

ABSTRACT

BURGER, WILLIAM. Exploring the Complex Computer-Mediated Communication Needs of Learners in a Multilingual, Multicultural Online Learning Environment. (Under the direction of Dr. Brad Mehlenbacher.)

The purpose of this study was to understand student perceptions of social presence that resulted from communicating and collaborating via different forms of Internet-based communication technologies in a diverse, multicultural, multilingual online learning environment. In that it describes how non-native English speaking students from different countries and cultures responded to the use of various asynchronous and synchronous computer-mediated communications technologies as they relate to developing a perceived sense of social presence, this study may assist educators and course designers as they consider how to implement an effective course design strategy toward meeting the complex needs of the multicultural online learning environment.

The questions guiding this research were (a) How do participants describe their perceived sense of presence while engaged with others in a multicultural online learning environment? (b) How do participants' cultural histories influence their choice of communication tools in the multicultural online learning environment? (c) What dynamics do participants encounter when communicating in the multicultural online learning environment? (d) How do participants describe their reactions to using various CMC in the multicultural online learning environment?

This qualitative, embedded, single-case study incorporated a purposeful maximum variation sampling strategy in its recruitment of 14 adult learner participants who were enrolled in a culturally diverse, online-delivered course hosted by a large university located

in the Mid-Atlantic region of the United States. The results of this research contribute to the creation of a body of knowledge useful to the fields of distance learning, communication, linguistics, social presence, social learning, instructional systems design, computer-mediated communication (CMC), and multicultural studies. By gaining an understanding of just how complex the communication needs are of the multicultural online learner, educators and course designers will be better prepared to serve multicultural and non-native speaking students by means of applying effective course design strategies and providing opportunities that help insure success for each unique learner. The research also expands on the literature by discussing how religion and other cultural issues may influence the choice of CMC technologies and how, when, and if the technologies may be used by all course participants.

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Exploring the Complex Computer-Mediated Communication Needs of Learners in a
Multilingual, Multicultural Online Learning Environment

by
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DEDICATION

There are many people I have met along life's meandering path who have influenced roads chosen and actions taken. First and foremost, I must dedicate this dissertation to my wife and son, Nina and Trystan. You are my family and my life and I love you both dearly. Pursuing a doctorate requires sacrifice on all levels, and I thank you for enduring through this process with me and understanding why I had to pack up the laptop and leave the house way too many times in search of a quiet space.

To other members of my family: Mom (Barbara), Dad (William), Aunt (Jan) my beloved brother Scott, and my Border Collie, Cassie, I dedicate this to you as well. All, especially Scott, were taken from this world at too young an age. I thank each of you for your unique influences, support, love, laughter, and sharing in life's many weird moments! I love and miss you all and hope you are proud of your first-born son.

BIOGRAPHY

William (Bill) Burger is a three-year veteran of the U.S. Army, 82nd Airborne Division, where he was a paratrooper-medical and decorated competitive marksman. After completing his tour in the military, he earned a B.A. in Photography, and then worked as owner-operator of an award-winning commercial advertising photography studio. Since that time, he has acquired a Master of Arts in Educational Media, Media Production (online) through Appalachian State University. Upon completing his M.A., Bill enrolled in North Carolina State University's Adult and Community College Education, Training & Development Ed.D. program, with a concentration in Communication.

The desire to work in higher education has always been foremost in his mind. After twelve years of running his own photography business, he began his career in higher education. Since that time, he has worked as Information Technology Specialist, Multimedia Specialist, Director of Distance Learning and Instructional Technologies, and as an Instructional Designer. Bill's areas of research include Cultural-Historical Activity Theory, effective online course design for non-native learners, adding 'human-ness' into the online learning environment, and addressing socio-cultural online learning needs via affordable Computer-Mediated Communication (CMC) technologies.

Bill is also a musician, and an award-winning fine art photographer and songwriter. Musical roots run deep.

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Today is a good day.

TABLE OF CONTENTS

LIST OF FIGURES	ix
CHAPTER 1: INTRODUCTION	1
Research Questions.....	1
Context and Background	2
Problem Statement.....	8
Purpose Statement	12
Significance	13
Limitations.....	14
The Researcher	16
Assumptions	17
Summary.....	18
CHAPTER 2: REVIEW OF THE LITERATURE	20
Introduction	20
Theoretical Framework.....	22
Part 1: Intercultural Communication Theory.....	26
English as the Global Language	30
Complexities Derived of Non-Native Communication.....	32
Cultural Differences (We Are Misunderstood).....	33
Part 2: Computer-Mediated Communication	39
Introduction	39
Online Learning and Online Communication	40
Online Presence	41
Part 3: Adult Learning Theory.....	44
Learning is a Social Activity	45
Cultural Learning Styles.....	48
Part 4: Webcam-Mediated Communication	50
Sense of Presence	50
Emotional Response to Webcams	55
Webcams and Second Language Dynamics.....	60
Webcams and Cultural Dynamics	63
Summary.....	65
CHAPTER 3: METHODOLOGY	71
Introduction	71
Research Design	72
Rationale For Qualitative Research.....	77
Rationale For Study Approach – Case Study	79
Conceptual Framework.....	81
Preferred Means of Communication.....	81
Participant Reactions to Webcams	82

Challenges to Online Communication.....	83
Study Setting, Context, Participants.....	85
Data Collection Methods.....	87
Data Analysis Methods.....	89
Organizing the Data.....	90
Data Immersion.....	91
Categories and Themes.....	91
Data Coding.....	91
Written Report.....	92
Ethical Issues.....	92
Validation.....	93
Summary.....	94
CHAPTER 4: FINDINGS.....	96
Finding 1: Achieving a Sense of Presence via CMC Technologies.....	98
The Development of Community.....	104
The Development of Friends.....	108
The Conveyance of Emotion.....	113
Finding 2: How Cultures and Cultural Histories Influence One's Preference of CMC Tools.....	116
Emergent Cultural Issues and Cultural Dynamics.....	117
Religion.....	119
Finding 3: The Challenges of Communicating in the Multicultural Online Learning Environment.....	121
Communicating With English as a Non-Native Language.....	122
Reliability of CMC Technologies.....	126
Technologies That Inhibit One's Ability to Communicate.....	129
Finding 4: Participants Embrace the Use of Various CMC Technologies.....	135
Comfort Experienced While Communicating With CMC Technologies.....	135
Environmental Affects on Desire or Ability to Participate Using CMC Technologies	139
Preferred CMC Technologies for Communicating in the Multicultural Online Learning Environment.....	141
Summary.....	144
CHAPTER 5: DISCUSSION.....	149
Achieving a Sense of Presence Through the Development of Friendships and Community.....	149
Building a Global Community and World Peace via CMC.....	150
Building Communities of Practice via CMC.....	151
The Relationship Between Achieving a Sense of Belonging and Time Engaged With Others via CMC.....	152
Willingness of Others to Provide Assistance via CMC.....	154
The Relationship Between Experiencing a Sense of Presence and the Compatibility of Partners.....	156

The Ability of CMC to Evoke a Sense of Reality	157
How Individual Cultures and Cultural Histories May Have an Influence on Their Choice of Communication Tools	158
Religious Influences	158
The Psychological, Religious, Linguistics, Temporal, Infrastructure, and Technological Dynamics of Communicating	159
Psychological Challenges	159
Religious Dynamics.....	161
Technical Limitations	162
Most Participants Embraced the Opportunity to Communicate With Various CMC Technologies.....	162
Participant Reactions to Effective Course Design Strategies.....	162
How CMC Supports the Development of Non-Native English Communication Skills.....	165
Participant Reactions to the Course Coming to a Close.....	165
Summary.....	167
CHAPTER 6: IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSIONS ..	171
Overview	171
Implications for Practice.....	172
Pre-Course Collection of Cultural Information.....	172
Pre-Course CMC Technology Training and Testing.....	173
CMC and Course Design.....	174
Staff-To-Learner and Peer-To-Peer Support Systems.....	175
Course Closure	176
CHAT	176
Recommendations for Future Research.....	177
Utilizing CMC to Facilitate Effective Comprehension Between Second Language Speakers.....	177
Exploring the Potential Correlation That Exists Between Virtual Peer Support and Developing A Sense of Trust in the Online Learning Environment	178
Designing Thoughtful CMC Practices To Meet the Needs of Non-Western Religious Student Populations in the Online Learning Environment.....	179
Developing Communities of Practice via Facebook	179
Conclusions	180
REFERENCES	186
APPENDICES.....	208

LIST OF FIGURES

Figure 1: Theoretical foundation conceptual map	21
Figure 2: Vygotsky's model of mediated action (Vygotsky, 1978)	23
Figure 3: Tiered CMC technologies integration strategy (Burger, 2013)	74
Figure 4: Second-generation activity triangle model (Engeström, 1987)	75

Chapter 1: Introduction

This study seeks to understand student perceptions of social presence that result from communicating and collaborating via different forms of computer-mediated communication technologies in a diverse, multicultural, multilingual online learning environment. This study provides insight pertinent to the fields of distance learning, communication, linguistics, social presence, social learning, instructional systems design, computer-mediated communication, and multicultural studies. This qualitative, embedded, single-case study was theoretical anchored in Cultural-Historical Activity Theory (CHAT), and incorporated a purposeful maximum variation sampling strategy in its recruitment of 14 adult learner participants who were enrolled in a culturally diverse, online-delivered course hosted by a large university located in the Mid-Atlantic region of the United States.

Research Questions

The following research questions guided this study:

1. How do participants describe their perceived sense of presence while engaged with others in a multicultural online learning environment?
2. How do participants' cultural histories influence their choice of communication tools in the multicultural online learning environment?
3. What dynamics do participants encounter when communicating in the multicultural online learning environment?
4. How do participants describe their reactions to using various CMC in the multicultural online learning?

Context and Background

Advances in technology and increases in available bandwidth have provided the means for people to communicate synchronously with voice and video functionality (Day, Wood, Scutter, & Astachnowicz, 2003). Millions of communicants interact with others on a regular basis via computers over Internet-mediated technologies (Skype, 2011). However, synchronous Internet-based communication is not limited to using the personal computer platform. Mobile phones have evolved into handheld portable microcomputers dispersed throughout public places, being used to execute actions far more complex than to merely communicate via two-way voice technologies (de Souza E Silva, 2006). Many cell phones, including the Apple iPhone, allow people to communicate over mobile devices using synchronous audio and video technologies (Apple, 2011). Yamada & Akahori (2009) posit the capabilities of mobile technologies overcome limitations inherent in text-based communication systems, allowing communicants to experience a perceived increase of being in the presence of others.

Recent technologies have spawned a new generation of technology users who incorporate digital communication, collaboration, and social technologies into the everyday aspects of their lives (Prensky, 2001), including in how they learn. Educational institutions are incorporating e-learning and Internet-based communication technologies as part of their face-to-face and distance learning course design (Yamada, 2009). Citizens of the digital generation grow up using computers and they establish social networks with computer-mediated communication tools including Facebook, reflective diaries, video-aided mobile

telephones, tablets, and Internet-mediated video communication applications such as Skype (Thorne & Payne, 2005).

A report published by Skype in 2011 states that in 2010, Skype was used by 124 million users per month. In the first six months of 2010, Skype users logged 95 billion minutes of voice and video communication time. Approximately 38 billion of those minutes (40%) incorporated the use of video communication. The rapid evolution and adoption of digital communication technologies allow citizens to engage in cross-border intercultural communication (Lee, 2009). Lee states, “it is becoming much more important for people to understand one another’s cultures, since culture plays an important role in shaping the identities, values, and beliefs of people around the world” (p. 1).

Technology and globalization have had a particularly profound impact on distance education (Vrasidas & Zembylas, 2003). From a global perspective, technology allows people from geographically dispersed nations to become readily interconnected (Stromquist, 2001), facilitating the exchange of information amongst people of differing cultures and expanding the teaching and learning borders to the global arena. As interdependent activity is dependent upon effective communication between participants, non-native English speaking societies partially address this need by accepting (some via acquiescence) English as today’s global language of power (Obiaker, Smith & Sapp, 2007) and education (Altbach, 2007). This new level of multi-cultural interconnectedness and the dominance of the English language throughout the world require individuals to reassess how they see the world, their native country, their personal identity, and indeed, their place in this interwoven world

(Burbules & Torres, 2000). Some societies who do not have English as their native tongue have expressed concern that the influence of hegemonic powers is such that it places their non-English speaking people at a socio-economic disadvantage. There are additional concerns that English can have a dominating affect over their native language, having a distilling effect on their heritage and culture. So while technology has provided humans with the ability to communicate and share information at unprecedented levels, this capability ironically results in new complexities, which have the potential to produce unanticipated challenges that need to be addressed in order to deliver a quality and satisfying teaching/learning experience.

When planning for communication and collaboration events that occur between people of various languages and cultures, the linguistic and cultural needs of all participants must be addressed. According to Noddings (2005), the hosting entity must recognize and demonstrate respect for the diversity that participants bring to the event, as one person's actions or choices have the power to positively or negatively affect others. It is crucial that the distance learning program needs and limitations of each student are defined, understood and addressed (Zheng & Smaldino, 2003). A primary concern, then, becomes finding a means of communication with which all participants can have a voice and be heard (Gunawardena, 2004). Online educators must be particularly cognizant of the impact their immediacy and social presence behaviors have on student satisfaction, motivation, and learning (Richardson & Swan, 2003). Social presence is the bellwether of learner satisfaction (Gunawardena & Zittle, 1997).

Global business professionals frequently interact with coworkers and clients across national borders (St. Amant, 2002) and much of this communication takes place via the Internet. For instance, Skype is used by business people, academicians, students, and between friends and family (Skype, 2006). In their 3rd quarter report for 2006, sixteen percent of Skype user accounts were US-based while the remaining 84% were based 'overseas.' The demand for effective online-based transnational communication tools is evident and the demand extends into institutions of higher learning. Educause (2007) cites a large number of students and educators currently using Skype for scholarly communication and collaboration and estimates the total number of users at 250,000,000. By providing a means with which students can interact via computer technologies with transnational cultures, educators provide themselves and learners with a unique cross-cultural experience and valuable business communication skills.

Many English-as-a-second language, non-Westernized students seek to develop these skills by enrolling in institutions of higher education based out of countries considered to be of a traditionally Western bent. This is a symbiotic relationship, as Western academic institutions typically welcome foreign nationals. Most universities recognize the benefits in diversifying their faculty, supporting staff, and student body. And, many universities charge a premium price for non-native students. For universities that are financially challenged and partially funded by tax dollars, foreign dollars are seen as a welcome source of increased revenue. Prominent universities such as Harvard (Harvard University, 2008) and Oxford (Oxford University, 2008) enroll approximately twenty percent or more of their students

from foreign countries. Approximately 56% of the ten largest US-based institutions of higher education have some form of collaborative degree program with international non-US-based institutions (Council of Graduate Schools, 2007).

It is important that these statistics be considered in the context of the times. When one hears the words ‘foreign students,’ thoughts may turn to images of students separated from their family and native culture, living on a campus in an environment completely new to them, experiencing differences in mores and cuisine, negotiating language differences, and being physically immersed in the local culture. However, students no longer must file for a visa and fly across spatial, political and temporal borders in pursuit of an international education. People who have access to current Internet-based technologies are provided opportunities to participate in extensive online learning, collaboration, and rich communication events with people from all corners of the globe (St. Amant, 2002). The past decade has seen an incredible rise in the number of courses being offered via some form of distance learning (Sloan Consortium, 2012), and there is no sign of decline in the demand for courses to be delivered via distance learning delivery methods.

In the fall semester of 2006 in the United States alone, more than 3.5 million students enrolled in at least one online course (Allen & Seaman, 2006). In 2011, that number has increased to over 6.7 million students (Sloan Consortium, 2012). The Open University, an online university based out of the United Kingdom, connects their curriculum to more than 180,000 students per day (The Open University, 2008) and accepts enrollment into their programs by residents of Austria, Belgium, Bulgaria, Channel Islands, and more

than 20 additional countries. Being a foreign student no longer equates to leaving the comfort of one's home, abandoning one's local support system, and moving away from one's native culture. With a relatively inexpensive computer, fundamental PC skills, and a stable, broadband online connection, learners can gain access to online-based courses. This opens up a myriad of learning opportunities to learners from many corners of the world (Owen & Demb, 2004), provided the technology and infrastructure is available to them (Aderinoye, Siaciwena, & Wright, 2009).

The free-flowing nature of the Internet allows for the international transmission of data anywhere one can access a computer connected to the Internet. The Internet bypasses temporal and spatial boundaries providing people with the ability to connect, share, and learn from each other at an unprecedented scale. As McIsaac (2002) posits,

Distance education is taking advantage of these collaborative and connected learning spaces...Ideas and knowledge are shared in a global, connected learning environment...Education, as never before, is crossing international boundaries and is offering us the opportunity to share our multiple cultural perspectives. (p. 18)

The California-based social entrepreneur organization, *Coursera*, has partnered with a number of highly respected universities including Brown, Duke, the University of North Carolina, Columbia, Johns Hopkins, Stanford, Berklee School of Music and others, to offer online courses to students across the globe for free through a massive open online course (MOOC) delivery platform (Coursera, 2013).

Problem Statement

Centuries of English imperialism and decades of US-based hegemonic influence (Kawai, 2007), have produced more non-native speakers of English than native English language speakers (Foley, 2007). The advent of technological advances in online communication in combination with advances in globalization has fueled the speed and expansion of promoting English as the global language (Kawai, 2007). While this may make teaching and learning more manageable for educators and students who are native to the English language, acceptance of English as the global language of education places many non-English speaking, English as a second language (ESL), and non-Westernized students and faculty at a participatory disadvantage. And language and cultural dynamics are not the only potential problems faced by ESL and non-Western students.

Ironically, while Internet-based technologies allow users to interact with more people than ever before, these same technologies impose a series of socio-psychological and communication challenges. In a 2005 survey of more than 2,200 educational institutions conducted by the Sloan Consortium (Allen & Seaman, 2006), while 72.6% of the respondents agree that distance education reaches students who are not otherwise served by face-to-face brick-and-mortar programs, over 95% of the reporting Chief Academic Officers agreed that there are widespread challenges to student abilities of receiving an online education. One of the principal complaints expressed by online learners and educators is their perception of being socially disconnected (Rovai, 2002). Education is an interactive and social practice, and humans seek personal satisfaction from social interaction

(Vygotsky, 1981, Laffey, Yu Lin, & Lin, 2006). Nicol, Minty, & Sinclair (2003) argue that effective communication via interaction and dialogue are essential elements to the success of productive learning in any learning environment. Moore (1993) advises us that when students feel isolated it can inhibit their ability to learn.

When courses delivered over the Internet are designed to facilitate communication between participants solely by text-based means (email, text-chat, Instant Messaging), the result is a learning environment void of auditory or visual symbols, signals, and information. Participants lose the ability to exchange the wide range of verbal and nonverbal communication cues that are possible to transmit during face-to-face encounters (Doering & Poeschl, 2007).

During face-to-face exchanges, communicants see each others' facial expressions, body language, and hand gestures. Participants can hear the tonal inflection in voices and feel the shake of a hand or receive a reassuring pat on the back. According to Munter (1993), 65 to 99 percent of all communication is conducted via non-verbal means. Anthropologist Birdwhistell (1970) places those numbers between 65 and 70 percent. However, currently much of the communication that takes place between people occurs via text-based means over mobile telephone and the Internet.

Ofcom (2011) reports that, in 2011, mobile users in the United Kingdom sent 129 billion text messages over their smart phones. Independent research group mobiThinking (2012) reports smart phone users globally sent 8 trillion text messages in 2011. Email continues to enjoy high levels of popular use as well. Reduced social cues theory (Kiesler,

Siegel, & McGuire, 1984) suggests text-based computer-mediated communication lacks many essential verbal and nonverbal social cues and as a result, the communication experience is socially and emotionally impoverished (Doering & Poeschl, 2007). From an educational perspective, a lack of multi-sensory communication has the potential to contribute to a decline in participant social satisfaction, negatively affect class retention, and impede the social learning process. When communicants from dissimilar countries and cultures are deprived of social cues while engaged in discourse, complications are likely to arise.

According to Whiteman (2002), “understanding relates to perceptions, attitudes, role expectations, relationship beliefs and patterns, self-concepts, conflict issues, communicative intentions, feelings, and immediate thoughts while observing and analyzing conversations” (p. 4). It is important to acknowledge the complexities that make up a quality conversation or exchange of knowledge between individuals, especially when the communication occurs online.

While the online delivery method provides for new and expanded learning opportunities, the online learning environment is a digital one and as a result the classrooms are ‘virtual’ and commonly void of the elements that can fill the human senses. Face-to-face real-time contact is severed. This loss of face-to-face human contact inherent in the traditional classroom setting is a recognized concern to educators, administrators, researchers and students (Nicol, Minty & Sinclair, 2003; Romanoff, 2003). Gunawardena (1999) claims quality interaction between the learner and the instructor is not only highly

desired by learners, it is also regarded by many educators as essential to the success of the learning experience. Thus the convenience and attractive aspects of online learning comes at a psychological price (Morgan, Morgan, & Hill, 2000). Online students may well lose the ability to see, hear, and touch one another.

Distance learning combines technology with pedagogy with the intent of providing a quality learning experience for learners. However, there are concerns for the ability of all participants to interact effectively (Stein, Wanstreet, Calvin, Overtoom, & Wheaton, 2005). By combining distance learning related technologies with sound pedagogical practices, educators can facilitate the development of an active distance learning community (Romanoff, 2003). Learning communities can be instrumental in forming a sense of class unity and well being. Romanoff posits the lack of face-to-face interaction is not as critical as providing learning experiences that recognize individuals and the collective successes of its participants. It is therefore ironic that the same technologies that accommodate distance learning and have the potential to present spatial, cultural, and psychological challenges between educators and learners, are the technologies that have the capacity to minimize or improve these same social disparities. A potential barrier for some is the dominance of English as the globally accepted language of business and learning.

The following organizations have French and English as their official languages: NATO (NATO, n.d.), G8 summit communiqués (G8, 2003), the Olympics (International Olympic Committee, 2007), and the European Organization for Nuclear Research (European Organization for Nuclear Research, 2007). The World Bank (2008) uses English

as its sole official language. This has repercussions for governments, cultures, businesses, and academia. Non-native-English-speaking entities that wish to partner with the native-speaking West are forced to adapt, adopt, and comply or fall by the wayside.

The culmination of the above presents a predicament. If Western institutions continue to endorse the position that English is the global academic and business language, logically, these institutions should support non-native English speakers to enable and allow them to be valued and contributing members of these groups. In addition, if the US educational system desires to attract people from other cultures to enroll in and enrich our educational institutions, then it is imperative these institutions provide the means possible with which to address potential linguistic and cultural imbalances of power by reaching out to accommodate their multicultural guests. If host institutions can build bridges that cross the sociological, psychological, linguistic, cultural, and technological challenges that exist between host and non-native participants, the results should prove beneficial to all stakeholders. One such way of breaking through these challenges may be through the use of webcams in the multicultural online learning environment (Salam et al., 2013).

Purpose Statement

The purpose of this embedded, single-case study was to understand student perceptions of social presence that resulted from communicating and collaborating via different forms of Internet-based communication technologies in a diverse, multicultural, multilingual online learning environment. This qualitative, single-case study was conducted with the intent to explore the relationships that exist between the use of CMC technologies

(including text-based means of communication, audio chat, and video chat), and social presence, culture, and linguistics in the multicultural online learning environment.

Significance

The results of this case study indicate that multicultural, multilingual participants enrolled in an online course derived linguistic, cultural, and social benefits from the use of various CMC technologies in their social and educational communications. The results also indicate an individual's cultural history and religion may influence or even limit the participant's choice and use of CMC tools. Also, participants experienced a variety of difficulties communicating in the multicultural, multilingual online learning environment. As such, these findings provide support for the argument that these technologies are beneficial toward establishing an improved sense of social presence, building of types of community, and improving one's ability to communicate one's intended message. These findings also provide support for considering new approaches to the choice and use of CMC technologies in online courses by devising new learner-specific course design models. Such results suggest the need for further study and warrant giving thought to developing new models for the delivery of online courses, which would incorporate related technological solutions to provide for improvements in text-based, audio, and video interactivity. Findings from this study may assist in providing new insights for the fields of distance learning, communication, linguistics, social presence, social learning, instructional systems design, computer-mediated communication, and multicultural studies.

Limitations

There were several limitations associated with this study. To address time and financial constraints, the study was limited in scope. The study was conducted with students enrolled in a ten-week, online delivered class hosted by a large Western-influenced university located in the Mid-Atlantic region of the United States. The course default language was English and the course was designed around Western academic standards.

The success of this study was largely dependent on the level of cultural diversity of the participants. Logically, a more diverse pool of participants would provide greater insight and produce a richer data set than a more homogenous participant pool. Thus, every effort was made to locate a class delivered online that is historically comprised of a diverse, multi-cultural, multi-lingual pool of learners. The study population was successfully representative of four continents: South America, Africa, Asia, and Europe. The population did appear to be limited in its representation of world religions, and of the 14 participants, only one was male.

It is important to note that the population consisted of professional English language educators who were sponsored to participate in the course by the U. S. Department of State's Bureau of Educational and Cultural Affairs. As such, this was a group that appeared highly appreciative to be a part of this educational experience and also seemed to be highly motivated. They were also somewhat unique in that they shared the following attributes: they were non-native English speakers; they were all foreign to the host nation; they were all professional educators; they all teach English to young learners. Having so much in

common may have influenced the ease with which they developed personal bonds, experienced building a sense of community and a community of practice.

Part of the course required students with webcams to communicate synchronously through the Internet via communication application 'ooVoo.' I personally funded the purchase and mailing of webcams and headsets to all student and educator participants. As such, monetary constraints were taken into consideration. I also recommended the use of ooVoo during the course to facilitate the ability to text-chat, conduct audio conferences, host multi-participant videoconferences, and exchange digital files. As the version of ooVoo used was free, advertisements were visible to the users.

The possibility of technological limitations must also be accounted for. Every effort was made to incorporate webcam technologies that make efficient use of bandwidth in order to avoid webcam-related technical complications. However, some students had restricted or interrupted access to the broadband connection speeds necessary to support an effective audio chat or video chat communication experience.

The study is also limited from a 'technology in time' perspective. Technology evolves continually and while the study used what can be considered 'good' quality consumer-grade equipment by current technological time standards, by the time the study is published, improvements in audio chat or video chat technologies may have surpassed those used in the study.

Finally, the study explores data generated from a Western-based perspective. While I am married to a person of European origin and I have traveled to a dozen countries, I was

raised and educated in the United States, and have been employed by Western-based institutions of higher education. Further research will need to explore resulting data sets that are derived from studies from educational institutions based in non-Westernized cultures, and delivered by educators who are of a non-native-Western upbringing.

The Researcher

I am native to the United States and have extensive world-travel experience. As a student and education administrator, I have facilitated or participated in a variety of international educational partnerships. My immediate family has European roots. This provides a worldly experience-based lens through which I view matters relating to international relations, cultural comparisons, and multi-linguistic communication. I have a natural bent to want to see international partnerships succeed. I am also a professional who specializes in the fields of distance learning, webcam-mediated communication, and educational technologies. While this provides me with an educational and field-specific level of expertise, I am biased in that I find satisfaction in seeing matters related to these fields succeed. I enjoy communicating with friends and family who are located around the world via webcams. My wife of European origin stays in touch with her family via webcam technologies. I therefore acknowledge this personal bias and recognize that I seek to find workable solutions that support the use of webcams and other Internet-based computer-mediated communication technologies in offsetting social, psychological, educational, cultural, and linguistic challenges commonplace to academia, the business sector, and personal use, while communicating and collaborating via Internet-based technologies.

In my professional capacity, I have had first hand successes with employing webcams as a tool in connecting teachers and learners as well as corporate staff personnel locally, nationally, and internationally. Not everyone is completely enamored with the use of webcam technology. I have had several students tell me they do not want to be ‘bothered’ learning how to use webcams as a means to supplement their interactivity and learning. A few co-workers have also told me that they prefer to remain visually anonymous in their virtual communications, and would rather communicate via audio-only or text-base methods of communication. Several others have mentioned experiencing difficulties associated with scheduling synchronous sessions across what can be extensive time zone differences.

I must acknowledge my great admiration for the field and delivery methods of distance learning. My Masters degree is in Educational Media, with a concentration in Distance Learning. The degree was an all-online program offered by Appalachian State University. As a distance learning and instructional systems design professional, I recognize and support the position that distance learning and the use of webcams in online communication and collaboration is not ideally suited to or the preference of every learner, or in my opinion, every educator.

Assumptions

As an experienced student and previous distance learning administrator who has worked with and supported international distance learning communities, I brought five assumptions to this study (and acknowledge that others may exist that I am unaware of). First, people of differing languages are often capable of communicating their intended

meaning through non-verbal means of communication, such as body language, tonal inflection, facial expression, or gesture. Second, intended meaning between people of differing languages and cultures can be easily misconstrued when the communication medium is limited to text-based means. Third, many distance learning classes are not designed to address the needs of presence, community, interactivity, cultural diversity, communication and understanding. Fourth, many learners are excited about the possibility of using new methods of Internet-based, webcam communications and look forward to engaging others in real-time with audio and visual communication technologies. Fifth, some students have no desire to learn new education-based, communication and collaboration tools, and have a preference to remain in audio video anonymity.

Summary

This chapter begins with the context and background that frames the study. This is followed by the study's problem statement, statement of purpose, related research questions, significance of the study, the study overview and concludes with key terminology used in support of the study. In short, through hegemonic and other influences, English has become the global language of power and academia. Students foreign to the English language and Western culture, who are enrolled in Western-based online courses, are at a distinct disadvantage compared to those who are native to Western culture and native to speaking English. It is imperative that Western-based learning institutions provide the means necessary to accommodate foreign students as they negotiate any potential learning, communication, and socialization challenges that they encounter while participating in such

classes. By applying a perspective grounded in Cultural Historical Activity Theory (CHAT), this single-case study explains how students in a multicultural online learning environment perceive the role various CMC technologies play in negotiating potential social presence, culture, and language issues.

Chapter 2 will explore the literature that supports the areas of Intercultural Communication Theory, Computer-Mediated Communication, Adult Learning Theory, and Webcam-Mediated Communication. Specifically, the literature will focus on areas of English as the global language, complexities in non-native communication, cultural differences, styles of presence, online learning, online communication, learning as a social activity, and cultural learning styles.

Chapter 2: Review Of Literature

Introduction

The purpose of this study was to understand student perceptions of social presence that resulted from communicating and collaborating via different forms of Internet-based communication technologies in a diverse, multicultural, multilingual online learning environment. The research questions that guide this study are:

1. How do participants describe their perceived sense of presence while engaged with others in a multicultural online learning environment?
2. How do participants' cultural histories influence their choice of communication tools in the multicultural online learning environment?
3. What challenges do participants encounter when communicating in the multicultural online learning environment?
4. How do participants describe their reactions to using various CMC in the multicultural online learning?

This qualitative, embedded, single-case study was conducted with the intent to explore the relationships that exist between the use of CMC technologies including webcams, and social presence, culture, and language in the multicultural online learning environment. To best comprehend and support related components of the study, a comprehensive literature review was conducted through all phases of the study.

This study maintained cultural-historical activity theory (CHAT) as its principal theoretical framework. Research finds CHAT to be a useful theory when seeking to

understand the relationships that exist between technologies and their human consumers (Nardi, 1996). CHAT also has its foundations in social learning. In addition, CHAT requires the researcher to consider how culture and history play a role within intermingling processes. As such, the theory seems particularly well suited to serve as the cornerstone of this study.

