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Computer Mediated Communication and Student Perception of Instructor Immediacy

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Computer Mediated Communication and Student Perception of Instructor Immediacy

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THESIS ACCEPTANCE

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ABSTRACT

This study examined the relationship between student perception of teacher verbal immediacy and mode of class instruction. Comparisons were made between traditional classrooms and on-line classrooms in relation to student gender, student age, student ethnicity, and student comfort level with a computer. Results indicated that mode of instruction and student gender had significant affects on student perception of teacher verbal immediacy. Discussion focused on student gender and student age, and how CMC may force scholars to re-examine the definition of immediacy.

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Introduction

Computer mediated communication (CMC) is a complex concept. In the academic arena, CMC is studied in numerous fields and with far reaching implications. Business, psychology, communication, sociology and education scholars have all taken an interest in CMC and its effect on their particular fields.

CMC is especially important to the field of communication research. The role computers play in the communication process has increased as the World Wide Web has become more popular. As more and more people go on-line for business and educational purposes, and to e-mail their friends and families, it is obvious that the role computers play in mediating communication is growing and will continue to grow.

By definition, CMC requires the use of a computer as a mediating device. When one introduces a mediating device, such as a computer, to a communication process, it is important to examine the effect that device has on the process as well as on the participants. The invention of the radio and then the television revolutionized the way people shared information. Telephone mediated communication changed business and the way people communicate on a personal level. These inventions made information and news accessible more quickly, and changed the way people thought about, and participated in entertainment, education, business, and politics. Due to the recent increase in computer use, fundamental changes are being made and evaluated in all aspects of entertainment, education, business, and politics.

Scholars are asking how technology can be utilized to improve teaching and student learning. It is important for educators to examine and fully understand the effects that teaching a class via computer can have on the communication process between the teacher and student, and thus the effect it can have on student learning. These effects can greatly hinder or help the education process and can only be effectively dealt with once they are fully understood.

Over the last 50 years, several major developments have directly affected the accessibility of higher education. The land grant movement in the nineteenth century helped bring higher education to the middle class. The emergence of community colleges in the twentieth century brought access to higher education to people whose career goals did not require a four-year degree. Is the development of the Internet and classes taught on the World Wide Web the next major movement to change the shape and direction of higher education? If this is the case, this particular mode of teaching and learning deserves to be studied and understood.

Review of Literature

Computer Mediated Communication

Defining CMC has proven to be a problem. Wallace (1999) states that much of the research currently being conducted in the field of CMC sidesteps the whole issue and does not establish one definition. According to Wallace, it is more practical to generate a general description of the field itself rather than develop a specific definition. McLaughlin (1994) suggests looking at the study of CMC as one that is spread across many disciplines and just as many different outlets.

For the purpose of this study, CMC will be defined as it applies to the classroom. Classroom CMC is communication between teacher and student or student and student that occurs via a computer and consists of the electronic transfer of text based information, pictures and graphics.

On-line communication has become more and more popular as instructors and students have familiarized themselves with the technology. Institutions of higher learning support web-based instruction because it is cost effective and schools are constantly facing resource limitations and financial cutbacks (Bailey & Cotlar, 1994). The United States Department of Education also recognizes the growing popularity and importance of web based instruction. Healy (1999) reports that the United States Department of Education is canceling its annual competition for the Fund for the Improvement of Postsecondary Education. The moneys that were traditionally appropriated for this fund have been reallocated to develop distance-education programs and teacher training.

Simultaneously, changes in technology in the workplace require employers to ask more of their employees than in the past. As the need for technical and computer knowledge increases in the work place, so does the demand for institutions of higher learning to produce students who can succeed in such environments (Coates & Jarratt, 1993). Since colleges and universities feel the pressure to prepare students for the technology driven workforce, one response to this demand is to teach classes utilizing the same technology.

The use of the web to deliver class content to students has other benefits. No longer will colleges and universities be limited by geography when targeting their prospective students. Now institutions of higher learning can market their classes and programs nationwide. This will also increase the competition for students between colleges and universities. Colleges and universities who used to recruit and compete for students on a regional basis will now have to do it nationally.

In 1998, California State University, Long Beach (CSULB) offered a bachelor of vocational education degree program for fire service professionals via distance learning. A student could complete the enitre bachelor curriculum through videotape lectures and occasional instructor on-site visitations (California State University adds distance-learning degree programs, 1998).

The concept of distance education has grown dramatically with the development of the Internet. Distance education used to consist of videotape lectures, live video feeds, and on-site visits. As technology has progressed, so have educators' abilities to tap those resources to deliver education to people in other areas.

In recent years, technology has allowed institutions to offer such programs solely on the web. Currently, many universities offer comprehensive bachelor degree programs that can be completed entirely on-line. The SUNY Learning Network (SLN), in conjunction with the State University of New York offers such programs (e.g., www.sln.suny.edu).

The Western Governor's University initiative has allowed students to enroll in degree programs that allow students to take all their classes on-line. The WGU is a

project started by the Western Governor's Association, a non-partisan organization of governors from 18 western states, two Pacific-flag territories and one commonwealth.

Programs such as the one at SUNY and WGU offer text-based classes. These classes do not require the student and teacher to have face-to-face interaction. All instructions, questions, assignments, and assessments are done via text-based media. Most frequently information is read from web pages, downloaded or e-mailed.

As academia's interest in web-based instruction grows, one question that needs to be answered is what effect does CMC have on the communication process in the classroom?

The research available in the area of classroom CMC is limited at best. Computer mediated communication is such a new field (so new that no one has developed a universal definition) that it is easy to understand why research is insufficient. Consequently, research in the field of CMC as it deals with the classroom is lacking.

Classroom CMC

In his study investigating a middle school writing class taught via e-mail, Dorman (as cited in D'Sousa, 1991) found that students who took a course offered by e-mail out performed students taking the same class in a traditional setting. In addition to enhancing writing skills, Dorman found that the use of e-mail in the classroom helps students to better understand other cultures and to develop critical thinking skills faster than classrooms that do not utilize e-mail. Allen and Thompson (1995) found that when grading for content, grammar, and length, fifth grade males scored higher on e-mail writing samples than their traditional counterparts.

