ABSTRACT

THE IMPORTANCE OF FEEDBACK IN THE BLENDED CLASSROOM: A STUDY OF GROUP DISCUSSIONS

by Kye Brennan Wood

The purpose of this study was to examine the importance of feedback in online classroom discussions, specifically Blackboard discussion boards within the higher educational setting. The goal of the study was to determine if online discussion with instructor feedback could be as effective as face-to-face discussions in regards to perceptions of learning, media preference, and meaningfulness. An experimental design was used in 17 sections of an introductory public speaking course. The experimental activity consisted of three conditions; asynchronous discussion with instructor feedback, asynchronous discussion without instructor feedback, and synchronous or face-to-face discussion with feedback occurring naturally. Findings suggested that feedback did not have an impact on instructor or student perceptions of learning, media preference, or meaningfulness of discussion. The Discussion provides suggestions for future research.
THE IMPORTANCE OF FEEDBACK IN THE BLENDED CLASSROOM: A STUDY OF GROUP DISCUSSIONS

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Introduction

Distance learning education and its implementation has risen dramatically over the past decade. It’s becoming a force in the academic world that we all have to recognize. Most college campuses have expanded to include distance education in one form or another. Even the Ivy League is taking notice with schools like Harvard branching out into online courses. According to the National Center for Education Statistics (2003),

During the 12-month 2000-2001 academic year, 56 percent (2,320) of all 2-year and 4-year Title IV-eligible, degree-granting institutions offered distance education courses for any level or audience. Twelve percent of all institutions indicated that they planned to start offering distance education courses in the next 3 years (p. 3).

Obviously, distance education is now becoming an integral part of how educators are choosing to deliver their course material. As of 2001, over half of the schools in the United States had distance education courses available. By 2009, this number will probably be even more significant. But distance education technologies are also being used in the traditional classroom as a way to engage students and create more time for in-class content. This phenomenon is typically referred to as blended education, which is defined as the combination of traditional and online teaching (Graham, 2006). This type of education is used even more often than distance education in colleges across the U.S. (Whitelock & Jelfs, 2003). Through blended education computer-mediated communication (CMC) technologies like chat rooms, discussion boards, podcasts, interactive lectures, and other media often take the forefront in promoting group discussion and interaction outside the classroom.

Purpose of Study

The purpose of this study was to examine the importance of feedback in online classroom discussions, specifically Blackboard discussion boards within the higher educational setting. The goal of the study was to determine if online discussion with instructor feedback can be as effective as face-to-face discussions. An experimental design was used in 17 sections of an introductory public speaking course. The
experimental activity consisted of three conditions; asynchronous discussion with instructor feedback, asynchronous discussion without instructor feedback, and synchronous or face-to-face discussion with feedback occurring naturally. Instructors and students were invited to participate in pre and post-test surveys. The pre-test surveys measured instructor and student media preference. The post-test surveys measured instructor and student perceived learning and meaningfulness of discussion.
Chapter 1: Review of Literature

Asynchronous and Synchronous CMC

The study of CMC in education has focused on trying to understand the ways in which students learn within distance education media. According to Johnson (2006), in all instructional contexts, including blended and distance education, there is an expectation that learning involves human interaction. Current instructional applications of technology provide two distinct formats for such interaction — asynchronous and synchronous (Hines & Pearl, 2004).

Hrastinski and Keller (2007) attempted to provide a summary of the latest research in CMC education from 2000 thru 2004. They attempted to show what methodologies and research topics have been emphasized in order to be better prepared for the future by uncovering areas where there is a lack of research. The findings from their research conclude that there is an increasing use and importance of CMC in traditional education. CMC is apparently no longer a phenomenon limited to distance education; blended education is definitely gaining popularity and momentum in comparison with strictly distance education (Hrastinski & Keller, 2007).

Hrastinski and Keller (2007) also assessed the extent to which research has been focused on asynchronous media as compared with synchronous media. Asynchronous instruction occurs in delayed time and does not require the simultaneous participation of students and teacher (Rovy & Essex, 2001; Sabau, 2005). Students independently experience learning events and learning is not synchronized in time or space (Johnson, 2006). In contrast, synchronous instruction occurs in real time and requires the simultaneous participation of students and teacher although physical proximity is not required (Romiszowski & Mason, 2004). Hrastinski and Keller (2007) found that the value of asynchronous media is seldom questioned. This type of media allows students to log on to the class at any time, think about what has been written and post responses when they wish (Palloff & Pratt, 2001). The characteristics of synchronous media are quite different since conversations are conducted in real-time. Synchronous discussions in online courses have been reported to enhance community and accelerate information flows within a team (Carr, Cox, Eden, & Hanslo, 2004). Based on the study by Hrastinski
and Keller (2007), it was concluded that it has been more usual to examine asynchronous CMC as compared with synchronous CMC.

Web-based learning often utilizes online discussions, which are typically threaded asynchronous forums or synchronous chats (Lee, Dineen, MacKendree, & Mayes, 1999). The use of online discussion boards has grown extensively in the past five years (Cooper, 2001). In contrast, an element of controversy surrounds the instructional implementation of synchronous text-based CMC (Johnson, 2006). This may be due to chat rooms often being viewed as recreational, as opposed to educational forums for human interaction (Burnett, 2003). In addition, synchronous chat, which often attempts to emulate face-to-face discussion, is viewed as inferior to asynchronous online communicative exchange (Berge, 1999; McDonald, 2002). This is due to the contradictory nature of synchronous chat. Synchronous CMC applies distance education elements but requires everyone to be at the same virtual location at the same time. Asynchronous communication, on the other hand, is in some manner technologically mediated and is not dependent upon teachers and students being present together at a specific time/place to conduct learning/teaching activities (Berge, 1999). Using asynchronous communication, students can work at their own pace when and where they want, and from a pedagogical point of view, students can also control the pacing of instruction (Berge, 1999). Since students are generating the majority of the discussion and leading the overall discussion they therefore have more control over the outcomes of the discussion. Dede and Kremer (1999) conclude in their study of both asynchronous and synchronous media that asynchronous discussion provides richer, more inclusive types of interchange, but requires more time and provides less social interaction than synchronous chat (As sited by Johnson, 2006). This suggests that while asynchronous media has its limitations it is viewed more positively than synchronous media and used more often in educational settings. While CMC has its own dichotomy on whether asynchronous or synchronous are better suited for educational settings traditional and online or blended education have another dichotomy. Some researchers believe that how “rich” or “lean” a medium is can determine which is better suited for certain situations. From this standpoint CMC does not have the capabilities to equal or surpass the proposed “richest” medium face-to-face.
Media Richness Theory

Media richness theory (Daft & Lengel, 1984; Trevino, Lengel, & Daft, 1987) was originally used in organizational research regarding the idea of interpersonal media selection for the workplace. Daft and Lengel (1986) define media richness theory (MRT) as, “the ability of information to change understanding within a time interval” (p. 560). In other words, media richness is determined by how fast the abilities of the communication transaction can reduce uncertainty and provide rapid clarification within the given medium of operation. Daft and Lengel (1986) go on to assert that communication transactions that can address these issues of uncertainty and ambiguity in a timely manner are considered “rich.” In contrast, communication transactions that require a long time to address uncertainty and ambiguity or that cannot overcome different perspectives are considered “lean” (Daft & Lengel, 1986). Based on Daft and Wiginton’s (1979) original assertion, media richness is gauged by the medium’s capacity for immediate feedback, the number of cues (social) and channels utilized, personalization, and language variety. Daft and Lengel (1984) consider face-to-face communication to be the richest medium based on the afore mentioned criteria whereas media like statistical reports restrict feedback and utilize fewer social cues, which are less appropriate for addressing vague or ambiguous issues, therefore, it is considered the leanest medium.

The Blended Classroom

The blended classroom attempts to integrate distance education technologies into the traditional classroom as a way to enhance students’ interest in the class and promote the importance of new technologies in our society. Alghazo (2006) examined students’ attitudes towards web-enhanced instruction and found that students had positive attitudes toward most aspects of Web-enhanced instruction like discussion about course content through discussion boards and communicating with other students. Most of the concerns students had in Alghazo’s (2006) study centered on technical issues like lack of computer labs and slow internet connections at home. Additionally, Resnik (2005) found that students believed that the use of discussion boards was an effective teaching tool, that it enabled them to get feedback from their peers, that it helped promote discussion and debate, and that they would consider using discussion boards if they ever taught a course themselves. Although, it should be noted that discussion boards should not replace the
face-to-face interaction that occurs in a classroom setting. The importance of face-to-face interaction should not be overlooked. Isolation, misinterpretation, and the basic need for human interaction all have a negative impact on CMC and a positive impact on face-to-face interactions. However, blended education does serve an important role. The need to free up class time, extend meaningful discussions, and eliminate time constraints can benefit many instructors in today’s educational settings. With blended education the use of discussion boards are meant to complement the traditional face-to-face interaction of the physical class setting.

Ocker and Yaverbaum (1999) used a repeated-measures experimental design to compare student groups, each of which collaborated on two case studies, one using face-to-face collaboration and the other using asynchronous computer conferencing. Their findings indicated that collaborating in the online condition was just as successful as in the face-to-face condition in terms of learning, quality of solution, solution content and satisfaction with the solution. Although, students were significantly less satisfied with the asynchronous learning experience than the face-to-face experience (Guiller, Durndell, & Ross, 2008). This same conclusion has been reached by a multitude of research into face-to-face and asynchronous discussion (Kamin, Glicken, Hall, Quarantillo, & Merenstein, 2001; An & Frick, 2006; Meyer, 2003; Tiene, 2000). Specifically, Tiene (2000) found that graduate students reacted positively to their online discussions, although they still preferred the face-to-face setting; these students noted that the online discussions were a valuable addition to the class and not a substitution for face-to-face discussion. Meyer (2003) and An and Frick (2006) produced similar results when students compared their online discussions to their unspecified earlier experience with face-to-face discussions. This suggests that while asynchronous discussions have their uses and can complement face-to-face discussion the majority of students perceive face-to-face discussion to be more satisfying as a group learning experience. The usefulness and importance of real human interactions should never be overlooked.