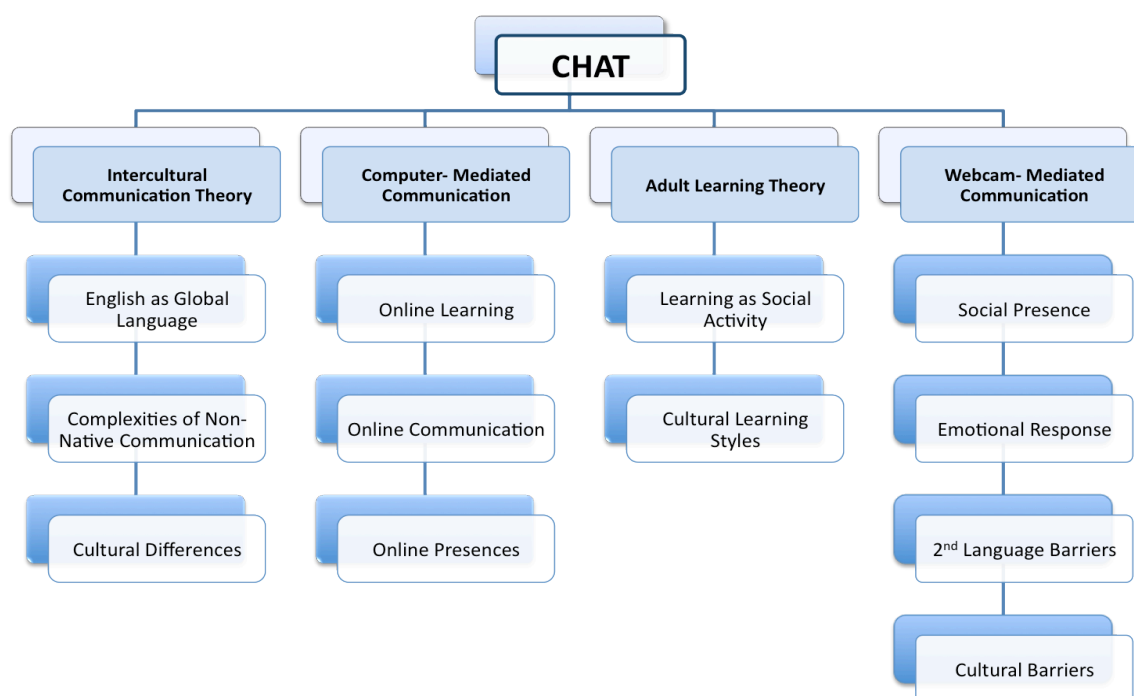


Figure 1: Theoretical foundation conceptual map

While CHAT served as the study's principal theoretical framework, four additional theoretical arenas were particularly well suited to add value to the study. They are

intercultural communication theory, computer-mediated communication, adult learning theory, and a relatively new concept that is highly relevant to this study that I am labeling ‘webcam-mediated communication.’ These interwoven theories and concepts served to provide the conceptual underpinning of the selected literature. Issues pertaining to intercultural communication theory focus on: English as a global language; complexities of engaging others using a non-native language; and cultural differences that arise between diverse communicants. Issues pertaining to computer-mediated communication (CMC) focus on the following sub-components: CMC in online learning; CMC in online communication; CMC in online presence. Issues pertaining to adult learning theory focus on: learning as a social activity; cultural learning styles. Issues pertaining to webcam-mediated communication focus on: how user communication experiences with webcams influence their perceived level of social presence; how webcams affect user emotional response; how webcams affect the dynamics that exist between communicants engaged in second language learning; how webcams affect the cultural dynamics that exist between online communicants.

Chapter 2 will begin with an overview of the theoretical framework followed by the conceptual framework for the literature review. The chapter will finish with a summary of the literature’s findings and a brief introduction to Chapter 3.

Theoretical Framework

Activity theory is an interdisciplinary approach to human sciences that originates in the cultural-historical psychology school of thought, initiated by Vygotsky, Leont'ev and

Luria (Engeström, 2001). Activity theory takes the object-oriented, artifact-mediated collective activity system as its unit of analysis, thus bridging the gulf between the individual subject and the societal structure (Engeström, Meittinen, Punamäki-Gitai, & Punamäki, 1999).

Engeström (2001) posits any theory of learning must answer the following four questions: 1) who are the subjects of learning; 2) why do they learn; 3) what do they learn; 4) how do they learn? Cultural-Historical Activity Theory - or CHAT – provides a systematic view of the development of the individual mind, the collective mind, the activity of the subject, and the evolving application of tools as they play a mediating role toward achieving an activity. CHAT has been proven useful for analyzing data recorded in actual classrooms as well as providing direction for change in troubled cultural environments (Roth & Lee, 2007).

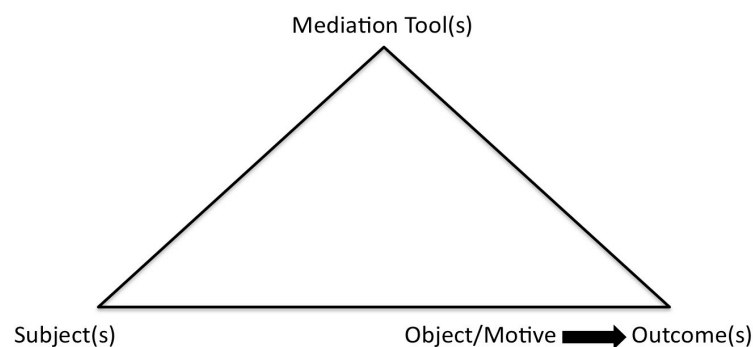


Figure 2: Vygotsky's model of mediated action - the first activity theory model

Since its inception, CHAT has gone through three generational changes (Engeström, 2001). The principles of CHAT were initially developed by Russian Lev Vygotsky in the 1920s and 1930s and were eventually expanded upon by his colleague Alexei Leont'ev. Vygotsky's interests were initially centered on the concept of mediation.

According to Vygotsky (1981), high-level human mental processes are mediated by historically and culturally constructed auxiliary means. These auxiliary means can be comprised of any of a number of indigenous cultural and symbolic artifacts, including language, numbers, and graphs. Vygotsky posits that a socially organized, goal-oriented practical activity designed to reflect on a learner's progress toward achieving their goal, leads to consciousness for the learner. Emphasis needs to be placed on the social processes that enhance the ability for the individual to learn through collaboratively engaging in activities with others. Even though Vygotsky passed away prior to the birth of the personal computer, Lee (2009) writes Vygotsky's position "illuminates the notion of multiple activity systems across time and space in the modern classroom with computers and telecommunications" (p. 22).

Leont'ev's theory of activity (1981) is constructed on foundations associated with mental functioning and semiotic mediation. According to Leont'ev, an activity is a goal-oriented action navigated through the use of mediational tools. Thus, if one is to engage in an activity, there should be a clear goal that—once achieved—should produce meaning. The choice as to what socio-cultural mediational tools should be deployed to facilitate this

activity is dependent on the final objective or goal. Researchers expert to the field of Socio-Cultural Theory have a slightly different view of activity (Lee, 2009).

According to Engestrom et al. (1999), Thorn (2005) and Wertsch (1995), activity can be defined as human action that is developed through culturally and historically constructed artifacts. The activity can then be applied as a unit of analysis, toward explaining learning and development (Lee, 2009).

Jonassen and Rohrer-Murphy (1999) declare that Activity Theory “is a powerful framework for the design and development of technology-based learning environments because its assumptions are consonant with the ideas of constructivism, situated learning, distributed cognition and everyday cognition” (p. 463). Greenhow and Belbas (2007) posit that since Activity Theory concentrates on the relationships of those immersed in a shared activity, this theory is well suited toward the study of intersubjective learning that occurs in the distance learning context.

Engeström (1987) states, the Activity Theory framework are a reflection on how people interact with objects via mediating tools in order to effect outcomes. This occurs within a unique community comprised of its own set of rules and approaches to the distribution of labor. As Basharina (2007) writes, “When the students engaged with computers in similar ways, and when their objects, rules/norms coincided, they formed one activity system” (p. 86).

The challenge to activity theory, as Nardi (1996) writes, is to understand "the interpenetration of the individual, other people and artifacts in everyday activity" (p. 7).

Basharina (2007) declares, “Within an activity system, all elements constantly interact with one another and are virtually always in the process of working through changes. Changes in the design of a tool may influence a subject's orientation toward an object, which, in turn, may influence the cultural practices of the community” (p. 85).

Engestrom et al. (1999) believe deploying modern technology as a means for human activity to occur through social interaction can prove to be quite stimulating. “Learning through computers and telecommunications is one possible new direction to investigate human activity in order to promote the desired learning interaction” (Lee, 2009, p. 23).

Part 1: Intercultural Communication Theory

Gunawardena and McIsaac (2003) write that language can be a barrier to learning amongst online learners, whether the learners are non-native to the language or native speaking. Language can become particularly troublesome when non-native online participants encounter communication containing the jargon, jokes, and culture-specific references that only online native speakers might understand (Mason & Gunawardena, 2001).

Through advances in technology, people from various nations are more easily interconnected, which facilitates the exchange of information on a multi-national level (Stromquist, 2001). According to Thorne (2003), when people from differing cultures execute the same task, they may use tools unique to their socio-cultural, socio-historical context. The use of different tools may reflect "a heterogeneous set of communicative practices with different rules, community norms, and division of labor" (p. 40). One such

example can be found in the use of the cell phone (de Souza E Silva, 2006). de Souza E Silva declares cell phones can no longer be considered strictly as mobile telephones. Current-day mobile phones are portable microcomputers dynamically placed in public spaces. People of different cultures utilize them in different ways. Just how phones are used is dependent upon cultural and socioeconomic factors. For example, Asian and Scandinavian communities use the voice communication functionality less than the other functions of the phone (Rheingold, 2002). The phone, then, has become a mediating tool, which is assigned site-specific social meaning (de Souza E Silva, 2006).

Internet communication tools are also impacted by local cultural influences (Thorne, 2003). Each culture perceives each tool to be a unique cultural artifact of its own making. In addition, since culture shapes identities, values, beliefs, communal “shared patterns of behavior, interaction, cognitive constructs, and effective understanding through socialization, cultural fluency is essential for successful communication” (Lee, 2009, p. 2). Cultural influences, then, may impact the processes of communication, relationship building, and language development (Thorne, 2003).

A study conducted of an online course comprised of a student population from Russia, Mexico, and Japan, indicated that initially all students experienced feelings of anxiety (Basharina, 2007). Fear was found to be the product of three primary concerns. First, students were afraid their peers would think them as being odd due to their native cultural beliefs. Second, the course required all participants to communicate in English. Students feared their mastery of English would be perceived as being inferior. Third,

students feared they would convey misinformation, and in doing so, represent their school and nation in a negative light.

In addition to experiencing anxiety, the diversity of the student cultural pool resulted in several additional problems. Basharina (2007) writes, “Students whose tools, norms/rules and objects significantly mismatched oftentimes failed to form the shared community, experienced intercultural contradictions, and also remained outside the "third place," in the (zones) of their local contexts” (p.86). The study revealed three levels of contradictions: intracultural; inter-cultural; and technology-related. Intracultural represents contradictions that affected student assumptions and beliefs prior to engaging in class participation via telecollaborative technologies. Inter-cultural contradictions speak to contradictions that emerged once engaged with the diverse student pool of peers during telecollaborative activities. Technology-related contradictions refer to contradictions that were largely the product of the telecollaboration tools that were in use. “These contradictions were the result of having the same task–online telecollaboration–but engagement in different activities, characterized by differences in their objects/motives and mediating tools” (Basharina, 2007, p. 95).

Cultural differences can also be found between genders (Brunet & Schmidt, 2010). Research indicates each gender will choose how he/she communicates or expresses him/herself based on the context of the situation and the presence or absence of social cues. The integration of videoconferencing technologies might serve as a way to offset a perceived absence of presence or lack of social cues, but when an organization deploys

videoconferencing systems across cultural borders, team members would be wise to factor in how various cultures would respond to applying videoconferencing as a way to meet the needs of these diverse virtual teams (Bekkering & Shim, 2006).

The use of CMC (computer-mediated communication) in the multi-cultural online learning environment has proven to be capable of yielding favorable results (Albuquerque & Velho, 2002; Jauregi & Ban-ados, 2008; Lee, 2009; Liaw, 2006). “The use of educational technologies and CMC as mediational artifacts can increase learners’ potentials. Thus, dynamic learning activity supported by technology has the potential to transform the learners’ social and cultural practice” (Lee, 2009, p. 40).

In a study conducted by Jauregi & Ban-ados (2008), online learners from the Netherlands and Chile constructed virtual bridges across cultural boundaries via CMC technologies and real-life exchanges, reaped the benefits that are available in authentic learning opportunities. Positive bonds were forged in a spirit of cooperation and enthusiasm. Participants shared knowledge and perspectives about their cultures, and pointed out commonalities and differences. The Chilean students assisted the Dutch students in enhancing their Spanish as second language communication skills. The Dutch students provided two perspectives of Spanish to the Chilean’s: First, from a second-language learner perspective; Second, the Dutch offered their interpretation regarding the influence of Spanish culture on the Chileans from a non-native point of view, providing a new opportunity for cultural self-reflection.

In another synchronous CMC-based online language learning course (Lee, 2009), learners were connected to people of varying cultures from across the world. The default language was English, and although the language was not native to many participants in the course, video chat technologies were utilized which enhanced the ability for participants to see non-verbal gestures used in communication. As a result, participants could understand one another and learners shared what difference gestures mean to different cultures.

Bakić-Mirić (2007) states:

Communication between different cultures is a major topic for communication theorists. Culture and communication have evolved and become interdependent on one another. As long as people from different cultures have been encountering one another there has been intercultural communication. (p. 3)

Intercultural communication is “a symbolic, interpretive, transactional, contextual process” (Bakić-Mirić, 2007, p.3). Steeped in this level of complexity, people from different cultures may well create differing interpretations and expectations as to what actions should be taken in order to create more universal and comprehensible meaning.

English as the global language. The power distribution throughout today’s world has largely been shaped as the result of years of English imperialism and the hegemonic effects of US influence disseminated through political, economic, and cultural means (Kawai, 2007). As a result, English is largely accepted as the premier international language (Berry, Carbaugh, & Nurmikari-Berry, 2004), and there are more non-native speakers of English than native language speakers (Foley, 2007). Advances in online communication

technologies in combination with advances in globalization have fueled the speed and expansion of promoting English as ‘the’ global language (Kawai, 2007). Those who are native to the English language are usually capable of expressing their intended meaning accurately. However, those who communicate with English as a second or third language – those on who English has become imposed - may inadvertently convey false meaning due to intercultural confusion or misinterpretation of the meaning they intend to convey. The educational implications are numerous.

Many international students seek educational opportunities in the United States and as such will need to have a good understanding of the English language. Ibrahim and Penfield (2005) found English as second language students (ESL) are confronted by language and cultural challenges not only while engaged in verbal discussions, but also in formal compositions. Often, ESL students are evaluated and held to the same standards as native English speakers (NES). While customized ESL classes have been developed, such customized classes may segregate and isolate ESL students from their native hosts. By designing a composition course to mix equal numbers of NES and ESL students, educators can still meet unique ESL student needs without isolating them. The end result promotes cultural understanding and facilitates interaction and cooperation amongst all students.

Ultimately, Ibrahim and Penfield believe universities must do more to assist ESL students in adapting to their new cultural and academic surroundings while ESL and NES students need to play an active role by communicating with and accepting each other. Any

diversity of cultural backgrounds should be capitalized upon – students can use their cultural identities as a foundation for project fulfillment.

Complexities derived of non-native communication. The language barrier to non-native English speaking students is real and one that must be addressed. The ability for learners and educators to communicate and understand one another is logically essential (Stein, Wanstreet, Calvin, Overtom, & Wheaton, 2005). The key to success in the distance learning environment is the quality of interaction that occurs between the teacher and the student (Wheeler, 2002).

Human communication is achieved by combining several sign systems simultaneously (Kreydlin, 2006), and each culture has its own collection of socially ‘acceptable’ and recognizable signs. “Cultural, individual and collective historical factors influence the ways students perceive Internet communication tools” (Thorne, 2003, p. 58.) As such, there is a need for individuals to acquire the knowledge that will allow them to recognize some of the diverse methods that other cultures use to effectively communicate. Only then can they hope to interact effectively with people of other cultures in face-to-face and international online forms of interaction.

Consider the vast array of students who attend The Open University. As of Spring 2013, more than 9000 students from mainland Europe were enrolled in English-speaking courses hosted in the United Kingdom (The Open University, 2013). Citizens from thirty separate countries are courted and invited to attend courses that are delivered by an English-based educational institution (The Open University, 2008). Each of these countries is

comprised of peoples who speak—in many cases—more than one language and students and educators have historical roots with a number of differing cultures. Different cultures express themselves using a complex system of communication codes, symbols and cues (Kreydlin, 2006). If indeed 65 to 99 percent of all communication is conducted via nonverbal means (Munter, 1993; Birdwhistell, 1970), and if we accept the premise that in order to fully understand the verbal message we must have access to nonverbal cues (Streeck, 1993), a lack of access to auditory and visual cues may result in a trans-cultural participant wrongly interpreting the intended meaning being expressed by a person from a differing culture.

Cultural differences (we are misunderstood). In order to understand what it takes to successfully communicate and collaborate as a member of a multicultural community, it is helpful to discover how culture influences the system of cultural communication. As Gudykunst (1998) declares, “the greater our cultural and linguistic knowledge, and the more our beliefs overlap with those of the strangers of whom we communicate, the less the likelihood there will be misunderstandings” (p. 215).

Historically, there has been great value placed on face-to-face interaction. There are cultures that insist on getting to know who their potential business partners are before actually doing business with them. Snavely, Miassoedov, & McNeilly (1998) believe part of the bonding process for Russian businessmen and women includes face-to-face negotiations, socializing, dining and drinking. Attempts to hurry or veer from this preferred formula may

terminate business relationships with Russian affiliates. It is their experience Russians like to “see” and get to know who they are dealing with.

Symbolic means of communication may differ wildly from culture to culture. According to Villareal (2007), in India, locals may get someone’s attention by “snapping” fingers at him or her. To the Indian who is accustomed to this act of his or her culture, snapping is a perfectly normal and effective behavior. However, a visiting businessperson from the United States may find being snapped at to be insulting, condescending or a display of impatience. Ultimately, the translation of the act is dependent upon the specific cultural lens that is being applied in the viewing. The individual interprets a gesture based upon a combination of his or her worldly knowledge, the culture from which the person were raised, and the way that individual experiences the world. A “snap” in and of itself has no meaning, but each unique individual will assign this act with a meaning based upon the symbolism the recipient attaches to the act, which is a direct result of one’s cultural heritage.

Symbolic means of communication extend into the virtual or *synthetic* realm as well (Wigham & Chanier, 2013). People engaged in virtual worlds such as Second Life assume a form of virtual being (avatar) through which they communicate with others. Avatars commonly communicate to members of their community by delivering a combination of text-based sentences, kinesic movement (gestures), and by applying a sense of proxemics (Pita & Pedro, 2012; Lee et al., 2007). The virtual culture of Second Life and a combination of it’s technical capabilities and limitations appears to contribute to a general preference for participants to communicate primarily via verbal – or in this case text-based –

communication means. Of course each instance of communication would need to be contextually considered when considering such generalizations.

In addition to culture having an influence on kinesic and proxemic practices, a peoples' approach to time – or chronemics – can vary from culture to culture. According to Gurvich (1964), the concept of time in France “is not identical with time in Norway nor with time in Brazil” (p.14). The concept of time can be transferred to communication considerations such as lapses of silence between communicants. Silence can mean different things to different people (Gudykunst, 1998), and Ting-Toomey (1999) reminds us, silence can also serve different needs depending upon the interlocutors and the context and environment in which they are engaged. For example, Asian cultures such as those in Japan and China, embrace silence as a part of their communication culture. To the Westerner, silence may be met with feelings of uneasiness and impatience. For the Japanese, it may serve as a tool for communication control or as a method to facilitate ‘truth’ in conversation.

Studies show that by Western standards, Finnish people are quiet people and frequently perceived of as being shy or socially handicapped (Berry, Carbaugh, & Nurmikari-Berry, 2004). If you ask a Finnish student to explain why their people are so quiet, they may well inform you that Finns are a ‘shy, silent people’. Berry, Carbaugh, and Nurmikari-Berry state the problem here is that the cultural meaning of ‘shy’ is varied and has been culturally misconstrued. To the Finns, being shy is ‘neutral’ or a positive way of being. It is a merely a pragmatic solution to being observant, ‘minding your own business’

or not bothering others. Finns practice *quietude*. So in this case, the word 'shy' holds different meanings for various cultures.

People are different because individuals belong to different cultural groups and these cultural groups are brought up in different cultural environments (Wierzbicka, 1998). Individuals think, feel, react and relate to different people in different ways. It is a logical extension that people of one culture may well express themselves differently than others do. How one elects to display emotion is a great part of who an individual is. Facial expressions are commonly incorporated in expressing emotion, such as the raising of an eyebrow to signal mistrust. And while the extension of the arm toward a guest while toasting may seem to some to be nothing more than a ritual part of drinking, to Russians, it is a part of the Russian culture that many Russians take seriously (Snavey, Miassoedov, & McNeilly, 1998). Other cultures pay particular interest to the use of haptics.

It is common practice for people of the United States to have a perceived sense of personal space – an imaginary spatial boundary - that surrounds their physical being. When someone not emotionally close to an individual crosses into that space, the action can be perceived as being rude (Hesar, Konca, & Zarfsaz, 2012). By comparison, people from Greek, Turkish, Arabic, and Israeli, cultures commonly express their feelings through haptics. “In those cultures, physical contact with people will signify friendship, intimacy, and trust” (p. 71).

Students who are not native to Western-based institutional learning environments face a potential maze of challenges, including how they learn. For the Chinese student,

learning is constructed in a linear fashion and accomplishments in rote memory and learning competitions are rewarded (Holmes, 2005). In a system founded on Confucianism, the student is the pupil and the teacher is the master, the master's word is final and goes unchallenged. The Chinese learning system does not encourage communication, creativity or collaboration. Western learning institutions take a more dialogic approach where concepts are challenged and the students are encouraged to have an active voice in the teaching and learning process.

Chinese students placed in the Western learning environment are at a distinct disadvantage. Not only are they expected to read and write in a language that is not of their birth nation, they are expected to act and engage others in ways that are counter-intuitive to their core cultural programming. In Western classrooms, Chinese students are expected to challenge their peers and when necessary their educator. To do so is a direct affront to their culture and is viewed as an act of disrespect. The Chinese wish is to retain harmony and maintain an air of respect throughout the classroom and they will accomplish this goal by saving face and the face of others.

While many US-based students will engage their educators with vocalization and direct eye contact, there are sub-cultures in the US who may deviate from the majority norm. One example is the Native American people. According to Cacciatore (2009), "the heritage-consistent Native American values listening" (p. 47) and as such, long periods of silence may lapse into a conversation. In addition, "Native Americans may avoid direct or sustained eye contact and may not demonstrate affect, even during a crisis." To assume a

Native American learner does not know the answer to a complex question because he/she does not raise his/her arm may be affecting an unfair and inaccurate judgment on that individual (Pewewardy, 2008).

A study by Niehoff, Turnley, Yen, & Sheu (2001), finds there are significant differences between how Eastern and Western students perceive their individual identities. The United States tends to foster an individualistic culture where personal achievement and head-to-head competition is taught and reinforced from childhood. The Taiwanese foster a collectivistic culture where family and cooperation amongst people is stressed. As a result, Taiwanese students prefer to have more group assignments while their US counterparts prefer more in-class group activities. (Niehoff, Turnley, Yen, & Sheu, 2001).

While teaching via distance learning is fraught with its own variety of complexities and difficulties (Allen & Seaman, 2006), teaching and communicating via distance learning with a transnational and culturally diverse student base lends itself to an additional set of unique issues to contend with.

Culture influences the way in which each individual contributes to online discussions (Warden, Chen & Caskey, 2005). A Taiwanese university developed an international hybrid MBA program draped in Chinese culture, designed around Western MBA pedagogical concepts, and taught in English. Much of the course work and discussions were conducted online. It was observed that Asians and Westerners demonstrated clear differences in online discussion posting behavior as pertains to the following variables: filial piety, loyalty to superiors, moderation, patriotism, persistence, trustworthiness, and being conservative. The

study suggests the practice of debating has been a part of Western culture since the rule of the ancient Greeks, which is bound to serve related interests of the Western learner. As previously noted, the Chinese and Taiwanese educational systems are influenced by Confucianism (Warden, Chen & Caskey, 2005), which emphasizes a master-student relationship. In Asian culture, it is commonly believed one must avoid any actions or comments that might lead to embarrassment or criticism. Students are taught to minimize their self-expression and practice saving face. This puts Asian students at a distinct disadvantage for arguing or supporting their opinion in an online discussion forum. These forms of cultural self-restraint could well lead to hesitation amongst the Asian students to post and discuss their opinions in an open discussion forum.

Part 2: Computer-Mediated Communication

Introduction. While it is widely recognized that there is great need to research Computer-Mediated Communication from a social psychological perspective (Gunawardena & McIsaac, 2003), the words *Computer-Mediated Communication* may be interpreted differently by different people. In defining Computer-Mediated Communication, Romiszowski and Mason (2003) state the following: “A working definition of CMC (is) the process by which people create, exchange, and perceive information using networked telecommunications systems that facilitate encoding, transmitting, and decoding messages” (p. 398). This definition seems to encompass both the delivery mechanisms, which are derived from communication theory, and the importance of the interaction amongst people that the technologies and processes mediate (Naughton, 2000). Romiszowski and Mason

also state, “studies of CMC can view this process from a variety of interdisciplinary theoretical perspectives by focusing on some combination of people, technology, processes, or effects” (p. 398). This perspective provides for flexibility in how one plans to approach researching CMC.

Online learning and online communication. Past history has shown that designers of online courses have neglected to provide opportunities for participant interaction and ultimately, the course design failed to facilitate collaborative learning (Gunawardena, 1999). However, a recent search on Google Scholar using the words *online + learning + communication* and filtering the dates to run from January 2012 until March 2013, found about 91,700 results. Online course design that incorporates bi-directional participant communication is in direct support of Knowles’ principles of andragogy (Knowles, 1998). In particular, online learning should strive to acknowledge Knowles’ principle of using the adult learner’s experience as part of the learning situation.

In order to use the Internet as a versatile medium for adult learning, careful thought must go into the design of the interaction mechanism. It must be capable of fostering the negotiation of meaning, the validation of knowledge, and the construction of knowledge via social negotiation. Learner-centered learning environments that are designed based on constructivist principles and apply learner initiated inquiry and participant exploration are much more appropriate for adult learners than the distribution of knowledge through teacher lecture (Gunawardena, 1999).

Starke-Meyerring and Andrews (2006) recommend that educators structure courses delivered to multicultural audiences by accommodating the following objectives:

1. Facilitate discussions centered around topics communicated in globally distributed environments, the challenges found within, and develop communication expertise via experiential learning
2. Motivate students as soon as possible – provide a multimedia presentation or bring in a guest speaker to discuss the concept of virtual team work
3. Provide extended levels of student mentoring and support
4. As there are spatial and cultural challenges between educator and learners, insure clarity of meaning in all communications and when discussing, evaluating and revising writing assignments
5. Provide adequate time for students to work on class projects
6. Encourage intra-team collaboration and communication
7. Above all, collaborating with others across spatial and temporal borders should be enjoyable

The principal ideal remains that it is imperative that those who provide English-speaking, Western-based, intercultural online educational experiences to non-native English speakers, must design courses and provide any prudent technological solutions in a manner that bridges potential language and cultural challenges.

Online presence. Online presence is a complex dynamic intermeshing of emotion, thought, and behavior that occurs between the private intra-world, and the public inter-world

(Garrison & Arbaugh, 2007). While establishing social presence is an essential component of online learning (Stacey, 2002), establishing a sense of online social presence can prove challenging due to “the lack of verbal and non-verbal cues and the sensory perspectives and perceptions that exist in a close proximal setting” (Griffiths & Graham, 2009).

Research indicates many online learners experience a sense of isolation (Rovai & Downey, 2010; Rovai, 2001; Wheeler, 2002) and of being socially disconnected (Bibeau, 2001). Gunawardena and Zittle (1997) showed that “social presence is an important predictor of learner satisfaction” (p. 373). Effective online course design provides an active-learning environment that facilitates learning as a social practice and engages learners in the learning process (Rovai & Downey, 2010). In a correlation design study conducted by Richardson and Swan (2003), online students who reported experiencing high levels of social presence reported high degrees of satisfaction with the instructor and a perceived sense of increased learning. Research findings of Garrison et al. take those student perceptions one step further, declaring that social presence has direct implications on academic performance (Garrison, Anderson, & Archer, 2010).

Lave and Wenger (1991) declare learning occurs outside formal educational confines; it occurs through social activity. Learning is systematically interconnected with – amongst other things - the sharing of social and historical practices, and the sense of belonging to a community.

According to Tu and McIsaac (2002), there are three elements of social presence that need to be addressed in order to establish a sense of community amongst online learners:

social context, online communication, and interactivity. There is a direct correlation between an increase in the level of online interaction and a perceived increase in one's level of social presence. According to Gunawardena and McIsaac (2003),

Social presence... is one factor that relates to the social dynamic of mediated communication, as well as to other factors such as interaction, motivation, group cohesion, social equality, and in general to the socio-emotional climate of a learning experience... Two-way video and audio systems that permit the transmission of facial expressions and gestures create social climates which are very different from the traditional classroom. (p. 383)

Short et al. (1976) define social presence as the “degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships” (p. 65). This means the degree to which a person is perceived as a “real person” in mediated communication. Social presence can be conveyed both by the medium and by the people who are involved in using the medium for interaction (instructors who humanize the classroom climate may convey a higher degree of social presence than those who do not).

Whiteman (2002) defines social presence as a feeling that others are involved with an individual or group in the communication process. As the social presence diminishes, communication becomes more impersonal. Tu (2001) states social presence is a strong predictor of learner satisfaction within a CMC (computer mediated communication) learning environment. While various academicians may take a slightly different stance on their perceptions of ‘social presence’, they are united in their voice that achieving a sense of

social presence in the online learning environment is an important component of the course design strategy as a way to provide for an effective and satisfying teaching and learning experience.

Part 3: Adult Learning Theory

While research has been conducted in instructional design components such as interactivity, collaboration, and sense of community, little specific research has been performed in examining their direct affects on adult learning (Ke, 2010). Prior to establishing associations between social presence and the adult learner, it is prudent to review some of the tenets of adult learning theory. In *Adult Learning Theory*, Knowles (Knowles, Holton, & Swanson, 1998) posits there are six assumptions that comprise the concept of andragogy which are as follows:

1. In maturity, the adult self-concept migrates from dependent personality toward self-direction
2. Adults need to understand why they need to learning something before they seek to learn it
3. An adult is a cornucopia of experience which serves as a resource in the quest for learning
4. Whether an adult is ready to learn correlates to a need to address a life situation or is based on the developmental tasks of his or her social role

5. Through maturation, time shifts the role of knowledge from that of future application to the need to ascertain knowledge to address an immediate life-centered need, resulting in the adult being problem centered rather than subject centered in learning;
6. Adults are driven to learn by internal factors rather than external (Merriam & Caffarella, 1999).

According to Cercone (2008), a high-quality adult online learning experience consists of the following attributes: (1) opportunities for social interaction and collaboration amongst peers; (2) provide opportunities allowing new knowledge to be connected to participant's past experiences; (3) participants perceive an ability to immediately apply the knowledge; (4) facilitate opportunities for self-reflection; and, (5) provide opportunities for self-regulated learning. In parallel with Cercone's thinking are the thoughts of Majeski and Stover (2007) as pertains to the concepts behind *deep learning*. Deep learning occurs when highly collaborative learning experiences are combined with opportunities where information and ideas can be synthesized, self-reflection can occur, and the knowledge attained is application-centered. This attainment of new knowledge is negotiated in a social learning environment.

Learning is a social activity. Studies indicate the ability to communicate effectively in any learning environment is crucial as interaction and dialogue are essential elements to the success of productive learning (Nicol, Minty, & Sinclair, 2003). Wheeler (2002) posits the exchange that occurs between the online instructor and the online learner is potentially the most important element of support one can incorporate in a distance learning course.