In a 1998 study examining collaborative teaching strategies over the Internet, Treadwell, Leach, Kellar, Lewis, and Mittan found that in a virtual learning environment, one where class content is delivered via the web, students developed a rapport with other students and with teachers that was far more relaxed than that developed in a traditional classroom.

According to Treadwell, et al. (1998) students taking classes in a web-based environment developed an informal learning environment. Students e-mailed teachers to ask questions and make requests that one would not make in a traditional learning environment. For example, students e-mailed teachers to ask when they could turn in late assignments even though they knew late assignments were not accepted. Students in the traditional classroom did not make such requests. They also found that not having face-to-face interaction led to feelings of academic uncertainty. Students had more questions about class expectations and teacher feedback. They hypothesized that this may be due to lack of nonverbal feedback and the novelty of utilizing only text-based communication. For example, a student not familiar with using e-mail or the Internet may have more questions about how assignments were to be handed in, returned, etc. A student who is used to having face to face interaction with his/her teacher may have difficulty understanding exactly what the teacher expects.

Treadwell, et al. (1998) report that student-to-student interaction was also affected by web-based communication. Students began communicating with each other by giving brief descriptions of themselves. Students seemed to develop relationships with their fellow students quickly and were comfortable with expressing their lack of knowledge of

the medium being used to drive the class. This study determined that students' lack of knowledge of the medium (the computer) encouraged student communication.

In an essay written for the Institute for Educational Technology National Research Council, Trentin (1999) asserts that education via the Web teaches much more than just course content. Students can develop their research skills, learn how to find information, learn how to formulate questions, and learn how to share knowledge and how to cooperate. In an earlier study, Durham (1990) found that CMC enhanced group cohesion among students.

Communication anxiety is a large area of research in the world of communication scholars. In a study dealing with communication apprehension and CMC, Young and Gilson (as cited in Coombs 1993) found that CMC helps to alleviate communication anxiety in students who are highly apprehensive. Using the computer to produce written text allows students time to formulate responses and develop well thought out questions. The anonymity supplied by CMC is also appealing to students with high communication apprehension.

In a study designed to observe the effectiveness of CMC as a teaching tool, Everett and Ahern (1994) found that the use of CMC has positive effects on students' interpersonal interaction. Communication via the Web is less structured than communication in a traditional classroom. This seemed to give students the freedom to express their feelings and thoughts to whomever on a timetable that was convenient for them. Oddly enough, interpersonal interaction via the Internet seems more natural than

interpersonal interaction in a structured classroom because no teacher is controlling the content and pace of the communication.

The concept of interactivity has also been studied. This concept looks at whether classmates seriously respond to others' course related messages when communicating via the computer. According to Archee (as cited in Young and Gilson, 1997) message overload led to students ignoring each other's views and statements; instead, they focused on expressing their own. This is contrary to the findings of Everett and Ahern (1994) as stated above.

Some scholars agree that CMC can add a lot to classroom instruction, however they still caution that there are costs as well as benefits. Among them, Morrow (1999), in a journal article for Regional Review, states that the exclusive use of CMC to teach a class can short change the students in several areas. According to Morrow, students can benefit from face to face interaction in a traditional classroom by developing a cooperative atmosphere, a strong team environment, and rapport. Students in a CMC classroom environment cannot develop these concepts and skills in the same way as in a face to face interaction.

Dialectic

When one examines the use of CMC for classroom instruction through the concept of the dialectic, the negative aspects of it become more evident. The word "dialectic" originates from the Greek expression for the art of conversation. Aristotle recognized Zeno of Elea, the author of the fifth century B.C. famous paradoxes, as the inventor of dialectic. Under Socrates, the dialectic became a search for truth by question

and answer (Adkins, 1999). According to the dialectic model, a person's beliefs and thoughts would be called into question and it is through defending those beliefs and thoughts that a person truly learns.

Burnsike (1998) stated that the greatest threat to education is the death of dialectics. According to Adkins (1999) Buber's I-Thou dialectic theory states that the process between persons meeting in authentic relations is important. In order to truly communicate with one another, both persons must give their whole selves to the discourse; this allows both participants to see each other as a person, or a "Thou". Without this sort of connection the participants view each other as an object and the focus of their communication becomes themselves, the "I". In other words, for true communication and learning to occur, neither the teacher nor the student can hold anything back.

The dialectic is a time-honored method of teaching. Buber's I-Thou dialectic enlists the teacher to engage the student in an authentic dialogue. The teacher does this by representing himself or herself truthfully, recognizing the student for the person he or she is, and by questioning that student's thoughts and beliefs (Adkins, 1999). In an educational situation, if a teacher attempts to hold back any part of himself or herself, the student learning will be affected because the teacher is not representing his or her whole self.

The use of in the classroom CMC does not allow for proper dialect. Classroom CMC is asynchronous. This means that the communication participants do not communicate at the same time or place. One person writes a message for the other which

can be read at any time from another place. The lack of common space, immediate feedback, personal contact, and nonverbal communication hinders the dialectic process where both participants must make their whole selves accessible to each other. Because the teacher does not give his/her whole self, dialectic does not occur and the student will not see the teacher as immediate.

Immediacy

Studying immediacy is important because many researchers have found positive relationships between student learning and teacher nonverbal and verbal immediacy. While there are other factors that contribute to student affective, behavioral and cognitive learning, such as course content, student procrastination, motivation, etc., it is evident that teacher immediacy is a construct worth studying.

Immediacy can best be defined as the extent to which particular communication behaviors enhance physical and psychological closeness (Andersen, 1979; Mehrabian, 1969, 1981).

Nonverbal immediacy is based in the interpersonal attraction theory: people are drawn to what they like and avoid what they do not like. Immediate behaviors include approaching students when communicating, smiling, maintaining eye contact, touching students, assuming a relaxed body posture and presentation style (Freitas, Myers, and Avtgis, 1998; Andersen, 1979).

Verbal immediacy is related to teacher self-disclosure, asking questions or encouraging students to talk, referring to the class as "our class", and asking how students feel about assignments, due dates, etc. (Freitas, et al., 1998; Gorham, 1988).

In a study looking for linear relationships between teacher immediacy and student learning, Christensen and Menzel (1998) found that students who exhibited higher levels of cognitive, affective and behavioral learning were taught by teachers who had high nonverbal and verbal immediacy.