The idea of a lean and a rich medium may not be as dichotomous as the theory originally asserted. A rich medium is gauged by use of social cues, immediate feedback, personalization, and language variety. If used correctly, asynchronous discussion boards, a lean medium can have many rich qualities in common with face-to-face interactions;
the richest medium. In other words, an instructor can textually replicate verbal and
nonverbal social cues in a leaner medium if he/she asserts social presence by way of
feedback and overall interaction in the discussions that take place. Additionally, feedback
in a much leaner medium can be done quite often by a motivated instructor and helps to
create a better learning environment for students in a physically lacking and sometimes
ambiguous medium (see Dennen, 2005). By using feedback, ambiguity can be alleviated
and students will be able to work through complex issues based on instructor
reinforcement and correction. Feedback can be personalized and language variety can be
used at an instructor’s discretion. While face-to-face interaction is the richest medium
and asynchronous discussions are a leaner medium both can be conducive to addressing
critical thinking and more complex learning issues. Therefore, a medium can be adapted,
based on that medium’s capabilities, to a much richer use.

The Importance of Group Discussion and Critical Thinking

The lecture-to-passive-students model of teaching has long been a dwindling
method of pedagogy. Discussion based learning has since established a model based on
diverse body of teaching techniques that emphasize participation, dialogue, and two-way
communication” (p. 21). These teaching techniques provide students with the benefit of
being involved in their own learning (Leeds, Stull, & Westbrook, 1998), learning through
the contributions of others (Hertenstein, 1991), and the development of higher-order
cognitive skills (Ewens, 2000). These higher-order cognitive skills or critical thinking
skills are an important issue in higher education and the development of critical thinking
skills is one of the primary aims of an undergraduate degree (Guiller, et al., 2007).
Critical thinking is a necessary skill for the full understanding of theories, evidence and
the core issues and debates in the domain of social scientific disciplines (Guiller et al.,
on critical thinking, a social element can be seen as important to the promotion of critical
thinking skills in the classroom.

Guiller et al. (2007) discuss a definition to critical thinking by Kuhn (1991). Kuhn
(1991) provides an alternative definition of critical thinking as a type of reasoned
argument, with a social element. She claims that it involves a number of skills including,
first, a students’ ability to differentiate their own theory or point of view from the evidence that can be brought to bear on it; second, to support their point of view or theory with non-spurious evidence; third, to suggest possible alternative theories and evidence that would support them; fourth, to provide evidence that supports one’s own theory whilst at the same time refuting the alternatives and, finally, to adopt an epistemological stance that involves weighing up and evaluating the evidence. The social element in Kuhn’s (1991) definition refers to the articulation and discussion of ideas with peers who are engaged in a collaborative process of knowledge building (Guiller et al., 2007). Likewise, Vygotsky (1978) emphasized the importance of learning within a social context in his explanations of social constructivism. His emphasis on the social dimension in children’s construction of knowledge and meaning has led to the widespread notion that collaboration with peers helps learners reach new knowledge and understanding. The perception of how much was learned in a given activity from the perspective of both instructors and students is an important aspect of evaluating the critical thinking skills utilized in a given activity.

**Perceptions of Cognitive Learning**

According to McCroskey, Valencic, and Richmond (2004), the primary outcomes of instructional communication are concerned with learning: cognitive, affective, and in classes were appropriate, psychomotor. McCroskey et al. (2004) are referring to Blooms Taxonomy. In 1956, Benjamin Bloom headed a group of educational psychologists who developed a classification of levels of intellectual behavior important in learning and this became a taxonomy including three overlapping domains; the cognitive, psychomotor, and affective (Lane, 2002). Cognitive learning is demonstrated by knowledge recall and the intellectual skills: comprehending information, organizing ideas, analyzing and synthesizing data, applying knowledge, choosing among alternatives in problem-solving and evaluating ideas or actions (Lane, 2002). This domain on the acquisition and use of knowledge is predominant in the majority of courses taught (Lane, 2002). Educators largely view learning in terms of cognitive change in students (Rovai, 2002). The importance of understanding student learning outcomes in the educational setting as a way to measure the success of a given activity or course is evident, but measuring this learning has been troublesome. According to Richmond, McCroskey, Kearney, and Plax
the study of variables that impact cognitive learning has been hindered by the
difficulty in establishing valid measures. Dumont (1996) and Hiltz and Wellman (1997)
report that student grades continue to be the most prevalent measure of student learning
outcomes. However, Rovai (2002) argues that grades can have little relationship to what
students have actually learned. Research suggests that student perceptions of their own
learning can be a valid measure of cognitive learning (Rovai, 2002; Richmond et al.,
1987; Pace, 1990; NCES, 1994). Richmond et al. (1987) designed a method to assess
cognitive learning on the basis of student perceptions of their own learning, which will be
used to measure learning in the current study. In addition, empowerment of students and
the perceptions of meaningfulness of a given activity or discussion can help measure and
validate the effectiveness of that activity or discussion.

**Perceptions of Meaningfulness**

There are many definitions for empowerment most dealing with manager-
employee relationships from an organizational standpoint. As noted by Frymier,
Shulman, and Houser (1996), motivation plays an important role in all these different
definitions, and therefore can be related to the teacher-student relationship. Much like
promoting critical thinking and socially constructive learning, the role of empowerment is
to create conditions that involve student commitment to producing quality work
(Shulman, McCormack, Luechauer, & Shulman, 1993). Thomas and Velthouse (1990)
describe empowerment as having four dimensions; meaningfulness, competence, impact,
and choice. According to Thomas and Velthouse’s definition (1990), meaningfulness
involves the individual's inherent caring about or commitment to a given task. Low
degrees of meaningfulness are believed to result in indifference, feeling detached and
unrelated to significant events whereas higher levels of meaningfulness are believed to
result in commitment, involvement, and concentration of energy (in other words,
motivation). Meaningfulness is therefore concerned with the value of the task goal or
purpose judged by an individual’s own ideals or standards, or an individuals caring for a
given task or assignment (Thomas & Velthouse, 1990). The students’ perception of the
meaningfulness of a given task or assignment can then be said to empower them to
commit to and produce quality work for the assignment. This in turn helps to achieve the
instructor’s goals for the assignment. Initiative by an instructor through empowering
The Instructor’s Role in Online Group Discussions

While several frameworks have been developed to explain the role of the instructor in an online discussion setting (Bennett, & Lockyer, 2004; Goodyear, Salmon, Spector, Steeples, & Tickner, 2001; Salmon, 2000), a system first proposed by Berge (1995) and later refined by Bonk, Kirkley, Hara, and Dennen (2001) proposes a four part model consisting of pedagogical, social, technical, and managerial dimensions, each with a varying number of roles. For the purposes of a study done by Ice, Curtis, Phillips, and Wells (2007), the social dimension and three roles (profession-inspirer, feedback-giver, and interaction-facilitator) within the pedagogical dimension were considered the most important and therefore depicted in the following table that was derived from the work of Liu, Bonk, Magiuka, Lee, and Su (2005).

Table 1
Select Roles of Online Instructors

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Roles</th>
<th>Description of Roles</th>
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<tbody>
<tr>
<td>Pedagogical</td>
<td>Profession-inspirer</td>
<td>Promote professional dialogue among online learners; relate personal experiences and cases to the discipline; point to professional organizations.</td>
</tr>
<tr>
<td>Feedback-giver</td>
<td>Provide timely and high quality feedback; provide formative feedback for continuous learning engagement.</td>
<td></td>
</tr>
<tr>
<td>Interaction-facilitator</td>
<td>Facilitate peer interaction in online discussion through a wide range of facilitation strategies.</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>Social rapport builder</td>
<td>Build social rapport; establish online teams; build online learning community.</td>
</tr>
</tbody>
</table>

According to Ice et al. (2007), in the traditional face-to-face classroom setting, each of these roles would be dependent upon both verbal and non-verbal cues. In the online environment, however, the primary form of communication is via text and therefore devoid of traditional non-verbal cues (Liu et al., 2005). Open communication
with students becomes a priority within an online setting. These roles, however, are also important to the traditional face-to-face setting. The instructor’s presence in face-to-face discussion is usually covered fairly well. Most trained instructors are aware of their need to participate and facilitate classroom discussions. In asynchronous online discussions this is not always the case.

According to Ice et al. (2007), the ability to project oneself through various media, termed social presence, was initially described by Short, Williams and Christie (1976) who proposed that, as critics of asynchronous learning contend, the ability to project verbal and nonverbal information directly impacted the degree to which presence was perceived. However, Rourke, Anderson, Garrison and Archer (2001) and Swan (2002) argued that this may not be the case as learners in online courses appeared to build effective learning communities by projecting their personalities through text alone (Ice et al., 2007). This text-based presence by the instructor can take form by way of using effective feedback, especially in group discussions. Providing feedback becomes an important point in the discussion where challenging assumptions and diagnosing misconceptions can take shape. This in turn helps promote critical thinking skills because students do the thinking required for learning and there is an opportunity for them to check their thinking against each other.

