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The Relationship Between Motivation And Online Social Presence In An Online Class

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THE RELATIONSHIP BETWEEN MOTIVATION AND ONLINE SOCIAL PRESENCE IN AN ONLINE CLASS

by

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ABSTRACT

The purpose of this study was to investigate the relationship between the level of student motivation and perceived online social presence in an online course. Better understanding of the relationship between online social presence and motivation would assist researchers to identify and develop effective instructional strategies for the success of students' online learning experience. This study was conducted during the Fall 2007 semester at the University of Central Florida (UCF) in Orlando, Florida. Data for this study were collected from participating students enrolled in three online sections of EME 2040, Introduction of Educational Technology. In this course, pre-service teachers learn how to use technology and, more importantly, how to integrate it into their courses and their future classrooms. Three instruments were used in this study to obtain students' demographic information and to measure students' online social presence feeling, students' motivation levels, and instructors' verbal immediacy behaviors.

Data were analyzed using repeated measure and multiple linear regression analysis. Seventy-four students from three online sections of EME 2040 responded to the study. Results suggested that students' level of online social presence increased significantly from the beginning of the semester to midterm and then dropped back to the original level from midterm to the end of the semester. However, the level of student motivation significantly increased only from the beginning of the semester to midterm and remained at same level for the rest of the semester. There were significant correlations between online social presence and student motivation across the semester. The regression analysis indicated that verbal immediacy affected online social presence significantly. Further research should be conducted with a larger sample and with different types of online courses in different academic settings and course

management systems. Causal relationship between online social presence and student motivation should be explored. Instructional strategies should be established to enhance students' online social presence.

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CHAPTER ONE: INTRODUCTION

Introduction and Background of the Study

With the fast development of telecommunication technology and World Wide Web, online education has become increasingly popular. In, 2006, 65% of United States higher education institutions offered graduate and undergraduate courses online (Allen & Seaman, 2007). More institutions of higher learning have offered online courses over the last several years (Bejerano, 2008). In 2005, 10.6% of total courses offered were online courses and 5.6% of the courses offered were blended courses (Allen, Seaman, & Garrett, 2007). The number of students taking at least one online course has also increased. Since 2006, online enrollment has grown at a rate of 9.7%, which was over ten times higher than the rate projected by the National Central for Education Statistics for the entire post secondary student population (Allen & Seaman, 2007). The number of states, counties, and school districts that provide online courses for high school students has also rapidly expanded during the last ten years. The number of high school students who enroll in these courses has often grown by double digits each year (Picciano & Seaman, 2007; Scheick, 2007; Watson, 2005). Online education provides students 24 hours a day, seven days a week access to course material, convenient and flexible course seating time, and opportunities to learn from the global community (Allen & Seaman, 2007; Ebersole, 2008; St. Amant, 2007).

Even with distance education and e-learning at the forefront of chosen pedagogies, the rate of course completion has increasingly diminished (O'Brien & Renner, 2002; Yukselturk & Inan, 2006). O'Connor, Sceiford, Wang, Foucar-Szocki, & Griffin (2003) reported a 26% dropout rate for e-learning in a study they conducted with 375 students. The surveyed

respondents reported that, on average, they started 5.3 courses and completed 5.2 courses for traditional classroom learning. At the same time, they started 5.5 courses and completed four courses for e-learning programs. Moore and Kearsley (Moore & Kearsley, 2004) reported attrition rates of between 30-50% in distance education courses, as compared to a 20% attrition rate in the traditional course settings. Levy (2007) concluded that students attending e-learning courses dropout at substantially higher rates than students in on-campus courses. Many researchers and institutions are interested in determining the reasons for students not completing these courses in order to increase retention rates. Poor motivation has been found as the most decisive factor contributing to e-learning dropouts (Artino, 2008a; J. M. Keller, 2008; Muilenburg & Berge, 2005; O'Connor, Sceiford, Wang, Foucar-Szocki, & Griffin, 2003; Pineau, 2008). Given human nature, an individual's motivation levels fluctuate over time (Niemivirta, 2006; Styer, 2007).