Positive teacher immediacy has been linked to student affect (or liking) for teachers, student affective learning, student cognitive learning, and student motivation toward studying the content of the class (Baringer& McCroskey, 2000).

When examining student perception of teacher immediacy, Freitas, et al., (1998) found that both nonverbal and verbal immediacy have an effect on student affective, behavioral and perceived cognitive learning. While studying causal relationships between teacher immediacy and learning, Bainbridge Frymier (1993) found that in classrooms with high teacher immediacy, students have more psychological arousal and affect toward a class. This leads to higher levels of student learning.

Hackman and Walker's 1990 study examined televised classrooms and their effects on teacher immediacy and student learning. They found that teachers who engaged in immediate behaviors, such as encouraging involvement, offering feedback, maintaining a relaxed body posture and using vocal variety were viewed more favorably by students than were teachers who did not exhibit these characteristics. In a similar study, Mottet (2000) concluded that teachers exhibiting immediate behaviors are perceived as being helpful, sympathetic, responsive, compassionate, and friendly. As earlier stated, high levels of teacher verbal and nonverbal immediacy has been linked to higher levels of student learning.

Freitas, et al., (1998) found that when comparing students enrolled in a conventional classroom to students enrolled in a distributed learning classroom, there was a difference in perceived immediacy. The students enrolled in the conventional classroom found their instructors to have high verbal and nonverbal immediacy, whereas the students enrolled in the distributed learning classroom found their instructors to have high verbal immediacy, but low nonverbal immediacy. The distributed learning classroom in this study consisted of a classroom in which students and teachers had contact through interactive computers. The instruction was synchronous and the students could see and hear the instructor much like students in the conventional classroom.

However, these studies have been conducted in a conventional classroom environment and little research has been done with regard to classes taught over the Web. Web-based instruction does not require the student and teacher to have face-to-face interaction. All instructions, questions, assignments, and assessments are completed via text-based media, which is read from web pages, downloaded or e-mailed.

These text-based classes are most often asynchronous. Students can complete all their class work on their own time schedule. The teacher and students don't have to be on-line at the same time in order to communicate. However, many teachers hold "virtual" office hours, when they are on-line and can respond immediately to student questions (Cahn, 1999). While it is evident that it is not possible to assess students' perception of their teachers' nonverbal immediacy in a class where the teacher and students never see each other, it is important to look at students' perceptions of their teachers' verbal immediacy.

When studying student perceptions of teacher verbal immediacy, one must take into account other factors that could shape a student's perception of his or her teacher. There is research that supports the idea that student's individual characteristics can affect his or her perception of teacher immediacy. Often times, a student's ethnic background, gender, and age can influence that student's perceptions of teacher immediacy.

Ethnicity. Andersen, (1985) states that teacher immediacy is a function of communication and it must be considered a cross cultural phenomenon. Teacher behaviors defined as immediate in one culture may not be defined the same way in a different culture. For example, in a 1997 study, Neuliep found that perceptions of teacher immediacy were higher for American students than Japanese students. This difference in perception of immediacy was attributed to the fact that Japan is a high-context culture, meaning that Japanese are typically indirect, subtle and impersonal in their communication with others. When Japanese students are asked to rate their teacher's immediacy based upon traditionally European paradigms, those scores fall short of the scores of their American counterparts.

When studying teacher immediacy and its effects on learning in a multicultural classroom, Sanders and Wiseman (1990) found that the impact of immediacy on learning for Hispanic students was greater than for African-American students and Asian-American students. This same study showed no significant difference for non-Hispanic Caucasian students when they were compared to the other three groups.

Due to the influence a student's ethnic background can have on his/her outlook of others, it is important to consider student ethnicity when assessing student's perception of teacher immediacy.

Gender. In a study examining the impact of gender and immediacy on willingness to talk and perceived learning, Menzel and Carrel (1999) found that gender affects how students choose to engage themselves in an education dialogue. They state that how much a student chooses to participate in class is related to student and teacher gender, as well as to teacher immediacy. Therefore, gender can hinder teacher immediacy, for example, if a male student isn't comfortable with a female teacher, or vice-versa. Simply because of the gender, that student may not see the teacher as immediate.

However, studying the effects of teacher immediacy on student evaluation of teachers, Rowden and Carlson (1996) found no differences in students' perception of teacher immediacy when comparing genders.

With past research supporting both arguments of the gender issue with regard to teacher immediacy, it is evident that student's gender should be considered when studying immediacy and Computer Mediated Communication.

Age. Bernt and Bugbee (1993) investigated student attitudes and distance learning classes, and found that adult learners require more from their teachers than their younger counterparts. Often adult learners will expect more feedback and immediate behaviors from their teacher due to the fact that they haven't been in school recently. If

the teacher doesn't meet these students' expectations, they are often not perceived as immediate.

Differences in students' age should be considered when studying teacher immediacy and CMC.

Statement of Purpose

As more and more institutions offer on-line, text-based courses to students, it is important to examine how this particular mode of teaching affects student learning. Studies have shown that distance education can have positive and negative effects on different aspects of the educational process. Buber's I-Thou dialectic theory along with the concept of immediacy suggests that instruction via CMC is not as effective as traditional classroom instruction. According to Buber's I-Thou dialectic, if one participant in the dialectic holds anything back and doesn't give his/her whole self to the communication process, a true dialectic can not take place. Without true dialectic, true learning can not take place.

This study considers the relationship between text based, asynchronous instruction and student perception of teacher immediacy. What happens to students' perception of teacher immediacy in a classroom environment in which the students and teacher never meet face-to-face or even talk on the phone? The purpose of this study is to examine the relationship between on-line instruction and student perception of teacher verbal immediacy. Research has shown that the medium chosen to teach a class and various other student characteristics can all influence a student's perception of his or her teacher's verbal immediacy. Therefore, the following eight research questions are posed:

RQ1: Is there a difference in students' perception of instructor verbal immediacy when comparing classes taught via CMC and classes taught in a traditional classroom?

RQ2: Is there a relationship between students' perception of instructor verbal immediacy and student gender?

RQ3: Does the relationship between students' perception of instructor verbal immediacy and gender differ from the traditional classroom to the CMC classroom?