A guide to facilitating online discussion was created by Matthews-DeNatale and Doubler (2000) that can be said to addresses the online instructor’s roles from the model depicted in table one in more detail with specific functions and goals. According to Hanson and Teven (2004), knowing how much to participate in threaded discussions as a facilitator can be difficult. Student needs change depending on the circumstances. While it is largely up to the instructor to figure out how to interject in threaded discussions, it helps to know your options. The various options proposed by Hanson and Teven (2004) come from Matthews-DeNatale and Doubler’s (2000) website, which divides these roles into summarizing, moderating, guiding, prompting, and providing constructive feedback. The professional-inspirer and interaction-facilitator roles can be seen as a moderator and guider of the online discussion. According to Matthews-DeNatale and Doubler (2000), moderating attempts to re-focus the groups when they begin posting multiple threads and topics. The instructor pulls the groups back together when they haven’t fully addressed a
topic(s), but have moved on to other topics anyways. The guide function has the instructor move students on to a topic or thread that has good discussion material in it but has been ignored (Matthews-DeNatale & Doubler, 2000).

These roles as well as the social rapport builder role have a function of summarizer. Summarizing is done by both the instructor and students where the material discussed up to that point are summarized into a couple of paragraphs (Matthews-DeNatale & Doubler, 2000). Online discussions cover a lot of text and multiple threads and material. Summarizing by the instructor helps to put the discussion to that point into perspective for the students. When a student summarizes he/she take control of the group as a leader and help organize the discussion to keep the rest of the group on track for completing the discussion assignment. This function then helps to build a socially constructive element into the discussion and allows students to take control of their own tasks.

The feedback-giver role has the functions of prompting and providing constructive feedback. According to Matthews-DeNatale and Doubler (2000), prompting is where the instructor asks students more questions related to the discussion when participation and interaction have begun to diminish. This gives students indirect feedback about their lack of participation and asks them to contribute more. Constructive feedback consists of both positive and negative feedback. This is where the instructor reinforces students for their work as well as redirects them when their inaccurate posts go unchallenged (Matthews-DeNatale & Doubler, 2000). Throughout Matthews-DeNatale and Doubler’s (2000) tips webpage they suggest that these functions be used when necessary, but this requires the instructor to follow along with the discussion as it develops at least at the end of every day.

**Feedback and the Blended Classroom**

While providing feedback to students is fundamental to effective classroom communication, Smith and King (2004) indicate that feedback is still an underdeveloped construct and has received only limited attention in the communication studies literature. Cybernetics theory, however, has been focused on feedback and the development of its understanding since the 1940s and 50s and may provide some insight into the importance of feedback in communication processes. Cybernetics sought to model goal-seeking...
behavior by applying (or discussing how to apply) the principles of feedback to models of different types of behavior (Miles, 2007). Bale (1995) summarizes (as cited by Miles 2007):

That feedback is a recursive process whereby a system’s behavior is scanned and fed back through its sensory receptors. Data about the system’s previous actions, as a part of the input it receives, is monitored, allowing the system to ‘watch’ itself, and thus signal the degree of attainment or non-attainment of a given operation relative to pre-established goals. This process allows a system to alter its output and thereby regulate or steer its behavior in relation to its pre-encoded goals (p. 34).

In essence, this suggests that one can look back upon one’s self by accepting feedback and can then readjust actions based on preexisting goals that can help guide based on these preexisting motives. Miles (2007) goes on to explain that negative feedback occurs when the system is trying to achieve stability by reducing the difference between its pre-established goals and the information it is receiving from its inputs regarding the attainment of those goals (such as when a client criticizes a presentation as being ‘not what I meant at all!’) whereas positive feedback is said to be occurring when the opposite is happening and the system is trying to increase the difference between its goals and its inputs. These ideas help to establish the importance of positive and negative feedback to that of goal setting and effective communication. From an instructor’s perspective, positive and negative feedback helps to let the group know if they are achieving their goals or if they are going in the wrong direction. From a student perspective this helps them to reinforce or disprove each other within the discussion process and essentially allows students to take part in the teaching process, which promotes active and critical learning skills.

**Feedback in Asynchronous Discussion**

The interactions between students and instructors have been shown to significantly affect learning in both regular classrooms (Madden & Carli, 1981; Powers & Rossman, 1985; Kelley & Gorham, 1988; Christophel, 1990; Rodriguez, Plax, & Kearney, 1996) and online (Picciano, 1998; Richardson & Ting, 1999; Jiang & Ting,
Swan (2002) examined asynchronous online education by focusing on social development of learning communities by both students and instructors. Swan’s (2002) study found that student–teacher interaction was indeed strongly related to student satisfaction and perceived learning. Students who reported low levels of interaction with their instructors also reported the lowest levels of satisfaction with their courses and the lowest levels of learning (Swan, 2002). Students who reported high levels of interaction with their instructors also reported higher levels of satisfaction with their courses and higher levels of learning from them (Swan, 2002). This suggests that the more students interact with their instructors the more they will feel that they are satisfied and have learned from that instructor. But in online education there are fewer opportunities to interact with instructors and more ambiguity involved due to the absence of social cues. Researchers experienced with online teaching and learning, however, contest this view. Participants in computer-mediated communications, Swan (2002) argues, create social presence by projecting their identities into communications. What is important, Walther (1994), Gunawardena and Zittle (1997), and Richardson and Swan (2001) contend, is not media capabilities, but, rather, personal perceptions. Therefore, the students’ perception of the medium and how well they feel the instructor is interacting with them has greater influence on how well they feel the class and that instructor helped them learn in online educational settings. The perceptions of those who use these mediums have a significant impact on how that medium will be accepted and utilized.

Discussion participation will not just happen on its own and learners look to the instructor to shape their interactions (Dennen, 2005). Winn (1992) suggests that computer-based communication tools are shells waiting to be filled by learners, and that instructor design processes for these shells should not focus on content design but rather activity and message design. In Dennen’s (2005) study asynchronous discussions were compared in nine different courses. Across the nine courses, the occurrence of dialogue was higher when the instructors were actively involved in the discussion. In addition, instructor feedback played an important part in students’ motivation to participate in these courses. It was provided in different ways, but the courses in which instructor feedback was timely and substantive achieved a higher level of student dialogue (Dennen, 2005). According to a study done by Lim and Cheah (2003), during a
discussion, the role of the instructor takes on a managerial and facilitator function. A facilitator poses probing questions or contradicting viewpoints to get participants thinking. The instructor draws attention to opposing perspectives, different directions or conflicting opinions that may lead to debates and peer critiques (Jolliffe, Ritter, & Stevens, 2001). At times, the instructor responds to questions that are posed by the participants and provide feedback or acknowledge the contributions (Lim & Cheah, 2003). The participants expect the facilitator to give timely and quality feedback on their contributions to discussion; that is, the instructor is expected to be online everyday (Shank, 2001). Just letting asynchronous discussions take place on their own results in less effective discussions. Instructors must become actively involved in these discussions throughout the discussion’s duration, even more so than they would in a traditional face-to-face discussion. This requires logging on frequently to the discussion board and providing timely feedback. This relates back to inserting a text-based presence into a media that lacks physical presence in order to make up for this imbalance. This highlights the importance of instructor feedback and participation in class discussions. In order to fully use the potential of asynchronous online discussions the interactions between students and instructors need to be frequent. Feedback is one way to up keep instructor-student interaction levels. This then leads to my first, second, third, and fourth hypotheses:

**H1a:** Students will perceive asynchronous discussion with feedback as more meaningful than asynchronous discussion without feedback.

**H1b:** Instructors will perceive asynchronous discussion with feedback as more meaningful than asynchronous discussion without feedback.

**H2a:** Students will perceive asynchronous discussion as being just as meaningful as synchronous discussion.

**H2b:** Instructors will perceive asynchronous discussion as being just as meaningful as synchronous discussion.

**H3a:** Students will perceive learning more from asynchronous discussion with feedback than from asynchronous discussion without feedback.

**H3b:** Instructors will perceive their students learning more from asynchronous discussion with feedback than from asynchronous discussion without feedback.
**H4a:** Students will perceive learning just as much from asynchronous discussion with feedback as from synchronous discussion.

**H4b:** Instructors will perceive their students learning just as much from asynchronous discussion with feedback as from synchronous discussion without feedback.

**Media Preference’s Impact on Group Discussion**

Many investigations into new communication technologies in organizations have cast doubt on the effectiveness of relying primarily on media characteristics as predictors of system use (Fulk, Steinfield, Schmitz, & Power, 1987). According to Fulk et al. (1987), a number of studies of CMC have demonstrated that highly emotional and interpersonally involving applications such as conflict and negotiation are more frequent than would be expected in what is typically considered to be a low-social-presence medium (Hiltz & Turoff, 1978; Kiesler, Siegel, & McGuire, 1984; Phillips, 1983; Rice & Love, 1987; Steinfield, 1985). Hiltz (1984) notes that being a member of certain groups or subcultures rather than others can shape the experiences of the members and the quality of their electronic life. Svenning (1982) found that an individual’s perceptions of the opinions of coworkers and supervisors were a significant predictor of employees’ attitudes and intentions to use a videoconferencing system. Additionally, Schmitz (1987) found that supervisor’s system use better predicted an individual’s use than did traditional features such as accessibility and perceived utility. In other words, the perceptions of supervisor (instructor) and coworker (peer) opinions towards a certain media are correlated with an individual’s acceptance and utilization of that given media. Moreover, the supervisor’s (instructor’s) use and support of that media more closely predicts a subordinate’s (student’s) use of that media in their working environment (i.e., the classroom).

According to An and Frick (2006), there are many distance education studies of student satisfaction or perceptions of CMC, studies on traditional student perceptions of CMC, however, are rare. An and Frick (2006) attempted to address this issue of student satisfaction and perceptions of CMC in blended education by creating a scale that measured student media preference based on tasks (simple to complex), comfort level with CMC, and what would be needed to learn better from CMC. The results of their
study found that while students in the blended classroom preferred face-to-face over CMC for complex tasks they also found that CMC was found to be faster and more convenient. Additionally An and Frick (2006) found that students would learn better and maybe even prefer CMC if the instructor was more enthusiastic about CMC and more willing to participate in the computer-mediated discussions. This leads me to my fifth, sixth, seventh, and eighth hypotheses:

**H5:** Students’ preference for electronic media will be positively related to higher levels of students’ meaningfulness in the discussion boards.