Aside from instructors being in one place and their students being in other places, the characteristics of online courses are different from traditional face-to-face classes. Among these differences are: content delivery format, learner-content interaction, learner-instructor interaction, learner-learner interaction, and learning outcome assessment (Moore & Kearsley, 2004; Shachar & Neumann, 2003; Stevens & Switzer, 2006). Instructors and instructional designers have applied different instructional strategies and pedagogical models to online courses to improve students' online learning experience (George, 2007; Pineau, 2008). Research studies also found that different instructional strategies have different effects for learners with different learning preferences (Gaytan & McEwen, 2007; Ingram & Watson, 2005). Ingram (2005) cross examined students' success and motivation with four different interactive online instructional strategies and students' social learning styles. Ingram (2005) asserted that

dependent and independent learners are motivated effectively by different interactive instructional strategies. Quality online courses that motivate learners need to be well designed, provide situational interest, allow personal control, and support motivating factors. Such courses need to motivate online learners to invest the time and work necessary to be successful, to persistently study, work hard and learn, and to actively participate in the online course (Styer, 2007).

The literature indicates that students' experiences in the courses varied with the delivery format based on their learning styles, attention spans, and life styles (El Mansour & Mupinga, 2007). Dziuban, Charles, Hartman, & Moskal (2004), in a study conducted between the spring of 2001 and 2003, compared the percentages of university students' success rate to numbers of students withdrawing among three different course delivery modes; face-to-face, blended, and fully online. Overall, the percentages of student success rates were higher in face-to-face courses and blended courses than in fully online courses. Further, the percentage of students withdrawing was higher in fully online courses than in any other course deliver mode. Rice (2007) compared persistence of degree-seeking nontraditional students at a Wisconsin technical college between online and face-to-face students and found that online students spent more time to work on their courses compared with the face-to-face students but had less degree completion and lower college attendance levels. Patterson (2007) conducted a comparative study of factors related to attrition in online and campus based master's degree programs at East Carolina University and found that online students were significantly more likely to drop out than campus-based students.

Many students stated that online courses are more difficult than expected as compared to face-to-face courses. (Michigan School Public Relations Services, 2002; Rodriguez, Ooms,

Montanez, & Yan, 2005; Styer, 2007). In many distance education courses, the responsibility of learning is placed on the student much more than in a traditional learning environment (Cropley & Kahl, 1983; Neal, 1998; Palloff & Pratt, 1999; Rice, 2007). In the traditional learning environment, the instructor is physically present with all the learners and can receive immediate response through students' visual or verbal cues (Blandin, Toussaint, & Shea, 2007; C. Lee & Witta, 2001). The situation is very different in a distance learning environment with the absence of the traditional communication cues (Donovan, 1995; Santhiveeran, 2005; G. G. Smith, Ferguson, & Caris, 2001; Weiss, 2000). Students have to rely on their own capabilities to actively and consciously control their own learning process (Dettori, Giannetti, & Persico, 2006; Whipp & Chiarelli, 2004; Zimmerman, 2002; Zimmerman & Schunk, 2008).

In an investigation into online learning, researchers consistently identify motivation as a strong predictor of success (Baynton, 1992; Cavanaugh, 2003; Cornell & Martin, 1997; Dettori et al., 2006; Dille & Mezack, 1991; Fjortoft, 1995; Garland, 1993; J. M. Keller, 1999a; Miltiadou, 2000; Paas, Tuovinen, van Merriënboer, & Darabi, 2005; Stevens & Switzer, 2006; Whipp & Chiarelli, 2004; Zimmerman & Schunk, 2008). Motivation is a critical dimension that determines learning success, and poor motivation is a primary cause for high dropout rates among online learners (Frankola, 2001; Patterson, 2007). It is important that motivation levels be frequently examined to determine whether and when they fluctuate and at what point they fluctuate during a given course (Song & Keller, 2001). Using these indicators, the next questions were identified. They were how to remediate low motivation levels, how they can be reversed, and what are some of the reasons for this to occur (Miltiadou, 2000; Pintrich & Schunk, 2002; Xie, Debacker, & Ferguson, 2006).