RQ4: Is there a relationship between students' perception of instructor verbal immediacy and student ethnic origin?

RQ5: Does the relationship between students' perception of instructor verbal immediacy and student ethnic origin differ from the traditional classroom to the CMC classroom?

RQ6: Is there a relationship between students' perception of instructor verbal immediacy and student age?

RQ7: Does the relationship between students' perception of instructor verbal immediacy and student age differ from the traditional classroom to the CMC classroom?

No formal research has addressed the issue of students' comfort levels with a computer and how that affects their perception of instructor verbal immediacy. Student perception of instructor verbal immediacy could be greatly affected if the student is not comfortable with the medium in which the class is taught. Therefore this final research question is posed:

RQ8: Is there a relationship between students' perception of instructor verbal immediacy and student comfort level with a computer in the CMC classroom?

Chapter 2

Methodology

Participants

The participants in this study were students in on-line classes and their traditional classroom counterparts at a medium sized midwestern university. All classes surveyed fall into the same category with an instructor teaching one section of the class in a traditional classroom and teaching another section of the class on-line. A total of ten classes (with five instructors) were surveyed. Of the five instructors, one was female and the remaining four were male.

Seventy questionnaires were handed out to students in the traditional classroom and 68 were returned for a 97% return rate. Sixty questionnaires were e-mailed to students taking the class on-line and 44 were returned for a 73% return rate.

Of the one hundred and twelve participants (N=112) who participated in the census, 27 were female and 85 were male.

Twenty-two participants were age 20 and under; 52 of the participants were age 21-25; 19 of the participants were age 26-30; 15 of the participants were age 31-35; four of the participants were age 36 and older.

Ethnic groups were divided using the same groups the university uses for student records. Ninety-one of the participants were Caucasian; nine of the participants were black; four of the participants were Hispanic; five of the participants were Asian American; and three of the participants were Native American.

On-line students were asked to rate their comfort level with regard to using a computer. Forty of the students rated themselves as very comfortable, three of the students rated themselves as comfortable, and one student rated their comfort level as neutral.

Materials

Gorham's (1998) *Verbal Immediacy Behaviors Questionnaire*, (see Appendix A), was administered to both sets of classes on a voluntary basis. Gorham asked students to list behaviors that characterized the best teachers they had had. These behaviors were categorized into a list of 19 verbal immediacy behaviors. Eventually two of the behaviors were dropped from the instrument because the item total correlation was below.25. Responses range from never engage in that behavior (0) to very often (4). Teachers who received a score of zero on the *Verbal Immediacy Behaviors Questionnaire* are considered to have no verbal immediacy; teachers who receive a score ranging from one to 17 are considered to have low verbal immediacy; teachers who receive a score of 18 to 34 are considered to have medium verbal immediacy; teachers who receive a score of 35 to 51 are considered to have high verbal immediacy; and teachers who receive a score of 52 to 68 are considered to have very high verbal immediacy.

Procedure

Classroom students were administered the measures in their classrooms. Students taking the on-line class received the questionnaire via e-mail and were asked to e-mail the questionnaire back. Participation was voluntary and the instrument included a brief demographic questionnaire. Demographic questions asked include age, gender, race

(participants are asked to choose between Caucasian, Black, Hispanic, Asian-American, and Native-American). Participants who received the questionnaire via e-mail were then asked to respond to the question: Please rate your comfort level with regard to using a computer. Participants were given the following scale to choose from; Very Comfortable, Comfortable, Neutral, Uncomfortable, and Very Uncomfortable. The participants were instructed to completely fill out the questionnaires. Participants were informed that their responses were confidential, and were told to ask questions when necessary. Participants who received the questionnaire via e-mail were instructed to e-mail the researcher if they have any questions regarding the instrument. No participants contacted the researcher with questions.

There were no identifiers that linked the study data to the subjects in the traditional classrooms. The surveys were e-mailed to participants taking the class via the web and these participants e-mailed the completed survey back to the researcher. This method of administering the questionnaire was necessary for the web-based students in order to parallel the teacher's day-to-day e-mail contact with the students. Once the e-mail survey was returned, the identifier was removed, and the e-mail was be printed off and deleted to maintain confidentiality.

All data was stored at the researcher's home with the researcher being the only person with access to the data. All appropriate steps were taken to maintain confidentiality of the data. The general results may be shared with the participating instructors.

Statistical Analysis

When the instrument was completed and returned, the data was coded and analyzed using SPSS. An internal reliability analysis of the Teacher Verbal Immediacy Scale was done; and t-tests and One-Way analysis of variance (ANOVA) were used to test for differences based on demographic variables.

For this study, the dependent variable is teacher verbal immediacy, and the independent variables are mode of instruction, gender, ethnicity, age, and student comfort level with a computer.

A t-test was run on the data to compare the mean scores of the Immediacy scale of the two classes taught by the same teachers, and to compare the mean scores of all on-line participants and all traditional classroom participants.

A series of t-tests and a Student-Newman-Keuls was run to find differences in mean immediacy scores among genders.

A series of one way ANOVAs and t-tests was run to test for differences in mean immediacy scores among different ethnic groups.

A series of one way ANOVAs and t-tests was run to test for differences in mean immediacy scores among different age groups.

A one way ANOVA was run to test for differences in immediacy scores among participants with different comfort levels with computers.

Chapter 3

Results

Reliability for student's assessment of teacher's verbal immediacy has been reported to range from .83 to .94. In the present study, the questionnaire was found to have a reliability level of .78. Questionnaire item means and standard deviations are presented in Table 1, and item response distributions are presented in Table 2.

The mean score of all teachers teaching their classes in a traditional classroom was m = 49.03 and the mean score of all teachers teaching their classes on-line was m=36.09. Results of t-tests comparing the two groups revealed significant differences ($t=23.77$, $p<.01$); teachers in a traditional classroom were perceived as more immediate than teachers teaching on-line classes (See Table 3).

When all five instructors were looked at individually, the mean scores of the traditional classrooms were significantly higher than the on-line classes in all five cases.