**H6:** Students’ preference for electronic media will be positively related to higher levels of students’ perceived learning in the discussion boards.

**H7:** Instructors’ preference for electronic media will be positively related to higher levels of instructors’ meaningfulness for discussion boards.

**H8:** Instructors’ preference for electronic media will be positively related to higher levels of instructors’ perceived student learning for discussion boards.
Chapter 2: Methodology

Participants

Participants in the study were 312 undergraduate students and 10 instructors at a Midwestern university distributed among 19 sections of an introductory level public speaking course. Of the 312 undergraduate students, 81 did not fill out the pre-test and 67 did not fill out a post-test. Of the 10 instructors, one did not fill out a post-test survey. This left 164 undergraduate students and nine instructors distributed across 17 sections of an introductory level public speaking course whose data was analyzed for this study. The students were comprised of 92 males (56%) and 72 females (44%) ranging from 19 to 23 years old ($M = 20.45$, $SD = 0.89$). Of the 164 students, 62 were in the synchronous face-to-face condition (38%), 52 were in the asynchronous with feedback condition (32%), and 50 were in the asynchronous without feedback condition (30%). The instructors were comprised of four males (44%) and five females (56%). Of the nine instructors, seven were graduate teaching assistants with 1-2 years experience and two were adjunct instructors with 3-5 years experience. Students who participated in the study received credit for one of two required research participation assignments. Each section was randomly assigned to one of the experimental conditions. Six sections participated in an asynchronous discussion using feedback, five sections participated in an asynchronous discussion without using feedback, and six of the sections participated in a synchronous discussion with natural occurring feedback.

Procedure

Prior to the experiment, all instructor and student participants completed a pre-test via an emailed link for completing the secure survey electronically. The pre-test took place during the fourth week of the spring 2009 semester. The instructor and student pre-test measured media preference.

All student participants completed a weeklong experimental activity of a group discussion in their public speaking course. This activity took place during the sixth week of the spring 2009 semester. All instructors facilitated these group discussions as part of their basic curriculum for the public speaking courses.

After the group activity all instructors and students were given a post-test via an emailed link for completing the secure survey electronically. This took place during the
seventh week of the spring 2009 semester. Instructors completed measures of their perception of student learning during the discussion, the meaningfulness of the group discussions, and an overall evaluation of the discussion. Students completed measures of their perceived learning during the discussion, the meaningfulness of the discussion, the types of instructor feedback given during the discussion, and the usefulness of feedback received from instructors during the discussion.

Instructors and students for each section completed an activity on research and supporting material; a chapter and week long component of their introductory public speaking course content. The activity was focused on evaluating Internet resources for use in public speeches based on credibility, authorship, references, timeliness, and audience. Students were also asked to discuss the debate over whether students should or should not be allowed to rely heavily on the use of Internet sources (like Wikipedia and other .com web pages). This portion of course content took place during the sixth week of spring semester in the Communication Department’s standard introductory public speaking course syllabus and schedule. For the two online discussion conditions, students were assigned the discussion activity at the beginning of week six of the spring semester. They were then given that entire week to complete the activity/discussion. Students were divided into groups of four or five. The assignment required students to post responses to the discussion questions and comment on each other’s postings. One condition had instructors trained to provide certain feedback when necessary to each group during the week long activity. This feedback was divided into five areas; summarizing the discussion, moderating the discussion, guiding the discussion, prompting new questions, and providing positive and negative feedback to students. Instructors only provided these five feedback types when necessary. This means that there was not a set number of times each type should be used. It was left up to the situation and the instructor’s discretion. The other condition had instructors trained to not provide any feedback. In this condition instructors just posted the discussion questions and allowed students to generate the discussion themselves. The last condition had instructors do the activity/discussion in class. Students engaged in the class activity during one class period that took approximately 15-20 minutes. They were divided into groups of four or five and asked to
discuss a series of questions while the instructor went from group to group providing feedback as needed. See Appendix B for complete details of the activity and training.

The instructor training was done in for each participating teacher involved in the experiment. Training took approximately two hours. Instructors were shown how to set up blackboard discussion boards, given guidelines for the activity content and student directions, and trained on the types of feedback to use. This feedback consisted of: summarizing the discussion, moderating the discussion, guiding the discussion, prompting new questions, and providing positive and negative feedback to students. Instructors were given real life examples from previous discussion boards using these types of feedback. Finally, a question and answer session followed the training. See Appendix B for complete details of the activity and training.

**Measures**

*Media Preference.* The media preference scale created by An and Frick (2006) was adapted initially for the purposes of this study to include questions for both students and instructors. Some of the wording was also changed to address the hypotheses of the current study. The student pre-test scale consisted of 15 Likert-scale questions and two multiple-choice questions. Students were asked about their: 1) perceptions of themselves as learners, 2) attitudes toward technology and CMC, 3) experiences with CMC, 4) media preference for different learning tasks, and 5) opinions and beliefs about CMC in face-to-face courses. The instructor pre-test scale was developed based on the student scale. Some items were deleted due to their focus on student perceptions. The instructor scale consisted of six Likert-scale questions and two multiple-choice questions. Instructors were asked about their: 1) attitudes toward technology and CMC, 2) experiences with CMC, and 3) opinions and beliefs about CMC in face-to-face courses. See Appendix A for full list of instructor and student pre-test scales.

The instructor media preference items were not submitted to factor analysis due to the low sample size ($n = 9$). The instructor pre-test scale consisted of questions concerning their comfort with technology and CMC. The instructor scale consists of three items measured on a Likert-type scale anchored by 1 = strongly agree to 5 = strongly disagree. The items consisted of the questions “I am experienced with CMC” and “I am
comfortable with computer technology” and “I feel comfortable participating in CMC.” Media preference has an alpha reliability of .82 \((M = 10.22, SD = 2.22)\).

The 15 Likert-scale student media preference items were submitted to principle components analysis with iteration prior to the factor extraction with varimax > .60. Criteria for factor extraction were eigenvalue > 1.0, loadings > .50 for each item, and each factor accounting for at least five percent of the variance. MSA = .67 indicating sampling adequacy and Bartlett’s test of sphericity was significant \((X^2 = 787.554, df = 136, p < .001)\) indicating there were adequate relationships among the variables for factor analysis to be appropriate. Six factors had an eigenvalue > 1.0. Scree indicated 3-4 factors possible. A three-factor solution was determined to be the best fit. The first factor with three items accounted for 29% of the variance, the second factor with two items accounted for 20% of the variance, and the third factor with two items accounted for 18% of the variance. The first factor was labeled as comfort with CMC and had an alpha reliability of .71 \((M = 11.10, SD = 2.19)\). The second factor was labeled instructor involvement with CMC and had an alpha reliability of .58 \((M = 7.53, SD = 1.35)\). The third factor was labeled other orientations of CMC and had an alpha reliability of .58 \((M = 6.41, SD = 1.61)\). See Table 2 for factor loadings.
Table 2

Media Preference Factor Loadings

<table>
<thead>
<tr>
<th></th>
<th>Comfort</th>
<th>Instructor Involvement</th>
<th>Other Orientations</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel that computer mediated discussion is very useful for learning</td>
<td>.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am experienced with computer-mediated discussion</td>
<td>.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel comfortable with participating in computer mediated discussion</td>
<td>.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer-mediated discussion is more effective when the instructor participates in the discussion</td>
<td>.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer-mediated discussion is more effective when the instructor provides feedback on the discussion by making comments or correcting some information.</td>
<td>.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learn a great deal from discussion with classmates</td>
<td>.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I prefer working with others to working alone</td>
<td>.84</td>
<td></td>
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</tr>
</tbody>
</table>

**Meaningfulness of Discussion.** To measure students’ perceptions of the meaningfulness of the discussion activity, the meaningfulness dimension of Frymier et al.’s (1996) empowerment scale was used. Specifically, the meaningfulness items that Frymier et al. (1996) adapted from Thomas and Velthouse’s (1990) conceptualization were reworded to address the meaningfulness of discussion rather than class in general. The scale was used to measure both the instructor and the students’ perceptions. For the student post-test, the meaningfulness dimension had an alpha reliability of .90 ($M = 42.92$, $SD = 8.58$). For the instructor post-test, the meaningfulness dimension had an alpha reliability of .88 ($M = 30.67$, $SD = 7.14$). The scale consisted of 10 Likert-type items and utilized a 1 (Never) to 5 (Very often) format. The scale consisted of questions such as “The tasks required of me in these discussions were personally meaningful” and “The discussions will help me to achieve my class goals.” See Appendix C for the instructor and student post-tests that include this scale.
Perceived Cognitive Learning. The perceived cognitive learning scale was adapted from Richmond et al. (1987) and reworded to measure both teacher and student perceptions of learning in the discussion. Both students and teachers were asked questions about learning on a 0-9 scale. The scale consisted of two questions, the first was: “How much did students learn from the discussion?” and the second was: “How much could students have learned had the discussion been ideal?” For each item “0” meant none and “9” meant more than any other discussion. Responses for question one were used as an indicator of cognitive learning. A second score, called “learning loss” (Richmond et al., 1987) was then generated by subtracting the score on question one from the score on question two. This was used as a second indicator of cognitive learning. This score essentially adjusted the reported amount of learning for what the student perceived could be learned in a given course. According to Richmond et al. (1987), this adjustment is important because students in some classes (i.e., required courses) do not perceive anything worthwhile can be learned in the course. For the student post-test, perceived learning had an alpha reliability of .69 \((M = 11.36, SD = 2.83)\). For the instructor post-test, the perceived learning dimension had an alpha reliability of .91 \((M = 13.11, SD = 2.71)\). See Appendix C for the instructor and student post-tests that include this scale.