Researchers have also identified many different factors that are related to student motivation. Bandura (1977) identified high correlations between perceived self-efficacy and motivation. Eccles and Wigfield (1995; 2005) suggested that task values in terms of interest, perceived importance, and perceived utility are correlated to achievement-related beliefs. Styer (2007) examined motivation from the learner's perspective and found that instructional strategies and online social interaction are strongly related to student motivation.

Keller's (1983) ARCS Model has been successfully tested for its validity and reliability in measuring learner motivation. A notable number of research studies have already used this model and also provided interventions to enhance and maintain high levels of learner motivation (Dempsey & Johnson, 1998; Gabrielle, 2003; Gunter & Kenny, 2004; Gunter & Kenny, 2008; J. M. Keller, 1999a; J. M. Keller, 1999b; D. H. Lim, 2004; Paas et al., 2005; Song & Keller, 1999; Song & Keller, 2001). Keller and Suzuki (2004) concluded that systematic, holistic motivational analysis of the audience as shown in the ARCS Model can lead instructional designers and instructors to the creation and selection of tactics that are consistent with the motivational needs of the audience.

Seeing some recurring motivational markers in his own classes, Keller (1983) classified some of them into four dimensions which he labeled in his ARCS model. His model included Attention, Relevance, Confidence, and Satisfaction (ARCS) (J. M. Keller, 1983). Attention refers to the instructor's ability to capture the interest of learners, to stimulate their curiosity to learn, and to hold their attention. Relevance refers to making the instructional content meaningful to the learners. Confidence refers to providing positive expectations for success by learners, and satisfaction refers to the resulting learners' positive feelings about their learning experiences. Gabrielle (2003) used the Course Interest Survey and the Instructional Materials

Motivation Survey designed by Keller (1993) to measure students' motivation and applied instructional strategies from the ARCS model to positively affect motivation. Asleitner (2003) used the ARCS motivational design model to enhance attention, relevance, confidence, and satisfaction of a Web-lecture-based learning environment and examined the effects on motivation and learning.

Short, Christine, and Williams (1976) first introduced the term social presence as "the salience of the other in a mediated communication and the consequent salience of their interpersonal interactions" in a telecommunication environment (p. 65). Mehrabian (1969) suggested that nonverbal cues such as facial expressions, body movements, and eye contact increased the sensory stimulation of interlocutors. Short, Christine, and William (1976) asserted that the lack of the capability of communication media to transmit nonverbal cues would have a negative effect on interpersonal communication. Fulk (1987; 1995) defined social presence as the extent to which a medium allows a user to experience others as being psychologically present. Research studies point to social presence as an influential factor in a constructivist learning process that emphasizes the social interaction of learning knowledge (Gunawardena, 1995; Tu & McIsaac, 2002).

Of the early studies on social presence that have been conducted, most took place in a face-to-face learning environment. In the online learning environment, it is very important to maintain and enhance degrees of social presence among participants because of the lack of the presence of traditional communication cues (Kreijns, Kirschner, Jochems, & Van Buuren, 2004). The degree of social presence is based on the characteristics of the medium and the user's perception (Tu & McIsaac, 2002). Student-student interactions in an online course can be evaluated by measuring students' online social presence levels. There are number of instruments

have been used to measure online social presence. Tu and McIsaac (2002; 2005) used an Online Social Presence Self-Assessment and identified four dimensions of social presence: social context, online communication, interactivity, system privacy, and feelings of privacy. Gunawardena (1997; 2004) developed Social Presence Indicators to solicit the students' reactions on a range of feelings toward the medium of computer mediated communication. Computer mediated communication refers to the use of networked computers for communication, interaction, and exchange of information among participants (Tu, 2000; Tu, 2002). Richardson and Swan (2003) adopted the same Social Presence Indicators instrument to examine the relationship between online social presence and students' perceived learning and satisfaction. While other research studies focused on satisfaction, efficacy, exchanging of information, etc., the focus of this research is the assessment of student motivation and its relationship to social presence.