The mean score for Instructor A in the traditional class was m=59.83 and the mean score in Instructor A's on-line class was m=32.14. Results of t-tests comparing these two groups revealed significant differences ($t=6.07$, $p<.02$); in the traditional classroom, Instructor A was perceived more immediate than in the on-line class (See Table 3).

The mean score for Instructor B in the traditional class was m=52.50 and the mean score in Instructor B's on-line class was m=27.83. Results of t-tests comparing these two groups revealed significant differences ($t=30.97$, $p<.01$); in the traditional

classroom, Instructor B was perceived as more immediate than in the on-line class (See Table 3).

Table 1

Means and Standard Deviations for Questionnaire Items

QUESTION	MEAN	SD
Q1. Uses personal examples	2.32	1.52
Q2. Asks questions	3.21	.77
Q3. Gets into discussions	2.21	1.27
Q4. Uses humor	2.30	1.37
Q5. Addresses students by name	3.28	1.00
Q6. Addresses me by name	3.30	.99
Q7. Gets into conversations	2.87	4.10
Q8. Initiated conversation	1.91	1.26
Q9. Refers to "our" class	3.38	.87
Q10. Provides feedback	2.78	1.11
Q11. Calls on students to answer*	2.99	.74
Q12. Asks how students feel	2.02	1.20
Q13. Invites students to phone	2.61	1.35
Q14. Solicits viewpoints	2.96	1.01
Q15. Praises student work	2.65	1.01
Q16. Discuss unrelated topics	2.00	1.27
Q17. Addressed by first name	2.51	1.46

Immediacy items were scored on a five point Likert-type scale ranging from 0=never, to 4=very often. *Question 11 is nonimmediate. Coding was reversed before summing.

Table 2

Frequencies and Percentages for all Items

Responses	0		1		2		3		4	
Q1	21	18.8	15	13.4	21	18.8	17	15.2	38	33.9
Q2	0	0.00	3	2.7	15	13.4	50	44.6	44	39.3
Q3	15	13.4	16	14.3	30	26.8	32	28.6	19	17.0
Q4	17	15.2	13	11.6	30	26.8	23	20.5	29	25.9
Q5	3	2.7	4	3.6	14	12.5	29	25.9	62	55.4
Q6	2	1.8	5	4.5	11	9.8	33	29.5	61	54.5
Q7	10	8.9	10	8.9	31	27.7	34	30.4	27	24.1
Q8	16	14.3	30	26.8	29	25.9	22	19.6	15	13.4
Q9	3	2.7	1	.9	8	7.1	39	34.8	61	54.5
Q10	5	4.5	12	10.7	18	16.1	45	40.2	32	28.6
Q11	0	0.0	0	0.0	33	29.5	51	45.5	28	25.0
Q12	15	13.4	21	18.8	36	32.1	27	24.1	13	11.6
Q13	13	11.6	11	9.8	20	17.9	31	27.7	37	33.0
Q14	2	1.8	9	8.0	20	17.9	41	36.6	40	35.7
Q15	2	1.8	13	11.6	32	28.6	40	35.7	25	22.3
Q16	16	14.3	24	21.4	34	30.4	20	17.9	18	16.1
Q17	17	15.2	12	10.7	22	19.6	19	17.0	42	37.5

The mean score for Instructor C in the traditional class was m=50.29 and the mean score in Instructor C's on-line class was m=44.43. Results of t-tests comparing the two groups revealed significant differences ($t=26.45$, $p<.01$); in the traditional classroom, Instructor C was perceived as more immediate than in the on-line class (See Table 3).

The mean score for Instructor D in the traditional class was m=43.56 and the mean score in Instructor D's on-line class was m=33.38. Results of t-tests comparing these two groups revealed significant differences ($t=18.64$, $p<.01$); in the traditional classroom, Instructor D was perceived as more immediate than in the on-line class (See Table 3).

The mean score for Instructor E in the traditional class was m=48.67 and the mean score in Instructor E's on-line class was m=43.45. Results of t-tests comparing these two groups revealed significant differences ($t=8.37$, $p<.03$); in the traditional classroom, Instructor E was perceived more immediate than in the on-line class (See Table 3).

Table 3

Group t-tests of Instructor Immediacy Scores by Instruction Mode

Class	Traditional Mean	On-line Mean	Significance
Full Sample	49.02	36.09	(t=23.77,p<.01)
	n=68	n=44	
Instructor A	58.83	32.14	(t=6.07,p<.02)
	n=6	n=7	
Instructor B	52.50	27.83	(t=30.97,p<.01)
	n=24	n=6	
Instructor C	50.29	44.43	(t=26.45,p<.01)
	n=17	n=14	
Instructor D	43.56	33.38	(t=18.64,p<.01)
	n=18	n=8	
Instructor E	48.67	43.45	(t=8.37,p<.03)
	n=3	n=9	

When looking at the whole sample, male students had a higher perception of teacher verbal immediacy (m=46.02) than female students did (m=42.89). Results of t-tests show that the difference was significant (t=43.32, p<.01); (see Table 4).

When looking at the on-line students, once again males had a higher perception of teacher verbal immediacy (m=39.45) than females (m=34.54) and the difference was significant, (t=36.32, p<.01). However, when a t-test was run on the data from the traditional students the researcher found that female students had a higher perception of teacher verbal immediacy (m=50.64) than males (m=49.80) and the difference was also significant, (t=24.50, p<.01); (See Table 4).

Table 4

Group t-tests of Instructor Immediacy Scores by Gender and Instruction Mode

	Whole Sample Mean	Traditional Mean	On-line Mean	Significance
Male	46.02 n=85	49.80 n=54	39.45 n=31	(t=-4.41,p<.01)
Female	42.89 n=27	50.64 n=14	34.54 n=13	(t=-4.78,p<.01)
Significance	(t=43.32,p<.01)	(t=24.50,p<.01)	(t=36.32,p<.01)	

A secondary analysis comparing mean scores in the traditional classroom to mean scores in the on-line class by specific gender concluded that both male and female student's perceptions of instructor's verbal immediacy was significantly higher in traditional classrooms ($t=-4.41$, $p<.01$) than in on-line classes ($t=-4.78$, $p<.01$); (See Table 4).