Usefulness of Feedback. Usefulness of feedback was measured with a scale that was created specifically for this study and consisted of six semantic differential items. The purpose of these items was to gauge student perceptions of how useful the feedback given to them was during the course of the group discussions. Each semantic differential scale item had two adjectives (i.e. “useful” and “not useful”) on a seven-point scale. The alpha reliability for this scale was .87 \((M = 28.69, SD = 6.35)\). See Appendix C for the student post-test that includes this scale.

Types of Feedback Scale. The types of feedback was measured with a scale that was created specifically for this study and consisted of five Likert-type items ranging from 1 = never to 5 = very often. The purpose of these items was to gauge how often, or if ever feedback was used as well as if feedback was used as instructors were trained to use it. Each item asked a question pertaining to a certain type of feedback. For example, question one stated, “Long discussions were summarized either by instructor or another student.” Another question stated, “The instructor prompted us with more questions to
answer in the discussion.” The alpha reliability for this scale was .82 ($M = 17.47$, $SD = 3.44$). See Appendix C for the student post-test that includes this scale.
Chapter 3: Results

Data Analysis

To examine the hypotheses of this study in student and instructor datasets, one-way analyses of variance and Pearson correlations were used. Variance and correlations across all variables in all conditions were not statistically significant, inconsistent, or significant, but against the hypotheses.

Manipulation Check

While not related to any hypotheses, student post-test data was collected and used as a manipulation check of the experimental design. To determine if feedback was successfully manipulated in the three conditions, differences in usefulness of feedback and types of feedback were examined among the three conditions. With usefulness of instructor feedback serving as the dependent variable, an ANOVA was conducted with $F(2, 161) = .55, p = .59$ indicating that students perceived no differences in the usefulness of feedback in the three conditions. For instance, asynchronous discussion without feedback was rated $M = 29.26, SD = 6.88$, synchronous discussion was rated $M = 29.15, SD = 6.45$, and asynchronous discussion with feedback was rated $M = 28.08, SD = 5.81$. The manipulation check for this scale was not successful due to similarities among the three conditions where differences should have been present.

The five types of feedback given by the instructor served as the dependent variable in five ANOVAs. Each item measured a different aspect of the feedback that instructors may have used and so were therefore examined separately. For item one, which asked if long discussions were summarized by the instructor, $F(2, 161) = 2.59, p = .08$, indicating no difference among the conditions. For item two, which asked when multiple focal points were discussed at one time if the instructor prompted students to address one focus at a time, $F(2, 161) = 1.13, p = .33$, indicating no difference among the conditions. For item three, which asked if the instructor prompted students to move on to another topic or aspect of the discussion, $F(2, 161) = 5.94, p = .003$, but the significance was between synchronous discussion ($M = 3.47, SD = .72$) and asynchronous discussion with feedback ($M = 2.96, SD = .91$). For item four, which asked if the instructor told students when they were on the right track in the discussion, $F(2, 161) = 1.11, p = .33$, indicating no difference among the conditions. For the fifth and last item, which asked if
the instructor prompted students with more questions to answer in the discussion, \( F (2, 161) = 1.96, p = .15 \), indicating no difference among the conditions. The manipulation check was not successful for any of the items in this scale due to similarities among the three conditions where differences should have been present.

**Research Results and Hypotheses**

Hypothesis one (a) predicted that students would perceive asynchronous discussion with feedback as more meaningful than asynchronous discussion without feedback. A one-way analysis of variance was used to test this hypothesis. For students, \( F (2, 161) = 4.03, p = .02 \), where asynchronous discussion without feedback had a \( M = 32.42, SD = 6.54 \) and asynchronous discussion with feedback had a \( M = 29.92, SD = 5.62 \). The significance did not come from the comparison of these two conditions, but from the inclusion of condition three; synchronous discussion, therefore the hypothesis was not supported.

Hypothesis one (b) predicted that instructors would perceive asynchronous discussion with feedback as more meaningful than asynchronous discussion without feedback. A one-way analysis of variance was used to test this hypothesis. For instructors, \( F (2, 6) = 1.87, p = .23 \), where asynchronous discussion with feedback had a \( M = 31.25, SD = 8.99 \) and asynchronous discussion without feedback had a \( M = 25.67, SD = 0.58 \), but it was not significantly different therefore, the hypothesis was not supported.

Hypothesis two (a) predicted that students would perceive asynchronous discussion as being just as meaningful as synchronous discussion. A one-way analysis of variance was used to test this hypothesis. For students, \( F (2, 161) = 4.03, p = .02 \), where synchronous discussion was perceived as being more meaningful (\( M = 33.03, SD = 6.01 \)) than asynchronous discussion with feedback (\( M = 29.92, SD = 5.62 \)). There was significant difference between these two conditions in relation to how meaningful they were perceived therefore, the hypothesis was not supported.

Hypothesis two (b) predicted that instructors would perceive asynchronous discussion as being just as meaningful as synchronous discussion. A one-way analysis of variance was used to test this hypothesis. For instructors, \( F (2, 6) = 1.87, p = .23 \), where
synchronous discussion had a $M = 37.00$, $SD = 2.83$ and asynchronous discussion with feedback had a $M = 31.25$, $SD = 9.00$, therefore the hypothesis was not supported.

Hypothesis three (a) predicted that students would perceive learning more from asynchronous discussion with feedback than from asynchronous discussion without feedback. A one-way analysis of variance was used to test this hypothesis. For students, $F(2, 161) = 3.32, p = .04$, where asynchronous discussion without feedback had a $M = 5.30$, $SD = 1.49$ and asynchronous discussion with feedback had a $M = 4.65$, $SD = 1.60$. The significance did not come from the comparison of these two conditions, but from the inclusion of condition three; synchronous discussion, therefore the hypothesis was not supported. The student learning loss was $F(2, 161) = 3.40, p = .04$, where asynchronous discussion with feedback was higher ($M = 1.69$, $SD = 1.72$) than asynchronous discussion without feedback ($M = 1.14$, $SD = 1.62$), which is consistent with the students’ perceived learning findings.

Hypothesis three (b) predicted that instructors would perceive their students learning more from asynchronous discussion with feedback than from asynchronous discussion without feedback. A one-way analysis of variance was used to test this hypothesis. For instructors, $F(2, 6) = 2.14, p = .20$, where asynchronous discussion with feedback had a $M = 6.50$, $SD = 1.00$ and asynchronous discussion without feedback had a $M = 4.67$, $SD = 1.53$, but it was not statically significant, therefore the hypothesis was not supported. The instructor learning loss was $F(2, 6) = .08, p = .93$, where asynchronous discussion with feedback was higher ($M = 1.75$, $SD = 1.26$) than in asynchronous discussion without feedback ($M = 1.67$, $SD = .58$), but was not significantly different.

Hypothesis four (a) predicted that Students would perceive learning just as much from asynchronous discussion with feedback as from synchronous discussion. A one-way analysis of variance was used to test this hypothesis. For students, $F(2, 161) = 3.32, p = .04$, where students in synchronous discussions reported learning more ($M = 5.40$, $SD = 1.79$) than students in asynchronous discussion with feedback ($M = 4.65$, $SD = 1.60$). There was a significant difference between these two conditions in relation to perceived learning therefore; the hypothesis was not supported for student perceptions. The student learning loss was $F(2, 161) = 3.40, p = .04$, where asynchronous discussion with
feedback was higher ($M = 1.69, \text{SD} = 1.72$) than in synchronous discussion ($M = .90, \text{SD} = 1.60$), which is consistent with the students’ perceived learning findings.

Hypothesis four (b) predicted that instructors would perceive their students learning just as much from asynchronous discussion with feedback as from asynchronous discussion without feedback. A one-way analysis of variance was used to test this hypothesis. For instructors, $F(2, 6) = 2.14, p = .20$, where asynchronous discussion with feedback had a $M = 6.50, \text{SD} = 1.00$ and synchronous discussion had a $M = 5.50, \text{SD} = .71$. While asynchronous discussion with feedback and synchronous discussion are similar in their perceived learning to one another and no significant difference was found the relationship to one another is only supported closely from the instructors’ perspective, which is inconsistent with the student perception findings. The instructor learning loss was $F(2, 6) = .08, p = .93$, where synchronous discussion was higher ($M = 2.00, \text{SD} = .00$) than in asynchronous discussion with feedback ($M = 1.75, \text{SD} = 1.26$), but was not significantly different.

The fifth hypothesis predicted that students’ preference for electronic media would be positively related to higher levels of students’ meaningfulness in the discussion boards. A two-tailed bivariate correlation was used to test this hypothesis. For comfort with CMC $r = .08 (p = .30)$, for instructor involvement with CMC $r = .04 (p = .64)$, for other orientations with CMC $r = .20 (p = .01)$. There was not any relationship found between students’ comfort with CMC or instructor involvement with CMC. Other orientations with CMC were seen to be positively related to meaningfulness of discussion at the .05 level.

The sixth hypothesis predicted that students’ preference for electronic media would be positively related to higher levels of students’ perceived learning in the discussion boards. A two-tailed bivariate correlation was used to test this hypothesis. For comfort with CMC $r = .04 (p = .65)$, for instructor involvement with CMC $r = .02 (p = .80)$, for communication apprehension $r = .10 (p = .22)$. There was not any relationship found between students’ media preference and perceived learning. Learning loss for comfort with CMC was $r = -.01 (p = .86)$, for instructor involvement with CMC $r = -.04 (p = .62)$, for communication apprehension and CMC $r = -.07 (p = .40)$. There was not any relationship found between students’ media preference and learning loss.
The seventh hypothesis predicted that instructors’ preference for electronic media would be positively related to higher levels of instructors’ meaningfulness for discussion boards. A two-tailed bivariate correlation was used to test this hypothesis. For comfort with CMC $r = .29 \ (p = .46)$. There was not any relationship found between instructors’ media preference and meaningfulness of discussion.