Researchers have been interested and continue to conduct studies to identify different variables related to the satisfaction of online learners. Richardson and Swan (2003) found that students with high overall perceptions of social presence also scored high in terms of perceived learning and perceived satisfaction with the instructor. Researchers have concluded that social presence is a strong predictor of satisfaction (Garrison, Anderson, & Archer, 2001; Gunawardena & Zittle, 1997; Lin, Lin, & Laffey, 2008; Tu & McIsaac, 2002). Shea (2003) concluded that student-student and student-faculty interaction are strongly correlated with student satisfaction and reported learning gains (Shea et al., 2003). Arbaugh (2001) found that instructor's verbal immediacy behaviors in Web-based courses were positive predictors of student learning and course satisfaction. Measuring instructor's verbal immediacy is a method to assess instructor-student interactions in an online learning environment. These verbal immediacy behaviors

include using personal examples and humor, providing and inviting feedback, and name recognition (Gorham, 1988; Saechou, 2005). Furthermore, Gunawardena and Duphorne (2001) suggested that learner readiness, online features, and computer mediated communication related learning approaches are associated with learner satisfaction.

Online communication has also provided learners with opportunities to form a highly interactive online learning community. Donovan (1995) stated that the absence of the traditional communication cues in an online environment made members of a group take more care in the preparation of their thoughts. The online learning environment also allows latecomers to catch up with the group discussion in an online course (Saka & Shiigi, 1996). Researchers found that online communication improved online student-student communication and student-instructor communication significantly in terms of quantity and quality. Bruning (1995) stated that e-mail has provided an open, nontraditional channel for students to communicate their thoughts and ideas. The use of threaded online discussions allows students to trace and keep track of conversational chains. Messages are organized in a hierarchical structure in an online learning environment that allows students to pursue multiple avenues of thought without becoming confused (Hewitt, 2001).

This research study examined online social presence and certain variables that may have impacted students' experiences. It was hypothesized that students' motivation to learn and participate in an online course varies along a continuum during a 16-week semester. Xie, Debacker, & Ferguson (2006) found that students' motivation for participating in online discussions decreased over time. Students felt overwhelmed by the course workload and did not feel they had enough time to elaborate their thoughts and ideas in the online discussions.

Several researchers have agreed that social presence both positively and negatively influences the learning environment, student satisfaction, persistence, performance, and social space (Anderson & Harris, 1997; Kreijns et al., 2004; Swan & Shih, 2005; Wise, Chang, Duffy, & Valle, 2004). This study provides additional data and analysis to better understand how social presence can influence student motivation in an online environment.

Purpose of the Study

The purpose of this study was to investigate the relationship between the level of student motivation and perceived online social presence in an online course. Understanding of the relationship between motivation and online social presence would assist researchers to design and develop effective instructional strategies to improve students' learning outcomes. The researcher also examined the level of online social presence and motivation students hold for an online class over time and the relationship between these variables. In addition, the researcher measured the relationships between online social presence and other factors such as gender, ethnicity and instructor's verbal immediacy behaviors.

Research Questions

The study focused on answering the following research questions:

1. Was there a change in student motivation from the beginning to the end of the semester as measured by Keller's Course Interest Survey?
2. Was there a change in student perceived online social presence from the beginning to the end of the semester as measured by Gunawardena's Social Presence Scale?
3. What's the relationship between online social presence and student motivation?

4. What factors such as gender, verbal immediacy, and ethnicity influence social presence in an online course?

Study Limitations

The following limitations were applied to the study:

1. All participation was limited to the population enrolled in three sections of EME 2040, Introduction of Educational Technology, during Fall 2007.
2. Validity was limited to the honesty of the students' responses to the questionnaire.
3. Since the sample is taken from the UCF population, the result only applies to that particular population of UCF.
4. Internal and external validity were limited to the reliability of the three instruments used in the study.
5. No causal relationships can be inferred from the data.

Assumptions of the Study

Some of the underlying assumptions in the study include:

1. The participants' of the study responded truthfully to the survey items.
2. The participants' answers were based on their own perceptions and beliefs.
3. The participants are able to access the Web-based online questionnaire.
4. The participants answered the questionnaire without the help of other individuals.