One-way ANOVA was performed to test for differences by gender combinations of traditional and on-line classes (i.e. female on-line, male on-line, female traditional, male traditional). There was a significant difference for student perception of teacher verbal immediacy at the $p<.01$ level. The female on-line/male on-line and female traditional/male traditional groups differed significantly from each other (See Table 5).

Table 5

One-way ANOVA and Student-Newman-Keuls Procedure for Instructor Immediacy Scores by Gender Groups

	Df	MS	F	P
Between Groups	3	1352.36	12.22	.0000
Within Groups	108	110.69		
Total	111			

Newman-Kuels Procedure for Instructor Immediacy scores by Gender Groups

Group	Female On-line[a]
Mean	34.54
Group	Male On-line[a]
Mean	39.45
Group	Male Traditional[b]
Mean	49.80
Group	Female Traditional[b]
Mean	50.64

[a, b] Groups not significantly different at the .05 level.

When examining ethnicity, it was noted that four of the ethnic groups did rate their teachers as having fairly high verbal immediacy, however small cell sizes in the non-Caucasian groups prevented meaningful analysis of those groups (See Table 6).

Table 6

One-Way ANOVA of Instructor Immediacy Scores by Race and Instruction Mode

	Whole Sample Mean	Traditional Mean	On-line Mean
Caucasian	45.40	49.97	38.85
	n=91	n=57	n=34
Black	47.11	58.60	32.75
	n=9	n=5	n=4
Hispanic	33.50	No Data	33.50
	n=4	n=0	n=4
Asian American	49.80	52.25	40.00
	n=5	n=4	n=1
Native American	44.00	43.00	46.00
	n=3	n=2	n=1
Significance	(F=1.21,p<.32)	(F=.85,p<.51)	(F=-1.36,p<.27)

Secondary analysis comparing mean scores in the traditional classroom to mean scores in the on-line class by specific ethnic groups showed a significant difference in scores among the Caucasian students, ($t=-5.60$, $p<.01$) (See Table 7). Immediacy of instructors was rated higher by Caucasians in the traditional classrooms than in the on-line classes. Any analysis of scores among black students, Asian American students, and Native American students would not be meaningful due to inadequate cell sizes. There were no Hispanic subjects in the traditional sample, so analysis could not be done (See Table 7

Table 7

Group t-tests of Instructor Immediacy Scores by Race and Instruction Mode

	Traditional Mean	On-line Mean	Significance
Caucasian	49.97 n=57	38.85 n=34	(t=-5.60,p<.01)
Black	58.60 n=5	32.75 n=4	(t=-2.09,p<.10)
Hispanic	No Data N=0	33.50 n=4	00000000
Asian American	52.25 n=4	40.00 n=1	(t=-2.36,p<.11)
Native American	43.00 n=2	46.00 n=1	(t=.09,p<.04)

In secondary analysis of the data, all ethnic groups other than Caucasian (black, Asian American, Native American, and Hispanic) were compressed into one grouping and renamed non-Caucasian. A t-test was run on this information and no significant difference in perceived verbal immediacy was found between the two groups (t=1.24, p<.87) (See Table 8).

Students in all age groups perceive their instructors as having relatively high verbal immediacy. Means of instructor immediacy scores by age and instruction mode are presented in Table 8. Due to small and unequal cell sizes in groups over age 26, data from these student groups were collapsed into one group. A one-way ANOVA revealed no significant differences for the whole sample, the traditional classes, or the on-line classes based on age of students (See Table 9).

Table 8

Means of Instructor Immediacy Scores by Age and Instruction Mode

	Whole Sample Mean	Traditional Mean	On-line Mean
Age 20 & under	48.18	48.71	37.00
	n=22	n=21	n=1
Age 21-25	46.13	51.77	38.45
	n=52	n=30	n=22
Age 26-30	38.63	41.00	36.91
	n=19	n=8	n=11
Age 31-35	46.07	53.38	37.71
	n=15	n=8	n=7
Age 36 & over	46.50	67.00	39.67
	n=4	n=1	n=3

Table 9

One-Way ANOVA of Instructor Immediacy Scores by Age and Instruction Mode

	Whole Sample Mean	Traditional Mean	On-line Mean
Age 20 & under	48.18	48.71	37.00
	n=22	n=21	n=1
Age 21-25	46.13	51.77	38.45
	n=52	n=30	n=22
Age 26 & over	42.39	48.35	37.57
	n=38	n=17	n=21
Significance	(F=1.90,p<.15)	(F=.67,p<.52)	(F=.05,p<.95)

Secondary analysis of traditional classroom means and on-line means by specific age groups revealed all age groups rated instructor immediacy higher in the traditional classes than in the on-line classes—two of these differences were significant (age groups 21-25, t=4.30, p<.01 and age group 26 and over, t=3.30, p<.01) (See Table 10).

Table 10

Group t-tests of Instructor Immediacy Scores by Age and Instruction Mode

	Traditional Mean	On-line Mean	Significance
Age 20 & under	48.71	37.00	
	n=21	n=1	(t=-1.04,p<.32)
Age 21-25	51.77	38.45	
	n=30	n=22	(t=-4.30,p<.01)
Age 26 & over	48.35	37.57	
	n=17	n=21	(t=-3.30,p<.01)

In terms of comfort using a computer, 40 of 44 on-line students rated themselves "very comfortable", three rated themselves "comfortable", and only one "neutral". Thus meaningful analysis of verbal immediacy as related to computer comfort level was not possible due to the lack of variance in comfort ratings.

Chapter 4

Discussion

The main objective of this study was to examine the relationship between on-line instruction and student perception of teacher verbal immediacy. Review of literature revealed previous studies that showed a positive relationship between teacher verbal immediacy and student learning.

Research Question number one, **Is there a difference in students' perception of instructor verbal immediacy when comparing classes taught via CMC and classes taught in a traditional classroom** is answered in the affirmative. It was determined that students who took classes in a traditional classroom (m=49.02) had higher perceptions of teacher verbal immediacy than students who took classes on-line (36.09). The difference in the mean scores was significant, ($t=23.77$, $p<.01$); (See Table 3).

These findings support earlier assumptions that traditional classroom students would perceive their teachers as having higher verbal immediacy than their on-line counterparts. These findings may be attributed to the fact that the definition of immediacy includes physical and psychological closeness (Andersen, 1979; Mehrabian, 1969, 1981). Logically, communication via a computer with no physical contact between the individuals would decrease the level of immediacy.

