevant to the issues). Slide #7 --> ##### (Elaborate on the results of the surveys). Slide #8 --> ##### (Read slide, elaborate on other issues as far as warranties and other issues.).

Lastly someone needs to save the powerpoint to a disk to use in class or have the powerpoint accessible through e-mail. There are a few corrections (spelling and grammar) that need to be made to the powerpoint, and only one person needs to print off a copy of the outline and bring to class, it needs to have all of our names, and our group number. Hopefully someone will get back with me before about 10:00 tomorrow morning. That would be great!"

APPENDIX B

Sample Copy of Pretest

Please respond to the following statements as they relate toward your opinions about working with others.

	Strongly Disagree			Strongly Agree	
1. I am tense and nervous while participating in group discussion.	1	2	3	4	5
2. Learning in a group is better than learning individually.	1	2	3	4	5
3. Generally, I am comfortable while participating in group discussions.	1	2	3	4	5
4. I think that group learning produces a greater amount of knowledge	1	2	3	4	5
5. I am calm and relaxed while participating in group discussions.	1	2	3	4	5
6. Engaging in a group discussion with new people makes me tense and nervous.	1	2	3	4	5
7. I like to get involved in group discussion.	1	2	3	4	5

In the following section please answer how important you feel the following items are in order to have a successful group experience.

	Very Unimportant			Very Important	
1. coordinating your activities	1	2	3	4	5
2. building or maintaining relationships	1	2	3	4	5
3. generating new ideas	1	2	3	4	5
4. sharing information about your activities	1	2	3	4	5
5. working together as a team	1	2	3	4	5
6. being creative in what you're doing	1	2	3	4	5

7. finding out what's been accomplished up to now	1	2	3	4	5
8. learning how your individual work fits into the big picture	1	2	3	4	5
9. being able to respond quickly to new ideas and information	1	2	3	4	5
10. exchanging feedback about your project	1	2	3	4	5
11. cooperating with other people to reach your goals	1	2	3	4	5
12. learning how you compare to others who do similar work	1	2	3	4	5

Please respond to the following statements as they relate to your familiarity with various forms of computer technology.

	Very Unfamiliar			Very Familiar	
1. Using the Internet	1	2	3	4	5
2. Using E-mail	1	2	3	4	5
3. Using Weblogs	1	2	3	4	5
4. Using chat programs	1	2	3	4	5
5. Using a web cam	1	2	3	4	5

Please answer the following questions.

Gender: Male Female

Class: Freshmen Sophomore Junior Senior

Living status: On-campus Commuter

Age: _____

APPENDIX C

Sample Copy of Posttest

Please respond to the following statements as they relate toward your feelings as you worked with your group members

	Almost Never	Sometimes	Often	Almost Always
1. I felt tense.	1	2	3	4
2. I felt at ease.	1	2	3	4
3. I felt calm.	1	2	3	4
4. I felt jittery.	1	2	3	4
5. I felt relaxed.	1	2	3	4
6. I felt worried.	1	2	3	4
7. I felt confident.	1	2	3	4

In the following section please answer how successful you were in accomplishing the following items while working in your group.

	Very Unsuccessful			Very Successful	
1. coordinating your activities	1	2	3	4	5
2. building or maintaining relationships	1	2	3	4	5
3. generating new ideas	1	2	3	4	5
4. sharing information about your activities	1	2	3	4	5
5. working together as a team	1	2	3	4	5
6. being creative in what you're doing	1	2	3	4	5
7. finding out what's been accomplished up to now	1	2	3	4	5

8. learning how your individual work fits into the big picture	1	2	3	4	5
9. responding quickly to new ideas and information	1	2	3	4	5
10. exchanging feedback about your project	1	2	3	4	5
11. cooperating with other people to reach your goals	1	2	3	4	5
12. learning how I compare to others who do similar work	1	2	3	4	5

APPENDIX D

Additional Posttest Questions for Weblog Group

Please respond to the following questions regarding the use of weblogs in CMM 110.

How many comments did you post on your group's blog site? Number: _____

How often did you visit your group's blog site? *(please circle one of the following)*

- a) Never b) Once c) Every other week d) Once a week
e) Two or three times a week f) Every day

On average, how much time did you spend on the blog site per visit? *(please circle one of the following)*

- a) Less than a minute b) a couple of minutes c) 10-15 minutes d) 30 minutes
e) 60 minutes f) Over an hour

Overall, how did you feel the weblog influenced your group? The weblog had:

1	2	3	4	5
No				Significant
Influence				Influence

Overall, how did the weblog influence your group's cohesion? As the group worked, the members were:

1	2	3	4	5
Very				Very
Independent				Cohesive

Overall, how did the weblog influence your group's success on the project? The group was:

1	2	3	4	5
Very				Very
Unsuccessful				Successful

What features of the weblog influenced your decision to use the site?

How likely are you to use a weblog in future group projects?

1
Very
Unlikely

2

3

4

5
Very
Likely

What could be changed to make you use weblogs more frequently in future group projects?

Overall, what influence did the weblog have on your group's communication?

Overall, how would you describe your experience working with weblogs?

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