The eighth hypothesis predicted that instructors’ preference for electronic media would be positively related to higher levels of instructors’ perceived student learning for discussion boards. A two-tailed bivariate correlation was used to test this hypothesis. For comfort with CMC $r = .03 \ (p = .94)$. There was not any relationship found between instructors’ media preference and perceived learning. Learning loss for comfort with CMC was $r = -.71 \ (p = .03)$. There was a negative correlation between instructor’s comfort with CMC and learning loss.
Chapter 4: Discussion

Research Findings

The purpose of this study was to extend the literature on the use of CMC and feedback in blended classroom discussions. Media preference, meaningfulness, and perceived learning scales were examined in three conditions with manipulated feedback. These conditions were asynchronous discussion with feedback, asynchronous discussion without feedback, and synchronous (face-to-face) discussion with feedback occurring naturally. Eight hypotheses were posed to test these variables through the three conditions.

Instructor and student perceptions of the meaningfulness of the discussion activity were examined. Results indicated that feedback did not have a significant impact on student perceptions of meaningfulness in discussion. This is a contradiction of what most of the research in this area has found. The research states that instructor feedback plays an important part in students’ motivation to participate in course activities (Jolliffe et al., 2001; Dennen, 2005). According to Thomas and Velthouse (1990), meaningfulness involves the individual's inherent caring about or commitment to a given task. Low degrees of meaningfulness are believed to result in indifference, feeling detached and unrelated to significant events whereas higher levels of meaningfulness are believed to result in commitment, involvement, and concentration of energy (in other words, motivation). Therefore, it was hypothesized that students level of meaningfulness (caring and commitment) attributed to the discussion would be, in part, a result of the instructor’s involvement. Unfortunately, the only form of instructor involvement tested was feedback and this may not have been comprehensive enough to fully measure the impact of social presence established by the instructor.

In this study, feedback was seen to be the most appropriate area that included some form of instructor involvement and social presence. Participants did not feel that feedback had an effect on the meaningfulness of the discussion or the learning outcomes. While instructor involvement and social presence have been researched and tested in a multitude of contexts, feedback has garnered little research when tested outside of the overall construct of instructor involvement and social presence. If the feedback provided by instructors was instead expanded to include instructor involvement and social
presence as a whole then the results could have been different. For example, Richardson and Ting (1999) compared the perceptions of two groups of students involved in asynchronous learning. They found that students learning through written correspondence with instructors were more concerned with instructor feedback, whereas students learning online felt that all interactions with instructors mattered. Swan (2002), suggests that the current research on teaching online indicates a heightened need for instructor activity and interaction in online environments, as well as highlighting the overlap with content interactions (the need for attention to structure and design), and interaction among students (the need to establish the learning community). Therefore, the focus on just one aspect (instructor feedback) of a larger construct (such as instructor involvement and social presence) may have hindered the results of this study by being too simplistic.

Instructor and student perceptions of learning in the discussion activity were also examined. Results indicated that feedback did not have a significant impact on student perceptions of learning. Students did not feel that their learning was any better or worse based on the instructor’s involvement. According to Vygotsky (1978), collaboration with peers helps learners reach new knowledge and understanding. Social constructivism emphasizes the importance of social interaction in learning, not necessarily the instructor’s involvement. In group discussion the instructor should still be involved, but maybe the important measure to a students learning is found in their interaction with peers. Swan (2002) hypothesized that perceived interaction with classmates would be associated with student satisfaction and perceived learning. Swan’s (2002) study found that students who rated their level of interaction with classmates as high also reported significantly higher levels of course satisfaction and significantly higher levels of learning. This suggests that peer interaction has an effect on learning outcomes. The focus on instructor involvement without an equal focus on peer involvement may have hindered the results of this study by being, again, overly simplistic.

Instructor and student media preference was hypothesized to have an effect on how meaningful the discussions were and how learning in the discussions would be perceived. Results indicated that perceptions of meaningfulness and learning were not related to someone’s media preference. A more theoretically sound framework related to media preference should have been established. The measure of media preference was
significantly modified to address the hypotheses and rationale for this study. An and Frick’s (2006) scale tested areas outside of just media preference. For example, the scale tested student’s perceptions towards their learning that is more related to cognitive learning scales than media preference. Also, An and Frick’s (2006) article did not provide enough information about the reliability of their scale. For the current study the scale was tested and put through factor analysis, which resulted in many of the items being removed due to low alpha reliability. Therefore, a new scale should be created and tested to fully address the questions posed by this study.

**Limitations**

The findings of this research were not statistically significant and none of the hypotheses were supported. There were, however, some interesting findings based in the manipulation check scales (types of feedback and usefulness of feedback) that may be able to further explain some of the problems that prevented positive results in this study.

Some inconsistencies were found based on the findings in the usefulness of feedback data. Asynchronous discussion without feedback had a higher mean ($M = 29.26$, $SD = 6.88$) than both synchronous discussion ($M = 29.15$, $SD = 6.45$) and asynchronous discussion with feedback ($M = 28.08$, $SD = 5.81$). Based on the manipulation of the experiment these mean scores should not have been possible. After reviewing the discussion boards through instructor’s Blackboard pages, it was concluded that instructors did not provide any feedback to students in the condition without feedback throughout the entirety of the weeklong experiment. This leaves three possible conclusions; students did not follow directions when filling out the post-test survey and answered based on the course as a whole, students perceived instructor feedback where no feedback was actually given, or instructor’s discussed the discussion activity in-class and therefore provided face-to-face feedback. In any case the same issue presents itself; student post-test results did not address the hypotheses proposed, therefore findings from this data were inconclusive.

The types of feedback scale in the student post-test garnered similar results. For each of the five items of this scale no statistically significant differences were found between the three conditions. This suggests that the type of feedback given by the instructor in the condition with no feedback given was similar to the two conditions were
feedback was given. Upon closer inspection, asynchronous discussion with feedback was rated lower than the other two conditions consistently across the five items. Instructors assigned to the asynchronous discussion with feedback condition did provide the feedback they were trained on for the weeklong discussion experiment. This also leaves three possible conclusions; students did not follow directions when filling out the post-test survey, students perceived instructor feedback where no feedback was actually given, or instructor’s discussed the discussion activity in-class and therefore provided face-to-face feedback. These results and subsequent investigations further provide proof that student post-test results did not actually address the hypotheses the scales were created for.

It is unlikely that students’ perceived feedback when no feedback was given or students were unable to differentiate between the experiment activity and the course as a whole. The likely conclusion is that instructor’s discussed the discussion activity in-class and therefore provided face-to-face feedback where no feedback should have been given. This could have been due to instructors not following directions properly. This could also have been due to students asking questions about the discussion activity in-class and the instructor then clarifying based on student needs. Since the experiment did not have any observations of in-class discussion there is no way of knowing what actually happened in the classrooms during the experiment. This may be an issue that needs to be controlled for in future research.

These findings, however, do not address the results of the instructor post-test. The results for instructors may be an issue related to the sample size. Only nine instructors participated in the study. This sample was significantly smaller than what was hoped for and may have had an effect on the differences examined between the conditions. Not enough instructors participated in the study for there to be conclusive evidence that the hypotheses were or were not supported. Only five or six sections were in each condition. Only two or three instructors each taught these sections. Therefore, the lack of variation among instructors may have had an effect on the results.

Another limitation may have been linked to ambiguous directions. As mentioned in chapter two, of the 312 undergraduate students who participated in the study, 81 did not fill out the pre-test and 67 did not fill out a post-test and were excluded from the
study. There may have been some ambiguity and confusion with the need to fill out both surveys. Almost half of the student participants were cut from the study due to not completing both surveys. This may have had a negative impact on the results. More complete instructions could have minimized the ambiguity and confusion surrounding the surveys and possibly the experiment itself causing more accurate results.

**Future Research**

Future research similar to this study should control for in-class discussion of the experiment where the instructor in a condition could give feedback where no feedback should be given. This will help to ensure that the manipulation of conditions works properly so that results indicate what actually happened during the experiment. This could be done by training instructors more vigorously about the guidelines of the experiment and by recording classroom discussions for manipulation check purposes.

Additionally, a technologically advanced demographic was not used in this study. The university demographic used was one that hasn’t caught up with the emergence of computer-mediated educational technologies. The students and instructors tested in this study were relatively unfamiliar with the technology. Most of those tested had not participated in distance education or blended education before, or were only minimally exposed to these technologies. Training for this demographic prior to the experiment should have been more in-depth to compensate for this issue. The training used was based on research at universities where distance education and blended classrooms are used fairly often. This training material could be adapted to provide more in-depth information for instructor’s who would like to start using these technologies.

Finally, longitudinal research into the incorporation of technologies into the classroom could greatly benefit this field of research. Not much is known about the effects new technologies have on classroom environments over time. This could answer many questions about how these technologies influence courses, students, and instructors throughout the course of a quarter or semester.

**Conclusion**

The results of this study may have been inconclusive, but the importance of research in this area is still very relevant. Many issues in this study could be addressed in the future and provide answers to many questions about the use of CMC in the traditional
classroom. Feedback has been an area with limited research in the educational setting outside of a larger context, but instructor involvement and social presence have garnered enough research to provide a strong rationale for future studies. Media richness theory and media preference are areas that may be able to provide a strong theoretical background to an area of research that struggles to find any. More fully developed scales that specifically address the use of technology could help provide the necessary departure from using traditional theory and scales in a non-traditional setting. Feedback and media preference may not have an impact on learning and perceptions. Media richness theory suggests that asynchronous media are too lean for complex learning tasks and that these media should be used for simple learning task only. Face-to-face is considered the richest media and this study was unable to contest that assertion. Complex tasks may need the appropriate immediate feedback and social presence only garnered by synchronous interactions.
References


Hanson, T. L., & Teven, J. J. (2004). Lessons learned from teaching public speaking online. *Online classroom: Ideas for Effective Online Instruction, 1*, 8.