Successful online social interaction instills a sense of belonging, provides the means from which participants establish trust between one another, and it allows for teamwork and collaboration to transpire. When one individual engages in discourse with another, opportunities arise from which each may learn about the other. Indeed, through this increase in personal knowledge, each has a greater understanding of the other which facilitates the ability for participants to interact with each other more effectively (Whiteman, 2002). It is equally important to recognize that communication in the online learning environment is quite different from communication conducted in a traditional classroom setting. Gunawardena (1999) posits achieving social satisfaction and collaboration in the traditional classroom environment requires a different approach to course design and delivery than teaching in an online virtual environment.

In a study comparing the use of the most popular means of communication devices used by college students, Flanagin (2005) observed the following:

(Face-to-face) communication was by far the most useful and most versatile channel for need satisfaction, suggesting that despite a growing number of increasingly complex and powerful media choices, nothing appears to compare to face-to-face communication in terms of satisfying individual's communication, information and social needs...Landline phones were by far the least useful for need satisfaction...though they did not differ significantly from email for social attention or for meeting new people. Email was also generally ranked low on needs satisfaction...Both cell phones and IM (Instant Messaging) were used significantly

more than email for all needs satisfaction factors...IM is viewed as more effective than email for both utilitarian and social uses. (p. 182)

The online learning environment is a digital one and it can be relatively void of the elements that fill the human senses. Educators and students regard interaction between the learner and the instructor to be a highly valued component of the learning experience (Gunawardena, 1999). Thus, the benefits of online learning too often come at a psychological price (Morgan, Morgan, & Hill, 2000). Thompson and McRae (2001) declare:

The need to belong is a determinative factor in psychological, physical, social, and spiritual health. All individuals seem to share a common need to be connected with caring others, and common sense signals that individuals' lives are better for being connected...This need to belong is a fundamental human motivation present in all cultures. (p. 40)

A lack of human-to-human interaction can potentially lead to students experiencing feelings of social disconnectedness, which may evolve into feelings of isolation (Bibeau, 2001).

Physical separation tends to decrease the learner's sense of community (Rovai, 2002). Rovai states:

In order to improve persistence in distance education programs, schools need to assist students in making the adjustment to learning at a distance by enhancing student satisfaction and commitment...One strategy to help increase retention is to provide students with increased affective support by promoting a strong sense of community. Such a strategy has the potential to reverse feelings of isolation and, by

making connections with other learners, to provide students with a larger base of academic support. (p. 7)

While studies agree that communication conducted via the Internet can be void of social context cues, it is the quality of the interaction that takes place and the sense of community that is developed amongst the participants that defines whether the communication is perceived as being interactive, interesting, and stimulating social medium (Whiteman, 2002).

Cultural learning styles. An individual equipped with a relatively inexpensive computer, fundamental PC skills and an online connection, can gain access to online-based courses. While this does not guarantee success in the potentially complex world of online learning, this kind of capability opens up a myriad of learning opportunities to learners from many corners of the world (Owen & Demb, 2004). However, every student's needs and limitations must be understood and addressed by the educator in all aspects of a distance education program, from registration to assessment (Zheng & Smaldino, 2003). One such example can be found regarding a study conducted in Australia.

James Cook University in Australia was presented with a complex problem (York & Henderson, 2001). Their Indigenous people are scattered throughout the remote areas of Australia and they use English as their second, third, or fourth language. The Aborigines were in need of a teacher education program. James Cook's reviewed the needs of the learners and developed a hybrid, learner-centered, cross-cultural program titled the 'Remote Area Teacher Education Program' or RATEP.

While participating in the program, Aboriginal ties to their culture remained strong and they placed immense value on family and local established community networks for support. RATEP utilized a variety of delivery and support methods including textbooks, workbooks, audio and video tapes, on-site tutors, teleconferencing, facsimile, email, and the Internet as ways to meet these students' needs. The cornerstone of RATEP is custom developed interactive multimedia software (IMM). The Indigenous students exuded a tendency to favor a hands-on, observation, practice, demonstration and immediate feedback process as a method of learning. Conducting lessons via the CD-based IMM was conducive to their preferred style of learning. Teleconferences were conducted weekly to accommodate the following: to inform; provide a means for students to lead classes; for problem solving purposes; to serve as a platform for a guest speaker; and as a means with which students could work on group activities. RATEP students and on-campus students participated in the teleconferencing sessions and many commented favorably on how the collaborative cross-culture environment provided a way for them to discuss cultural, theoretical, curriculum and pedagogical issues.

James Cook University was able to successfully set up a system that allowed the Indigenous people to stay in their community, maintain their culture and community-based support system, while pursuing a higher level of education. Simultaneously, RATEP became a melting pot. The program accommodated an exchange of ideas between Indigenous, non-Indigenous, and Western cultures. As a result, James Cook's faculty acknowledge, embrace,

and incorporate the culturally rich experiences that the Aboriginal students bring with them into current classes and will continue to do so in the future.

Part 4: Webcam-Mediated Communication

Sense of presence. Short et al. (1976) define ‘social presence’ as the degree to which a person is perceived as a “real person” in mediated communication. The findings of the literature indicates that social presence contributes to the social aspect of mediated communication and influences “interaction, motivation, group cohesion, social equality, and in general to the socio-emotional climate of a learning experience.” (Gunawardena & McIsaac, 2003, p. 383). Physical separation tends to decrease the learner’s sense of community, elevating feelings of being disconnected, isolated, serve as a catalyst for distraction, and potentially trigger a lack of personal attention which could affect student success in distance education programs (Rovai, 2002).

While Short, Williams, and Christie’s Social Presence Theory is commonly embraced as the primary way in which presence is operationalized today (Tekiner Tolu, 2010), currently, there is no one universally agreed upon definition of ‘social presence’ (Bailenson, Yee, Blascovich & Guadagno, 2008). Yet the need to define terms such as social presence is an important prerequisite toward advancing related fields. According to Biocca, Burgoon, Harms, and Stoner (2001),

The need for a theory of social presence is more pressing as the Internet and virtual environments become increasing social. With time we can observe an increase in social interaction not only among users, but also between users and computer agents.

A robust and detailed theory and measure of social presence could contribute to our understanding and explaining social behavior in mediated environments, allow researchers to predict and measure differences among media interfaces, and to guide the design of new social environments and interfaces. (p. 1)

The literature finds no shortage of contributions of thought pertaining to how social presence should be defined, branched, limited, or constructed.

According to Wrench and Punyanunt-Carter (2007), social presence theory concerns the capacity with which various media formats are able to forge social interactions while negotiating challenges to nonverbal communication. Albuquerque & Perkis (2008) state, “social presence refers to the feeling of being together with a virtual or remotely located communication partner” (p.1). Johnson et al. (2005) define social presence as, “the degree of salience of the other person in the mediated interaction and the consequent salience of the interpersonal relationship” (p. 266).

Other scholars posit there are prerequisites that must be met in order for social presence to exist. Blas & Poggie (2007) write that a sense of presence requires involvement. Involvement is dependent upon the degree of perceived significance found in related activities, stimuli, or events. According to Caples (2006), social presence is not restricted to online communities. Rather, it is interconnected between two components of the community of inquiry model: cognitive presence and teaching presence. Along with thoughts of interconnectedness, there are those who believe that social presence is comprised of sub-categories.

Tekiner Tolu (2010) states, “social presence includes 3 progressive categories: open communication, affective expression, and group cohesion. Open communication is related to creating an environment for risk-free expression. For social presence to prosper, learners need to feel free and secure to express themselves openly” (p. 43). Learners must engage one another in reciprocal and respectful exchanges - personally and academically. Doing so will facilitate the development of personal relationships necessary “to commit to, and pursue, intended academic goals and gain a sense of belonging to the community” (Garrison & Vaughan, 2008, p.19). The development of interpersonal communication is a requirement toward creating a sense of trust among learners. The establishment of trust amongst learners will allow them to work collaboratively (Tekiner Tolu, 2010). Garrison, Anderson, and Archer (2000) developed a model that reflects their thoughts on the interdependencies between social presence and other elements that contribute to the learner’s educational experience.

The Community of Inquiry (Garrison et al., 2000) was created as a means of providing an orderly conceptual tool that can be applied toward the use of computer mediated communication (CMC) and computer-based conferencing in their support of the educational experience. A community of inquiry (CoI) is defined as “a cohesive and interactive community of learners whose purpose is to critically analyze, construct, and confirm worthwhile knowledge” (Garrison & Vaughan, 2008, p.9). CoI is comprised of two constructs of learning: community and inquiry. The community is a product of its social dynamics, social interactivity, and collaborative nature. The community creates the

environment from which it supports the second construct, inquiry. “Inquiry reflects intellectual academic interaction that includes - the process of constructing meaning through personal responsibility and choice” (Garrison & Vaughan, 2008, p. 9). As such, online communities of learning are unique from other communities by their makeup of inquiry (Tekiner Tolu, 2010).

CoI was driven from extensive analysis and comparison of spoken and text-based CMC, as well as their effects on thinking, research on social-learning, community, social constructivism, collaborative learning, instructional design, and distance education. (p. 43)

Within the CoI framework, social presence is defined as, “the ability of participants in a community of inquiry to project themselves socially and emotionally, as “real” people (i.e., their full personality), through the medium of communication being used” (Garrison et al., 2000, p. 95). CoI declares the most crucial factor that contributes to the degree of social presence is the communication context. Tekiner Tolu (2010) states the communication context is comprised of the following factors: motivation; commitment; skills; familiarity; activities; the length of time spent using the media. I would propose adding “comprehension” or “understanding” to Tekiner Tolu’s list of factors.

According to Wolfe & Haynes (2003), face-to-face meetings provide the highest level of social presence, and indeed recent research has been conducted with the intent to explore how applying a video image to a course affects one’s sense of social presence (Borup, West, & Graham, 2012; de Souza Almeida et al., 2012). Based on the preceding

observations, there are numerous thoughts about what presence is and what its dependencies are. This evidence supports the position of some researchers that declare the concept of ‘presence’ is uniquely subjective (IJsselsteijn, de Ridder, Freeman, & Avons, 2000; Albuquerque & Velho, 2002; Lari, 2008.) and thus open to interpretation.

One of the reported benefits to online learners who communicate with videoconferencing technology is the ability to send and receive social cues, and perceive an increased sense of presence (Bekkering & Shim, 2006; Telles, 2009; Verhulsdonck, 2007; Yamada, 2009; Yamada & Akahori, 2009; de Souza Almeida et al., 2012). The findings of Gunawardena and McIsaac (2003) support the position that when technology provides the means for participants to see facial cues, gestures, and hear tonal inflection, such as when communicants use two-way audio-video systems, this creates online social classroom environments that are different from the traditional classroom setting. The combined use of real-time audio and video as a medium for online interaction can convey a higher level of social presence than audio on its own. By ‘humanizing’ the virtual classroom, participants may convey a higher level of social presence than is experienced in traditional classrooms and in online classrooms that do not intentionally address the need for presence satisfaction.

As videoconferencing is dependent upon the use of computer-mediated technologies, in order to establish a better understanding as to what it means to be socially present, literature that discusses presence specific to the online learning environment should be

further explored and a consensus as to what it means to achieve ‘social presence’ should be reached.

Emotional response to webcams. In a study conducted by Jauregi & Ban-ados (2008), students reportedly enjoyed using video technologies in online learning. While CMC has the capacity to facilitate social interaction for the negotiation of meaning between learners (Yamada & Akahori, 2009), a measurement of success assigned to CMC within an e-learning environment can be directly tagged to the learner’s perception of their degree of social presence (Yamada, 2009). The deployment of videoconferencing in synchronous computer mediated communication (SCMC) models has been shown to produce a perceived increase in ‘feeling’ the presence of others when compared to the degree of presence felt by participants who communicated via text-based means.

Verhulsdonck (2007) posits, tasks that require higher levels of social presence must be communicated via a medium that facilitates the transmission of social information. SCMC is an intermeshing of computers, the Internet, and interconnected interlocutors. “Through the connections, interactions, and communication in the SCMC environment... learners take advantage of real-time, online audio and video oral discourses to convey their thinking, negotiate the meaning of words, and cooperate with one other to accomplish their learning activities” (Lee, 2009, p. 21). SCMC technologies not only include those that pertain to the audio and video chat arena, the realm of SCMC extends into the domain of virtual worlds.

As of date, there are two approaches to communicating through the use of virtual environments (Albuquerque & Velho, 2002). Users can communicate via the Internet in a graphically generated virtual environment using a 3D rendered avatar to represent their visual person, accompanied by synchronous voice over microphone or text-based communications. Or, participants can converse over the Internet via webcam technologies accompanied by synchronous voice over microphone or text-based communication.

Virtual worlds have proven to be effective in providing for a mode of communication that allows participants to feel ‘closer’ than they would if they were to be communicating by phone call or email (Albuquerque & Velho, 2002). “Virtual worlds have been designed to provide users with a mediated experience that seems natural, real and non-mediated, aiming to give them a sense of being present in those environments, sharing the same space and experiences with others” (p.1). Blas & Poggi (2007) state that virtual reality has the ability to generate a communal sense of social presence by: facilitating the formation of groups in their virtual situation; and through a group’s devotion to achieving a common goal.

The popular virtual worlds allow participants to take the form of a computer-generated avatar. The ability to communicate with a voice in combination with presenting a visual embodiment representative of one’s self elevates the feeling of ‘being together’ compared to communicating via other modalities (Albuquerque & Perkis, 2008). The participants’ perceived level of synchronicity affects their perceived level of co-presence, social presence, and self-presence (Jourdan, 2006). Indeed, synchronous media is associated

with establishing a significantly higher level of presence than asynchronous media.

“Synchronicity in an interaction can support social presence through enhanced social connections and convergence of meaning” (p. 296).

Both webcam-related technologies and 3D virtual environments were developed in order to provide users the opportunity to experience physical and social components, resulting in a perceived sense of ‘being together’. (IJsselsteijn, de Ridder, Freeman, & Avons, 2000). The significant advantage of communicating in a 3D virtual environment versus communicating in a 2D community is the 3D environment’s capacity to create virtual presence (Di Blas & Poggi, 2007). When 3D world participants are enabled with the ability to walk around their world, construct virtual houses, and cultivate virtual gardens, it provides for a favorable sense of physical presence and creation (Albuquerque & Velho, 2002).

While people who actively use webcams are vocal in their defense of its use and seek to expand opportunities to interact with others by means of videoconferencing technology (Albuquerque & Velho, 2002), those who enjoy the use of the 3D virtual environment and elect to represent their likeness via a computer-generated avatar, appreciate the anonymity the technology provides. Once they get to ‘know’ someone, they may wish to exchange real images of one another. In this case, the deployment of an avatar in combination with the expression of emoticons and the ability to ‘move naturally’ serves as a trial of sorts. If a participant feels comfortable with a person in the 3D world of anonymity,

they have the option to elevate their interaction to a more real-world mode of communication such as through the use of webcams.

In a study conducted by Albuquerque & Velho (2002), student participants stated the use of webcam technologies was found to be superior to that of 3D virtual worlds in its ability to ‘represent people’. And while there are voiced concerns regarding the ability of webcam technology to synchronously link video to voice, a 2008 study (Albuquerque & Perkis) produced similar favorable findings in support of the use of webcams toward online learning. “Webcam and voice was appointed for almost all people as the best option to communicate. The image of the person adds closeness to the interaction” (p. 4). Other studies support this position. Develotte, Guichon, & Vincent (2010) posit the following:

When webcamming is utilized, it plays a major part in the socio-affective dimension of pedagogical communication and in the development of interpersonal relationships. Webcamming creates presence at a distance, installs an obvious connection between the participants and, furthermore, develops the quality of the pedagogical relationship. (p. 309)

Aaltonen et al. (2009) declare, the ability to stream synchronous video between participants allows for the distribution of non-verbal emotional information, making parallel conversations easier than those conducted using audio-only means. In addition, students who conversed over high-resolution video conferencing equipment (higher quality than is typically achieved via webcam) experienced a sense of positive emotion, emotional exchange, a shared understanding, pride, unity, and trust with their virtual partner.

According to Albuquerque & Velho (2002), a learner's sense of presence increases when they have the capacity to see movement in their peers' gestures, appearance, and facial expressions. Learners who choose to use webcams have a desire to see who they are communicating with and a similar desire to be seen as real as possible. To these students, the use of webcams is considered fundamental.

According to Griffiths & Graham (2009), webcams can be utilized in online courses to strengthen instructor-student relationships. In a study that explored the use of SCMC technologies, "students reported feeling more individual contact and a more personal relationship, and the instructors reported that they felt that they knew more about individual students, their individual situations and learning needs than would normally be possible" (p .73).

In a study conducted by Cunningham (2009), the use of webcams in online learning environments resulted in students feeling more connected to their instructor. In a particular class where the educator invoked the use of humor via webcam, students noted how they enjoyed this approach, as it had the effect of keeping them engaged. Students also commented that the ability to hear the tone in the instructor's voice had a favorable impact, as it allowed them to feel connected to the educator and to their peers.

It is possible to design curriculum and learning activities within a theoretical framework to allow learners with opportunities where they can interact and communicate with each other and establish a sense of social presence using an Internet-based SCMC system (Lee, 2009). Those who converse using consumer-grade webcams over Skype report

feeling a sense of co-presence, which yields an enjoyable user experience (Aaltonen et al., 2009). These same users stated the emotional attachment to their partner was enhanced when they switched from standard webcam resolution to high-resolution video. In the end, the spoken desire is to find ways to synchronously and virtually connect people with people while increasing their sense of presence (Albuquerque & Perkis, 2008).

Albuquerque & Velho (2002) state people who communicate via webcams have voiced that the communication experience can at times be quite intimate. As an example, it was noted that when one person shares their feelings, their peers could see the happiness or sadness on the other's face. Proponents of webcam use have a desire to see and be seen as 'real' as possible. The use of webcam toward meeting this end is fundamental.

Webcams and second language dynamics. CMC technologies are well suited toward individuals who desire to communicate in and/or learn a second language (Bueno Alastuey, 2010). CMC allows for participants to hear and converse with native speakers of a given language. They are afforded opportunities to hear differing accents and engage with other non-native language-speaking participants. The ability to communicate with native speakers allows the learner to learn how to use the language to communicate authentically.

When a multi-cultural group of students is afforded an opportunity to interact, it fuels student interest and curiosity about cultural themes (Blas & Poggi, 2007). Studies indicate this multi-cultural curiosity plays a major influence in their motivation to learn. Technology can also influence the motivation of multi-lingual learners (Jauregi & Ban-ados, 2008).

“SCMC enables learners to communicate in an environment that has real time settings, which motivates learners to communicate with each other in the second language” (Yamada, 2009, p. 820). Specifically, online courses delivered with the assistance of video technologies, affords educators and learners with opportunities to construct a pleasing virtual learning environment conducive to collaborative language and cultural learning. According to Jauregi & Ban-ados (2008) , students who use video technologies in online learning are provided opportunity to increase “their motivation to communicate and learn the language, the culture and pragmatic issues in a real sociocultural context” (p. 201). Additional benefits can be derived specific to intercultural communication (Lee, 2009).

Yamada & Akahori (2009) declare:

In videoconferencing, the self-image, allowing learners to see themselves as though in a mirror, has a similar effect on meta-cognitive behavior. When considering the design of a videoconferencing system including the function of maintaining learners’ attention on learning objectives and meta-cognitive behavior, the use of the learner’s own image in addition to the partner’s image can help learners see themselves from a third-person perspective and activate meta-cognitive behaviors. (p. 20)

According to Yamada (2009), the ability to deliver learning partner’s images and voices over videoconferencing tools provides for a sense of presence. This in turn yields a positive effect on learning output. Having the ability to see his or her partner’s image assists learners to “understand their partner’s situation such as in the case of miscommunication. Sometimes

learners are unable to comprehend each other; they notice this miscommunication and try to modify their former utterances” (p. 831).

Internet-based videoconferencing allows second language learners to engage in a more rich intercultural communication experience than is possible through the use of reading materials and text-based chat (Lee, 2009). The use of webcams promotes cultural learning by providing access to personalized and “authentic perspectives of the target culture through the interaction with insiders” (Lee, 2009, p. 96). Webcams allow participants to observe their partner’s surroundings, allowing them to gather cultural meaning and provide insight into the life their partners lead (Telles, 2009). In addition, “Internet-mediated videoconferencing promotes re-evaluation of the home culture through the outsider’s perspectives” (Lee, 2009, p. 192).

In a study by Wang (2007), participants expressed an appreciation for the webcam’s ability to deliver personal information and paralinguistic cues. The ability of learners to receive this information was demonstrated to be beneficial to the task of language acquisition. The effectiveness of the use of webcams in second language learning was affirmed by the marked improvements gained by the students in their proficiency of the foreign language. Students unanimously voiced the opinion that the use of webcams in the learning process was worthwhile and rewarding.

From a more generalized online learning perspective, Yamada (2009) posits videoconferencing has a significant impact on all aspects of performance and affect. Presentation of participant images via videoconferencing effects participant meta-cognition

and comprehensibility in communication (Yamada & Akahori, 2009). In addition, the ability to see one's self in communication with others promotes self-correction.

Webcams and cultural dynamics. The use of audio and videoconferencing technologies in the online learning environment has a real impact on the end user experience (Yamada, 2009). Voice communication has been shown to have a strong influence on improving the learners' affect as well as their output. The ability for learners to see each other's image over webcam and hear each other's voices lends the impression that communication is occurring in a natural way. "The presence of both the self and the partner's image promotes the perceived similarity to a real setting. The partner's image affects the perceived awareness of the learner's presence" (Yamada, & Akahori, 2009, p. 18). The ability to perceive a sense of being with people who are not actually sharing the same physical space results in the communication and collaboration feeling more smooth, natural and engaging (Blas & Poggi, 2007). When this can be achieved, virtual communities feel more realistic and members of the community perceive a stronger sense of being together. There are additional benefits to conveying a more natural communication experience through computer-mediated videoconferencing technologies.

O'Dowd (2007) finds that the use of videoconferencing amongst online learners allows users to rapidly clarify lingering questions and engage in more realistic interaction. Learners participating in multicultural online learning experiences are afforded opportunities to "experience personalized and authentic perspectives of the target culture through interaction with insiders" (Lee, 2009, p. 191). The use of synchronous audio/video

technologies also allows participants to see and hear background sounds and sights from remote locations, making the interactive experience seem more natural (Albuquerque & Perkis, 2008). Having the ability to receive direct insight about a culture from a person indigenous to that culture facilitates a deeper understanding of the target culture for the foreign audience (Lee, 2009). In fact, online courses designed to incorporate telecollaborative activities have the potential to enhance the development of intercultural communicative competence in a fashion that cannot be duplicated through the use of traditional learning materials (O'Dowd, 2007).

O'Dowd states direct online intercultural interactivity provides learners with access to knowledge that is unavailable to them in textbooks and other traditional resources. Learners engaged in online interactions receive information that is subjective and personalized. By comparison, accounts of events or content printed in a text-based format are often written in an objective and factual style (Cunningham, 2009). The following is one such example.

In a multicultural online learning course that utilized audio/video technologies, the instructor interjected jokes and offered stories of personal experiences as a way to enhance learning (Cunningham, 2009). Students report this approach brought a personal touch to the virtual classroom, made the instructor seem more human, and provided for a deeper understanding of the course content.

Computer-mediated communication provides a virtual means with which students may immerse themselves in “a journey of discovery and reflection where their

understanding of the behaviors, beliefs, concepts, ways of interacting in their own and the other culture (are) exchanged, discussed, negotiated, and even refined” (Liaw, 2006, p. 60).

Summary

Research in the field of CMC has predominantly focused on written communication (Yanguas, 2010). Lee (2009) concurs, stating, “The great majority of CMC research on intercultural competence involves written interaction such as e-mail and text-based chats. There have been few studies on the use of videoconferencing tools to support oral-visual interaction for the development of intercultural competence” (p. 55). Hastie (2007) adds there is little data available that practitioners can apply toward developing good instructional design practices for online courses that incorporate synchronous technologies. While little research has been conducted regarding the use of webcams (Develotte, Guichon, & Vincent, 2010), there are some published works.

In a study conducted by Griffiths & Graham (2009) at Brigham Young University, “the online section of IP&T287 (taught with webcams) is rated higher than the average score of all sections of IP&T287, higher than the average score of all courses in the School of Education, and higher than the average of all courses at BYU” (p. 72). Their study included comparisons of courses taught online using webcams and courses taught in the conventional face-to-face format. The online webcam students reported feeling very positive about the learning experience. “They were excited to see and hear their instructor during online sessions, enjoyed their conversations with the instructor, and generally looked forward to the one-hour sessions” (p. 72). Wang (2007) reports in another study of online

class that incorporated the use of webcams, students “were all delighted to see their teacher for the first time, and a friendly and positive atmosphere was created” (p. 608).

Cunningham’s observations (2009) also yielded positive findings. The use of videoconferencing technologies in the online learning environment provided a tool through which students could communicate and collaborate. This capability increased student satisfaction with the course and with the delivery of the course content.

Zhang & Ge (2006) conducted a study of online learners who incorporated video communication as part of their course design. Learners were cited as perceiving a higher level of social presence, which resulted in increased social interactions amongst learners. The use of videoconferencing technologies can result in the enhancement of computer-supported collaborative learning (Strijbos, Martens & Jochems, 2004). Software packages such as Elluminate Live bundle communication and collaboration tools that facilitate the ability for students to engage in collaborative and constructivist learning activities (Tekiner Tolu, 2010). These technologies have the capacity to create the feel of face-to-face learning in the online learning environment. Through tools that include webcams, audio communication, text-chat, breakout rooms, and interactive Whiteboards, participants experience an enhanced sense of presence and the desire to participate in a community of inquiry. The use of webcams in particular can have a positive effect on levels of presence (Tekiner Tolu, 2010).

Students in an online course delivered by Tekiner Tolu expressed an appreciation when a webcam was used in the delivery of personal introductions and certain course

content. Students stated the use of a webcam by the educator allowed them to experience an enhanced level of social presence. In addition, the ability to see the educator's facial expressions and demonstrations enhanced their ability to comprehend certain subject matter. The use of the webcam in the course augmented levels of social presence and cognitive presence.

Online students report the use of webcams makes inter-participant communication more interactive, allows participants to receive facial and gesture cues, allows participants to receive information through visual cues as to whether intended meaning is received, elevates levels of self-confidence, facilitates turn-taking, and provides for a sense of proximity and intimacy (Telles, 2009). Webcams allow participants to feel closer to each other and mirrors communication in face-to-face settings making the experience feel more real. Webcams provide an enhanced tool that can be applied in learning about the cultural aspects of others. In addition, students report that online communication without webcams makes the experience seem artificial, technical, electronic, distant and impersonal.

A study conducted by McKinney and Whiteside (2006), found that videoconferencing was rated the second richest form of media, while the highest rated form of media was face-to-face contact. The media-rich qualities found in webcam-based technologies facilitate successful development of interpersonal student relationships and task communication (Sheer, 2011) and have been found to be superior to lean media when facilitating interpersonal communication and relationship building (Sheer & Chen, 2004).

While there has not been much research in the use of webcams in education, there is a significant body of work devoted to the realm of technology in education.

In a study comparing the use of the most popular means of communication devices used by college students today (email, text-based chat, instant-messaging, telephone, face-to-face), Flanagin (2005) observed that face-to-face communication was by far the most preferred, most versatile, and most productive means for fulfilling personal satisfaction communication needs. If we accept Flanagin's findings, this suggests there is value in researching ways to replicate face-to-face communication in the online learning environment.

The current literatures' shortcoming is the failure to consider how to offset the element of social disconnectedness in the online learning environment. In particular, it fails to address how to best take advantage of current technologies such as webcams to allow participants to see who they are communicating with, better understand the message intended, and inject the human element into the digital virtual learning environment. This study can result in data that can be applied to work in the fields of distance learning, communication, linguistics, social presence, social learning, instructional systems design, computer-mediated communication, and multicultural studies.

Berry, Carbaugh, and Nurmikari-Berry (2004) recommend that English should continue to be learned as an international language to the best of the learner's ability, but attention must be given to intercultural semantics and the unintended role native languages might play to non-native speakers. The goal is not to convert non-native speakers to English.

The goal is to empower non-native English students with the skills and strategies needed to effectively communicate their intended meanings through the use of the English language. This clash of cultures and semantics provides a unique opportunity for educators. Educators can introduce language learning into the classroom and through experiential learning, provide real-world examples of cultural differences as they are conveyed in a single language.

As author of this paper, I believe it is important to acknowledge I am a product of the United States of America. While I have traveled to eleven countries, the majority of my years have been spent embedded in Judeo-Christian, English-speaking, Westernized society. It is easy to get caught up in one's own way of conducting day-to-day business. Westerners may lose sight that the world is flush with many other countries. Each country has its own complex sets of culture and sub-cultures. Every culture has its own way of communicating nonverbally by employing such techniques as haptics, proxemics, oculecs, gestures, body language, kinesics, chronemics, and silence (Sue & Sue, 1977). Some societies may even employ the use of drums or clicking sounds. Westerners must remember that non-Westerners may not share the Western ways of communicating, concepts of beauty, or belief systems and values. Ultimately, Westerners need to be sensitive to and respectful of the ways of others.

A class comprised of students from a diverse collection of cultural homes cannot be taught in the same way, as all students are unique individuals, and products of their own societies (Gollnick & Chinn, 2009). Each individual's cultures and personal experiences

provide influence over how we interact with society, our educators, and our peers. “For an educational project to be successful, it must be meaningful for learners, address their learning needs and respect their idiosyncrasies” (Jauregi & Ban-adós, 2008, p. 188).

An objective of multicultural education is to provide all students with the necessary resources, including technological resources, with which they can function as members of their local and global communities (Gollnick & Chinn, 2009). Individuals participating in the same virtual environment may report achieving varying degrees of social presence (Whelan, 2008). “Equitable pedagogy is achieved when a teacher is able to match teaching strategies with student learning styles to ensure the academic success of every student. The last dimension requires that the culture and organization of a school be structured in such a way as to ensure equality and empowerment for students from all groups” (Yao et al., 2009, p. 2).

Chapter 3: Methodology

Introduction

This research investigated participants as they engaged and communicated with one another in the multicultural online learning environment. The purpose of this single-case study was to understand student perceptions of social presence that resulted from communicating and collaborating via different forms of Internet-based communication technologies in a diverse, multicultural, multilingual online learning environment. The research questions that guided this study are:

1. How do participants describe their perceived sense of presence while engaged with others in a multicultural online learning environment?
2. How do participants' cultural histories influence their choice of communication tools in the multicultural online learning environment?
3. What dynamics do participants encounter when communicating in the multicultural online learning environment?
4. How do participants describe their reactions to using various CMC in the multicultural online learning?

English is generally accepted as the global language of education (Altbach, 2007). This English language dominance places many non-English speaking, non-Westernized students who wish to collaborate with their cross-border peers at a participatory disadvantage (Ibrahim & Penfield, 2005). Accommodations should be provided to alleviate related social-cultural-linguistic disadvantages. This qualitative, embedded, single-case

study was conducted to explore how the introduction of webcams into a multicultural online learning environment might enhance the ability of students to interact, communicate, form community, and learn with each other. Meaning constructed from this study provides new insight pertinent to the fields of distance learning, communication, linguistics, social presence, social learning, instructional systems design, computer-mediated communication, and multicultural studies.

This chapter describes the study's research methodology and provides an overview on the following related subject matter: overview of research design; rationale for qualitative research design; rationale for case study; conceptual framework; study setting, context, participants; data collection; data analysis; ethical issues; veracity and trustworthiness; study timeline; summary.

Research Design

According to Creswell, case studies are used extensively in social science research, in academic disciplines, and as a way of conducting dissertation studies (2007). Case study research is comprised of studying a particular issue through one or more cases within a confined system or context. While the participants of this study were from 14 different countries and native to 11 separate languages, they were engaged with the intent of learning in the same online learning community. Participants provided intense, holistic, descriptive data generated from a bounded-system, which are the hallmarks of a qualitative case study (Merriam, 1998).

The study dealt with the use of relatively uncommon technologies in the educational setting and incorporated a highly diverse participant pool, to observe and analyze socio-cultural-linguistic phenomenon that until fairly recently technology and educational course design would not have accommodated. Student participants were asked to communicate and collaborate using online tools including consumer-grade webcams, which required specific equipment, skills and technological access. As such, it met the conditions for qualifying as a revelatory single case study (Yin, 1994). In revelatory single case studies, while the problem itself have been in existence, social scientists, for whatever limiting reason(s), have to date been unable to investigate the phenomenon.