Organization of the Dissertation

Five chapters are included in this dissertation. Chapter 1 introduction provides the orientation of the study. Chapter 2 contains a summary of the literature related to the research

focus of this study. This literature review places the present study in the context of previous research to support the basis of the theoretical framework of the study. Chapter 3 focuses on the research methodology used in this study, such as sampling, description of the participants, data collection procedures, data analysis, and it also includes the basis for the purposive sampling and the development of the questionnaire. Chapter 4 presents the results of the study. Chapter 5 provides a summary of the findings, discussion, conclusions and recommendations based on the results of this research. Appendices A through C contain the questionnaire scales employed in this study. References are listed at the end of the dissertation.

Definition of Terms

Numerous terms have been used for online learning, making it difficult to select a term that is universal and a definition that is standard. The term online learning will be used throughout this study synonymously with other common terms such as distance learning, Web-based learning, Internet learning, e-learning, and online distributed learning.

Blended/hybrid course: Courses that combine face-to-face classroom instruction with online learning. Blended/hybrid courses move a significant part of course learning online and, as a result, reduce the amount of classroom seat time (Dziuban et al., 2004; Jackson & Helms, 2008; Kaleta, Garnham, & Aycock, 2003).

Computer-mediated communication (CMC): The use of networked computers for communication, interaction, and exchange of information among participants (Tu, 2000).

Immediacy: Communication behaviors that reduce social and psychological distance between people. It includes both nonverbal and verbal behaviors (Arbaugh, 2001; Mehrabian, 1969).

Motivation: The process whereby goal-directed activity is instigated and sustained. It is a process that underlies behavior and is inferred from such actions as choice and persistence. It involves both mental and physical activity (Pintrich & Schunk, 2002).

Perceived utility: Utility value is how tasks are related to future goals, such as career goals. Utility value is determined by the individual's perception of the usefulness of the task for him or her. (Pintrich & Schunk, 2002; I. B. Weiner, Freedheim, Schinka, & Velicer, 2003).

Self-efficacy: The belief in one's capabilities to organize and execute the courses of action required to produce given attainments (Bandura, 1997 p.3).

Social immediacy: The psychological distance between a communicator and the recipient of the communication (Wiener & Mehrabian, 1968). It is conveyed through speech and associated verbal and nonverbal cues (Walther & Burgoon, 1992).

Social presence: Degree of salience of the other person in the interaction and the consequent salience of their interpersonal relationships (Fulk et al., 1987; Fulk, 1995; Mehrabian, 1969; Short et al., 1976). The degree to which an online user feels access to the "intelligence, intentions, and sensory impressions" of other learners in an online environment (Tu, 2002).

Verbal immediacy: Refers to communication behaviors that reduce social and psychological distance between people. Verbal immediacy focuses on speaking behaviors such as including personal examples, using humor, providing and inviting feedback, and addressing and being addressed by students by name (Gorham, 1988). In an online environment, participants exchange ideas, create social presence by projecting their identities and building online communities through verbal immediacy behaviors alone (Gunawardena & Zittle, 1997; Swan, 2002).

CHAPTER TWO: LITERATURE REVIEW

Introduction

Online education became popular with the rapid development of Internet. More institutions now are offering online courses, programs and degrees; however, students' attrition rates in online courses are high (Allen & Seaman, 2007; Moore & Kearsley, 2004; Scheick, 2007). Numerous research studies have recently been conducted to determine the key variables that contribute to the overall success of online learning. Student motivation level has been found as a valid predictor of successes in online learning (Artino, 2008a; Frankola, 2001; J. M. Keller, 2008; Muilenburg & Berge, 2005; Pineau, 2008). Studies also reported that different variables, such as self-efficacy, interest, perceived importance, and perceived utility, correlate to student motivation level in an online learning environment (Eccles, 2005; C. Lee & Witta, 2001; Styer, 2007). Other than student motivation level, previous researchers found that perceived social presence was most highly correlated with the success of online learning (Gunawardena & McIsaac, 2004; Richardson & Swan, 2003). Limited research studies have been done to examine the connection between online social presence and students' motivation (Bai, 2003). Several recent research studies have found a significant relationship between students' perceived online social presence and their motivation level (Bracken & Lombard, 2004; Gunter, 2007; Lin et al., 2008; Newberry, 2004; Weaver & Albion, 2005; Wheeler, 2005).