Appendix A

Instructor Pre-test Questionnaire

**Introduction:** I appreciate you taking the time to complete the questionnaire. You should be able to complete it in 5 minutes or less. Please answer the following questions truthfully and to the best of your ability. This is not a test -- your opinion is the only right answer.

1. Please indicate which section(s) of COM 135 you teach: ____________________.

A. Computer-mediated discussions are things like online discussion boards and chat rooms where students work together to discuss various topics. Please respond to each of the following statements about computer-mediated discussion by checking the response that best matches your feelings.

2. I am comfortable with computer technology. (1 = strongly disagree, 5 = strongly agree)

3. I am experienced with computer-mediated discussion (1 = strongly disagree, 5 = strongly agree).

4. I feel comfortable with participating in computer-mediated discussion (1 = strongly disagree, 5 = strongly agree).

5. I feel that computer-mediated discussion is very useful for learning (1 = strongly disagree, 5 = strongly agree).

6. Computer-mediated discussion is more effective when the instructor participates in the discussion (1 = strongly disagree, 5 = strongly agree).

7. Computer-mediated discussion is more effective when the instructor provides feedback on the discussion by making comments or correcting some information (1 = strongly disagree, 5 = strongly agree).

B. Computer-mediated communications are discussion boards, chat rooms, and other communication programs for interacting with others online. Please indicate in which medium you agree with the statement listed.

8. I am more comfortable in (1 = face-to-face, 2 = CMC, 3 = both, 4 = neither).

9. I am more active in (1 = face-to-face, 2 = CMC, 3 = both, 4 = neither).
Student Pre-test Questionnaire

**Introduction:** I appreciate you taking the time to complete the questionnaire. You should be able to complete it in 5 minutes or less. You must be 18 years or older to participate in this study.

**Purpose of the Study**
This research study is designed to investigate teacher and student interactions as well as teacher and student perceptions of the classroom learning environment both traditionally and virtually. This research asks you to complete two surveys; one right now and a second will be emailed to you in approximately two weeks. The first survey will ask you about your opinions regarding technology. The second survey will ask you about your experience in your COM 135 class. The researcher intends to publish this research and to use this research to improve teacher training and student learning.

Please answer the following questions truthfully and to the best of your ability. This is not a test -- your opinion is the only right answer.

Please fill in your birth date (mm-dd-yyyy) so that your two surveys can be matched up later on __ __-__ __-__ __ __ __.

Please fill in your city of birth (e.g., Jacksonville) so that your two surveys can be matched up later on ________________________________.

Please indicate your gender (Male or Female): ______________.

1. Please indicate which section of COM 135 you are in (e.g. COM 135 – H): ______________________.

A. Computer-mediated discussions are things like online discussion boards and chat rooms where students work together to discuss various topics. Please respond to each of the following statements about computer-mediated discussion by checking the response that best matches your feelings.

2. I am a self-directed learner (1 = strongly disagree, 5 = strongly agree).

3. I am comfortable with computer technology (1 = strongly disagree, 5 = strongly agree).

4. I am experienced with computer-mediated discussion (1 = strongly disagree, 5 = strongly agree).

5. I am shy when I speak in front of class (1 = strongly disagree, 5 = strongly agree).
6. I learn a great deal from discussion with classmates (1 = strongly disagree, 5 = strongly agree).

7. I prefer working with others to working alone (1 = strongly disagree, 5 = strongly agree).

8. I feel comfortable with participating in computer-mediated discussion (1 = strongly disagree, 5 = strongly agree).

9. I have convenient access to the Internet at home (1 = strongly disagree, 5 = strongly agree).

10. I have convenient access to the Internet at school (1 = strongly disagree, 5 = strongly agree).

11. I feel that computer-mediated discussion is very useful for learning (1 = strongly disagree, 5 = strongly agree).

12. From my experiences, students who dominate face-to-face discussion also dominate computer-mediated discussion (1 = strongly disagree, 5 = strongly agree).

13. Computer-mediated discussion is more effective when the instructor participates in the discussion (1 = strongly disagree, 5 = strongly agree).

14. Computer-mediated discussion is more effective when the instructor provides feedback on the discussion by making comments or correcting some information (1 = strongly disagree, 5 = strongly agree).

15. I participate in computer-mediated discussion more actively when the instructor sets some rules such as “Post your opinions at least five times each week” (1 = strongly disagree, 5 = strongly agree).

16. I participate in computer-mediated discussion more actively when other students are active (1 = strongly disagree, 5 = strongly agree).

B. Computer-mediated communications are discussion boards, chat rooms, and other communication programs for interacting with others online. Please indicate in which medium you agree with the statement listed.

17. I am more comfortable in (1 = face-to-face, 2 = CMC, 3 = both, 4 = neither).

18. I am more active in (1 = face-to-face, 2 = CMC, 3 = both, 4 = neither).
Appendix B
Instructor Training Materials

The following is taken from a guide to facilitation (Matthews-DeNatale and Doubler, 2008). Summarizing, moderating, guiding, prompting, and constructive feedback will be used in these group activities. Trouble shooting, mediating, and problem solving do not pertain to the scope of my thesis project and therefore will not be used or addressed.

The following outlines the three different experimental activity formats, the activity that will be used for each, and directions on how to address feedback within these formats.

Discussion Board Activity

This assignment is based on chapter 7 from your book. In relation to using supporting material in your speeches, most students like to rely heavily on internet sources, maybe even too much so. This discussion will be focusing on the debate on whether or not students should be able to use more than one internet source in their speech.

This discussion should include examples from the internet, explanations from your book, and personal experiences for backing up your stance on the argument.

This discussion should take into account, not only the questions posted, but also how you will ensure your internet sources you intend to use for your speech will be evaluated based off of your insights from the discussion. Consult chapter 7 and this web link for more information on evaluating web resources.
http://owl.english.purdue.edu/handouts/print/research/r_evalsource4.html

You should provide an answer for both questions AND post at least two responses to group members’ posts for both questions. That means a total of two answers for the two questions and six responses to group member posts and/or responses to further the discussion. You have all week (until Sunday morning at 9:00 AM) to complete this activity.

Question one: Are all websites what they seem? How can you determine that websites are credible? For example, look at this website about Martin Luther King Jr. http://www.martinlutherking.org What can you find here? Is it credible or not? Why or why not? What other examples have you seen of this type in your experiences? Use concepts from chapter 7 and the owl writing lab web link to back up your reasoning.

Question two: Which search engines are most appropriate for your assignments? Which Internet sites do you recommend for students looking for support for their speeches? From which sites should students stay away from? Why? For example, many students like to use Wikipedia, but is Wikipedia a credible source? Use concepts from chapter 7, your own experiences, and the Owl Writing Lab web link to back up your reasoning.

Discussion Board (without Feedback) Activity: Directions
Post the above questions and directions at the beginning of the week. Allow the
discussion to develop on its own. Make sure students know that the discussion takes
place at the beginning of the week and will end on Sunday morning.

You will need to assign points to this assignment or tell students that this activity is a part
of their participation grade. Otherwise participation in this assignment for class will be
minimal.

You will want to come together as a class the following Monday to discuss the
assignment for about five or ten minutes to make sure that students understand what they
did. This helps students to process the information they have been discussing all week.

Assign students into groups of five or six. Post the discussion questions and directions for
each group. This activity works better for small groups as opposed to the whole class
doing the discussion in one large group.

**Discussion Board (with Feedback) Activity: Directions**

Post the above questions and directions at the beginning of the week. Make sure students
know that the discussion takes place at the beginning of the week and will end on Sunday
morning.

You will need to assign points to this assignment or tell students that this activity is a part
of their participation grade. Otherwise participation in this assignment for class will be
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You will want to come together as a class the following Monday to discuss the
assignment for about five or ten minutes to make sure that students understand what they
did. This helps students to process the information they have been discussing all week.

Assign students into groups of five or six. Post the discussion questions and directions for
each group. This activity works better for small groups as opposed to the whole class
doing the discussion in one large group.

**Feedback** For this activity you will need to be facilitating the discussion as it develops
online. You will need to log on at the end of every day and see how the discussion is
developing while posting feedback where necessary. Post feedback of the following
types:

**Summarizing** – By Wednesday you will need to summarize what has been written by
students in the discussion and pose a new overarching question that gets them back
together as a group. In this question you pose you should be encouraging them to further
their discussion on the topics listed in the activity and asking them to relate their
arguments to course material and personal experience. What you write for this question
depends on how far along they are in the discussion and what has been said by the group so for in the discussion.

At the end of the week, Sunday morning, you should summarize one last time without posing new questions to wrap up the assignment. You could also ask a group leader to do this to end the discussion and prepare themselves for the in class discussion of the discussion board for the following Monday. Listed below is an example of a student summary of a group discussion on Black Board:

We have come up with a set of proposals that will allow students to become more confident and skilled in public speaking in COM 135. The first proposal includes having a structured meeting with the instructor after each speech to get important feedback about the speech. We get feedback as a class about what we did well and bad during our speeches, but not individually. If time is a problem, maybe each student could meet with his or her instructor after the first and last speech to cap off the class. The second proposal is that whether our sources come from online or not should not matter. We are required to get the majority of our sources not from the internet, and I don’t think this is entirely fair these days. Technology is increasing everyday and printed sources are now being put in online databases. We should be learning how to access sources on the internet now instead of looking for printed sources because it is part of our generation. The third proposal includes watching more videos for examples of good and bad speeches. It is important for our learning to try and learn from the best speakers about public speaking and watching great speeches can be inspiring and helpful for our own skills. Also, I think it is important to watch bad speeches that are not present as well in order to get a good spectrum of good and bad speeches. The fourth proposal is that we should conduct more social activities in front of the class to get more confident and comfortable speaking in front of the class. Also, if we did more of improv activities, our improve speeches will be a lot better, and it may eliminate some of our vocal fillers. Our fifth proposal includes the mid-term and final exam format. We feel that each teacher should make their own exam, because every instructor teaches differently so it isn’t always fair to everyone. A department exam is a good way to test all of the COM 135 classes at the same time, but some of the questions were quite unfair. We feel that all five of our proposals would bring COM 135 to a whole new level, and that the students would gain much more knowledge of public speaking.