This study was conducted as a single-case study for additional reasons of practicality. Time and financial constraints limited the ability to conduct this study on a larger scale. From a chronological perspective, the study is part of the course requirements toward being awarded the Degree of Doctor of Education. Financially, I absorbed the cost of purchasing and distributing the webcams through the use of personal funds. The course selected for the study was a large university located in the Mid-Atlantic region of the United States.

I worked in cooperation with the university to define what demographic data was collected prior to the start of the course, and assisted in defining the rubric to be used as part of the participants' requirement to write their thoughts weekly in a private reflective journal. I also worked with the host staff to define what computer-mediated communication (CMC) technologies would be used in the course, as well as how and when the participants would

be asked to use the technologies. As such, I elected to apply a tiered CMC technologies integration strategy to introducing participants to the various CMC tools by asking them to use communication technologies they were most acquainted with early in the course such as email, then gradually transitioning into more complex tools such as audio and video chat.

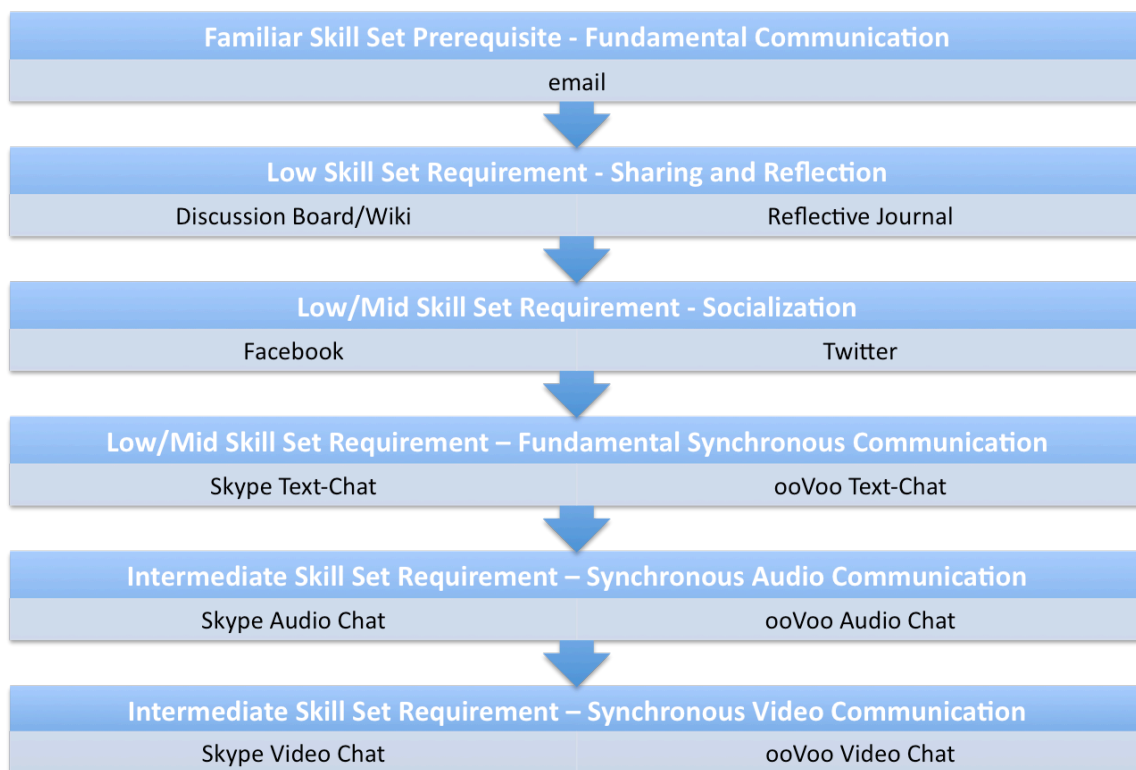


Figure 3: Tiered CMC technologies integration strategy (Burger, 2013)

I also provided front-end passive training on the use of the webcam and ooVoo in the form of a pdf document, and supported these same technologies in real-time via ooVoo or via the course discussion board and email throughout the entirety of the course.

Data was collected from the 14 embedded units (Yin, 1994), or in this case ‘the participants’, by five means: virtual real-time audio interview; electronic document (personal reflective diary-based diary); virtual classroom observation; digital recordings of class sessions; and a virtual real-time video post-course interview over ooVoo. An explanation-building data analysis strategy was applied to the resulting data (Yin, 1994), a strategy that is well suited toward the explanatory case study. “To explain a phenomenon is to stipulate a set of causal links about it” (p. 110). The concept of explaining phenomena related to causal links is equally at home in CHAT (Engeström, 2001). Through this analysis, detailed descriptions about each individual’s thoughts and experiences with using webcams in the multicultural online learning environment were reported.

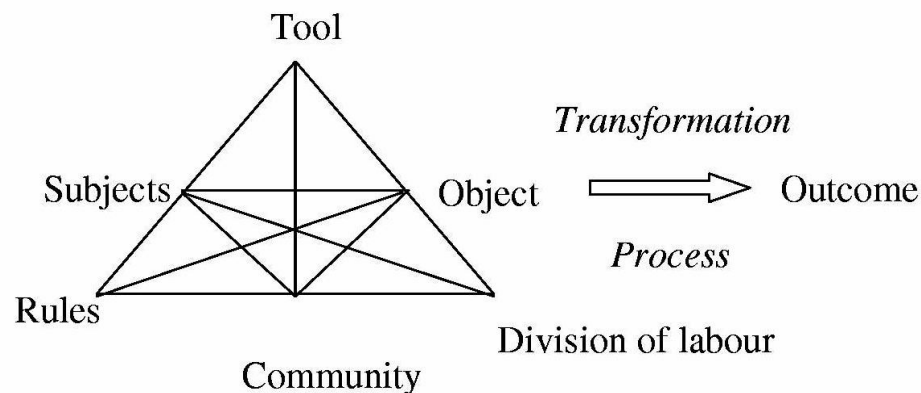


Figure 4: Second-generation activity triangle model (Engeström, 1987)

Of the three iterations of activity theory that have been developed, a modified version of the second version was particularly well suited to serve as the foundation of this

study. The second iteration considers the relationships that exist between mediating tools (instruments) and the unique user as he or she seeks to achieve the desired objective and final outcome. While the second-generation activity theory model seems well suited to meeting the needs of this research project, the study was particularly concerned with exploring the potential challenges that might occur during the process of inter-participant communication. First, communication was dependent upon the ability of participants to engage one another successfully via technology-mediated means. Second, participants brought various historically influenced cultural biases, practices, beliefs and practices to the class. Third, for all participants, English was not a native language and mastery of the English language varied. Finally, each participant had a personal preference for how active they engaged others in the online learning environment. As such, there were ample opportunities for a number of communication-related challenges to present themselves, each with the power to impede the participant's ability to communicate, receive communication, express themselves as intended, become a member of the community, or to achieve a satisfactory level of social presence.

Ultimately, the findings of study include not only written analyses from the collection of data, but as so much information in communication is lost in non-verbal means (Munter, 1993) and differing cultures express themselves using a variety of communication codes, symbols and cues (Kreydlin, 2006), and as learning is an interactive and social practice (Laffey, Yu Lin, & Lin, 2006), I posit that a more rich picture of the findings was realized when interviews of participants were captured via digital audio and video

recordings. Participant approval was sought prior to capturing the audio and video data, and participants had complete control over the use of the audio and video media. These digital files will not be made available for public access.

This study has the potential not only for discovery, but also for change as individual attitudes were shaped while participating in online learning in the presence of others through social constructivism (Creswell, 2007).

Rationale for Qualitative Research

The human individuality and cultural history each participant brings must be considered along with the social and technical elements of the learning environment (Vygotsky, 1989). Thoughts, feelings, holistic realities and needs must be understood. This study was interested in understanding the experience of communicating, interacting and sense of being that occurs amongst peers from varying cultural upbringings as they participate in an online learning environment. As understanding the contextual nature of communication is key, participants were interviewed in the learning environment using the same technologies as those that were available to them in the course. These technologies included means of asynchronous and synchronous communication: email; private reflective journal; discussion board; Facebook; text-chat over ooVoo; audio chat over ooVoo; and video chat over ooVoo. As such, a qualitative approach was justifiable (Merriam, 1998).

Rossmann and Rallis (2003) posit that qualitative research has a defined set of characteristics. Qualitative research takes place in the study's natural setting using a variety of interactive and humanistic methods. The study's focus was placed on context, the study

was emergent rather than tightly preconceived, and qualitative research is mainly interpretive. Rossman and Rallis also declare that qualitative researchers “view social phenomenon holistically, systematically reflect on who she is in the inquiry, is sensitive to her personal biography and how it shapes the study, (and) uses complex reasoning that is multifaceted and iterative” (p. 10).

Creswell (2007) lists five philosophical assumptions that are tied to undertaking qualitative research. These are: 1) reality is subjective and varies according to viewpoint of the participants in the study; 2) the researcher attempts to close the distance between himself or herself and any participants through collaboration and efforts to be accepted as an “insider”; 3) the researcher openly recognizes that he or she carries biases, acknowledges those biases and values, and the value systems attached to the study; 4) the researcher will write in a literary, engaging, informal style using personal voice and limited definitions; 5) the researcher evaluates the details before generalizing, utilizes inductive logic, studies the context surrounding the subject, and applies dynamic emerging design from the field. This researcher accepts these assumptions and the study and related framework were designed around these five assumptions. Creswell also posits one should choose a paradigm with which to further shape the direction of one’s research (2007). Cultural-Historical Activity Theory (CHAT) factors in the development of the individual and collective mind in combination with the activity of the subject and the evolving application of tools in a mediating role toward achieving the activity (Roth, 2007). As this study indeed sought to

gain an understanding of such knowledge, CHAT played a key role in the framing of the study.

Rationale For Study Approach – Case Study

The case study is the strategy of choice when “the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context” (Yin, 1994, p. 1). Case studies are an effective choice when there is a need to understand complex social phenomena while retaining the holistic nature and characteristics of the real-life event. It is comprised of “how” and “why” questions, the researcher requires minimal to no control over events, and the study focuses on contemporary events. “A case study design is employed to gain an in-depth understanding of the situation and meaning for those involved... Insights gleaned from case studies can directly influence policy, practice, and future research” (Merriam, 1999, p. 19).

Individuals described how they responded to communicating and learning with others in a multicultural online learning environment. Such events were dependent (interdependent) upon any combination of influences including: an individual’s life experiences, cultural influences, religious practices and beliefs, level of shyness, comfort using a specific technology, sense of belonging, successes with online learning, willingness to build a social network or learning community, ability to negotiate a second language, and one’s preferred learning style. This context and phenomenon were well suited to the case study. According to Stake (1981):

Previously unknown relationships and variables can be expected to emerge from case studies leading to a rethinking of the phenomenon being studied. Insights into how things get to the way they are can be expected to result from case studies. (p. 47)

Specifically, this study was a sound candidate for an explanatory case study, due to the nature of its particular conditions (Yin, 1994). As defined by Yin, the explanatory case study's objective is to derive explanatory meaning by considering "competing explanations for the same set of events and to indicate how such explanations may apply to other situations" (p. 5). Marshall and Rossman (2006) state that explanatory studies explain patterns as they pertain to a specific phenomenon and identify relationships that assist in the development of the phenomenon. The explanatory (causal) case study is one that reflects on cause-effect relational data and explains how events occur (Yin, 2003). "Each case study seeks to explain how and why some event(s) occurred. Embedded in the explanation is a potential causal path, whereby a case study seems to be making an inroad into the attribution problem" (p. 69). However, Denzin and Lincoln (2005) warn not to place the emphasis on causal inference alone. To do so dilutes other forms of explanatory power and results in a reduction of understanding into the educational and social micro processes, particularly as they pertain to themes of oppression, educational failure, and discrimination. They recommend applying patience and focusing on conducting rich research rather than be lured into quick-fix solutions.

Conceptual Framework

This study explored participant reactions to introducing CMC technologies into a multicultural online learning environment. Specifically, the study sought to explain social presence, culture, communication, and language as it relates to students interacting and learning with each other in the multicultural online learning environment. The research questions guiding this study were: (a) How do participants describe their perceived sense of presence while engaged with others in a multicultural online learning environment? (b) How do participants' cultural histories influence their choice of communication tools in the multicultural online learning environment? (c) What dynamics do participants encounter when communicating in the multicultural online learning environment? (d) How do participants describe their reactions to using various CMC in the multicultural online learning?

The conceptual framework therefore addresses four conceptual aspects of the study: sense of presence; preferred means of communication; participant reactions to CMC technologies; challenges to online communication.

Preferred Means of Communication

Human communication is achieved by combining several sign systems simultaneously (Kreydlin, 2006), and each culture has its own collection of socially 'acceptable' and recognizable signs. "Cultural, individual and collective historical factors influence the ways students perceive Internet communication tools" (Thorne, 2003, p. 58.).

Participants in the multicultural online classroom were required to negotiate a variety of realities: complex, multiple, new technology and communication systems; participants speaking in second languages; and participants engaging one another through their own individual lens of cultural influence. Even though there is literature that supports the findings that the use of webcams has the potential to provide a socially superior interactive experience (Gunawardena & McIsaac, 2003), research indicates there are cultures that display a propensity for not engaging others in a face-to-face or eye-to-eye fashion (Cacciatore, 2009). There were additional factors to consider.

It has been my personal experience that some students do not wish to be bothered learning to use a new technology as part of their online educational experience. Their goal is to get their degree as quickly and easily as possible. I have also witnessed how vanity may play a significant factor in preferring not to incorporate a webcam as part of a corporate virtual communication solution. I have heard students declare they don't like to use webcams because then they have to be visually 'presentable' to others. Others have expressed concerns of how webcams make them appear short, overweight, and balding. It is the combination of these concerns along with aspects such as technological capabilities and infrastructural support that will play a role in the types of communication a specific student may prefer to use while engaging others in the online learning environment.

Participant Reactions to Webcams

Research indicates that well over sixty percent of all communication is conducted via nonverbal means (Birdwhistell, 1970; Munter, 1993). The multicultural online learning

environment is inherently infused with cultural language complexities (Kreydlin, 2006). Having a lack of access to auditory and visual cues may result in a trans-cultural participant wrongly interpreting the intended meaning being expressed by a person from a differing culture. While my personal experience is in agreement with the findings of Gunawardena and McIsaac (2003), that the use of real-time audio and video as a means of online interaction conveys a higher level of social presence than other available online means, it is difficult to anticipate how any individual from a particular culture will react to using webcams in the multicultural online learning environment. There are simply too many factors that systematically come into play. Caucasians from Western-based societies who embrace control over voice and choice may or may not embrace the use of webcams. People from cultures where there is a Confucianism-like upbringing may not embrace the technology as readily as face issues may intervene. Post communist participants from Russia, might be enthusiastic and anxious to use the technology, but may also act out concerns regarding ‘face issues.’ Religious, political, and infrastructure also play into the scenario. This level of unpredictability was born out as a result of the research, as many participants reacted positively to the use of webcams, but some reacted with less enthusiasm for a variety of reasons.

Challenges to Online Communication

It is my experience as an online graduate student, Instructional Systems Designer, and former Director of Distance Learning & Instructional Technologies, that a number of online courses have a history of being primarily designed to transmit information

unidirectional - to the learner - rather than foster the teaching and learning process in a dialogic manner. This type of course design fails to acknowledge Knowles' principle of using the adult learner's experience as part of the learning situation. Its design qualities do not facilitate interaction and ultimately inhibits collaborative learning (Gunawardena, 1999). Such design fails to take into consideration the preferred learning styles or cultural heritage of its participants, and transitions away from a learner-centered approach. Every student's needs and limitations must be understood and addressed by the educator in all aspects of a distance education program (Zheng & Smaldino, 2003).

Bakić-Mirić states (2007) culture and communication are interdependent upon one another. People of differing cultures have always had the need to communicate. But the ways in which different cultures communicate varies in symbology, interpretation, and in the context within which the communication occurs. The result is miscommunication and disagreement as to what is regarded as competent behavior.

In addition, there are the technological 'haves' and the technological 'have-nots' (Alibrandi & Bull, 2004). Many students and institutions are still without regular electricity, reliable Internet access, or computers powerful enough to facilitate real-time audio-video communications.

In order to feel comfortable and build a sense of community in the virtual learning environment, it is crucial that those of the hosting culture gain an understanding of each non-native participant's cultural perspectives and their native ways of communication.

Study Setting, Context, Participants

The study applied a purposeful, maximum variation sampling strategy (Creswell, 2003), and was designed to collect data from a demographically diverse range of adult learners enrolled in a university-level online course. To this end, criteria included recruiting participants from widely dispersed geographic locations, with various competencies in using CMC technologies, native to a variety of languages, with equal gender balance, and representing a broad mix of cultural histories and ideologies. Per this end, 14 participants were recruited from 14 unique countries from the continents of South America, Asia, Africa, and Europe. All but one participant was female. Self-proclaimed expertise with their ability to use CMC technologies ranged from novice to advanced. The 14 participants had 11 native languages shared between them. A sampling of native languages represented includes Tamil, Portuguese, Russian, Swahili, Arabic, Mandarin, and Spanish. The importance of religion was not factored into the early design of the study, and as such, I did not specifically seek out peoples of diverse religions per se. Upon reflection, to the best of my knowledge, there were two primary religions represented in the study: Christianity and Muslim. However, this is solely based on the data gathered during the course and as such, this is indeed an assumption on my part. In order to address concerns of coordination, technology, and training with the participating university and educator (convenience) the online course was hosted by a large university located in the Mid-Atlantic region of the United States. The course was a ‘Teaching English to Young Learners’ (TEYL), was offered to international educators and sponsored by the US Department of State. Every effort was be

made to acquire a culturally diverse pool of participants with the intent of netting a good cross section of data reflecting the thoughts and experiences of multicultural adult learners. As the course was hosted by a Western university, there is a chance the participants may have reacted or responded in ways they perceive as being acceptable to Westernized societies. In addition, to qualify for this course, participants were required to have regular access to broadband Internet connectivity. Such a requirement may have excluded participants from lower income backgrounds as well as people located in regions lacking a strong communication and technology infrastructure from participating.

Recruitment of volunteers initially took place prior to the start of the course through introduction by the host institution, and I followed up by personally emailing an invitation. Offers to participate were extended to the entire class population. I purchased, tested and shipped webcams and headsets at no cost to the educators and participants. Participants were allowed to keep the webcams as an incentive for choosing to participate in the study. Recipients were not harassed or punished or suffered retribution for receiving a webcam and not actively participating in the study by their educator or me.

Participants received asynchronous computer-based training on the use of the webcam, distributed in pdf format to the class population via email. These pdfs were also posted in the class discussion board. Additional synchronous training and technical support was provided principally by me and made available via email and ooVoo. The institution provided support on matters pertaining to the course delivery system.

Participants were required to maintain a private online reflective journal in which they could discuss their communication-related experiences and any other subjects pertaining to their course. It was designed to be a safe and open reflective space. The educator, individual student and I were the only persons who had access to these documents. Participants were also asked to use a wide variety of communication technologies during the coursework including email, text-based chat, Internet-based audio conferencing (ooVoo audio chat), and Internet-based video conferencing (ooVoo video chat). I observed group video chat sessions and was invited to contribute to the discussion. I was also granted permission to record, store, view, and transcribe interview and class sessions.

Data Collection Methods

As human action is influenced by one's setting such as the virtual learning and communication environment (Anderson, 1996), it is only logical to study this type of behavior in the actual environment in which it occurred. Participants in the online course communicated through a variety of means including email, text-based chat, discussion board, Internet-based audio, and Internet-based video systems.

The six major sources of evidence in case studies (Yin, 1994), include documents, archival records, interviews, direct observation, participant-observation, and physical artifacts. Marshall and Rossman (1989) include additional sources, which include films, photographs, and videotapes. I make the argument that in order to acquire a rich diverse collection of data, it was prudent to gather data in five different ways using several different methods.

1. A preliminary demographic survey was administered online, with intent of gathering technical competency and biographical information.
2. Students were asked to post weekly comments regarding their general thoughts on the class to a personal, access-protected, online reflective journal. The educator and I had access to this content.
3. I observed group video chat sessions facilitated by the educator via ooVoo.
4. I had access to digitally recorded course sessions.
5. A final, virtual, “face-to-face” interview was conducted via Internet-based ooVoo video chat and digitally recorded for analysis.

These means of data collection not only addressed the needs to record the viewpoint of the human individual and the class as community, but they were equally essential to observe and collect data in the same digital communication and learning environments that the participants were asked to immerse themselves in as a function of the course design. The data collected from the reflective diary produced a rich, autobiographically personal, reflective commentary on their experiences and thoughts pertaining to the class experience. The data retrieved from the observation of the online classroom allowed me to record and comment on the interaction amongst participants from a third party, scholarly, observant perspective. The data retrieved from the digital audio and digital audio-video files including the post-course interviews of the 14 participants not only produced transcripts from which coding occurred, but they also allowed me to see the facial cues and gestures, and heard the pacing and tonal inflection of the participants as they were interviewed. This was

particularly prudent for this study, as the study dealt with potential challenges and difficulties in communication due to the multicultural nature of the participants, the diversity of native languages, the use of technologies employed in the online learning environment, and the need to communicate and collaborate with a diverse group of strangers using a variety of technologies in the online learning environment.

All audio chat sessions I was engaged with were recorded via a digital audio recording device and maintained for analysis purposes on my personal computer. The post-course video chat interview was recorded digitally – including the capture of the interviewee’s video image – using ooVoo’s video chat recording technologies, was backed up via a digital audio recording device. The resulting digital files were stored and maintained on my personal computer for analysis. All audio and video files will be deleted upon completion of the research.

Data Analysis Methods

Five sets of data were produced as a result of the following data collection methods: 1) Demographic data generated by an Internet-based fill-in form; 2) participant’s personal diary (reflective diary) entries; 3) observations of students as they participate in the virtual learning communication and collaboration environment ooVoo video chat; 4) digital recordings of virtual classroom sessions; 5) virtual face-to-face interviews conducted using webcams (ooVoo) and captured via a digital audio-video recording application at the completion of the study. As this is an explanatory case study, I used an explanatory-building

analytic strategy (Yin, 1994). Through explanatory building, the goal was to analyze the data by constructing an explanation to support the case.

Marshall and Rossman (2006) propose there are seven phases that comprise typical analytic procedures:

(a) Organizing the data; (b) immersion in the data; (c) generating categories and themes; (d) coding the data; (e) offering interpretations through analytic memos; (f) searching for alternative understandings; and (g) writing the report or other format for presenting the study. Each phase of data analysis entails data reduction, as the reams of collected data are brought into manageable chunks, and interpretation, as the researcher brings meaning and insight to the words and acts of participants in the study...data analysis transforms data into findings. (p. 156)

For purposes of this study, I adopted five of the seven phases: organizing the data; immersion in the data; generating categories and themes; coding the data; and writing a report in the form of this study's findings.

Organizing the Data

All collected raw data were of a digital nature and in one of three formats: text-based; audio recordings; audio/video recordings. The recordings were transcribed and the transcripts printed out in hard copy format. Notation and highlighter were used to search out and define if a pertinent data point fit a current or new code. Codes on paper were physically cut, sorted and paper clipped together (Ryan and Bernard, 2003).

Data Immersion

Once the data was collected and organized, I immersed myself in the data (Marshall and Rossman, 2006) in order to obtain an overall preliminary picture as to what the raw data collectively meant (Creswell, 2007).

Categories and Themes

Each stage of data analysis required interpretation and a reduction of data. In qualitative research, it is commonplace to sift through a large body of data and reduce the data down to a smaller number of central themes or categories (Marshall and Rossman, 2006). Collecting data from participants originating from 14 unique locations, with various native linguistic and cultural backgrounds, resulted in a fairly large number of raw data categories that pertained to CHAT, social presence, and webcam-mediated communication. Audio and video data was transcribed into a text-based document. All data was printed, analyzed, and sorted into related categories and themes.

According to Rourke, Anderson, Garrison, and Archer (2001), there are four ways to select units for analysis: sentence, paragraph, message, or theme. I chose to incorporate the use of sentence analysis, as there was extensive data that consisted of full sentences and paragraphs in both the participants' reflective diaries and in their response to the post-course interview questions. Participants' sentences yielded highly rich information.

Data Coding

After the data was coded on paper, marked, sorted and stacked (Ryan and Bernard, 2003), related codes were sorted in stacks and were eventually assembled in a hierarchical

or 'tree' code format (Strauss and Cobin, 1990). This assemblage was transcribed and saved as a Word document. The hard copy papers are stored in an envelope in my possession and the digital file saved on my personal computer.

Written Report

The final explanation delivered a product based on the following qualifiers (Yin, 1994):

1) making an initial theoretical statement or an initial proposition about policy or social behavior; 2) comparing the findings of an initial case against such a statement or proposition; 3) revising the statement or proposition; 4) comparing other details of the case against the revision; 5) again revising the statement or proposition; 6) comparing the revision to the facts of a second, third, or more cases; 7) repeating this process as many times as is needed. (p. 111)

Ethical Issues

Participants were initially introduced and invited to participate in the study via the course educator. I introduced myself and the purpose of the study in a pdf document emailed to all potential volunteers. As I am enrolled in a doctoral program at North Carolina State University and the research was conducted on a population enrolled in a course hosted by the University of Maryland, Baltimore County, I stringently adhered to the Institutional Review Board (IRB) requirements and standards for human subject involvement in research established by North Carolina State University and the University of Maryland, Baltimore County. A consent form was distributed explaining the nature of the study, the

methodology, research questions, requests made of volunteers, potential benefits of the study, no-penalty clause for lack of participation, the right to ask questions or remove themselves from the study, and their ability to view and edit data. Language in the consent form was as open and honest as possible. Digital audio and video recordings were kept from public view and upon completion of the research project, all audio and video files will be deleted. I have expert-level digital audio and video production skills and have been able to produce and maintain these files without difficulty.

Any potential for ethical concerns in qualitative studies are likely to make themselves known as a result of the data collected or the dissemination of my findings (Merriam, 1998). Maintaining a sound relationship between the researcher and the informant is crucial to protect the participants from harm. As some of the data generated from the study was rich in personal and emotional information, I took stringent steps to protect the confidentiality and identity of all participants.

Validation

Educational research must be conducted with rigor and “present insights and conclusions that ring true to readers, educators, and other researchers” (Merriam, 1998, p. 199). Others must have confidence in the validity and reliability of the study, and in a qualitative study, this can be achieved by exploring each component of the study. With qualitative studies, understanding is the principal rationale behind the investigation. Validity in qualitative study is an elusive business, as reality is seen as a dynamic force at play and a construct of the human mind (Merriam, 1998). As human beings are the primary instruments

in qualitative data collection and analysis, 'reality' is dependent upon the relationship between the researcher, the participants, and the researcher's ability to interpret the observations and interviews from the participant's point of view. The result will be a holistic interpretation of the phenomenon.

I applied four strategies of validity to this research study: triangulation, member checks, feedback, and participant involvement (Merriam, 1998). Triangulation was achieved by gathering data from multiple sources using multiple methods. Member checks took the form of inviting participants to review any transcribed copies of their specific interviews in order to insure their point of view or positions were being represented as intended. Feedback was achieved by having my committee review my work. In addressing the need to incorporate participant involvement, I made myself available and intentionally engaged participants from early in the start of the course.

Summary

The purpose of this single-case study was to understand student perceptions of social presence that resulted from communicating and collaborating via different forms of Internet-based communication technologies in a diverse, multicultural, multilingual online learning environment. The research questions that guided this study were:

1. How do participants describe their perceived sense of presence while engaged with others in a multicultural online learning environment?
2. How do participants' cultural histories influence their choice of communication tools in the multicultural online learning environment?

3. What dynamics do participants encounter when communicating in the multicultural online learning environment?
4. How do participants describe their reactions to using various CMC in the multicultural online learning?

The theoretical framework for the study was cultural-historical activity theory (CHAT). The literature is supported by intercultural communication theory, computer-mediated communication, webcam-mediated communication, and adult learning theory. This was a qualitative embedded single case study that incorporated data from interviews, observation, digital recordings, and text-based documents. The participants consisted of 14 students enrolled in a ten-week multicultural online learning course, hosted by a large university located in the Mid-Atlantic region of the United States.

Chapter 4: Findings

This research examined a group of multinational teaching professionals enrolled in a *Teaching English to Young Learners* online course taught by a large university in the Mid-Atlantic region of the United States and sponsored by the U. S. Department of State. The study explored what the learners experienced while communicating and collaborating with their peers and educators using a variety of Internet-based Computer-Mediated Communication (CMC) technologies. It explored how they experienced sense of presence, the role culture played in their communication with others, the dynamics encountered while communicating, and emotional reactions resultant of communicating via the various communication technologies. For the purposes of this study, 14 participants agreed to be observed via webcam while engaging in online course communications, provided access to their private course reflective diaries, and agreed to be interviewed synchronously via webcam. Each participant was based from a unique location, representing 14 countries spanning the continents of South America, Africa, Asia, and Europe. It is important to note each person was non-native to the English language. Amongst the 14 participants, 11 native languages were spoken. This chapter reports the findings that pertain to the four research questions that guided this study:

1. How do participants describe their perceived sense of presence while engaged with others in a multicultural online learning environment?
2. How do participants' cultural histories influence their choice of communication tools in the multicultural online learning environment?

3. What dynamics do participants encounter when communicating in the multicultural online learning environment?
4. How do participants describe their reactions to using various CMC in the multicultural online learning?

Major Findings

Four major findings emerged as a result of this study:

1. Through the use of CMC technologies, participants were able to achieve a sense of presence through the development of friendships and community while engaged with others in a multicultural online learning environment.
2. Participants' individual cultures and cultural histories may have an influence on their preferred choice of communication tools in the multicultural online learning environment.
3. Participants experienced a variety of challenges to communicating in the multicultural online learning environment, which were presented in the form of psychological, religious, linguistics, temporal, infrastructure, and technological issues.
4. Most participants embraced the opportunity to communicate with various CMC technologies in the multicultural online learning environment.

Throughout the course, these largely K-12 teaching professionals were instructed to communicate and collaborate by applying a tiered approach to their use of CMC technologies. The course was intentionally designed to expose the participants to and require

them to use a variety of Internet-based communication and collaboration technologies. The intent was to provide participants with technologies that have the potential to allow them to experience some level of social presence. The course was also intentionally designed to begin communication amongst participants using technologies that were assumed to be familiar and comfortable to most users. This assumption was confirmed by data collected in a preliminary demographic survey prior to the start of the course.

At the beginning of the course, participants engaged one-another asynchronously via email and posted text-based comments on the course's Blackboard Discussion Board. They were also instructed to asynchronously post weekly course-related and personal remarks in a private reflective journal that was available to course educators and to me. Next, they communicated to peers synchronously using ooVoo's text-chat feature. Then, participants communicated via ooVoo's audio conferencing feature using a headset. Finally, participants were instructed to engage each other via ooVoo's video conferencing feature using headsets and webcams which were provided by the principal investigator. In the diary entries and interviews conducted for this research, participants discussed *social presence in the online community, the development of community, the development of friends, the conveyance of emotion, and the role technology played* in these many experiences.

Finding 1: Through the Use of CMC Technologies, Participants Were Able to Achieve a Sense of Presence Through the Development of Friendships and Community While Engaged With Others in a Multicultural Online Learning Environment

The first question guiding this research was, how do participants describe their perceived sense of presence while engaged with others in a multicultural online learning environment? Learners found social value in a variety of the CMC technologies provided as part of the online course and participants voiced a variety of perspectives and opinions about how the technologies served the social needs of the individuals. The first technology learners were instructed to use were asynchronous and synchronous text-based technologies. Multiple learners preferred text-based means of communication, as was stated in the following reflective journal entry that discusses a course requirement to text-chat with peers using ooVoo: “With this assignment, I got to know two other members in the community better. Not only their professional information but also a lot about their countries and themselves.” Another participant appreciated the fact that in using text-based communications, there is the ability to track and refer to what has been written.