Buber's I-Thou Dialectic theory would also be consistent with these results. According to this theory, true communication and learning can not take place when one of the participants holds anything back; both teacher and student must give their whole selves to the communication process. In a CMC environment it may not be possible for

participants to give their whole selves because they can't give immediate feedback or communicate non-verbally.

When looking at the instructors' individual scores, the differences in mean scores varied. As would be expected, all teachers scored relatively high in the traditional classroom; it was interesting to note, however, that all of the teachers also scored relatively high in the on-line class (Table 3).

These findings bring up important questions. Do students in on-line classes expect less from their teacher, therefore view most anything the teacher does as immediate? Has the emergence of on-line education changed the way students view immediacy? Does the practice of teaching classes on-line change the definition of immediacy? Do we need to revisit the definition of immediacy and determine how on-line instruction affects it?

Research Question number two, **Is there a relationship between students' perception of instructor verbal immediacy and student gender** is also answered in the affirmative. When examining the whole sample, both males and females perceived their teachers as having relatively high levels of verbal immediacy, however the male ($m=46.02$) students perceived their teacher as having higher verbal immediacy than the female ($m=42.89$) students. Difference in mean scores between male and female students was significant, ($t=43.32$, $p<.01$); (See Table 4). Further research focusing on student gender as compared to instructor gender would be beneficial to the field of CMC.

Research Question number three, **Does the relationship between students' perception of instructor verbal immediacy and gender differ from the traditional**

classroom to the CMC classroom is also answered in the affirmative. When comparing males and females, it was found that males (m=39.45) perceive their teacher as having higher verbal immediacy in on-line classrooms when compared to females (m=34.54); ($t=43.32$, $p<.01$). When examining traditional classes, the opposite is true, with females (m=50.64) having a higher mean score than males (m=49.80); (See Table 4). These results suggest that future research is warranted to explain why this difference exists.

A secondary analysis comparing mean scores in the traditional classroom to mean scores in the on-line class by specific gender concluded that both male and female student's perceptions of instructor's verbal immediacy was significantly higher in traditional classrooms ($t=-4.41$, $p<.01$) than in on-line classes ($t=-4.78$, $p<.01$); (See Table 4). These results support earlier findings that students view their teachers in traditional classes as more immediate than teachers in on-line classes.

An analysis looking for differences by gender combinations of traditional and on-line classes (i.e. female on-line, male on-line, female traditional, and male traditional) found a significant difference for student perception of teacher verbal immediacy at the $p<.01$ level. The female on-line/male on-line and female traditional/male traditional groups differed significantly from each other (See Table 5). These results show both genders similarly view teacher immediacy higher in traditional versus on-line classes.

Research Question number four, **Is there a relationship between students' perception of instructor verbal immediacy and student ethnic origin** can not be answered due to small and unequal sample sizes of the non-Caucasian groups (See Table 6).

Research Question number five, **Does the relationship between students' perception of instructor verbal immediacy and student ethnic origin differ from the traditional classroom to the CMC classroom** can not be answered for the non-Caucasian groups due to the small and unequal cell sizes.

However, comparing mean scores in the traditional classroom to mean scores in the on-line classes for Caucasians revealed Caucasian students perceived their teachers' verbal immediacy higher in traditional classes than in their on-line classes ($t=-2.09$, $p<.01$) (See Table 6). Any analysis of Black, Asia American, Hispanic, and Native American students would be meaningless due to small cell sizes. However, the Caucasian findings suggest that further research is warranted (See Table 6).

In secondary analysis of the data, all ethnic groups other than Caucasian (Black, Asian American, Native American, and Hispanic) were compressed into one grouping and renamed non-Caucasian. Analyses of the whole sample and the traditional and on-line groups found there were no significant differences in perceived verbal immediacy between Caucasians and non-Caucasians.

Andersen, (1985) states that teacher immediacy is a function of communication and that teacher behaviors defined as immediate in one culture may not be defined the same way in a different culture. Also interesting is a 1997 study, in which Neuliep found that perceptions of teacher immediacy were higher for American students than Japanese students. This difference in perception of immediacy was attributed to the fact that Japan is a high-context culture, meaning that Japanese are typically indirect, subtle and impersonal in their communication with others. However, in the current study any

meaningful analysis could not be done due to unequal cell sizes. Andersen and Neuliep's research along with these results indicate that future research in this area would be beneficial to determine if gender affects student perception of teacher verbal immediacy.

Research Question number six, **Is there a relationship between students' perception of instructor verbal immediacy and student age** was answered negatively. No significant differences were found based on age for the whole sample or in the traditional or on-line classes (See Table 9).

As earlier reported, Bernt and Bugbee (1993) found that older adult learners often require more from their teachers than their younger counterparts. The contention is that older adult learners will expect more feedback and immediate behaviors from their teacher due to the fact that they haven't been in school recently. If the teacher doesn't meet these students' expectations, they are often not perceived as immediate.

In the present research, the lack of significant results may be due to the small number of older learners in the sample. Future research is warranted to examine how age may affect student perception of verbal immediacy.

Research question number seven, **Does the relationship between students' perception of instructor verbal immediacy and student age differ from the traditional classroom to the CMC classroom** produced mixed results. Group 21-25 and 26 and over showed a significant difference between traditional ($t=-4.30$, $p<.01$), and on-line classes ($t=-3.30$, $p<.01$); (See Table 10). However, no significant difference was found for age group 20 and under. These findings suggest that future research is warranted.

Research Question number eight, **Is there a relationship between students' perception of instructor verbal immediacy and student comfort level with a computer in the CMC classroom** can not be answered due to the lack of variance in student comfort level. Students who reported they were very comfortable with regard to using a computer made up the majority of the on-line sample, n=40. These students perceived their teachers as having high verbal immediacy. The sample sizes for the students who reported they were comfortable using a computer (n=3) and for the neutral group (n=1) were too small to analyze.

In summary, this study has found that students who take classes in a traditional classroom have a higher perception of their teacher's verbal immediacy than their on-line counterparts. Also, female students have a higher perception of their teacher's verbal immediacy in traditional classrooms and the opposite is true for on-line classes with males having a higher mean score.