Subject: our 5 proposals, should I send this to him?

Moderate – this tool should only be used if it is necessary. Moderating helps you to refocus the group. Only use it if you feel that they need refocusing. If they get off track from the assignment or post multiple threads on the discussion board pull them back together by asking them to either address the questions you posted for the activity or in the case of multiple threads, focus on one thread at a time and make sure they continue on only one thread in the future. Below is an example of moderating:

--Show Parent Post--

It seems that we have been posting on multiple threads here. Let's focus on Vince and Andy's thread first then we can move on to Justin and Kristen's thread. For question two let's try to keep this discussion to one thread. After my post for question two just hit reply to add to that thread for all subsequent posts.
Guide - this tool should only be used if it is necessary as well. If students are ignoring important information from others then you should guide them to address that person’s arguments. If one aspect of the discussion is given more attention than others, then you will need to redirect them to address those other aspects by posing the questions you would like them to focus on in more detail.

This is also the area where you should ask them to relate the material better to their personal experience and speeches they will be giving in class, again, only if they are not doing this on their own. Below are some examples of guiding:

---Show Parent Post---

I'm not sure that we are done here yet. How about the importance of validity that Lisa pointed out? Think back to some instances when you were faced with this same issue how did you test the validity of your source?


Prompt – this is the important one and always needs addressing. This is where you will rekindle the discussion when it begins to go silent. You do this by asking questions about what has been discussed so far, how they can apply this information to other examples, pointing out arguments that have been overlooked, and posing new questions to further the discussion on the same topics from the activity. This should be done when you feel that the discussion has dropped off in terms of participation. Below is an example of prompting:

---Show Parent Post---

I think that we have missed something important here. Think back to the powerpoint on evaluating internet sources. We seemed to have skipped over Authorship. Is there an author or organization clearly indicated? Ask yourself how reputable this person is. What can you find out about the author?


Positive and negative feedback – This is also very important and will need to be used throughout the discussion. This is where you will need to reaffirm students for doing a good job and where you will need to redirect students when the arguments they posed that are wrong go unchallenged.

It’s important to let students know that they are doing a good job, but you don’t want to pose these questions in a way that makes your word seem final. Then students will think that if you say something it’s the final word and the discussion is over. Pose positive and negative feedback as questions to the group about someone’s particular posting that you thought was good or bad. This should be done at least once a day, but not once a day per student. You will need to do this once a day per group. Below are some examples of positive and negative feedback:
Negative Feedback

What do you all think about Greg's post? Is he correct in his assessment? What else should be accounted for here as well?

Subject: RE:Group 1

Positive Feedback

Great Job Yu! Now what else can be added to this? Does anyone have anymore ideas to back this up?

Subject: RE:RE:Group 5

In Class Discussion

Have students read chapter 7 and review this web page
http://owl.english.purdue.edu/handouts/print/research/r_evalsource4.html

In relation to using supporting material in your speeches, most students like to rely heavily on internet sources, maybe even too much so. This discussion will be focusing on the debate on whether or not students should be able to use more than one internet source in their speeches.

Do you have to be cautious of the resources you find on the internet? (getting them started on the mindset of an evaluator).
Why?

How do you gauge whether or not your internet resources are legitimate? (chapter 7 and eval ppt recall).

Show example of a website about Martin Luther King Jr. found on the first page of a Google search for MLK by full name: http://www.martinlutherking.org

What’s the problem with this website? (Bias, hate speech, accuracy of information, etc.) How could you use the techniques from chapter 7 and the Owl to evaluate this?

- Authorship?
- Accuracy of information?
- Goals of the site?
- Access?
Can you think of any other sites like this one that you’ve come across? (Personal experiences help learning).

Which Internet sites do you recommend for students looking for support for their speeches?

From which sites should students stay away? Why? (This is asking students to point out biases and accuracy issues).

Why or why not is Wikipedia a credible source? (Accuracy of information issues).

Look at this example from Wikipedia when you look up “healthy diet”:

A healthy diet is one that is arrived at with the intent of improving or maintaining optimal health. This usually involves consuming nutrients by eating the appropriate amounts from all of the food groups, including an adequate amount of water. Since human nutrition is complex, a healthy diet may vary widely, and is subject to an individual’s genetic makeup, environment, and health. For around 21% of the human population, lack of food and malnutrition are the main impediments to healthy eating. Conversely, people in developed countries have the opposite problem; they are more concerned about obesity. What’s wrong with this? (Authorship issues here i.e. citation needed. One of the major issues of wiki no expert sources).

How could citing something like this hurt your credibility? (just like in your own speeches when you don’t cite your sources).

Do you still think Wikipedia is credible? Why?

In Class Activity: Directions

This activity will take place in class and should last approximately 15-20 minutes in length. The beginning of the discussion should be done as a class as a whole. After posing the above questions and examples break the class up into two teams; one for and one against and pose this question: Finally, should students be allowed to rely only on web sources? Why?

Have them debate the issue based on their assigned group. Pose questions and feedback as you see fit as well as facilitating the discussion.
Appendix C
Instructor Post-test Questionnaire

Introduction: I appreciate you taking the time to complete the questionnaire. You should be able to complete it in 5 minutes or less. Please answer the following questions truthfully and to the best of your ability. This is not a test -- your opinion is the only right answer.

1. Please indicate which section(s) of COM 135 you teach: ______________________.

A. Please respond to each of the following statements about the discussion activity on research and supporting material by checking the response that best matches your feelings.

2. The tasks required of me in these discussions were personally meaningful (1 = never, 5 = very often).

3. I was looking forward to doing these discussions (1 = never, 5 = very often).

4. The discussions were exciting (1 = never, 5 = very often).

5. The discussions were boring (1 = never, 5 = very often).

6. The discussions were interesting (1 = never, 5 = very often).

7. The tasks required of me in these discussions were valuable to me (1 = never, 5 = very often).

8. The information in these discussions was useful (1 = never, 5 = very often).

9. The discussions will help me to achieve my class goals (1 = never, 5 = very often).

10. The tasks required in the discussions were a waste of my time (1 = never, 5 = very often).

11. These discussions were not important to me (1 = never, 5 = very often).

B. On a scale of 0-9, how much do you believe that your student’s learned from the research and supporting material discussion? With 0 meaning that they learned nothing and 9 meaning they learned more than in any other discussion you have had, please answer the two questions below.

8. How much did students learn from the discussion?

9. How much could students have learned had the discussion been ideal?
Student Post-test Questionnaire

**Introduction:** I appreciate you taking the time to complete the questionnaire. You should be able to complete it in 10 minutes or less.

Please answer the following questions truthfully and to the best of your ability. This is not a test -- your opinion is the only right answer.

Please fill in your birth date (mm-dd-yyyy) so that your two surveys can be matched up later on __ __ -__ __-__ __ __ __.

Please fill in your city of birth (e.g., Jacksonville) so that your two surveys can be matched up later on _______________________________.

Please indicate your gender (Male or Female): ______________.

1. Please indicate which section of COM 135 you are in (e.g. COM 135 – H): ________________________.

A. For this section of the survey you will be thinking about the discussion activity you did on research and supporting material in your COM 135 class. Please respond to each of the following statements by checking the response that best matches your feelings.

2. The tasks required of me in this discussion were personally meaningful (1 = never, 5 = very often).

3. I was looking forward to doing this discussion (1 = never, 5 = very often).

4. The discussion was exciting (1 = never, 5 = very often).

5. The discussion was boring (1 = never, 5 = very often).

6. The discussion was interesting (1 = never, 5 = very often).

7. The tasks required of me in this discussion were valuable to me (1 = never, 5 = very often).

8. The information in the discussion was useful (1 = never, 5 = very often).

9. The discussion will help me achieve my future goals (1 = never, 5 = very often).

10. The tasks required in the discussion were a waste of my time (1 = never, 5 = very often).

11. The discussion was not important to me (1 = never, 5 = very often).
B. On a scale of 0-9, how much did you learn in the discussion activity? With 0 meaning you learned nothing and 9 meaning you learned more than in any other class you have had, please answer the two questions below.

12. How much did students learn from the discussion?

13. How much could students have learned had the discussion been ideal?

C. Please indicate your impression of the feedback given to you by your instructor during the research and supporting material activity by circling the appropriate number between the pairs of adjectives below. The closer the number is to an adjective the more certain you are of your evaluation.

14. The feedback received was:

Useful
Not useful
Not helpful
Helpful
Practical
Not practical
Not valuable
Valuable
Effective
Not effective
Not constructive
Constructive

D. This section is dedicated to the feedback you received from your COM 135 instructor during the research and supporting material discussion activity. Please respond to each of the following statements by checking the response that best matches your feelings.

15. Long discussions were summarized either by instructor or another student (1 = never, 5 = very often).

16. When multiple threads were posted the instructor prompted us to address one thread at a time (1 = never, 5 = very often).

17. The instructor prompted us to move on to another topic or aspect of discussion (1 = never, 5 = very often).

19. The instructor prompted us with more questions to answer in the discussion (1 = never, 5 = very often).

20. Technical problems with the discussion medium were addressed by the instructor (1 = never, 5 = very often).
21. Conflicts between group members were resolved by the instructor (1 = never, 5 = very often).

22. Problems were addressed by the instructor (1 = never, 5 = very often).