With (my partner), we are just sharing each other’s personal information. I like to use text-chat, because we can keep remembering and see when we share. Talking maybe we will forget and text-chat we can keep it in a history. In ooVoo chat, I can keep all the text-chat in there. That was also good – I can see what did we discuss, talk about and all texts I see in the history of ooVoo.

Some learners preferred to use text-based technologies for social communication as a work around solution to technical difficulties or failures experienced while using audio and video chat. One participant cited the following example:

The text-chat in ooVoo works well for social communication needs. Because sometimes with (ooVoo audio chat) you have many troubles connecting. I remember trying to talk with (a peer) from China, and she tried to call me but we never got to connect. When you were using text, you knew that it would work all the time – whenever you need it.

Other learners made a more comparative analysis on the use of the various CMC systems as is exemplified in the following:

I think that without the discussion board we wouldn't have shared different experiences with the different participants from many parts of the world, and thanks to discussion board as part of computer mediated communication, were able to send files, receive files and documents from participants, help each other. So I think I like the computer mediated communication – all the sorts of computer mediated communication - especially email which I use every day, text-chat which I use all of the time, journal also, audio conferences are very useful and they just help me, they are successful, and they also serve for the social communication needs.

Another participant preferred ooVoo text-chat for her social needs, but preferred to use email to facilitate the exchange of files, even though ooVoo has the ability to share digital files amongst participants. This same user also addressed the complex issue of value added in the use of CMC versus potential technological failure. During our post-course video chat interview, we experienced some packet loss that resulted in an interrupted communication signal.

For the audio, I think sometimes it doesn't work so well because we don't see the partner face-to-face so sometimes we begin to talk together. And for video chatting, also there are some interference, just like now, and people hear strange sounds sometimes. So we like to do text-chatting most of the time.

One learner experienced a range of technical difficulties that prevented her from communicating with some of the tools available to her peers for approximately three weeks. Once her problems were resolved, she wrote, "I was able to communicate with my colleagues, which magnified my sense of belonging in the online learning."

Even though every participant experienced some level of technical difficulty using ooVoo audio and video chat, participants continued to appreciate the technologies' potential. "Let me talk about chat first. That helped a lot in making friends, right? So, we didn't know people that much, so that was really helpful at the beginning." She goes on to state when people have a lot to talk about, perhaps it is better to use audio or video chat for social communication. Other participants are in agreement. One learner wrote in her journal about her experience video chatting with a peer and being able to see her peer's son. As a result, she states, "ooVoo really helped us to build good relationships in the community. I feel that we are now communicating not only as classmates but also as friends. I hope this will continue after the end of our course." Another learner notes how she experienced social value in several CMC technologies:

Text-chat was really great. I think later when we started using audio chat it was even better because we could spend less time for the things we wanted to say and wanted

to do. And video chat in the end was great because I could actually see the people – my classmates – I saw their family members as well, so I think it was really effective. The benefit of using video chat is I can see you, you know who you are talking about. For me it was great... I really loved using this video chat.

One learner observed the quality of the webcam image differed when used in various communication technologies. She observed that in her country, most people communicate socially over computer via Yahoo Messenger. She stated the webcam built into her laptop produced a poor quality image compared to the webcam I provided. Still, when she used the webcam I provided with Yahoo Messenger, the image quality was lacking. Ultimately, she declared a preference for using the webcam I supplied her in conjunction with ooVoo, as the quality of image of this bundle was superior. She noted, “This web camera everything works a little bit different. Lots different. Then I think I would prefer to use ooVoo chat maybe with my friends in (my country), we use ooVoo chat instead of using Yahoo.”

Another participant had a different point of view on why she preferred using video chat for social communications. She is admittedly afraid of communicating via audio technologies, especially while interacting with people she is not well acquainted. “You don’t see the people, they don’t see you. But I prefer to see their reaction to my words and that’s why I felt a little bit nervous when having audio chat.” One of her peers voiced concern about contacting her peers using video chat.

I felt sometimes a little embarrassed when I was about to make a video call – I am not sure as whether people would welcome my call, if they are busy doing something

or maybe they are just not in a good mood at the moment and they don't feel like talking at the moment.

This concern was born out in reality when another participant left her computer on and received an ooVoo call from one of her peers at 2:00am local time. Participants enrolled in an online course consisting of multinational learners need to be mindful that their peers may live in time zones many hours in advance or delayed from their own. Indeed, participants noted the complexity of scheduling synchronous chat sessions with partners whose geographic locations resulted in a twelve-hour time zone difference between communicants.

While the online course design and support staff provided learners with tiered access to six unique asynchronous and synchronous means of communicating, early in the course, one of the participants took it upon his self to set up a Facebook site where learners could socialize. The effort was celebrated and embraced by his peers. One participant stated in her reflective diary, "Something pleasant should be said about this week – it was Thomas who created a new group on Facebook, one more place for us to cooperate and simply talk. Thank you, Thomas!" One learner stated there was value in using Facebook for both social and pedagogical purposes, as there were times when course participants would remain logged in to Facebook and thus easily accessible. "Not only did Facebook work well from the pedagogical aspect, but maybe you could connect and share some things with people there and you would maybe receive a "good morning" from everybody, or, I don't know – socially I think it was really good."

Amongst their individual preferences, technical problems, and differences, participants embraced the ability to communicate socially via CMC technologies. As one participant stated, “I think maybe the technologies were very important. Because we had a chance to talk with everybody not only with the homework that we had to do but we talked about social things.” Another learner noted the timely nature of these socially applicable technologies.

I think the new technology brought new dialogue to life, and if I would think earlier about this, I couldn't imagine that one day that I could talk to other people or in this case to my colleagues all over the world. So, I think this is a new era, a new day, and I think it is something very important and something that only the people in 2012 can experience this useful technology or the useful things that are happening to them.

One participant wrote the following observation in her reflective journal.

We could meet lots of people and be in touch with them with email, or chat room here (ooVoo), or audio, even video chat, also with Facebook... The audio and video technologies were very important in listening to someone from the other side of the globe.

She summarizes her feelings about the technologies by concluding, “I really enjoyed it in the course.”

The development of community. The learners enrolled in this course had numerous comments and observations to make about the technologies' contributions toward developing a sense of community. One participant wrote in her reflective journal, “on the

discussion board we had the chance to follow our starter precious questions and, again, sharing our thoughts and experiences enriched ourselves as a community.” Participants discovered that time invested in communicating with others seemed to enhance their sense of belonging to the community. As an example, one learner wrote,

My sense of belonging to the online learning community is growing as I am establishing contact and getting to know more and more people. Some of us are already friends on Facebook as well, so I believe we will stay in contact even after this course finishes.

She goes on to state, “Getting to know more about the way how my colleagues teach and in which conditions they work adds to the sense of belonging. The feeling of belonging to this online community is great.” Another participant made a connection between time spent communicating with others via technology and the development of closer relationships with peers.

In the beginning, we seemed to be very distant from each other. But after we started ooVoo chatting – and we started to talk especially more regularly – with certain partners – we feel more and more close. So I think the media help us get more acquainted.

The concept of closeness was voiced by several of the learners. One participant wrote that having access to audio chat “is like another start to online community.” She continues by declaring, “I felt that I am more close to them even the friendship is stronger than before.” Her experience has been that text-chat limits the volume that one is able to contribute to a

conversation and that it is a bit difficult communicating effectively in this manner. “But in audio chatting one can express one’s ideas without a limit. I wish it would be nice if I get the chance to use audio or video chat with my instructors too.” Other learners expressed a preference for technologies for different reasons.

Some learners experienced the building of community through interaction that occurred in the discussion board. A participant stated she felt the discussion board “allowed us to express our feelings, not just answering questions, but we were also sharing knowledge and experiences and allow us to be part of the same community.” One of her peers agreed that the technologies were effective in establishing a sense of community, declaring, “I had good touch with my course members,” and then voiced her appreciation for the speed in which people responded to her Discussion Board posts. She continued by stating that she felt equally connected to her educators through the use of email. “That was helpful to me. I never felt that I was far away from my instructors or far away from my classmates.”

Another interviewee commented that she was surprised at how *comfortable* she felt as a member of the international online community.

I wrote in one of my reflective diaries, I thought there would be some sort of competitor atmosphere, that I am the best, you are worse than me, but no, we all behaved as though we were equal, we tried to help each other. I felt that mostly when we were using ooVoo chat with partners.

She continued to voice her appreciation in how people made an effort to respond to each discussion board post, and through their actions and attention, she felt that her opinion was

“counted, its relied upon, its interesting to other participants. And that was very important to me to feel this feedback from them.” Although video chat and webcam technologies were new to her, from her perspective, “video chat was best of all for feeling like a member of the class community. I liked it immensely.” Others agreed “video chat was the best technology toward building a sense of community.”

In addition to participants experiencing a sense of belonging to the online course community, some felt they were connected to a professional community of their peers.

I liked the discussion board in this respect because, you know, we are all united by some common topic and we share experiences, respond to our professional experiences, and of course it unites, because all kinds of sharing – I mean professional, emotional – it makes us related, connected, united to some extent. So it was a very good educational and – when it’s socializing – community building too.

One participant was “amazed through the whole course how connected we actually were.” This particular learner was a self-professed computer technology novice and as such, much of this technology was new to her. Nonetheless, she declared,

I felt, I don’t know, as a member of a community – as my opinion really mattered.

Even though technologies can feel kind of cold or not as human. I don’t know how to express myself, but I really felt as part of a group using these technologies.

Not everyone felt equally connected or a part of the course community. Upon engaging with the course content and her peers, one participant began to experience a lack of confidence and questioned her mastery of the English language. She was concerned her

peer's control of English "was very very good and a lot better than mine." As a result, she opted to limit her contributions to the course, responding only to topics posted on Discussion Board. By choosing to limit her level of interaction with others, she became concerned her lack of interaction would present her as being *isolated*. She then became concerned that she was not capable of completing or meeting the requirements of the course. She told the instructor she wanted to drop out of the course. The instructor encouraged her to stick with the program and through this encouragement she successfully completed the course.

The development of friends. Throughout the reflective journals and post-course interviews, there was repeated mention of the word *friends*. Participants spoke of how friendships developed as a result of their participation in this course facilitated via CMC technologies. As part of the post-course interview, one participant was discussing how CMC technologies served as a casual or informal way to communicate. She declared her preference to use the webcam, as she was "very slow in typing." But through the webcam, she felt she could discuss topics with more efficiency. With the aid of the webcam, she felt she could "ask my friends questions – maybe I didn't understand a question in the books or the readings we had. The friends could really understand and I could also do the same."

As part of the post-course interview, one learner mentioned how she had partnered with one of her peers to collaborate on six out of the courses ten units. This led to them discussing topics of a more casual nature. "So it is kind of we are more like friends." While some of her peers prefer to use Facebook for socializing, she prefers to chat via ooVoo text-

chat. “You know why? When I use ooVoo, I know I am only talking to that person. But with Facebook, it seems many people is see our conversation. And I don’t like to get that kind of conversation so public.” It is worth noting her preference in using ooVoo’s text-chat feature for friendly conversation is largely due to the reliability of ooVoo text-chat versus the risk of encountering packet loss during ooVoo audio or video chat. “If we don’t have any lagging or interfering, I think that I would like ooVoo for video – for video chat.”

Another participant stated that the CMC technologies not only served pedagogical needs, but also allowed her to “keep in touch with my classmates in a non-academical environment.” Through the course and the technologies, she was able to make some really good friends. “We talk all the time, during the week, outside the classroom environment too.” Her preferred technology for casual or informal communication is Facebook. A fellow classmate also declared her preference to use Facebook for informal discussions with friends. However, preference for Facebook is based on her belief that Facebook has mobility and will function on smart phones, while ooVoo is not available on smart phones. “People can always check the Facebook from the smart phone. So you can say it’s very convenient – it goes with you everywhere. But with ooVoo, I still have to go on my laptop, so not so convenient.” In actuality, ooVoo is available for download in both Android and Apple platforms and will function on smart phones and other mobile devices.

The word *friends* also surfaced when discussions turned to peer-to-peer conversations of a more private or personal nature. One participant expressed her happiness upon seeing her friend over the webcam. “That was so nice for me. So we discussed – we

discussed personal issues, professional issues, they were asking me how (my country's) children is, the classes I handle, and then we also discussed about family life.” One of her peers discussed how she feels these technologies were successful in allowing relationships to develop. “The thing that makes ooVoo that makes it good for developing relationships, is some privacy. Talking via ooVoo, we usually talked partner-to-partner. When I was talking with (my course partner), I knew that no one else could hear me or listening to me, and the same was from her side, I think.” While discussing the ability of these technologies to facilitate the development of relationships, another participant voiced her appreciation for her ability to contact a classmate via audio or video chat to discuss coursework or just say “hello.” “Once I remember with (my course partner), she said give me some time to comb my hair, and she was joking. And I said it doesn't matter, I can do an audio call – I don't have to see you! So we were laughing and we just did an audio call.” Another participant discussed how happy she is that she has been able to forge friendships in the course through the use of technology. “I'm very happy that (my peer) from India has become my friend on Oovoo... I really cherish the friendship I've established with (this person) and (another peer) through Oovoo chatting and email communication.”

For these participants, the concept of friendship seems to be associated with feelings of closeness, repetitive contact, or access to social cues. Some participants seem to have had friendships develop simply as a result of time in contact with others, whether discussions were course-related or while engaged in casual chat. For others, friendships developed specifically as a result of engaging others about non-course-related topics. Lastly, for some,

the bonds of friendship grew as they gained access to technologies that facilitated the ability to exchange social cues such as voice and visual cues provided by audio and video chat.

During the post-course interview, the concept of trust was presented. One of the participants mentioned the relevance of establishing trust as an important element in establishing relationships.

It's not easy to get in touch or to... or let's say to have that kind of trust in people – let people trust you via any means of communication. But thanks to these means of communication that we are using here, and thanks to computer-mediated communication, all of them were of great help to us to maintain and build a kind of successful relationship and they just feel that they are new friends and references, and people on whom they can rely now, to enrich their teaching methodology for example. And people whom they can email and ask for help. And at least people they can email and say, “Hi, how are you doing? How is life in (your country)?”

Relationships were developed between the learners, and the technologies played roles that varied by the user. One participant expressed the following sentiments.

To those who I had talked, and had a video chat, and I had met, they have another meaning to me. Another feeling for me, for example when I see someone – different for me than when I write someone. I have a picture of the person to that I am talking, or the person that I am discussing things, and when I only write, it is something different, because I cannot imagine - maybe I have a picture but still that is something that doesn't move. For me if see them, he or she would be a long time in

my heart and in my mind. I would have another wish to maybe meet and then discuss and talk different things.

Another peer discussed the importance of experiencing multi-sensory cues as part of the online communication experience. “I have already mentioned all aspects of communication – verbal and non-verbal ones – that make us feel closer to each other and that’s very important.”

The use of webcams in the course also provided for unique cultural/personal learning experiences to surface. One example occurred when a learner conducted a webcam session while working in the family business.

I sometimes work in the shop here – downstairs we have a big shop and I help my sister sometimes, and once when I talked with her, she could see all the things we sell there. They are the kind of blankets that women can do with their hands and she was interested to know about them.

As noted by another participant, “this online community is a brilliant way for people around the world to come closer and gain a better understanding of our cultures.” One of the learner’s took this idea a step further, by mentioning the concept of having global friends, when she wrote, “the friends, who talked to me in the previous week, are very intimate with me now. This is such a good place to have global friends.” Another learner stated, “It’s wonderful, because I am connect to 17 different people from 17 different countries. If I am not in this course, it is not at all possible. Because 17 English teachers from 17 different countries are my friends today.”

Yet another peer stated, “It was very interesting too to wake up in the morning and talk with someone from Portugal, India and Paraguay. It felt like the world is a little square and we are all neighbors.” The desire to cultivate these friendships beyond the scope of the online classroom was also discussed. “OoVoo really helped us to build good relationships in the community. I feel that we are now communicating not only as classmates but also as friends. I hope this will continue after the end of our course.”

As the course was approaching it’s end, one participant wrote, “I never thought that I would actually be missing some of the people from the (online course) environment right now because we would talk every single day, and it was like we were chatting with each other over a cup of coffee. I don’t know, it was really easy to do, and I felt really good. I think I made some really good friends.”

The conveyance of emotion. As part of the end of course interview, learners were asked how successful the various forms of CMC were in conveying feeling and emotion. One participant who really struggled with meeting the requirements of the course stated she preferred the reflective journal, as this was a space in which her instructor communicated with her. She notes, “I am really happy to read from (my instructor) when I write in my reflective journal. Also, she wrote down some comments. I really loved to read that and feel a lot better.” Another learner mentioned she believed the “reflective journal was very important to talk about feelings.” One of her peers agreed.

I remember feeling very frustrated and I remember thinking I will use the reflective journal to express that, because writing an email will not be the correct way to do it.

So, I felt that the reflective journal was my place to write about that. And the description of the reflective journal was that it was a place everything you want in terms of your interaction with the community and with the various forms of communications, and I really used it for that purpose. So I felt that was a very good place for me to express myself, and express my feelings towards the course.

Other learners had different experiences and opinions. One thought the discussion board and webcam were effective in allowing a person to express his or her emotion. Yet another learner stated a preference for using discussion board and email to express feeling and emotion. Part of her preference for using non-ooVoo, text-based technologies was due to the packet loss she experienced during her ooVoo audio and video chat sessions. In addition, she was concerned with the speed with which the participants talked over audio and video technologies and her ability to understand others using a non-native language.

We are people from different nations and they have different dialect. So that they are not all native language speakers, they are all second language speakers, and foreign language speakers, not the native language speakers. So we have the problem.

Other participants had a different point of view. One interviewee declared her experiences with “ooVoo (video chat) was great!” She recalled how she had a conference with one of her peers in another continent and how it lasted for nearly an hour.

But we were laughing all the time, though we were discussing rather serious questions about how to plan our lessons and so on. But my husband who was trying to fall asleep he said, “boy, you are really studying – you are not kidding me, no?”

You were laughing!” She was very positive. Actually, I couldn’t fall asleep after that thought it was 3:00am but still I couldn’t because I was smiling! I was smiling the whole night after that talk! She was great.

Others voiced their preference for video chat in expressing feelings and emotions. One participant thinks video is best because she could “see the person I am talking to, I see the reaction.” Interestingly, during a post-course interview with one of the learners, we jointly experienced a phenomenon contrary to this viewpoint.

I had just completed my interview via webcam with a learner from Europe, and she had just finished conveying a point. The dialogue progressed as follows:

Bill: Yeah, that is an interesting point.

Learner: Yeah, but you don’t look very interested! (she challenged me with a big grin)

Bill: No, and, see, that’s one of the dangers of having the webcam! (I smiled) I get that look (on my face) when all the gears are turning – I look like I have checked out! But no, I hadn’t thought about it in those terms before. The words are coming out in a very monotone way – “that’s a really interesting point” – but, that’s because all the energy is in my head, processing what you just said. So it’s a misunderstanding (I stated smiling). Video and audio signals can be misleading.

Learner: Yeah, but if you had written – if you wrote, I really feel interested, I would feel, “well, he is so interested!” So, without being able to look at the person, you really stop trusting words!

Another learner carried this conversational concept a step further in discussing the use of technologies and their ability convey sensitivity. “

I suppose that feelings and sense were best shown again via video chat. But, with text-chat we used a different sort of smiles, punctuation marks (emoticons) to show smiles, and exclamation marks and what not. But still, video chat was still the best. Even if you use audio chat you can't hear and be sure that you hear and understand the reaction of your partner correctly.

In summary, one participant declared the various CMC technologies provided a “very comfortable and very pleasant way” to communicate with his peers.

Finding 2: Participants' Individual Cultures and Cultural Histories May Have an Influence on Their Preferred Choice of Communication Tools in the Multicultural Online Learning Environment

The second question guiding this research was, how do participants' cultural histories influence their choice of communication tools in the multicultural online learning environment? In the reflective journal entries and post-course interviews conducted for this research, participants discussed *emergent cultural issues* and *cultural challenges* that surfaced and role CMC technologies played in negotiating culture-related communications and events. In many cases, the cited emergent culture-related issues, cultural challenges, and the technologies that facilitated discussions were inter-twined. As such, they will be discussed as a collective whole.

Emergent cultural issues and cultural dynamics. I observed an interesting phenomenon that occurred regarding whether the participants felt there were any culture-related challenges that presented themselves during the course. In the private reflective journal, there was little mention of challenges experienced at a cultural level. The post-course interview yielded responses that were more indicative of cultural challenges experienced.

In her reflective journal, one participant declared, “The only cultural issue I have experienced is that every school my friends (online peers) teach at are nice schools, and when I tell them about my reality here in (my country), they react like if I was from another planet.” Another participant states, “This unit on classroom management was very interesting because of the topic itself and because the interactions on oovoo were also very enriching. I had the chance to become aware of the major differences in what students' behaviour is concerned. This community truly is fighting the cultural divide!” One of her peers stated he had not experienced any cultural issues and posited that perhaps this was due to the community focus on English-related issues. “Though we are from different cultures I don't see much difference among ourselves concerning the ideas and feeling that we have towards each other.” She goes on to present an interesting thought. Perhaps cultural difficulties would arise amongst multicultural learners “if we were in the same classroom, physically present and had more chance to interact with each other.” Several participants noted how surprised they were that they did not experience cultural challenges. As one learner stated,

What was amazing about this course is that being from different countries, educational systems and religions was not a barrier towards living as one family and studying as brothers and sisters. On the contrary, it gave more energy to concentrate on the content of the course for the welfare of our students and communities.

One of his peers agreed the focus of the participants was universally placed on the welfare of their students' future English learning experiences. "One thing I recognized is that as teachers we care about our students the same way and trying to solve the problems with a dialogue is common to teachers all over the world."

The reflective diaries did recognize there was a mix of religious denominations represented in the course. One learner expressed her concerns for balancing her time to meet her many obligations. "This is a special month for us (Muslims) I was engaged in prayers of Ramadhan at the same time participating on the online learning. This was very demanding but I tried my level best not to disappoint God and my online comrades."

Responses in the post-course interviews included comments that echoed those in the reflective journals such as, "The one feeling is (we) all want to give their best to (our) children. So culture is not interfering in the education system." However, they did yield a more varied response to the question of culture-influenced issues and challenges and provided opportunities for me to experience culture-related considerations on a personal level.

During her interview, one learner stated she felt her peers were a little different from her: "They are more serious, they don't talk so much-they only talk to me concerning the

homework in the course-nothing personal at all, never.” She goes on to state that the people of her country love to talk and “I think the technologies helped a little bit, but not so much, because it’s a cultural thing that we don’t change from one day to another.”

Another participant believes her quiet demeanor is culturally influenced. She states that as a people, her countrymen are quiet. She listens to others, but “I have less community.” In her “real life I have so few friends and very shy person. And maybe I have less communication with others.” She elaborates by stating her countrymen are a shy and quiet people, “especially woman I think.”

Religion. One interviewee mentioned the need to be careful with how you use humor in the presence of a multicultural audience. Speaking from personal experience, she declares, “humor is the most tricky area for intercultural communication. Maybe when we speak about some personal relations or some religious things – you know all these areas that can provoke some conflict?” Religion did come up as a topic of concern with several of her peers.

One female participant spoke of her uneasiness to communicate with a male peer. Like the majority of her countrymen, the learner was a practitioner of the Muslim faith. She spoke with her male peer who was also Muslim. While she considers herself and her countrymen to be a very “open” people, she did not feel “open to him.” She goes on to explain, “I said, I must be careful with what am I wearing. Do you understand? So I have to be careful what am I talking to him, I don’t know why.” During my interview over webcam with her, I heard in the background the local call to prayer. I asked her if she needed to take

a break from the interview to pray. She responded, “no, I just finished for month of Ramadan – but I pray my way.”

Another Muslim participant elaborated further on the complexities of balancing local and personal culturally influenced practices with communicating via CMC technologies.

Well, sometimes for some cultures – especially between men and women – we can talk, but we cannot see each other in the webcam. It doesn't mean the webcam doesn't work, but it's against my culture to see me, right? So we can still talk, share, exchange ideas, share ideas, but you can't see me, it's my culture, especially between men and women.

The participant goes on to further explain that in the case of communicating with a member of the opposite sex, it comes down to self-examination. The individual needs to search his or her heart and ask what their true intent is in communicating with the other person. As an example, if a man is to use a webcam to communicate with a female teacher, roles and intent are defined in advance. If the man can accept in his heart the true motivation for communicating with this woman is for a purpose dedicated to education, then this scenario does not present a problem. “I can see her and she can see me under the condition that her face or her clothes will not attract my attention.” He elaborates on this point.

“In terms of culture we are different. Women in Islamic countries, they choose to wear different clothes than women in non-Islamic countries, non-Muslim countries.” As the interviewee is an educator, I pose the question if this presents a problem for him when he teaches female students. “I do communicate with my students – girls – but they do know

before hand that I am respecting them as they are respecting me. So we have a very clear idea about our relation.” Ultimately, the concern is whether communication with a member of the opposite sex is going to move in a “negative” or “positive” direction. “So, I go back and say that culture is always shaping that conversation. Shaping that or controlling that.”

As was the case in a previous interview, during my interview with this learner, I heard the call for prayer emitting over the local speaker system. When asked if the interviewee needed to break for prayer, he responded as follows:

Learner: No, I just have more... 15 minutes. How many questions do you still have?

Bill: 9 more.

Learner: Nine. We can go through the nine questions and then I will go for prayer.

Yeah, I still have 15 minutes...

Finding 3: Participants Experienced a Variety of Challenges to Communicating in the Multicultural Online Learning Environment, Which Were Presented in the Form of Psychological, Religious, Linguistics, Temporal, Infrastructure, and Technological Issues

The third question guiding this research was, what challenges do participants encounter when communicating in the multicultural online learning environment? In the reflective journal entries and post-course interviews conducted for this research, participants discussed *communicating with English as a non-native language, reliability of CMC technologies, and technologies that inhibit one’s ability to communicate.*

Communicating with English as a non-native language. Communicating with English while enrolled in an academic course presents unique challenges to non-native speaking students. Participants in this multicultural online learning environment experienced a range of positive and negative emotions on communicating with English and their ability to communicate with and understand others. In fact, the perceived ability of a participant could change based on when they were discussing the topic.

As an example, during the first week of the course, one participant noted in her reflective journal, “I have learnt that it isn’t easy to communicate in English. I found it a bit difficult to express some of my ideas.” In the post-course interview, this same person declared, “I didn’t get any problem, it was good, it was fun.” During the second week of the course, one of her peers wrote in her journal, “I don’t find it difficult to communicate in English with the group. All are so friendly and they use simple English language and the communication between each others went on effectively.” However, while discussing this same topic in the post-course interview, her position had changed. “I find it difficult. Sometimes it was very difficult to follow the conversation of others.” She clarifies by stating, “Indian English is totally different from (Taiwanese) English. And that is different in Kenya. So, with these people I had audio chat in ooVoo, and some days, it is a bit difficult for me to follow them.” Evolution of opinion was also found in yet another participant who directly linked her ability to effectively communicate in English to the communication technologies she was using. In her reflective journal, she mentions that she was excited to have the opportunity to have an audio chat session with one of her peers.

Because the course participants are from different countries, I thought we have to adapt to diverse English accents. However, the accent problem was actually less than minor comparing to the line connection one. To begin with, sometimes we could not hear so well because both of us talked at the same time as we do not see the other one's face during an audio-chatting. Secondly, it seemed that when we spoke at our normal speed, the sound blurred at the other person's side due to lag. So, we had to talk more slowly to ensure a better listening quality.

In her post-course interview, she revisited her concern for negotiating a range of multinational accents and commented, "I think text-chat provided the easiest way for chatting with all of the participants because we have to say that people from different countries, they have different intonation and accents, but by chatting by the text is not a problem."

Some participants voiced concern on how others would perceive their mastery of the English language. For one participant, the concern was so great that she contemplated dropping out of the course. While she understood the online lectures and could negotiate the challenges of the technologies, she struggled when an issue required that she express herself using English.

Sometimes when I misunderstand readings, when I start, I feel like I try to express my idea or my opinion, I am having trouble with that. And also I worry about writing, thinking this really hard for me to get it. And I thought that because we are not taught in university academic, I just worry about my English.

One her peers was also concerned with the requirement to communicate in English, as she stated, “I feel shy to speak in English.” Another learner expressed other anxiety-related thoughts. During her interview, she declared,

When I had audio chat, I was a bit nervous. And, I have this feeling when I come to a new community I begin thinking how do people react and whether they are listening to what I say or to how I say it? And I began being afraid of making mistakes. And when you are afraid of making mistakes, you constantly do make them.

Another participant was concerned on how she came across when she could not understand and peer and had to ask him or her to repeat what was said.

Sometimes it’s really difficult to understand. People who are from the East, its just because of the accents some people have. You know, it can be pretty embarrassing to ask them to repeat what they said and to apologize to say you have failed to understand – that’s a bit tricky. Then with those people, texting or text-chat is much better.

Comprehending accents and intonation was of common concern. For one participant, time in practice eased the concern. “There were problems with me understanding their accents. But when we get to know them and get used to their accents, that was not a problem.”

Participants reported positive outcomes that came from being required to communicate in English. As one learner reported, “the online course was a very good if not a golden opportunity for me to brush up my English, listen to others English, learn from

them many things – especially words, expressions, pronunciation.” More than one of his peers voiced similar opinions. One participant stated, “Personally, my vocabulary has really increased during this ten weeks.”

During the post-course interview, I asked participants to discuss the requirement to use English as the one language that all class participants must use to communicate with. The responses ranged from practical to emotional. One participant stated, “(English) is the open door for the world. If you want to be out in the world, you have to speak in English.” One of her peers made a similar observation. “English is an international language and we use it more and more often.” Another participant reminded me that after all, the course is framed around teaching English to young learners. “It is the one language through which we can communicate with others. They are all English teachers and it is a must that they should speak in English, they should communicate in English.”

Other participants have a different perspective regarding communicating with English. As one participant reports,

English is very nice. I can remember when I was young in school, we used the mother tongue. In Kenya, we have so many ethnic groups; it was a problem for many kids because each one was speaking his or her language. And then we have Swahili, which is a national language in Kenya. I find also that some people are not also so good at Swahili. But since English is taught in our country from the age of four, onwards, you find that it is very easy to communicate.

Several participants reflected on how a group of non-native English learners could communicate together in this online learning environment. One participant stated, “I’m so glad that English is it! And we could understand each other – people from all over the world could understand. I think that it is a miracle that people using English could talk to the others and could express their ideas, opinions, feelings.” Another peer voiced a similar point of view.

I was amazed because we were talking about the purpose – the function of English as an international language – and when we started talking about that, I started thinking about how all of us could communicate using only one language and we could understand each other. Maybe not all of the words, but the meaning and the purpose and the communicating aspects. So, I was really comfortable and I felt really good.

Reliability of CMC technologies. There is no doubt all participants of the course experienced some degree of failure while communicating with some of the CMC technologies made available to them. In fact, I was witness to this event on more than one occasion while conducting post-course interviews via ooVoo video chat. Frequently, the cause of failure would be a lack of sufficient bandwidth or an interruption of signal between those who were participating in the conference. Insufficient bandwidth or interruptions in the signal can result in audio being disconnected, delayed, or dropped. Video images can become pixilated, frozen, or stutter. Connections between some peers were more stable than others. This affected the communication experience and influenced an individual’s preference in choosing a technology to communicate with.

Several learners experienced difficulty connecting as a group via webcam over ooVoo in a scheduled conference with the director of the course program. As a work around solution, the director opted to hold one-on-one ooVoo chat sessions in order to meet the larger unit objective. As one participant noted, “she was very patient to answer our questions and posted all relevant links as text chat which helped the whole community.” Another learner experienced problems with the audio and video functions in ooVoo. She wrote in her journal, “The only regret for Oovoo communication is that it doesn’t work so well for audio and video chatting. Otherwise, it would be possible for most of us to chat and ‘see’ our friends more often.” Others echoed this feeling.