Mixed results were found when examining specific demographic groupings and comparing traditional means to on-line means. When examining gender, it was found that the difference in means scores between traditional and on-line classes were significant for both males and females, with the traditional mean being higher.

When examining ethnic origin in this manner, it was determined that the difference in mean scores between traditional and on-line classes were significant for Caucasians, with the traditional mean being higher. For all other ethnic groups, meaningful analysis of the data could not be calculated due to small and unequal cell sizes.

When studying student age under the same circumstances, it was found that the difference in mean scores between traditional and on-line classes was significant for age group 21-25 and group 26 and over.

Finally, with regard to student's comfort level with a computer, student perception of teacher's verbal immediacy based on this particular variable could not be calculated due to lack of variance in student comfort level.

Chapter 5

Conclusion

The results of this study point to the fact that there is a definite relationship between student perception of teacher's verbal immediacy and the mode in which the class was taught. The present study used an existing instrument as the responsive questionnaire filled out by its participants.

Limitations

One of the major limitations of this study is the sample size. While a larger sample would have given more weight to the results and may have allowed for more questions being answered; the sample size was as large as possible for this particular college campus. Teachers had to teach a class in the traditional classroom and then teach another section of the same class on-line. Finding instructors who fell into this specific framework led the researcher to only one department at the university that offers many of its classes on-line. This particular department's student make up is mostly white males in their early to mid-twenties.

Future Research

This research provides an indication that a student's perception of teacher immediacy is affected by the mode in which the class is taught. Overall, students perceived their teacher as having higher verbal immediacy in a traditional classroom than in on-line classes. When broken down by gender, males had a higher perception of teacher verbal immediacy in an on-line class and female students had higher perception

of teacher verbal immediacy in traditional classes. Further investigation is needed to learn why male students rated teachers higher in on-line classes and why female students rated teachers higher in traditional classes.

Further research in the general area of verbal immediacy and CMC is also warranted. After garnering mixed results from the current study, a study with a larger sampling will give the researcher a better picture of how ethnic origin, age, and comfort level with a computer can affect perceptions of verbal immediacy.

Appendix A

Traditional Classroom Survey

As a college student, I would like to invite you to participate in a research project on student learning and on-line classes.

Participation in this study is voluntary. If you decide to participate, you are free to discontinue participation at any time. Your decision not to participate will not affect your relationship with the University of Nebraska at Omaha.

You will not be asked any sensitive or embarrassing questions and all information will be kept confidential.

Age_____

Gender:_____Female _____Male

Race: _____Caucasian
_____Black
_____Hispanic
_____Asian-American
_____Native-American

IRB# 121-00-EX

Verbal Immediacy Behaviors

Instructions: Below are a series of descriptions of things some teachers have been observed saying in some classes. Please respond to each of the statements in terms of the way you perceive your teacher communicating towards you or others in your class. For each item, indicate how often your teacher responds this way when teaching. Use the scale: 0=never; 1=rarely; 2=occasionally; 3=often; and 4=very often.

1. _____Uses personal examples or talks about experiences she/he has had outside of class.

2. _____Asks questions or encourages students to talk.

3. _____Gets into discussions based on something a student brings up even when this doesn't seem to be part of his/her lecture plan.

4. _____Uses humor in class.

5. _____Addresses students by name.

6. _____Addresses me by name.

7. _____Gets into conversations with individual students outside of class time.

8. _____Has initiated conversations with me before, after or outside of class.

9. _____Refers to class as "our" class or what "we" are doing.

10. _____Provides feedback on my individual work through comments on paper, discussions, etc.

11 _____Calls on students to answer questions even if they have not indicated that they want to talk.

12. _____Asks how students feel about an assignment, due date or discussion topic.

13. _____Invites students to telephone or meet with him/her outside of class if they have question or want to discuss something.

14. _____Asks questions that solicit viewpoints or opinions.

15. _____Praises students' work, actions or comments.

16. _____Will have discussions about things unrelated to class with individual students or with the class as a whole.

17. _____Is addressed by his/her first name by the students.

On-line Survey

As a college student, I would like to invite you to participate in a research project on student learning and on-line classes.

Participation in this study is voluntary. If you decide to participate, you are free to discontinue participation at any time. Your decision not to participate will not affect our relationship with the University of Nebraska at Omaha.

You will not be asked any sensitive or embarrassing questions and all information will be kept confidential.

When you have completed the following questionnaires, please e-mail your responses to heath_tuttle@unomail.unomaha.edu.

Age_____

Gender:_____Female _____Male

Race: _____Caucasian
_____Black
_____Hispanic
_____Asian-American
_____Native-American

Please rate your comfort level with regard to using a computer (underline one).

Very Comfortable Comfortable Neutral Uncomfortable Very Uncomfortable

IRB# 121-00-EX

Verbal Immediacy Behaviors

Instructions: Below are a series of descriptions of things some teachers have been observed saying in some classes. Please respond to each of the statements in terms of the way you perceive your teacher communicating towards you or others in your class. For each item, indicate how often your teacher responds this way when teaching. Use the scale: 0=never; 1=rarely; 2=occasionally; 3=often; and 4=very often.

1. _____Uses personal examples or talks about experiences she/he has had outside of class.

2. _____Asks questions or encourages students to talk.

3. _____Gets into discussions based on something a student brings up even when this doesn't seem to be part of his/her lecture plan.

4. _____Uses humor in class.

5. _____Addresses students by name.

6. _____Addresses me by name.

7. _____Gets into conversations with individual students outside of class time.

8. _____Has initiated conversations with me before, after or outside of class.

9. _____Refers to class as "our" class or what "we" are doing.

10. _____Provides feedback on my individual work through comments on paper, discussions, etc.

11 _____Calls on students to answer questions even if they have not indicated that they want to talk.

12. _____Asks how students feel about an assignment, due date or discussion topic.

13. _____Invites students to telephone or meet with him/her outside of class if they have question or want to discuss something.

14. _____Asks questions that solicit viewpoints or opinions.

15. _____Praises students' work, actions or comments.

16. _____Will have discussions about things unrelated to class with individual students or with the class as a whole.

17. _____Is addressed by his/her first name by the students.

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