In some cases, it was not bandwidth that was the issue. Such was the case with one participant missed our scheduled interview session. She reported, “we cannot depend wholly on technology. Sometimes – even today – I was thinking that I should talk with you at six o’clock, but there was power failure. I can’t get connected to Internet! So that is the problem.” For others, there were instances where they experienced a partial technical failure. A participant stated,

We had a video chat with (a peer), and every five minutes, we were stopped – we were disconnected. We tried this for an hour, and then we decided to switch off camera and then it went better. I don’t know why we were struggling with it for an hour and didn’t get that idea at first to switch off camera. But then we did and it was okay.

One learner reported an incident where there was some interference with the signal, “like the image would freeze or something like that. But it would not actually disrupt the communication.” Still, the experiences of packet loss, regardless of how or where the signal loss occurred, had an impact on some; they preferred to use technologies that were more stable.

As one learner declared, “I felt quite comfortable with discussion board, with text-chat, and I couldn’t trust video chat because once or twice there were some problems with image, or with picture – you know what I mean – and there can also be some problems with sound as well so it is not as reliable as with writing.” One of her peers agrees. “With audio, there are some interference or lagging. And video, sometimes we got even a problem with the image. So I think text-chatting is no problem, and audio not so good as text-chatting, and video, the least reliable so far.” And finally, yet another peer chooses text-based communications due to the technical failures she has experienced. She stated, “Lack of reliability with the webcam affects my desire to use webcams. As I have told you, there were times we tried to use video chat and my friend and I stopped talking.”

There were instances where I experienced technical shortcomings while gathering data for this research. During a post-course interview, the video signal was such that both parties could see each other and I could hear most of what the interviewee was saying, but the interviewee could not hear me. A hybrid solution was implemented where the webcam image was left running while questions were posed to the interviewee via ooVoo text-chat.

Thus I was able to receive responses, hear tonal inflection, and observe visual cues in real time via audio and video signal.

On a humorous note, as part of the post-course interview, I was interviewing a female learner via ooVoo webcam. We connected online at the agreed upon time and appeared to have a stable Internet connection without packet loss. I was receiving a good video image and very good audio signal. The learner could see me very well, but could not hear me. I ran through some technical settings on my end and they appeared to be set and functioning correctly. Next, I asked the learner to run through a series of setting checks. After several minutes, I was puzzled as to what the problem could be. Finally, in an act of desperation, I asked the participant, “I know this might sound silly, but is your speaker volume turned down?” Sure enough, that was the case. Apparently, she has a son who plays computer games and had turned the volume down on the learner’s computer. We had a good laugh over the matter and continued on to have a productive interview. Some technical difficulties have easy resolution.

Technologies that inhibit one’s ability to communicate. While people enrolled in the course experienced CMC-related reliability issues, there were also instances where the technology or technology-related issues inhibited their ability or desire to communicate. With several participants, the inhibitions were rooted in emotionally grounded circumstances. By requiring participants to communicate asynchronously, synchronously, with text, audio, and video, people were removed from their comfort zones. As one learner explained, “I seem to be afraid of talking. It was a surprise to me. I speak English most of

the time, but speaking to a stranger was very stressful – I was always thinking about how to talk right without mistakes instead of thinking what to say.” One of her peers had issues with speaking over CMC, but for a different reason. During the post-course interview, she declared she was not comfortable conversing over the webcam. When asked why, she stated, “I don’t know. The words, I sometimes lose the words. And sometimes I pronounce or say something that doesn’t have a meaning in plain ordinary English.” There were other variations and reasons why participants felt technologies inhibited their ability to communicate.

One of her peers was taken out of her comfort zone when required to communicate via webcam. She wrote, “I’m too shy to do this, mostly if I haven’t met the person before.” Another peer developed concerns after experiencing back-to-back technical difficulties. As she stated in her journal, “I think I am not brave enough to try and learn more about the new technology because it took me time and I had difficulties through three units.

In one particular instance, a learner had interacted with a peer using text-based communications and had established a good rapport with this individual. That all changed when she engaged with her via webcam. When she communicated with this person via webcam, she writes that she felt “a bit distressed by something in her and, understand me correctly, I can’t afford feeling depressed now while bearing so much responsibility and before the very beginning of the academic year. It is, naturally, highly subjective.” As she had developed a more positive impression of this person prior to the use of webcams, she suggests, “Maybe it is not such a good idea to use video in professional communication

sometimes.” In her opinion, “I can conclude that without video you feel more confident and relaxed.”

While some experienced psychologically driven technology inhibitions, others experienced inhibitions due to issues related to technical infrastructure limitations, computer skills, lack of understanding or following instructions, initial set up of technologies, or hindering computer settings. In some cases, people could not get ooVoo to function on any level.

One person downloaded the application to her husband’s computer, would receive confirmation that it had been loaded, and yet could not launch ooVoo for weeks. In her case, this was due to the security settings that were set on her husband’s computer. But, in the mean time, she spent weeks participating in the course without key communication technologies that her peers were actively using, losing opportunities to engage with her classmates via a more robust range of communication technologies. In her journal she reports, “I am sorry to confess, but I start feeling a bit like an outsider in the course due to my inability to use this ooVoo program.” Another participant noted how there was a delay in participants signing up for their ooVoo accounts, and some learners did not follow the course directions regarding how to name their ooVoo user account. As a result, when learners went to look for their peers, a number of them were nowhere to be found by ooVoo. There were other instances where peers experienced difficulties finding one another.

As part of the requirements for their course work, learners were instructed to partner with others, working through one ‘Unit’ at a time via the various communication

technologies. One participant wrote, “I couldn't find a partner for Unit 5 and I was lucky to discuss to (a peer) about different aspects of teaching listening and speaking for Unit 6.”

Another participant reported,

Unfortunately this week I found it hard to find a partner, one big problem is that I didn't logged in for a considerable time and the times I used to logged in, nobody was online and available. Thus I had to rely only on the learning materials and the discussion board. I feel really sad about this but I am determined to do better next week.

Learners continued to experience other ooVoo-related difficulties.

One participant could not get ooVoo to work on her computer and was incorrectly advised ooVoo would not work in her country. The course support team and the I worked to resolve her issues, but she lost seven weeks of time not being able to communicate via ooVoo text-chat, audio chat, or webcam. In addition, the technical problems inhibited her ability to meet her course requirements. In the interview, she reports,

I was partnered with a friend from China. And because I didn't have the ooVoo, it was a problem for me to download, she really looked for me and I also did the same. So getting in touch was really a problem. But we managed. She used the email to write the information that was needed to me and I also did the same.

In another instance, a learner experienced problems navigating in Blackboard due to browser issues. Participants were instructed to connect to their Blackboard Discussion Board using the Firefox web browser. According to the learner,

The Mozilla Internet with Firefox, Mozilla, that doesn't work in my home. Part of the course, really half of the course. I think its really hard for me to get into the Internet. It's still not working now. I using just old Internet Explorer. This works more better than Mozilla Firefox. I asked somebody to help me to fix this, but they said Mozilla Firefox needs to be off first. When I start the course, they said I supposed to be using Mozilla Firefox to connect to the discussion board.

For another participant, her technical inhibitions were linked to her keyboarding skills. As a result, the participant declared in some cases, she actually prefers to communicate via webcam rather than via text-based methods.

I am very slow in typing. So I feel it is better for us to talk like this (using webcams). Typing takes me a long time, I am not so good at that. I wasn't very much comfortable with it. But with the discussion boards I didn't have any problem, because I could take my own sweet time, the work and then post it. Only text-chatting. That was my problem because of being very slow.

One learner took a more sweeping approach to her point of view regarding the course requirement that participants communicate with a variety of technologies. She declared,

Actually I think we used too many technologies when we are attending an online course. Especially when we have to install something like Java and this, so I always feel kind of nervous, because I don't know if I can install them successfully and I don't know what will happen to my laptop, things like that.

That said, she completes her thoughts on the matter by stating, “But, ooVoo is easy to install and use.”

Lastly, one participant had difficulty accessing or keeping up with instructions and materials. The result left her feeling isolated and falling behind in her coursework. For this learner, she doesn’t completely understand how she got behind in her work. During the post-course interview, she speculated she got behind in her work due to a combination of things such as misunderstanding the grading rubrics, not finding all of the requirements of the assignments, and failing to actively engage with the educator and her peers. She stated, “I had a gap at the beginning. And then I hesitated to ask (the educator) or the other classrooms.” Not engaging with the community took an emotional toll on her. She explains, “I felt lonely at that time. I didn’t read all the suggestions carefully and on time and got behind.” When I asked what she believed triggered her sense of loneliness, she replied it was due to her inability to access the materials. She explains,

Yes, even though I am an experienced teacher, still I was not too confident, and I felt I am not good for anything. (My educator) helped me, and she motivated me, and she made me search and read and work harder. And she was so surprised that I didn’t give up. I wanted to be noticed there. I was so lucky that we shared our opinions and ideas and it was a great experience.

When asked if the CMC technologies had a positive affect on helping get through the loneliness, she answered, “yes.” She elaborated, stating,

I don't know why but I always hesitate to write someone first or to send a request to have a chat. I don't know why, but this is me. When someone talks with me, I of course, I am not lonely here, but this is my nature, it is my character, I don't know why, but I always wait. It is not good. I am friendly, I like to talk and discuss with my friends, but something inside me doesn't let me do something first or make a step – I don't know why.

Finding 4: Most Participants Embraced the Opportunity to Communicate With Various CMC Technologies in the Multicultural Online Learning Environment

The fourth question guiding this research was, how do participants describe their reactions to using various CMC in the multicultural online learning? In the reflective journal entries and post-course interviews conducted for this research, participants discussed the level of *comfort experienced while communicating with various CMC technologies*, the *environmental affects on desire or ability to participate using CMC technologies*, and the *preferred CMC technologies for communicating in the multicultural online learning environment*.

Comfort experienced while communicating with CMC technologies. The levels of comfort experienced by individuals while communicating with others via CMC technologies were uniquely and contextually varied. Two participants were quick to declare they were comfortable using the technologies. According to the first participant, “I was so comfortable from the beginning to the end of the course. I was very happy, very happy for

participating and joyfully!” The second participant succinctly stated, “I was really comfortable.”

Several learners were actually surprised with just how comfortable they were using these technologies. During her interview, one learner reported,

When we had to download ooVoo, I said, oh my goodness, another one, and I was like, oh, no! Because I am really not good at this. And I was really surprised at how comfortable I was. And also, sometimes helping another classmate to solve their problems. And I was like feeling Bill Gates, I don't know! (she smiles broadly) I was feeling really good! Because I am not that person who helps another with technology, believe me! (again, she smiles)

She goes on to declare, “I am very proud of myself. Because I am not a very technological person, and I was afraid how everything would go in terms of technology and my management of those. And I think everything went really well.” One of her peers experienced a similar boost of confidence as a result of the course requirements to communicate via the various CMC technologies. She noted,

I thought that I was even less than novice with the computers, but still, I suppose that everything we used here is quite easy to understand, is quite easy to use. So, if there is a wish, there is a way.

She continues with the following thoughts.

In general, using all of these technologies allowed me to feel more self-confident. I was very much pleased with myself for installing new programs, for using it

whenever I wanted, even for being able to change the provider. It wasn't such a difficult thing, but still, I didn't use that before, and I was happy that I could do that. I suppose I have grown up a little bit in my own eyes, and that is all thanks to this course and thanks to the communities we were using

Other learners pinpointed technologies they were not particularly comfortable using.

One example came from a learner who did not like using audio communication technologies. She clarified her position by stating, "Audio chat was a little bit worrying and stressful for me. But I told you that is my psychological quality, and I simply felt a bit nervous about making mistakes, about not seeing how people react to my voice, of not seeing people, that was also a little bit unpleasant." However, once she had the opportunity to use technologies that incorporated the ability to see others and be seen, her level of comfort reversed.

Video chat was great. It was, it was – I don't know! It was amazing, wonderful, it was full of emotions, so I liked it most of all. Though it was new and at first I thought, oh, how will I do that? Then actually it happened like a normal talk. I see the person I am talking to, he or she sees me, and we simply talk.

One of her peers also experienced levels of discomfort using ooVoo audio chat. Several weeks into the course, participants were instructed to use the audio chat feature. The learner declared, "at the beginning there was a big problem for me to use audio chat because I was not used to ooVoo." However, after having personal experience with the technology, there was a shift in attitudinal tone. "That was quite an interesting experience, because we were

talking with only one community to people in many other countries. So it was a very new experience and very interesting. And we got to know many other people in a lot of places.”

Another participant also related audio chat with *comfort*, but for different reasons.

The learner declared when using text-chat and audio chat,

I feel free because no one can see me. And I can think and say anything. But when using video chat, sometimes it is a little bit embarrassing. Having this interview over webcam is a bit different rather than meeting a person and talking with that one and using the webcam - that is two different things – they’re already friends. It’s not like meeting somebody and talk to that person. Because I think you can’t look into one’s eyes and talk because the camera is somewhere and we are looking somewhere else.

There were other combinations of preference for other variety of reasons.

One participant felt most comfortable with text-based technologies and webcams.

She preferred working with text-based solutions “because I could delete some sentence or change it – I mean word or phrase it better. So I spent some time on editing in discussion board.” Regarding her comfort level with using video chat, she stated, “Video is very comfortable for me only with those people I can trust. So with others, it can be a little bit strenuous, it can be embarrassing.”

Lastly, one learner felt uncomfortable with the volume of CMC technologies she was asked to use. She declared, “I think we used too many technologies when we are attending an online course. Especially when we have to install something like Java and this, so I always feel kind of nervous, because I don’t know if I can install them successfully and I

don't know what will happen to my laptop." She completes her thoughts on the topic by declaring, "but, ooVoo is easy to install and use."

Environmental affects on desire or ability to participate using CMC technologies. The location that the learners connected and engaged in the online course had a definite impact on their desire or ability to participate. One learner favorably proclaims, "It is a wonderful experience to stay at home and to be able to communicate to my colleagues all over the world." One of her peers had a similar response: "I logged in from home. More than anything I feel free – I can work free without any interruptions from outside." Another peer had favorable thoughts pertaining to various log in locations. "The location, it doesn't affect my participation. Sometimes I just stay in my house and I feel comfortable, sometimes I go to the café and I am also comfortable, sometimes I may be in my car and I am comfortable." It may be worth noting that in all three of these cases, none of the participants were married. For the other participants, their log in location proved to be a source of technical and personal challenges.

In her journal entry, one participant wrote,

To begin with I would like to show my deepest sorrow for being late on this journal. I travelled to Sweden and while I was at a friend's house I could work and I actually had the chat for this unit while I was there, but then I spent the weekend in a hotel where the Internet connection was terrible and I couldn't use it to work on the course assignments.

Travel proved to be challenging for other learners as was expressed in this journal entry:

This week I am in Turkey with my 2 sons on holiday (finally!) and though they promised a good wifi at the hotel I found with frustration that it was definitely a challenge even to check your emails, let alone ooVoo or Youtube lectures watching.

For another traveler-learner who was visiting her mother, her destination's environment provided for a different set of challenges. She explained, "One week, I was at my mother's house, and I communicated from there. I suppose I had more time to communicate away from home. Because, children were always being entertained, and there were too many grannies, and great grannies, everyone was trying to wiggle wobble and so on (she smiles)." Even though she had time to participate in the course, the environment posed a problem. "I was not so free to use audio or video chat because I was a little bit shy to speak English in front of grannies in front of great grandparents. They were looking at me like, what is she doing there?" As a result, she was comfortable communicating via text-chat or posting in Discussion Board, but with audio and video chat, she felt "shy."

Family proved to be a challenging issue requiring negotiation for another participant. This learner's husband works away from the home and returns to the home on the weekends. The learner must juggle her work, family, and course obligations. Logging into the course from home with her six year old close at hand, she states, "you can imagine with him around. And he doesn't know what you are doing! I used to tell him what is the calls I am doing, but he wouldn't understand so much. So you see, at least, he is in my care. The whole family in fact." When it comes to her coursework, she tends to her family first making sure their needs are tended to, puts them to bed, then addresses her coursework.

When asked if participants log in from work, most responded they do not. One learner elaborates by stating, “at my school, it wouldn’t be possible because the Internet there is terrible and I wouldn’t have the chance to participate.” Another declares the environment is too distracting. “When I am work, people know I am at work, so they distract all of the time. When I logged from home, I knew that the Internet connection would be pretty good, so I felt more secure, more confident in this respect. And of course when I feel confident, I feel more motivated.” One participant attempted to participate from work, but was unsuccessful. She elaborates by stating, “At work, I was using the few minutes I had free, but I was also thinking that my students will be back at the class. And here (home) I managed my time in a better way. So I used the computer for more time and I felt more comfortable also, so it really did affect me.”

Preferred CMC technologies for communicating in the multicultural online learning environment. The research questions and related sub-questions lead up to the final over-arching question posed to participants in the post-course interview; *after this course experience, what CMC technology would you say works best for you in the multicultural online class environment?* The responses to this question were as varied as the individual answers to the previous questions presented during this research. While several respondents selected one technology over all others as being their “best” choice, most participants elected to reply by declaring they preferred several technologies. They liked how a technology or technologies best served a specific course requirement or personal need.

Two respondents preferred video chat with webcams above all others. Upon posing the question as to which technology she preferred, the first one learner replied, “Of course the webcam! I like it because you get immediate information that you wanted.” The second participant declared, “It was obviously video chat. It helps a lot in communicating lots of information other than just sound.” One participant also focused her preference on text-based communications. She stated her preference was written communication as the mastery of English amongst the learners was quite varied. Through written communication, she believes that mode of communication has the potential for leveling the communication playing field. She explains,

And there can be problems with pronunciation - and not exactly problems, but it will be difficult to understand, to grasp the meaning. So it may be pretty difficult. And with written communication, it is always possible – even if there are mistakes or some serious grammar mistakes – it is still possible to decipher the meaning. So it is simpler, it is just simpler.

Other learners were more diversified in their approach to choosing their “best” technologies.

As one participant stated, “I would say ooVoo text-chat works best for me, because of the international aspect. But, it’s still good to see the partner’s face from the video, even if it’s for once or twice - although it doesn’t work so well, but it still helps to allow you to feel close to the friends.” One of the learners agreed that there is value in using video chat to serve a social purpose, but proposed there were other technologies that should be considered as well. She states through video chat,

we convey our experiences, our feelings, our knowledge. But also meet the others and the level of relationship can increase there, I think. Of course when we read the posts on the discussion board, it is a deeper level, more formal of course, because there we are discussing the course, the contents of it. Then if we think about the CMC tools (*ooVoo audio and video*), we go to another level where its just not knowledge, its much more about experiencing. We don't give so many examples when we are writing a post. But here, we can go back to our school experience and say, "this and that happened to me and this is what I did – so what would you do? For example...". So I think that these tools (*ooVoo audio and video*) can increase our level of bonding.

One of her peers expresses similar thoughts in how the technologies function as a system. "It is hard to choose just one. I think they all work together. I think the discussion board was very important for the learning – the texts, the links, and the video too. I believe for social I would say Facebook, and the text-chat and the video chat."

One participant expressed a similar opinion in the value of using multiple technologies in this online learning environment, but she also brings up the importance of using technologies that do not have a steep learning curve. She stated that while she liked the discussion board,

I like ooVoo because it had all the necessary tools for us to actually communicate. And most important for me is the fact that we have to keep in mind that not all of us are technological geniuses, again, and it was really easy to get used to. And really

easy to use. And I think that is a really important aspect, because the final objective in all of that is to actually communicate and share.

Lastly, one participant was already formulating a plan for how he would put his new technological skills to work in the classroom for his students.

I am going to forget SMS and try to use the ooVoo with my students. I can use this experience with them; whenever we don't have class we can come together via ooVoo or Facebook, because we have already created a group and we use it for whenever we have a message for them. I just post it on Facebook and they just answer. I can add ooVoo up to that. We have emails also, and I think ooVoo is one of the great things I have learned thanks to this TEYL experience.

Summary

Fourteen educators from 4 continents native to 11 separate languages enrolled in a multicultural online course hosted by large university based in the Mid-Atlantic United States with the objective to increase their knowledge to better serve their ability to teach English to young learners at the local level. None of the participants spoke English as their native language. Through the practice of effective course design, initiating a strategy of having learners communicate via a tiered progression of CMC technologies, providing and facilitating institutional and peer-based support, and facilitating active engagement within the community, participants were able to establish perceived levels of social presence, develop a sense of community, and build relationships and a sense of closeness with their peers to the degree where peers commonly referred to each other as friends. While the

learners acknowledged their geo-political, temporal, religious, and cultural differences, the community was able to turn their focus toward the mutual professional objective of advancing their pedagogical knowledge in order to better serve the needs of their students. Through extensive communication, collaboration, social engagement, and sharing via technologies, the participants were able to establish a sense of trust and respect for their peers, which led to a common desire to maintain relationships after the close of the course. This newly formed bond also had the effect of establishing an excited and motivated international community of practice.

As the 14 participants in the study were from different countries and all non-native English speakers, there was some initial concern expressed by participants to be able to communicate their intended meaning to peers and understand others. While there were some cases where intonation became an issue while participating in audio and video chats, it was noted that through repeated exposure to various accents, instances of difficulty in understanding peers due to accent or intonation differences waned. Other participants addressed this issue by conducting text-based sessions with peers, removing concerns of accent and intonation.

In most cases, culture was not perceived as being a barrier to communication. However, religious practices did have an affect on some participants when they were asked to engage with opposite-gender peers via video chat technologies. Such requirements had an emotional affect on some of the parties involved and in some cases led to participants experiencing a level of personal discomfort.

The people enrolled in this course were native to a variety of locations and were at different parts of their professional careers. Each had a unique set of personal circumstances and thus unique set of personal obligations to meet. In addition, participant accessed the online course from many different environments. These factors combined to dictate if and how that environment facilitated or inhibited their ability to participate in the course. The learners who were not married and logged in from home felt comfortable and motivated. Those with family obligations found it more challenging to juggle communicating over multiple time zones, not waking family members while participating in audio and video chat, and satisfying the needs of inquisitive on looking family members. While such circumstances proved at times to be challenging, it also provided opportunities for participants to meet participants' sons and daughters, expand their knowledge about each others' local and cultural surroundings and daily practices, and in general facilitate the growing bonds of friendship, closeness and trust.

All but two participants enjoyed having an opportunity to communicate via various CMC technologies and voiced a preference for using a wide range of CMC tools in the multicultural online learning environment. In some cases, the local or connecting Internet infrastructure may dictate if or when data-intensive technologies such as video chat can be utilized between participants. Even local power grids, politics, or local access to computer-related technologies may dictate or impose some degree of limitation. While all participants experienced some event of technical failure while using audio and video chat technologies, all but two participants acknowledged the value in the use of video chat as a way of building

relationships, serving social needs, and expressing emotion. Some participants preferred using video chat as a way to visually confirm whether their peer received the intended message by observing their partners' facial cues and gestures.

It is worth noting that webcams are capable of producing a widely varying quality of image. I addressed this potential technical issue by researching and testing consumer grade webcams. Once a webcam was found with a good quality to cost ratio, I purchased and shipped the same model of webcam to all learners, course educators, and support staff.

While video chat was affiliated with its share of technical problems, text-chat technologies fared very well. In fact, when several participants who were engaged in audio or video chats experienced a lack of bandwidth and an unproductive chat session, they switched over to text-chat and were able to salvage the session. While 12 of the 14 learners acknowledged the value of text-based communications, they expressed a variety of opinions for how text should be applied as part of the course design. Most found particular value in using text-based communication as a means for addressing course-related needs, some found social value in the media.

In defining what CMC technology was preferred by each participant for communicating in the multicultural online environment, there was not enough evidence to declare just how extensive a role culture plays in making that personal choice. It is evident that the reliability of the technology and supporting infrastructure factors into whether a learner will utilize the more complex, information rich, and bandwidth-demanding technology such as audio and video chat. Learners also enjoyed using some technologies for

social purposes and some technologies for course-related work. In general, most recognized the social benefits derived from using video chat and social media technologies such as Facebook. Many learners voiced their intent to use ooVoo in both their personal and professional practices. While all of the CMC technologies were embraced and proven to be effective, several students declared they would like to have a say in how and when to use these technologies.

It is important to note that all CMC technologies were successful in serving the participants socially on some level. Emotional reactions to the quality of conversations and level of friendships established ran high. Culture, individual personalities/histories, learning styles, technological stability, politics, and religion played considerable roles in the successful application of CMC toward establishing a sense of presence, building communities, friends, and professional relationships. Achieving this desired level of social success is dependent on the ability to weave a highly complex systems-based web of inter-related factors. This statement and findings then, lends value in the use of CHAT as the study's theoretical foundation.

Chapter 5: Discussion

The focus of this research was to examine a group of multinational teaching professionals enrolled in an online course hosted by a large university located in the Mid-Atlantic region of the United States and to explore what the learners experienced while communicating and collaborating with their peers and educators using a variety of Internet-based Computer-Mediated Communication (CMC) technologies. Responses by participants provided the data necessary to address the four primary research questions. Data generated from the research proved to be particularly valuable in bringing attention to tangential concepts or outcomes worthy of further consideration. This chapter discusses the relationship that exists between the research topics, the research findings, and these tangentially relevant issues.

Through the Use of CMC Technologies, Participants Were Able to Achieve a Sense of Presence Through the Development of Friendships and Community While Engaged With Others in a Multicultural Online Learning Environment

While reviewing the data related to CMC technologies contribute to a sense of presence, and the development of friendships and community, six topics of import surfaced:

1. Building a global community and world peace via CMC
2. Building communities of practice via CMC
3. The relationship that exists between having a sense of belonging and time engaged communicating with others via CMC

4. The relationship that exists between having a sense of belonging and the perceived level of assistance provided by others via CMC
5. The relationship that exists between achieving a perceived sense of presence and the quality of one's partners
6. The ability of CMC to evoke a sense of reality

Data relevant to each tangential finding is presented in this chapter.

Building a global community and world peace via CMC. While reviewing the participants' journal entries, several learners mentioned how they felt that the technologies afforded them during the course have allowed multinational partners to engage as members of an international community. As one learner wrote,

It is an interesting and fascinating experience to be a participant of the online course. Because the course participants are from different countries, I feel that by attending the course I have joined an international community, where I have the opportunity to encounter a variety of cultures by meeting foreigner friends in the virtual world via Discussion Board, Oovoo chatting, and e-mail correspondence.

She goes on to state that as a result of her ability to participate via the course media, "the online course has linked the course participants from all over the world together not only as members in the virtual community, but also as friends beyond nation boundaries."

Others agreed. One learner mentioned that while communicating with her peer, they learned how culture could play a role in defining how students were punished. Even though there were differences in how they approached certain subjects, she wrote, "One thing I

recognized is that as teachers we care about our students the same way and trying to solve the problems with a dialogue is common to teachers all over the world.”

Two learners took the concept of developing an international community via CMC a large philosophical step forward. One observed, “As the world is getting smaller, due to this amazing technology, I hope we will finally learn to live in peace because, in time, everyone will have a dear friend everywhere and we will refuse invading their countries, hurting them or their families; their friends or their people.” In a similar note of reflection, one of her peers wrote, “we both agreed that the Community is such a wonderful place, where, despite of diverse nationalities and cultural backgrounds, everyone is friendly and ready to help whenever possible, that we can not understand why there are wars all the time.”

Building communities of practice via CMC. According to Wenger (1998), communities of practice are comprised of people engaged in a common interest or share enthusiasm for something they do. While learners in this course acknowledged they had experienced a level of presence and achieved a sense of belonging to the online course environment, a number of participants provided feedback that supports the premise that the group had evolved into a community of professional educators, essentially forming a community of practice (Lave & Wenger, 1991). According to one learner, “It is always very rewarding to talk with these colleagues and find out the differences and similarities that bind us together.” She extends her point of view declaring, “In an international community of teachers it's very important to have room for this kind of interaction.” One of her peers collaborated on a Unit's assignment with two people from countries different than hers, and

proclaimed, “The work was great!” She stated that both of her collaborators “think differently, but in the end the problems discussed appeared to be similar. That is what unites us all.” More peers contribute to this line of thinking. Another participant wrote,

My sense of belonging to the online learning community is growing every week as I get to know my classmates better. Discussing different questions with them on (Discussion Board) and sharing ideas, I learn more about them, the way they teach, the environment in which they work, methods they use, problems they face.

The following comment has sentiments that are mirrored in many other participant writings;

I feel good being part of this online community. I am really happy that all of us are going to join the TEYL group on Facebook. It is a great idea to keep this learning community together after the course finishes. In this way we will be able to build good relationships with colleagues around the world and keep sharing our experiences, new ideas, and best practices.

The relationship between achieving a sense of belonging and time engaged with others via CMC. One of the interesting phenomenon that appears to have surfaced is the seemingly logical premise that the more time a participant engages with his or her peers and educators via CMC, the stronger sense of community they will feel and the stronger their sense of belonging. This premise is directly supported in the following journal entry:

I really feel good being part of this online community. The feeling of belonging to this online community is growing every week as I get to know my classmates better. Yesterday, just before the video chat with (the program director), I talked to four

community members. Everyone was excited about the video chat. (One of my peers) joined us for the first time on OoVoo yesterday and we had a text chat first and then a video chat. It was great to meet her and talk to her via OoVoo. She was very excited about meeting her colleagues via OoVoo.

One of her peers wrote that she derives benefit reading her friends “posts, reactions , suggestions and interactions in the discussion board . I liked it very much. On the whole , the more we communicate and share through the discussion board the more we build a strong community of international teachers .” Another participant elaborates on these points of view, writing,

My sense of belonging to the online community is growing day by day as I get connected with the members and the friendship becomes stronger through the interaction we have with each other in the activities and through the (Discussion Board). The high involvement strategy you have used in designing and planning the programme is another reason for this.

Along similar lines, there were several participants who did not have the ability to utilize all of the CMC technologies for up to seven weeks into the course. This resulted in these participants experiencing a negative emotional reaction. One learner reflects, “I am sorry to confess, but I start feeling a bit like an outsider in the course due to my inability to use this ooVoo program.” Another expressed experiencing feelings of “loneliness.” One participant was able to set up an ooVoo account and get it to function so she could utilize it during week eight. She wrote, “I am so very glad that finally I can write about my

interaction with other colleagues via ooVoo in the frames of this course ☺! It is a genuine pleasure to feel a rightful member of the community ☺.”

One final response was recorded as part of the post-course interview and directly addresses the preposition:

I already think that if we have all the same interests, we are all trustful people, and then of course, with some colleagues, we are more comfortable than with others because we have shared something more. The ones that we first met, that relationship we were building it. So at the end of the course, I am closer to some colleagues than others. ooVoo audio video chat room helps build trust relationships.

The relationship between experiencing a sense of belonging and the willingness of others to provide assistance via CMC. As was mentioned, participants in this course experienced a sense of presence, belonging, and community. In addition, a number of posts were presented during the course that mentioned the willingness of learners to assist their peers. Logically, a relationship might exist between one’s sense of belonging in the course and the willingness of others to assist their peers via the course CMC tools. One person wrote, “I have to say this week has been easier in terms of getting to know the system and the way to work. Again, it is good to know that my friends in the TEYL community are always there to help.” Another stated,

Day by day I become intimate with some community members that they even help in necessary situations. I find this very helpful because all the members are form

several corners of the world and it is “oovoo” and the discussion board which connect people.

Eight weeks into the ten-week course, one participant had a virus attack her computer and was very concerned about her ability to recover her losses. In her journal she recalls,

After getting my laptop fixed on Monday evening, I had to spend hours re-downloading the software required for the online course and get the course participants connected to my Oovoo. I was really touched when many of the community friends transferred their contact lists to me after receiving my Oovoo invitation. While sending her contact list to me, (a peer) asked about my situation, saying she was wondering what happened to me when she noticed I was not on (Discussion Board) on Sunday.

One participant summarized related experiences in her journal as follows:

Every member is treated as an individual and they are personally welcomed by each other, invited to get involved, given responsibilities, have a mentor to see them through and sought out if we've got any problem. In the group, every member helps each other and share ideas and appreciates one another when they do good work which helps to run the community and most of all the encouragement given by our instructor is immeasurable. Here we have built an emotional need rather than a tangible benefit and I feel that I belong amongst a group which consists of teachers from all over the world with different backgrounds, religions and cultures having the

same spirit towards teaching English Language. Therefore my loyalty, commitment and willingness to help have increased dramatically which I will have them for life.

The relationship between experiencing a sense of presence and the compatibility of partners. As a result of the data collected from this research, I posit that there may be a relationship between the level of sense of presence experienced by a learner and the compatibility of the partners they engage with in the online course environment. During the course, a participant wrote, “I feel lucky that I kind of naturally paired with Cynthia regularly and got motivated all the time. I believe I may become less active if I were paired up with a less diligent Oovoo partner.” Another participant had a negative encounter with a peer via video chat and later participated in a group video chat session that I attended along with the director of the TEYL program. The learner proclaimed,

As for the group video lecture (ooVoo video chat) with (the program director) and Bill Burger and other participants, I liked it immensely! They all are such nice people that the time of the session flew incredibly fast ☺. It was a great and inspiring experience (I guess a lot depends on people you deal with, not on technologies ☺).

In some cases, the compatibility of partners may relate to other issues. Religion did prove to be a challenge for two women who were concerned with how they presented themselves while communicating with a male who practiced the Muslim faith and whose guidelines on how to interact with women are defined by his faith. As he explained, “I believe that we can talk with a great number of women via ooVoo, via SMS, via Skype still, as far as the objective is very clear and doesn’t go against my culture, and doesn’t violate my religion.

Lastly, geo-temporal issues may be perceived as a form of incompatibility as was noted in the following journal entry.

The main problem in this way to communicate with friends (synchronous audio chat) is “time”. When I start talking with somebody in the morning, for some, it is night time and they get ready to sleep and morning for them is bedtime for me. Therefore to find appropriate time for both parties is a bit difficult.

The ability of CMC to evoke a sense of reality. During the fourth week of the course, participants began to communicate with each other via ooVoo audio chat. One learner made the following related observation in her weekly reflective journal. “I liked using the audio chat. When you can hear people, it somehow makes them more ‘real’.” For a number of learners, in the post-course discussion about their experience communicating with CMC technologies, the word “real” found its way into the conversation. One participant mentioned how she had never used a webcam before, as she is shy but found it to be a “very good tool to use.” She continues by declaring, “So in serving social communication, I agree that the webcam was a plus, in all the communication we had. Because text-chatting people are very far away from each other, and using the webcam they feel real.” While discussing video chat technologies, another participant believes it is a valuable tool “because you can see the person and see how that person reacts to what you say, and see his gestures and facial expressions and all. It’s a bit similar to an experience where you meet that person.” Another peer believes there is a similar quality of experience

achieved when using all of the CMC technologies. She declares communicating with the courses CMC technologies was “just like real communication.”

Participants’ Individual Cultures and Cultural Histories May Have an Influence on Their Preferred Choice of Communication Tools in the Multicultural Online Learning Environment

While reviewing the data related to how cultures and cultural histories may have an influence on the preferred choice of CMC tools to use in the multicultural online learning environment, one dominant topic of import surfaced: *Religious Influences*.

Religious influences. Various religions dictate that specific rituals be practiced at certain dates and times. As an example, on several occasions, I was conducting post-course interviews with learners located in countries with a large Muslim presence, and a call to prayer could be heard in the background. The dates and times when call to prayer occurs in these countries was unknown and not planned for as part of the interview process. In addition, one practitioner of the Muslim faith informed me that his belief system required him to be careful with how he communicates with women. Local culture finds it unacceptable for him to engage with women if he can see their face or if they dress in a culturally unacceptable way. As he explained,

It depends on each one’s will. For example, if I have to talk with (my educator) who I have never with or I have never seen her face, I ask myself, do I consider her a teacher of mine, or am I considering her for example as something else? If I consider

her a teacher of mine, no problem, I can see her and she can see me under the condition that her face or her clothes will not attract my attention.

Factors such as these might well affect the CMC technology used between people who practice this form of faith.

Participants Experienced a Variety of Challenges to Communicating in the Multicultural Online Learning Environment, Which Were Presented in the Form of Psychological, Religious, Linguistics, Temporal, Infrastructure, and Technological Issues

While reviewing the data related to the various challenges participants experienced while communicating via CMC tools in the multicultural online learning environment, three topics of import surfaced:

1. Psychological challenges
2. Religious dynamics
3. Technical limitations

Psychological challenges. Two of the 14 participants described themselves as being “shy” and one of their peers feels uncomfortable with the use of audio communication technologies. Admittedly, they all proclaim these emotional conditions had an impact on how or how much they communicate. With one ‘shy’ participant, she wrote about our approaching post-course interview the following: “Bill Burger has assigned our interview about the course for September 7th and I’m pretty anxious about it. I’m really a shy person,

but I think it will be a pleasant experience. I hope we can easily understand my English, because of the accent.”

The second self-admitted “shy” person believes her shyness is a direct result of cultural influences. She believes that people from her country tend to be “quiet” and the women particularly shy. During her coursework, “I was so quiet person. And I listen to what they are talking and I have less community. And also in my real life I have so few friends and very shy person. And maybe I have less communication with others.” This same individual is more comfortable communicating with other women and prefers to apply a tiered approach to the use of CMC technologies in developing a new relationship. She declared, “I would prefer to build relationship with ladies and women instead of men, I don’t know why. For building relationships, first text-chat, and then we can make video call or audio chat.”

Lastly, one of their peers has what she refers to as a possible “phone-phobia,” meaning she experiences discomfort talking with someone via audio communication technologies. She states, “ I really feel not easy when I have to call someone I don’t really know.” She went on to complete the course successfully, fully embracing the use of ooVoo video chat technologies.

Religious dynamics. Potential challenges can be presented in the forms of course requirements versus faith-based practices, as outlined in the previous discussion on cultural and historical influences and their potential impact on the preferred choice of CMC technology. In addressing the issue from a potential barrier perspective would be reiterating

much of which has already been discussed on the topic. In summary, one participant suggests practicing *respect* for others and building levels of *trust* will go a long way in allowing participants to communicate and collaborate via CMC technologies. He suggests that by being respectful of others, we “make that person feel comfortable with others. And that kind of respect is always shaping the conversation and controlling the conversation, and then things are going better step by step.” He goes on to declare, “Yes, respect is also very important. That’s why - it is the key to trust.”

Technical limitations. Technical failures and limitations had an affect on the choice of CMC participants elected to use in their communication and collaborative efforts with others. In several statements, participants stated if the connection were more stable while using ooVoo video chat, they would prefer to use webcam communication technologies more extensively in their coursework.

Technical failures such as these are often due to limitations related to bandwidth. Bandwidth is dependent on numerous factors, especially when the Internet connection crosses two, three, four or more continents. As such, when considering these limitations, it may prove prudent to factor in the quality of the Internet, electricity, and computer infrastructure on each local level.

Political factors may also be at play in defining technical limitations. In order to accommodate this research project, I elected to purchase webcams and headsets and ship them to all research participants, course support staff, and educators. By doing so, the host staff, the participants and I could be assured they were receiving a quality device that had

been tested. Also, by knowing ahead of time what webcam and headset participants would be using insured the audio and video quality would be above average, and made it more manageable to troubleshoot one device should any related issues present themselves. When I went to ship a webcam to one of the participating countries, I discovered U. S. Customs had a policy in place that prevented the shipment of a webcam to that destination. I attempted to ship the webcam nonetheless and the device failed to arrive at its intended destination.

Most Participants Embraced the Opportunity to Communicate With Various CMC Technologies in the Multicultural Online Learning Environment

While reviewing the data related to how participants embraced the opportunity to communicate with the various CMC tools in the multicultural online learning environment, three topics of import surfaced:

1. Participant reactions to effective course design strategies
2. How CMC Supports the development of non-native English communication skills
3. Participant reactions to the course coming to a close

Participant reactions to effective course design strategies. A very specific design strategy was incorporated into what CMC technologies would be offered to the participants during this course, when they would be made available for use, and how they would be supported. While 2 of the 14 participants expressed concerns for the requirement to learn and communicate with the range of CMC tools, the majority of participants found value or enjoyed the opportunity to have hands-on experience putting these technologies into practice. In a journal entry, one participant remarked, “I do enjoy this cause a lot and am

happy that in the modern world there are such great opportunities to get education and to communicate with people from all over the world via cutting-edge technologies 😊.”

Another participant expressed joy by posting, “I was so happy that I met (the program director) in real time chat. I met many members online through OoVoo and we had video and text chat. I wholeheartedly thank the efforts of UMBC in conducting this online course innovatively.”

Several participants wrote in their journals how the CMC provided opportunities that brought them joy. After participating in a group ooVoo video chat session, one participant wrote, “we had a great time, well, at least I had.” After her group video chat session, her peer declared, “I liked it immensely!” And another peer again wrote the following about her experiences while participating in a group and individual video chat session:

This seems a very interesting and a successful method in making students engaging in studies. If I had this type of opportunity in my university period, rather than odd lectures, I would have done better. She explained answers to all my questions and cleared all my doubts about story telling. Most of all I really enjoyed the group chat which we conducted with five members. After this experience, most of the members tend to contact each other using video call rather than text chat or audio chat. Thus I also got the chance to discuss with many of my friends due to that. Distance learning is fun.

The host university director, educators, and support staff allowed me to have a voice in the communication aspects of the course design. Based on the anticipated needs of the

course, the educators, the learners, and the research, I decided to apply a *tiered CMC technologies integration strategy* as to how and when the learners would use the various CMC tools. The design strategy provided users with access to the most basic and familiar means of communicating – email – and then gradually introduced them to more complex tools throughout the ten-week course. Taking such an approach had the potential to reduce technological fears and allow participants to get to know each other gradually and semi-anonymously via familiar text-based means first. Once they became acquainted with each other and their learning environment, they would get to know each other via more sensory-rich tools including audio chat and video chat.

Participants' reaction to this strategy generated comments such as, "I like the way our course has allowed us to use these technologies. First start with text-chat and then when we go on we use audio and finally we use video chat when people get to know each other – I like that way." One learner summarized her experiences with the course technologies as follows:

It's 2012 and E-Learning is quickly becoming the way of future learning. Via online learning you are able to eliminate barriers including distance, time and entry requirements and this is what you all at UMBC did helping us throughout ten weeks with tremendous effort and determination which was very successful and encouraging. I thank (the host university, program director, educators, support staff) for organizing and handling marvelous online programme. The high involvement strategy used in designing and planning this programme gave me the opportunity to

develop the sense of belonging to this online learning community. The interaction among the group members kept me going forward positively and I gained lot of knowledge and experience. It was interesting to interact with global teachers who teach the same subject with different cultures, backgrounds and expertise.

How CMC supports the development of non-native English communication

skills. Several participants noted in their reflective journal entries that their knowledge and ability to communicate in English was improving. As one learner posted, “I am very excited to be gaining so much vocabulary through interactions with the community!” Another wrote,

“I am happy to understand that this course also helps me to improve my English knowledge, where I have to communicate only in English and not any other language.” A third learner submitted the following entry:

I understand that my communicating ability in English is improving very fast specially in writing since I read a lot and refer the Internet very often to get more details I need to know when doing assignments. Also my knowledge in computer is improving and the typing speed is becoming fast.

Participant reactions to the course coming to a close. I found the last two weeks of course journal entries submitted by participants and the end interview comments to be particularly telling of what was foremost on the minds of those who participated in this course. Simply put, one learner declared, “I will truly, miss the entire UMBC online community.” This sentiment was repeated in journal entries and post-course interviews. A

peer wrote, “Parting is something sensational to all the peoples globally and I felt that in the (Discussion Board) posts. Though we belong to different places yet, we experience the same pain when something good comes to an end.” Another journal reads, “- I feel sorry it is coming to its end. Of course we all knew this day would come, but still... we didn’t think it would come so soon. Luckily, that doesn’t mean we are to stop communicating and exchanging ideas.”

As part of the TEYL course design, the host university had established an alumnus Facebook site where graduates of the program could keep in touch with each other and share resources. As the course was coming to an end, they voiced appreciation for providing an opportunity where alumnus could remain connected. One participant wrote, thanks to the Facebook site, “We will find each other, I am sure. And I liked Oovoo a lot, so I am going to use it quite often now.” Another expresses similar viewpoints by writing,

I feel great being part of this online community. I am really sad because of the end of this course. I will miss our discussions on the Discussion Board. However, I am happy that we have joined the TEYL group on Facebook. This is a nice way to keep this learning community together after the course finishes. I hope we will continue sharing our experiences, new ideas, and best practices in this group.

The following journal entry is a reflection on the participants overall experience:

I still remember how I rushed to start the course in late June feeling so unsure of everything and unfamiliar with everyone. Because of the chances to chat with the course participants on Oovoo and to read and respond to our classmates’ posts, I

gradually felt more and more close to most of the friends from around the world.

Although I have attended online courses before, this one is very different from them not only because of the multi-culture nature of the community, but also because of the enthusiasm of the participants. I believe the friendship will go on as we already joined two Facebook groups to link and communicate with each other aside from Oovoo.

Summary

This chapter discussed the relationship that exists between the research topics, the research findings, and these tangentially relevant issues. Participants of this multicultural online course achieved a sense of presence, developed friendships, and built a community through the use of the available CMC technologies. They also believe they were able to construct a larger global community and inferred the development of such communities on a larger scale might contribute to world peace. They were also able to establish a community of practice, in which the focus was to increase their pedagogical, cultural, linguistic, and pedagogical knowledge to apply to the benefit of their local student population. The data suggest there may be a correlation between participants achieving a sense of belonging and time engaged communicating with others via CMC. There may also be a relationship that exists between achieving a sense of belonging and the perceived level of assistance they receive from others, in particular their peers. There may also be a relationship between the ability to achieve a sense of presence and the quality or compatibility of one's collaborating partners. Also, the data indicates participants noted CMC technologies have the ability to

evoke a sense of reality during communication. Finally, especially, since the data reported are situated in an actual multicultural online learning environment, the results highlight the many nuanced factors that interact together to produce a learner's experience in an online course, a learning community's growth and challenges to that growth, and the many technologies that facilitate and impede these processes.

Culture and historical cultural influences also appear to play a role in defining what CMC technology will be preferred by a particular user in the multicultural online learning environment. Specifically, religion may dictate how participants communicate using various forms of text-based, audio-based, and video chat technologies.

It is noted that various challenges have been experienced by participants while attempting to communicate with their peers via CMC tools in the multicultural online learning environment. The data suggest that there are additional psychological, religious, and technical issues that need to be considered. Psychologically, shyness and forms of media phobia may dictate a preference for how participants prefer to communicate or the degree with which they communicate. One's own religious practices may limit how members of the opposite sex communicate. Or, concern for offending a peer who practices a particular religion may result in a barrier or hesitancy to engage with that person. From a technical perspective, lack of bandwidth, packet loss, an unreliable Internet signal, power grid issues, and even nation-to-nation politically based policies may all result in challenges, limiting the ability for multicultural participants to communicate with one another.

Lastly, while the data indicates participants embraced the opportunity to communicate with the various CMC tools in the multicultural online learning environment, the data also infers that participants had opinions regarding the course design strategy, improved their English communication skills as a result of participating in the course, and had ambivalent feelings when the course was coming to a close. Regarding data pertaining to the course design, the majority of participants believed they benefited and even had “fun” communicating with others via the various CMC technologies. Burger’s Tiered CMC Technologies Integration Strategy appears to have successfully served the communication requirements of the multicultural online learning community. That said, the model is in its infancy. More rigorous study is necessary in order to determine its potential benefits and weaknesses. Turning to the topic of communicating with others in the course solely by using the English language, by requiring participants to engage one another for ten weeks via various modes of CMC using English, participants noted an improvement in their knowledge of English. After ten weeks of communicating and collaborating with their international peers in the online learning environment, participants evoked emotional responses of gratitude, happiness, and sadness that they would no longer be meeting as a regular group in this format. International bonds of friendship and collegiality had formed and the ability to maintain those newly formed bonds was facilitated by the host university, through development of a course alumnus Facebook site.

In the next chapter (chapter 6), I will discuss implications for practice, provide recommendations for future research pertaining to CMC in the multicultural online learning environment, and present conclusions about this research.

Chapter 6: Implications, Recommendations, and Conclusions

This chapter provides an overview of the research, implications for practice, provides recommendations for future research pertaining to the incorporation of CMC technologies in the multicultural online learning environment, and presents conclusions about this research.

Overview

The study explored what the learners experienced while communicating and collaborating with their peers and educators using a variety of Internet-based Computer-Mediated Communication (CMC) technologies. The intent of the research was to describe (a) how they experienced sense of presence, (b) the role culture played in their communication with others, (c) the dynamics encountered while communicating, and (d) the emotional reactions resultant of communicating via the various CMC technologies. The results of this research contributes to the creation of a body of knowledge useful to the fields of distance learning, communication, linguistics, social presence, social learning, instructional systems design, computer-mediated communication, and multicultural studies. By gaining an understanding of just how complex the communication needs are of the multicultural online learner, educators and course designers will be better prepared to serve multicultural and non-native speaking students by means of applying effective course design strategies and providing opportunities that help insure success for each unique learner.

The four primary questions that guided this research are: (a) How do participants describe their perceived sense of presence while engaged with others in a multicultural

online learning environment? (b) How do participants' cultural histories influence their choice of communication tools in the multicultural online learning environment? (c) What dynamics do participants encounter when communicating in the multicultural online learning environment? And (d) how do participants describe their reactions to using various CMC in the multicultural online learning environment?

Implications for Practice

The implications of this research has an affect on the educators, course designers, support staff and learners enrolled in a course that is comprised of a multicultural student population and delivered via an online learning environment. It will also have an impact on the host institution and may affect international student and course-related policies and staffing practices. As a result of this research, implications may be categorized in six principal categories: (1) Pre-course collection of cultural information; (2) pre-course CMC technology training and testing; (3) CMC and course design; (4) staff-to-learner and peer-to-peer support systems; (5) course closure; (6) CHAT.

Pre-course collection of cultural information. Prior to the start of this online course, a demographic survey was sent out to collect information about participants. The survey included topics such as the learner's primary language, level of mastery of English, experience using computers and the Internet, experience using various CMC technologies, and whether the participant anticipated they would experience difficulty completing the course. While in many cases the answers provided served as a predictor of how a given participant would respond in this course learning environment, in several cases participants

experienced limitations or difficulties specific to their culture or technological infrastructure, reflecting information that might not have been captured in the pre-course survey. In two cases, students identified themselves as either being shy or hesitant to initiate conversation. Both students had difficulty meeting the course requirements and thought about dropping out of the course. Encouraging actions by the educator and support staff assisted in insuring these students completed the course. In another case, a male participant's culture guided his actions in how and when he can communicate with women. I was unaware that this student or any other might be struggling with balancing the communication requirements of the course with their personal religious convictions. The related information I received as a result of my post-course interview with this participant was transformational. In fact, while interviewing two participants of Muslim faith, I heard the call to prayer over the video chat technologies. It had never occurred to me that I might need to schedule synchronous interviews around call to prayer or some other cultural practice. In all instances, the course communications and interviews were negotiated and completed successfully.

Pre-course CMC technology training and testing. During the course and interview sessions, I personally witnessed technical failures related to either power failure, the stability of the Internet signal, or the line between communicants would not allow enough data to be exchanged participants to accommodate the use of audio or video chat technologies. Participants also reported CMC-related packet loss or Internet connectivity reliability issues. In almost all instances, the volume of data transmitted across lines was adequate enough to facilitate peer-to-peer communication via text-chat. In addition to

reports of line reliability, there were instances where several learners had difficulty setting up their ooVoo accounts. Prior to the start of the course, participants were provided with a file on the installation and use of ooVoo and webcams in the form of digital files. While the majority of participants were able to get their ooVoo accounts set up and functioning without reported difficulty, several learners were not as fortunate. One participant could not activate an account for seven weeks and unfortunately was under the impression that ooVoo was not available to users in her country. Two other participants experienced an inability to use ooVoo for three and five weeks. This resulted in these participants feeling inept, frustrated, and disconnected from the community. Issues were resolved through a combination of assistance provided by me, the course support team, course peers, and in some cases local assistance.

CMC and course design. Throughout the course's entirety, participants noted how computer-mediated communications facilitated the exchange of course files, information, negotiation of foreign accents and dialects, the building of social presence, friendships and communities, sharing of cultural and religious practices, expression of emotion, and for communication to occur via email, text-chat, Blackboard Discussion Board, reflective journal, Facebook, ooVoo text-chat, ooVoo audio chat, and ooVoo video chat. As a distance learning professional and instructional designer, it is my opinion that a multicultural online learning environment comprised of a student population consisting of people who are non-native language speakers and from a number of countries and continents makes for a highly complex course design project. It is due to this level of complexity and factors that need to

be considered, that it is essential to incorporate CMC technologies into the course design strategy as effectively as possible. In each course case, it will be a contextual puzzle. But the common directive is to apply the technologies in the way that best serves the needs of the learners, the course objectives, and the educators. In the case of this research, Burger's Tiered CMC Technologies Integration Strategy was applied and students confirmed that the strategy was effective in allow them to meet or excel in their social and course-related needs.

Staff-to-learner and peer-to-peer support systems. Participants in this course experienced a variety of CMC-related technical problems including the following: a limited inability to gain access to Blackboard; a limited inability to sign up for an ooVoo account; audio not functioning during a video chat session; audio or video chat signal failure or intermittent disruption; a noted Java settings issue; administrative permissions settings on learner's computers; and local power failure. Solutions to these problems were largely contextually based. In cases that pertained to ooVoo, headsets and webcams, I make myself as accessible as possible to assist. Once in a while, participants reported getting assistance from local resources. For other issues, the host course support and educator staff was highly engaged with providing assistance. However, in many reported cases, participants received support to technical and course-related issues from their peers. It appears as though this might have had a residual benefit, as in their journals and interviews, there is an inference that by peers being so willing to assist each other, this may have contributed to developing senses of presence and community. I would also speculate that such actions would

contribute to the building of trust. With the exception of one learner who was unable to gain access to ooVoo for seven weeks, comments from participants seem to indicate the extensive support system put in place for this course successfully met the majority of needs of learners and educators. I would add that encouraging peer-to-peer course and even technical support holds the potential for having unexpected social and emotional benefits.

Course closure. As the course drew to a close, Discussion Board forums, reflective journals, and post-course interview comments were filled with mixed emotions. Participants were happy they had successfully completed this rigorous course, and yet, they were sad that it was coming to an end. CMC technologies had facilitated opportunities for friendships and communities to form. Participants were feeling this ‘loss,’ knowing the social and collegial interaction that had existed for ten weeks was coming to a close. As has been the practice for previous TEYL courses hosted by this university, an alumnus Facebook site had been set up where participants could continue to communicate with each other, and share professional resources and dialogue. In addition, several participants commented in how they were going to stay in touch with their peers via their new ooVoo accounts. It is my observation that the alumni Facebook site serves a valuable and appreciated need. Through the use of CMC technologies, the learners felt they had made new friends and developed a community of practice. Facebook provides a solution that will allow ‘virtual’ friends and colleagues to remain linked together upon closure of the course.

CHAT. Reflecting on the findings of the study seems to confirm that the use of Cultural-Historical Activity Theory as its theoretical foundation was a sound choice. Indeed,

CHAT has a history of serving research where an object is mediated by means of humans interfacing to that end via technology. The findings of this study indicated that designing a course to meet the social and communication needs of an online course populated by a mix of diverse, multicultural, multilingual students is a highly complex undertaking that needs to factor for a number of socio, cultural, religious, psychological, and technical elements. The principal surprise finding in this study, I would argue, is the potential influence religion has in the selection of how, when, and if a particular CMC technology can be used in such a course. Particular consideration should be made in factoring how and if CHAT can serve in such capacity.

Recommendations for Future Research

The responses from the participants in this study have brought to light areas that have the potential to contribute to establishing a sense of presence enhance communication efficacy for participants in the multicultural online learning environment. These areas include (a) using CMC technologies to serve the communication needs between students who are communicating using a second language, (b) considering the possible correlation that exists between peers who support each other and the development of trust in the online learning environment, (c) meeting the needs of the non-western religious faithful in the online learning environment, (d) exploring the development of communities of practice via Facebook.

Utilizing CMC to facilitate effective comprehension between second language speakers. This research has provided data that indicates there are benefits to the use of text-

chat, audio chat, and video chat in negotiating conversations between communicants when the parties are communicating using a non-native language. Some learners have stated when accents and dialects are difficult to comprehend; they prefer to have their partner write their intended message using text-chat. For others, they prefer to have the ability to see whom they are talking to so that they can look for non-verbal communication cues that indicate if their message was properly received. The ability to immediately ask questions and receive clarification is also appreciated. While there is some literature that explores the use of asynchronous CMC amongst multi-lingual online learners, there is little research that appears to explore incorporating both text-chat and video chat technologies to serve language comprehension needs in the online learning environment.

Exploring the potential correlation that exists between virtual peer support and developing a sense of trust in the online learning environment. During my review of the entries in the participants' reflective journals, I noticed learners combined thoughts on how friendly peers were, with how community minded participants were, and how supportive their peers were. It seems there may be a logical correlation that exists between how one perceives the level of support provided by peers, and their sense of belonging and community in the online learning environment. If research indicates such a correlation exists, course designers and educators could facilitate and leverage the practice of peers-assisting-peers as a way to build trust amongst participants, which translates into participants experiencing a sense of connectedness and community.

Designing thoughtful CMC practices to meet the needs of non-western religious student populations in the online learning environment. While interviewing two learners who were from countries with a prominent Muslim constituency, I heard the call to prayer. This was quite fascinating. I was conducting a video chat with these people at two separate times on two separate days, and I was struck with how I managed not to factor in the religious or cultural needs of participants while scheduling end-of course interviews. This was very eye opening for me. If my lack of knowledge about such things allowed this to occur, as a course designer and administrator, there must be so much more I need to know about Muslim and other cultural and faith-based practices that should be factored into how a course is designed. As long as people from around the world value attaining an education from host facilities non-native to their own, researching various religious and cultural practices and applying the resulting knowledge into the course design should go a long way toward showing respect and honoring the cultures of those we are engaging through online education.

Developing communities of practice via Facebook. It was interesting to note that participants in the research mentioned how they perceived to be not only a member of the online course community, but that the CMC technologies allowed them to feel part of an international professional community. In other words, participants perceived being a part of an educational community of practice, united in their quest gather knowledge and experiences with which to better serve their local student populations. I propose the host university's TEYL course alumnus Facebook site serves the role of maintaining and

building an international educator's community of practice. I have observed as a member of the TEYL Facebook site that it seems to be effective in serving in this capacity. Therefore, I submit this relationship deserves to be explored further and formally.

Conclusions

Technology has provided educators and learners with the ability to communicate and share information at unprecedented levels and affords unique opportunities for global engagement. However, this capability ironically results in the development of new complexities, which have the potential to produce unanticipated challenges that need to be addressed in order to deliver a quality and satisfying teaching/learning experience. Designing a multicultural online course to accommodate the individual, cultural, technological and communication needs of each non-native learner is a complex undertaking. Students participating in a multicultural online learning environment derived benefits from achieving a sense of presence, forging friendships, and feeling as though they belong as part of the course community by engaging with each other via Computer-Mediated Communication tools. By offering a variety of CMC technologies to choose from, course participants were able to experience a sense of social presence, develop a sense of community, communicate comfortably with one another, address course-related issues, and were provided a 'safe place' they could voice opinions or concerns courtesy of a private reflective journal. All participants were required to communicate in English, which was not their native language. For some, this led to difficulties in comprehension attributable to intonation or accent differences. The variety of CMC technologies available to them allowed

them to negotiate these linguistic complexities as some preferred to communicate via text, while others preferred to see and hear their communicant and have the ability to synchronously ask for clarity.

While many online learners enjoyed or preferred to use video chat as a way to build social bonds and develop a sense of community, other learners found value in utilizing text-based communications and at times preferred utilizing discussion forums (Discussion Board) or ooVoo text-chat to fulfill their course-related requirements. As such, a variety of synchronous and asynchronous CMC technologies should be made available to meet the individual learner's social needs, personal preferences, and course requirements. The host university has a Facebook site which its course alumnus are invited to participate upon completing the course as a way to stay connected and serves as a resource to connect to other alumni educators who teach English as a second language to young learners. Early into the course, one of the learners set up a Facebook site where participants could socialize during the course and the site was well received by others. Educators should consider setting up a dedicated social media site such as Facebook, where learners are provided an 'off-campus' resource they can utilize for socializing.

While participants were provided training on CMC technologies in the form of PDF documents prior to the start of the course, several participants did not have access to or were unable to use the technologies for a period ranging from three to seven weeks. Based on my knowledge supporting the CMC tools used in this study in combination with working for years supporting related technologies and previously serving as Director of Distance

Learning and Instructional Technologies, it is my recommendation training and testing of CMC technologies with participants occur prior to the start of the course. One possible approach is to have the participants confirm a fundamental working knowledge of the technology by conducting a short “hello” session with the educator. This would be an excellent way for each student to introduce his or herself to the educator and begin the essential communication link between online learner and educator. If technical problems related to CMC and bandwidth connectivity can be recognized prior to the course, these concerns can be addressed early, thus reducing stress amongst participants, assisting in the ability for students to feel as though they have a level of presence and community, an active voice, and allowing participants to communicate and collaborate with educators, staff and peers for the entire duration of the program.

As part of the course design, the CMC technologies were introduced to the learners in a ‘tiered’ approach, by having them utilize the most familiar CMC technologies early in the course such as email, discussion forums (Blackboard Discussion Board), posting in a private reflective journal, and using ooVoo text-based communications. Over time, as they became comfortable with the course environment and got to know each other a little better, they were asked to communicate via more complex and sensory-rich technologies such as audio or video chat. This approach was well received by the learners. They particularly enjoyed being able to get to know each other slowly, semi-anonymously, and over time friendships and a sense of trust were allowed to develop. It is important to note that several participants in this group were from countries with large populations of Muslims. As part of

my research, I was informed that the belief structure of one of the participants was such that men and women had to be particularly careful in their communications. Male and female participants who are asked to engage with one another must look into their own hearts to see what their motive is in communicating with members of the opposite sex. The men should not be able to “see” the women, and the women must conform to a particular dress code. In addition, on two occasions while conducting post-course interviews synchronously over webcam, I heard the local call to prayer. I had unknowingly scheduled the interview during times when practitioners answer the call to prayer. These kinds of culturally significant requirements need to be explored, understood, and planned for while as part of the effective course design process. Ultimately, by making various CMC technologies available to the participants, the learners are given a voice and choice as to what technologies works ‘best’ for them, thus allowing them to base their decision on a combination of personal biases, cultural or religious influences, time zone considerations, and potential local infrastructure and technical limitations.

Learners participating in this multicultural online learning environment expressed experiencing a sense of belonging to a global community and to a community of educators, or a community of practice. Host institutions should facilitate opportunities where communities such as these can develop. Course participants – including educators, learners, and support staff - should be encouraged to communicate, support, and be respectful of one another. Participants enjoyed getting to know each other on a more personal level. Opportunities for personal development should be encouraged, as should opportunities

where learners can engage in cultural sharing. That said, there were several participants in this study who were self-described as being “shy,” “quiet,” or had a fear of communicating with strangers via audio technologies. One participant declared being “quiet” was a national trait of her people, especially the women. It should be noted that two of these participants struggled emotionally and thought about dropping out of the course. Through active staff support, all completed the course. Staff should try to be in tune with these types of emotional needs and make an effort to assist participants in formulating a communication strategy particular to one’s cultural heritage.

Technologically speaking, staff would do well to invest time learning how to effectively utilize the CMC technologies they will incorporate in their course. Also, a well thought out support system needs to be in place to support both educators and learners. In addition, the availability of bandwidth, reliability of the power grid, and Internet access needs to be investigated and taken into account. While a great deal of benefit may be derived through the use of CMC technologies in multicultural online courses, technology is wonderful and effective only as long as it is working as intended. All participants of this course experienced packet loss and at the very least periodic limitations on their ability to use ooVoo video chat. In most cases, this was due to insufficient bandwidth or an interruption of the Internet signal. For some, their infrastructure was such that reliability became a repeat issue. Even though the majority of learners preferred to use webcams for social purposes, some became so frustrated they switched to text-based methods such as ooVoo text-chat leaving their webcams behind. Several participants who made this switch

said they would transition back to video chat if the transfer of video data becomes more reliable. Educators who incorporate any form of educational technology into their courses will at some point experience technical failure. Where technology is concerned, I highly recommend educators always have a 'Plan B.'

Lastly, participants in this multicultural online course developed a profound fondness for one another and their host staff. As the calendar drew near the end of the course, emotional notes were posted in text-based resources such as Discussion Board and Facebook. Participants stated how they were going to miss discussing issues and with their newly found friends via the course resources. It has been my experience that the TEYL alumni Facebook site does serve as a professional community of practice resource. Designers of multicultural online courses might consider establishing similar social media sites as a way for participants to stay connected socially and/or professionally.

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APPENDICES

Appendix A

Research Questions

1. How do participants describe their perceived sense of presence while engaged with others in a multicultural online learning environment?
2. How do participants' cultural histories influence their choice of communication tools in the multicultural online learning environment?
3. What dynamics do participants encounter when communicating in the multicultural online learning environment?
4. How do participants describe their reactions to using various CMC in the multicultural online learning?

Appendix B

PRELIMINARY DEMOGRAPHIC SURVEY

Principal Investigator, Bill Burger

North Carolina State University

Computer-Mediated Communication (CMC) Questionnaire

The following questionnaire has been developed to investigate your attitude toward Computer-Mediated Communication (CMC), including e-mail, Threaded Discussion, Real-Time Text-Chat, Audio Conferencing, and Webcam. You will be presented with a statement about CMC and then will select the appropriate response listed under each statement. The following descriptions apply to entire questionnaire:

- **E-Mail:** Electronic messaging system that permits communicating.
- **Threaded Discussion:** Computer-based environments in which messages are 'posted' and read by users who may or may not be logged on simultaneously. It is required that the users must access the discussion boards to participate.
- **Real-Time Text-Chat:** Computer-based environments in which users communicate simultaneously using text.
- **Audio Conferencing:** Computer-based environments in which users communicate simultaneously by voice over microphones.
- **Webcam:** Computer-based environments in which users communicate simultaneously by voice over microphones and the transmission of video image over webcam.

Your responses will remain anonymous. Please answer each item. If you need assistance with this survey, please contact Bill Burger. Thank you for your assistance!

wpburger@ncsu.edu

Part I: Preliminary Demographic Survey

1. Gender

Male	Female
<input type="radio"/>	<input type="radio"/>

2. What is your name?

3. You are

Under 18	18-25	26-35	36-45	45+
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Estimate of your level of computer expertise.

No experience	Novice	Intermediate	Expert
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Where do you presently use computers?

Home	Computer Lab	Library or Media Center	Classroom	Office
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. What is your native country?

6. What is your native language?

7. How well do you speak English?

Novice (Beginner)	Below Average	Average	Above Average	Expert
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. How many online classes have you taken before this one?

Part II: Preliminary Demographic Survey (continued)

1. How proficient are you in using CMC? (e.g., expertise with software and system commands, keyboard skills, etc.)

	Novice (Beginner)	Below Average	Average	Above Average	Expert
E-mail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Threaded Discussion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Real-Time Text-Chat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Audio Conferencing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Webcam	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. How many years have you been using the different forms of CMC?

E-mail	<input type="text"/>	Years (EX: 1; 2.5; 3 etc.)
Threaded Discussion	<input type="text"/>	Years
Real-Time Text-Chat	<input type="text"/>	Years
Audio Conferencing	<input type="text"/>	Years

Webcam	<input type="text"/>	Years
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3. How many hours do you spend using CMC each week?

E-Mail	<input type="text"/>	Hours (EX: 1; 2.5; 3 etc.)
Threaded Discussion	<input type="text"/>	Hours
Real-Time Text-Chat	<input type="text"/>	Hours
Audio Conferencing	<input type="text"/>	Hours
Webcam	<input type="text"/>	Hours

4. How many years have you been using the Internet?

Internet	<input type="text"/>	Years (EX: 1; 2.5; 3 etc.)
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Appendix C

SUMMATIVE COURSE INTERVIEW Principal Investigator, Bill Burger North Carolina State University

Part III: Summative Survey

The following questions will be asked of the learner by the PI during the last three weeks of the class. All questions are a reflection of the users experiences in the class with communication via E-mail, Threaded Discussion, Real-Time Text-Chat, Audio Conferencing, and Webcam. Learners will address the questions by answering with open-ended, qualitative responses. Summative interviews will be conducted via webcams over Internet. Responses will be recorded by a digital recording technology, which will allow the capture of audio and video communication cues.

PI to Participant

Thank you very much for meeting with me today. I am going to ask you a series of questions related to your communication experiences in this online course. I estimate our discussion will take somewhere around 90-120 minutes. If you ever feel uncomfortable with answering a question I ask you, feel free to tell me you are not comfortable answering that question. Please let me know if I need to clarify a question for you. I am recording this session with technology that captures your image and your voice, but will only keep the recording long enough to complete my dissertation. At that time, the digital file will be deleted but the research data retained for seven years after the research is published. Neither Dr. Joan Shin of UMBC, nor your educator Madelaine Schwartz will have access to this recorded information. My faculty sponsor at NCSU will have access to this recorded information. Do you have any questions or concerns?

1. Describe how successful the various forms of CMC are in serving social communication needs.
2. Did the use of CMC in the class allow you to feel as though you were a member of a class community? Elaborate.
3. Describe how successful the various forms of CMC are in serving as informal and casual ways to communicate.
4. Describe how successful the various forms of CMC are in conveying feeling and emotion.
5. Describe how successful the various forms of CMC are in allowing for private/confidential communication.
6. Describe the ways the various forms of CMC are impersonal.
7. Describe how successful the various means of CMC are in providing a sensitive way to communicate with others.

8. Would you agree that CMC is a pleasant way to communicate with others? Elaborate.
 9. Would you agree that users of CMC normally respond to messages immediately? Elaborate.
 10. Describe how easy it was to communicate your intended meaning using English and listen to others communicating with you in English via CMC.
 11. Describe your feelings regarding having to use English as the one language that all class participants must use to communicate with.
 12. Describe how easy it was to communicate your intended meaning using the various forms of CMC.
 13. Did differences in culture ever result in a producing a barrier that made conveying or receiving intended meaning from being expressed? If so, how did the various CMC technologies succeed in addressing that barrier?
 14. Describe the level of comfort you experienced in using the various forms of CMC while communicating with others.
 15. Describe how reliable the various CMC technologies are in your attempt to communicate with others.
 16. Describe how successful the various CMC technologies are in allowing relationships to form through the sharing and exchange of information.
 17. How do the various forms of CMC succeed in building a caring relationship with others?
 18. How would the aggressive over-participation of others with CMC affect your future use of CMC technologies?
 19. How likely is it that someone might obtain personal information about you from the various CMC technologies? Elaborate.
 20. How did the location of where you must access CMC affect your ability or desire to participate?
 21. How successful are the various CMC technologies in building trust relationships? Elaborate.
 22. Was there an aspect of the various CMC technologies that inhibits your ability to communicate? Elaborate.
 23. Does your current level of computer-skills allow you to feel comfortable while communicating using the various CMC technologies? Elaborate.
 24. How comfortable are you with the way that others communicate with you using the various CMC technologies? Elaborate.
 25. After this course experience, what CMC technology would you say works best for you in the multicultural online class environment? Please elaborate.
-

Thanks for your participation.

This instrument is based on the Computer-Mediated Communication Questionnaire (CMCQ, 2003-2011) originally authored by Dr. Chih-Hsiung Tu, of Northern Arizona University. Permission was granted by Dr. Tu, allowing the PI to modify the questionnaire in order to serve the qualitative needs of this particular study.

Appendix D

IRB 2673

**North Carolina State University
Institutional Review Board for the Use of Human Subjects in Research
SUBMISSION FOR NEW STUDIES**

GENERAL INFORMATION

1. **Date Submitted:** 05-21-12
- 1a. **Revised Date:** _____
2. **Title of Project:** Considering the Relationship Between Social Presence and Webcam Use:
How Webcams Affect Diverse Multilingual Adult Learners in Online Learning Environments
3. **Principal Investigator:** William (Bill) Peter Burger
4. **Department:** Doctoral Student ACCE
5. **Campus Box Number:** _____
6. **Email:** wpburger@ncsu.edu
7. **Phone Number:** 336-841-1870
8. **Fax Number:** _____
9. **Faculty Sponsor Name and Email Address if Student Submission:** Dr. Brad Mehlenbacher:
brad_m@ncsu.edu
10. **Source of Funding? (required information):** self-funded
11. **Is this research receiving federal funding?:** no
12. **If Externally funded, include sponsor name and university account number:**
13. **RANK:**
 Faculty X Student: Undergraduate; Masters; or PhD Other (specify): Ed.D.

As the principal investigator, my signature testifies that I have read and understood the University Policy and Procedures for the Use of Human Subjects in Research. I assure the Committee that all procedures performed under this project will be conducted exactly as outlined in the Proposal Narrative and that any modification to this protocol will be submitted to the Committee in the form of an amendment for its approval prior to implementation.

Principal Investigator:

William (Bill) Peter Burger
(typed/printed name)

William Peter Burger *
(signature)

05-21-12
(date)

*As the faculty sponsor, my signature testifies that I have reviewed this application thoroughly and will oversee the research in its entirety. I hereby acknowledge my role as the **principal investigator of record**.*

Faculty Sponsor:

Dr. Brad Mehlenbacher
(typed/printed name)

Dr. Brad Mehlenbacher *
(signature)

05-21-12
(date)

*Electronic submissions to the IRB are considered signed via an electronic signature. For student submissions this means that the faculty sponsor has reviewed the proposal prior to it being submitted and is copied on the submission.

Please complete this application and email as an attachment to: debra_paxton@ncsu.edu or send by mail to: Institutional Review Board, Box 7514, NCSU Campus (Administrative Services III). Please include consent forms and other study documents with your application and submit as one document.

For SPARCS office use only

Reviewer Decision (Expedited or Exempt Review)

Exempt b1,b2 Approved Approved pending modifications Table

Expedited Review Category: 1 2 3 4 5 6 7 8a 8b 8c 9

Reviewer Name

Signature

Date

Appendix E

North Carolina State University Institutional Review Board for the Use of Human Subjects in Research GUIDELINES FOR A PROPOSAL NARRATIVE

In your narrative, address each of the topics outlined below. Every application for IRB review must contain a proposal narrative, and failure to follow these directions will result in delays in reviewing/processing the protocol.

A. INTRODUCTION

1. Briefly describe in lay language the purpose of the proposed research and why it is important.

Research: This qualitative study seeks to understand student perceptions of social presence that result from communicating and collaborating via webcams in diverse, multicultural, multilingual online learning environments.

Purpose: This study explores how the introduction of webcams in diverse, multicultural, multilingual online classes might contribute to understanding more about the following: enhancing the students' sense of presence during student-to-student and student-to-educator interaction; how students emotionally respond to the use of webcams; how various Internet-based communication technologies affect multilingual and multicultural communication barriers between course participants including the ability to convey and receive intended meaning.

Contributions: If the data supports the premise that the use of webcams enhances the student's overall social presence, emotional, and communication efficacy experience, this could support research findings that indicates a need to consider modifying online educational models to incorporate the synchronous use of webcams as worthy elements of course instructional design for classes comprised of multicultural-multilingual online students and or educators. This insight may also have potential for further exploration in additional educational and business applications.

2. If student research, indicate whether for a course, thesis, dissertation, or independent research.

The resulting data will serve as study findings compiled and analyzed in my dissertation which will be submitted to the Graduate Faculty of North Carolina State University in partial fulfillment of the requirements for the Degree of Doctor of Education.

B. SUBJECT POPULATION

1. How many subjects will be involved in the research?
Estimates or ranges are acceptable. Please be aware that if you recruit over 10% more participants than originally requested, you will need to submit a request to modify your recruitment numbers.

One online class, comprised of approximately 15-20 multinational, multicultural, multilingual adult educators.

2. Describe how subjects will be recruited. Please provide the IRB with any recruitment materials that will be used.

The University of Maryland, Baltimore County (UMBC), hosts an online-based course titled, "Teaching English to Young Learners (TEYL)". TEYL is part of the E-Teacher Scholarship Program funded by the U.S. Department of State, and is offered to adult educators from around the world. This course is offered in multiple sections throughout the course of the year. To address the research needs of the PI, one section of the course

will be comprised solely of approximately 15-20 multinational, multilingual adult educators who specifically volunteer to participate in the study. In the event more than 20 adult learners volunteer to participate in the research, volunteers will be selected in order to acquire the most demographically diverse population possible.

The course educator will announce that I will be seeking students to participate in my study as part of my doctoral dissertation. Since this specific section of this course is being utilized in a research study, agreement to participate in the research study is a requirement for enrollment in this course. If a participant does not want to participate in the study there are other sections of this course that they may enroll in.

A letter of invitation will be drafted and saved as a pdf file. The letter will explain in broad terms that this study seeks to explore how social presence is affected when participants communicate using a variety of asynchronous and synchronous computer-mediated means of communication, including the use of webcams. The educator will distribute the pdf to the students at the beginning of the course. A draft copy of a 'letter of recruitment' is attached that reflects the tone and content which will be covered by this PI. The letter will request that anyone interested in participating in the study and may have questions should contact the PI via email. In addition, the PI will hold a virtual Q&A meeting designed to answer any questions students might have about the study at the start of the course via some synchronous form of Internet-based communication (Skype, ooVoo, etc.). The faculty sponsor, Dr Mehlenbacher, will not be included in these discussions in order to ensure that students do not feel pressured to participate as a component of the class. Students will be given the consent form explaining the overall research project aimed at this class, and the specific portion of the research relating to the PI's needs (the summative final interview performed at the end of the course).

3. List specific eligibility requirements for subjects (or describe screening procedures), including those criteria that would exclude otherwise acceptable subjects.

In order to minimize technical conflicts and ease troubleshooting, all participants will be provided a Logitech HD C270 Webcam by the principal investigator. The Logitech HD C270 requires participants be connected to the Internet via a broadband connection with a minimum recommended speed of 500kbps. User computers must be capable of connecting to and recognizing the Logitech HD C270 as well as popular forms of Internet-based communication such as Skype, ooVoo, etc. The study is intentionally attempting to seek a course with the widest possible multicultural/multilingual demographic sample. English is the universal language of the course. Attempts have been made to find a course comprised of multilingual participants with a balanced gender ratio, cultural diversity, varying online learning experiences, and varying levels of technical expertise.

4. Explain any sampling procedure that might exclude specific populations.

The students in the course, and therefore the students in the study, are limited to 20 participants. The sampling procedures do not exclude any specific population; in fact, the study seeks out the most diverse population available. Should more than 20 volunteers express a desire to participate in the study, the criteria used to select participants will include the following: gender balance; age diversity; cultural diversity; linguistic diversity; geographic dispersion; dependable access to a high-speed Internet connection. Some students may not have the technical ability to utilize the technology but learning of these barriers is a critical aspect of the study. The PI and the listed collaborators will jointly decide which students will participate in the study. Students who do not speak each other's languages will not be excluded; in fact, a high level of participant diversity is intentionally sought out. Various degrees of cross-language understanding will be desirable – all participants must be able to communicate with a reasonable level of success through the use of English.

5. Disclose any relationship between researcher and subjects - such as, teacher/student; employer/employee.

There are no such relationships between the student researcher and the subjects.

6. Check any vulnerable populations included in study:

- minors (under age 18) - if so, have you included a line on the consent form for the parent/guardian signature
- fetuses
- pregnant women
- persons with mental, psychiatric or emotional disabilities
- persons with physical disabilities
- economically or educationally disadvantaged
- prisoners
- elderly
- students from a class taught by principal investigator
- other vulnerable population.

7. If any of the above are used, state the necessity for doing so. Please indicate the approximate age range of the minors to be involved.

The study does not seek to include vulnerable populations – including minors – as part of this study.

C. PROCEDURES TO BE FOLLOWED

1. In lay language, describe completely all procedures to be followed during the course of the experimentation. Provide sufficient detail so that the Committee is able to assess potential risks to human subjects. In order for the IRB to completely understand the experience of the subjects in your project, please provide a detailed outline of everything subjects will experience as a result of participating in your project. Please be specific and include information on all aspects of the research, through subject recruitment and ending when the subject's role in the project is complete. All descriptions should include the informed consent process, interactions between the subjects and the researcher, and any tasks, tests, etc. that involve subjects. If the project involves more than one group of subjects (e.g. teachers and students, employees and supervisors), please make sure to provide descriptions for each subject group.

An offer to participate in the study will be extended to all multilingual adult educators who are enrolled in an online class hosted by the University of Maryland, Baltimore County (UMBC), titled, "Teaching English to Young Learners (TEYL)". TEYL is part of the E-Teacher Scholarship Program funded by the U.S. Department of State. The program offers specialized professional development classes for English language teaching (ELT) professionals around the world. A section of this online course will be comprised solely of 15-20 research volunteers. The research site is designed to accommodate a maximum of 20 participants.

The class has been intentionally selected based upon its historical ability to attract a diverse, multinational, multilingual, adult student pool. As the course section is comprised of all research volunteers, the educator and program director will know who is participating in the research.

All TEYL students will be asked to complete a demographic survey hosted on Survey Monkey with several open-ended questions at the start of the course. This survey has information that is useful to the program director, the educator, and the PI. Once students have indicated a desire to participate in the research, the course educator will forward a digital copy of the demographic responses from the volunteers to the PI via email. Participants will then be selected with specific intent to achieve a diverse student population.

All members of the class will be required to engage in online communication with peers and their educator as a part of the course requirements. Should a participant who has been given a webcam by the PI choose to withdraw from the overall study, they will be allowed to keep the webcam without penalty and be allowed to complete the course.

I will meet virtually with possible participants to describe the study and answer questions at the beginning of the course. My faculty sponsor will not be included in those discussions in order to ensure that students do not feel pressured to participate. As part of their course requirements, students will be asked to do the following:

- Log general thoughts about the students' experience with the course on a personal reflective diary site or digital diary; the doctoral student PI, program director, and the educator will have access to this diary
- Participate in a minimum of two interactive asynchronous text-based communication exercises; students will post remarks about their experiences on a personal reflective diary diary after each communication session
- Participate in a minimum of two interactive synchronous audio-conferencing communication exercises; students will post remarks about their experiences on a personal reflective diary diary
- Participate in a minimum of two interactive synchronous webcam-based communication exercises; students will post remarks about their experiences on a personal reflective diary diary

As part of my research, volunteers will participate in a synchronous summative interview via webcams in a communication/collaborations application such as Skype or ooVoo, during the final week of the course. Due to the time required to capture interview data from as many as 20 participants, interviews may require up to two additional weeks after the end of the course to complete. Only the PI and the faculty sponsor will have access to this data. Participation in the summative interview is not a requirement of the course, but will occur solely for the purpose to allow the PI to gather data from volunteers to be used as part of his research.

Synchronous participant interviews may be recorded with a digital audio device and/or digital video recording technology such as the record feature in ooVoo, Skype, or a third party recording application. The doctoral student principal investigator will conduct a qualitative data analysis and write up a report. No images captured during this interview will be used for publication.

2. How much time will be required of each subject?

The initial pre-course demographic survey will take approximately 30 minutes to complete. While the survey data is used to serve a more general purpose, the data is also useful to the PI in applying it toward his research. Regular 'personal diary' reflective diary posts will be contributed to by each student as part of the course requirement. Entries should take approximately 10-20 minutes per post. Again, the entries made on these reflective diaries will serve the requirements of the course, but also provide useful insight for the purposes of the PI's study.

For the PI's research purposes, one real-time interview will be conducted beginning on the last week of the course and each interview will run approximately 90-120 minutes per student. The sole purpose of this summative survey is to apply the data to the PI's research. Approximately two to three hours total per student will be dedicated solely toward the needs of the study over the span of the course.

D. POTENTIAL RISKS

1. State the potential risks (psychological, social, physical, financial, legal or other) connected with the proposed procedures and explain the steps taken to minimize these risks.

Less than minimal potential risks are anticipated. The summative interview will ask participants to respond to evaluative questions about the course, but reports will not be made available until after the course has ended. The course instructor will not know which students agreed to participate in the final summative interview.

2. Will there be a request for information that subjects might consider to be personal or sensitive (e.g. private behavior, economic status, sexual issues, religious beliefs, or other matters that if made public might impair their self-esteem or reputation or could reasonably place the subjects at risk of criminal or civil liability)?

No.

a. If yes, please describe and explain the steps taken to minimize these risks.

3. Could any of the study procedures produce stress or anxiety, or be considered offensive, threatening, or degrading? If yes, please describe why they are important and what arrangements have been made for handling an emotional reaction from the subject.

No.

4. How will data be recorded and stored?

Demographic survey data will be captured using Survey Monkey. The results of the survey will be converted to a digital text format and emailed to the PI by the educator. Interviews will be recorded by means of a digital audio and/or video recording device. The posting of thoughts in each participants online reflective diary will be cut, pasted, and compiled in individual word processing files. All digital files will remain on the doctoral student PI's personal computer hard drive. All study data and related information will remain under lock and key at all times. Demographic and personal diary data entered into electronic form will be accessible to the doctoral student PI, the program director, and the educator. Only the PI and the faculty sponsor will have access to the summative survey data.

5. How will identifiers be used in study notes and other materials?

Only the doctoral student PI, the program director, the educator, and the faculty sponsor will have access the the research participant's identifications during the study. Participants will be identified in the data collection development and retrieval process by numbers, and only the doctoral student PI, educator, program director, and faculty sponsor will know the connection between the number and the name of the participant.

6. How will reports will be written, in aggregate terms, or will individual responses be described?

All digital recordings of interviews will be identified using only alpha-numeric indentifiers and after analysis will be destroyed. In summaries and subsequent publications, the data will be referenced using only general descriptions such as "a participant said that..." or "a participant took the following actions..." or by applying fictitious names. Reference to individual statements will be made anonymous in publicated reports. No images will be used in publications.

7. If audio or video recordings are collected, will you retain or destroy the recordings? How will recordings be stored during the project and after, as per your destruction/retention plans?

Interviews will be recorded by means of a digital audio recording device. Recordings will be transferred to the doctoral student PI's personal computer hard drive. Once recordings have been transferred to the hard drive, the recordings will be deleted from the digital recording device. All recordings will be deleted from the hard drives seven years after the research has been published.

8. Is there any deception of the human subjects involved in this study? If yes, please describe why it is necessary and describe the debriefing procedures that have been arranged.

No means of deception will be employed during the study.

E. POTENTIAL BENEFITS

This does not include any form of compensation for participation.

1. What, if any, direct benefit is to be gained by the subject? If no direct benefit is expected, but indirect benefit may be expected (knowledge may be gained that could help others), please explain.

Participants will be able to gain valuable experience communicating and collaborating via the Internet through the use of webcams. This skill can potentially be applied to their personal lives (communicate socially with friends and family via webcam), to their education, and possibly carried over into their workplace as the trends to telecommute and engage with multicultural business and academic partners continue to expand. Practice with this technology in a controlled course environment should enhance their ability to communicate and collaborate visually and audibly. This may improve the student's motivation, improve their online performance, open up new possibilities for collaboration and communicating locally and globally, increase their level of social satisfaction, improve a sense of virtual community and increase the chances for student retention.

F. COMPENSATION

Please keep in mind that the logistics of providing compensation to your subjects (e.g., if your business office requires names of subjects who received compensation) may compromise anonymity or complicate confidentiality protections. If, while arranging for subject compensation, you must make changes to the anonymity or confidentiality provisions for your research, you must contact the IRB office prior to implementing those changes.

1. Describe compensation

All participants will be provided webcams by the doctoral student PI. If the webcam is damaged in shipping, the PI will provide one replacement free of charge. If the webcam is damaged or lost during the course, the PI will not replace the unit, nor will the participant be liable for the loss or damage.

2. Explain compensation provisions if the subject withdraws prior to completion of the study.

Participants will be allowed to keep the webcams provided to them by the doctoral student PI whether they choose to participate in the study or withdraw.

3. If class credit will be given, list the amount and alternative ways to earn the same amount of credit.

Class credit will not be dependent upon participating in the study.

G. COLLABORATORS

1. If you anticipate that additional investigators (other than those named on **Cover Page**) may be involved in this research, list them here indicating their institution, department and phone number.

The educator conducting the University of Maryland, Baltimore County class is Madelaine Schwartz, and her online instructional assistant is Satarupa Joardar. Both will be indirectly involved with the study as coordinators and facilitating communication and collaboration amongst participants. Dr. Joan Kang Shin of the University of Maryland, Baltimore County, is the director of the TEYL program, and is listed as a collaborator. None of the aforementioned people will have access to the data collected by the PI during the summative surveys.

2. Will anyone besides the PI or the research team have access to the data (including completed surveys) from the moment they are collected until they are destroyed.

The data that is available from the demographic survey and from the private reflective diary postings are part of the course requirements. As such, both the program director and the educator will have access to that data.

H. CONFLICT OF INTEREST

1. Do you have a significant financial interest or other conflict of interest in the sponsor of this project? No.
2. Does your current conflicts of interest management plan include this relationship and is it being properly followed? _____

I. ADDITIONAL INFORMATION

1. If a questionnaire, survey or interview instrument is to be used, attach a copy to this proposal.
(see *Appendix A: Preliminary Demographic Survey*)
(see *Appendix B: Summative Course Interview Instrument*)
2. Attach a copy of the informed consent form to this proposal.
(see *Appendix C*)
3. Please provide any additional materials that may aid the IRB in making its decision. (see *Appendix D: Letter of Invitation*)

J. HUMAN SUBJECT ETHICS TRAINING

*Please consider taking the [Collaborative Institutional Training Initiative](#) (CITI), a free, comprehensive ethics training program for researchers conducting research with human subjects. Just click on the underlined link.

Appendix F

North Carolina State University INFORMED CONSENT FORM for RESEARCH

Name of Study: The Effects of Communication Technologies in the Multicultural Online Learning Environment

Principal Investigator (PI): William (Bill) P. Burger

Faculty Sponsor: Brad Mehlenbacher, Ph.D.

What are some general things you should know about research studies?

You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time without penalty. There are a maximum of 20 seats available in this study and as a result, if more than 20 people express interest in participating in the course, not everyone who expresses an interest will be accepted. The purpose of research studies is to gain a better understanding of a certain topic or issue. You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above.

What is the purpose of this study?

This study seeks to understand student perceptions of social presence that result from communicating and collaborating via different forms of Internet-based communication technologies in a diverse, multicultural, multilingual online learning environment.

What will happen if you take part in the study?

If you agree to participate in this course, you are also agreeing to participate in most portions of this research study. As part of this course, you will be asked to perform the tasks listed below, and as part of the research, we are asking your permission to use the data from these tasks for this study: 1) you will receive training and support for the use of communication and collaboration technologies that will be used as part of your course and the research; 2) you will be sent a Logitech HD C270 Webcam or a comparable model free of charge for your use and receive training on the use of the webcam; 3) at the beginning of the course, you will complete a survey that asks about your general background, culture and experiences with technology (20-30 minutes to complete); 4) you will make personal observations in online diary approximately once per week about your course and communication experiences; 5) if participant permission is granted, the PI may silently observe several virtual class sessions and use this data for research; 6) you will communicate via different means such as email, text-chat, discussion boards, audio-conferencing, and webcams throughout this course.

At the end of the course, I (the PI) would like your permission to conduct a summary interview with you via webcam (approximately 90-120 minutes). The interview questions will deal largely with your experiences of communicating with others using the various forms of communication available to you during this course. These interviews may be scheduled for up to two weeks after the completion of the course. All interviews will be digitally recorded, stored on the PI's personal computer, and held under lock and key. The recordings will be retained just long enough to complete a thorough analysis of the data presented and then the recorded files deleted. Research data will be retained for seven years after the research is published. All participants names, voices, and likenesses will be confidential. Your image captured from these interviews will not be used in publication.

Risks

There are less than minimal foreseeable risks or discomforts anticipated as a result of participating in this research, but since you are being asked to evaluate the course in this interview, there may be risk if there were a breach in confidentiality. For your protection, reports from these interviews will be published after you have completed this course. Although quotes will not be associated with your name, given the limited number of participants in this study, there is a chance that someone may be able to recognize what you have said.

Benefits

All participants will be provided a Logitech HD C270 Webcam or its equal at no cost. Participants will be able to gain valuable experience communicating and collaborating via the Internet through the use of webcams. This skill can potentially be applied to personal lives, toward educational pursuits, and possibly carried over into the workplace as the trends to telecommute and engage with multicultural business partners continue to expand. Experience using this technology may enhance the participant's ability to communicate and collaborate visually and audibly and open up new possibilities for collaboration and communicating locally, regionally and globally.

Confidentiality

The information in the study records will be kept confidential to the full extent allowed by law. Your course educator will not be informed about who participates in the final interview, although they will know who is participating in the overall research study. Data will be stored securely on the PI's personal computer, and held under lock and key. Your name will be associated with all course work and research-related surveys and interviews; but for your protection your name will be replaced with a code number once these materials are collected. The data and digital recordings will be retained just long enough to complete a thorough analysis of the data presented and then the recorded files deleted. All participants names, voices, and likenesses shall remain confidential. Although quotes from the final interview may be used in publications, your name will be masked and not associated with these quotes. No direct references of your name or image will be used in oral or written reports which could link you to the study.

Compensation

For participating in this study you will receive a consumer-grade webcam, a Logitech HD C270 Webcam or its equivalent. If the webcam is damaged in shipping, the PI will work with you to file a damage claim and he will send you a replacement. If the webcam is damaged or lost once the course is underway, you will not receive a replacement webcam. If you withdraw from the study prior to its completion, you will be allowed to keep the webcam. You will not receive any additional compensation for participating.

What if you are a student?

Participation in the summative interview at the end of the course is not a course requirement and your participation or lack thereof, will not affect your class standing or grades at your host university.

What if you have questions about this study?

If you have questions at any time about the study or the procedures, you may contact the researcher, Bill Burger, at 3727 Harrington Point, High Point, NC 27265 USA, wpburger@ncsu.edu, or 336-782-6897.

What if you have questions about your rights as a research participant?

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919/515-4514).

In addition, this study has been reviewed and approved by the UMBC Institutional Review Board (IRB). A representative of that Board, from the Office for Research Protections and Compliance, is available to discuss the review process or my rights as a research participant. Contact information of the Office is (410) 455-2737 or compliance@umbc.edu.

Consent To Participate

"I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may choose not to participate or to stop participating at any time without penalty or loss of benefits to which I am otherwise entitled."

Subject's signature _____ **Date** _____

Investigator's signature _____ **Date** _____

Appendix G

Definition of Terms

Chronemics – the use or perception of time (Darn, 2005).

Communication - a process by which information is exchanged between individuals through a common system of symbols, signs, or behavior (merriam-webster.com, 2013).

Computer-Mediated Communication (CMC) - the process by which people create, exchange, and perceive information using networked telecommunications systems that facilitate encoding, transmitting, and decoding messages (Romiszowski and Mason, 2003).

Culture - the values, attitudes, and behaviors in a specific group of people (Dahl, 2006).

Gestures – the use of body alignment, facial movement, and body movement as means of transmitting nonverbal messages (Ostermeier, 1995).

Haptics – the use of touch (Darn, 2005).

Kinesics – movement of the body, head, eyes, limbs (Darn, 2005).

Multicultural online learning environment – a virtual space housed on the Internet populated by participants from a variety of cultural backgrounds dedicated to the teaching, learning, and exchange of a body of knowledge (Burger, 2013).

Oculecs – the degree and type of eye contact (Darn, 2005).

Presence - the fact or condition of being present; the part of space within one's immediate vicinity; something felt or believed to be present (merriam-webster, 2013).

Proxemics – the perception and usage of one’s personal and interpersonal space (Sue & Sue, 1977).