This review chapter presents four sections and describes theoretical concepts and research related to: (1) distance education and course delivery modalities, (2) online learner and online communication, (3) student motivation, (4) online social presence and immediacy, and (5)

the relationship between social presence and motivation and the important role social presence plays in student's successful learning experience.

Distance Education and Course Delivery Modalities

Distance Education Defined

The concept of distance education first appears in the late 1800s, at the University of Chicago. In 1890, William Rainey Harper established the first major correspondence program in the United States in which the teachers and learners were in separate locations (Gunawardena & McIsaac, 2004). In 1932, the State University of Iowa began experimenting with transmitting instructional courses (Saettler, 1990). Distance education and training resulted from the technological separation of teacher and learner which freed the student from the necessity of traveling to a fixed place, at a fixed time, to meet a fixed person, in order to be trained or educated (Colbert, 2005; Keegan, 1995; Li & Lau, 2006; Vishtak, 2007). The asynchronous feature of online education offers an advantage in that the online class is open 24 hours a day, 7 days a week to accommodate the time schedules of distance learners (Gunawardena & McIsaac, 2004). Over the past 100 years, distance education has evolved through four iterations: the Correspondence Model based on print technology; the Multi-media Model based on print, audio and video technologies; the Telecommunication Learning Model, based on applications of telecommunications technologies to provide opportunities for synchronous communication; and the Flexible Learning Model based on online delivery via the Internet (Taylor, 2001). In 2006, nearly 3.5 million American students were taking at least one online course during the fall 2006 term compared to 1.9 in 2003, 2.3 in 2004, and 3.2 million in 2005 (Allen & Seaman, 2005; Allen & Seaman, 2007). In 2006, 65% of American higher education institutions offered

graduate and undergraduate courses online (Allen & Seaman, 2007). In 2006, the overall enrollment growth rate was 9.5%, which greatly exceeds the overall growth rate in the higher education student body (Allen & Seaman, 2007).

Researchers have identified a number of characteristics of online distance education; the first being is the physical separation of the learner and teacher (Gunawardena & McIsaac, 2004; Keegan, 2000). The second characteristic is that two-way communication between teacher and the student is through e-mail, online conferencing, and online discussion boards (de Bruyn, 2004; Gunawardena & McIsaac, 2004; Keegan, 2000; Zembylas & Vrasidas, 2007). Students and teachers are generally required to utilize these computer-mediated technologies for communication purposes. Gunawardena and McIsaac (2004) classified such communication as computer-mediated communication (CMC). The computer-mediated communication (CMC) environment presents very different characteristics from the face-to-face classroom (J. Lim, Kim, Chen, & Ryder, 2008; Tu & McIsaac, 2002; Tu, 2004; Tu, 2005)}. The third characteristic is individualized learning experience (Joseph, 2005; Keegan, 1995; Keegan, 2000; Kerawalla, Minocha, Kirkup, & Conole, 2008; Shroff, Vogel, & Coombes, 2008). In an online learning environment, students are usually taught as individuals rather than as a group. The fourth characteristic is the importance of technology. In a traditional classroom, technology may be used but is not always central to the learner. However, in a distance education setting, different forms of technology are the foundation for communication (Tu & McIsaac, 2002). Technology plays many roles in the online environment for student explanation, communication and learning. In this technology-centered learning environment, instructors use various media to deliver the content (Gunawardena & McIsaac, 2004; Tu & McIsaac, 2002).

Course Delivery Modalities

Based on the proportion of content delivered online, there can be three different course delivery modalities: (1) online course, (2) traditional course, and (3) blended or hybrid course. Online courses, the primary focus of this research study, are those in which at least 80% of the course content is delivered online (Allen & Seaman, 2007). Traditional courses are courses in which less than 29% of the content is delivered online. It includes both traditional face-to-face courses and Web-facilitated courses. The remaining alternative, the blended courses, sometimes called hybrid courses, contains 30% to 80% of the course content delivered online (Allen & Seaman, 2007; Osguthorpe & Graham, 2003). Dziuban (2004) stated that blended courses combine the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment.

Analysis of pedagogical benefits studies shows that online learning is perceived to be at least as effective as face-to-face classes (Picciano, 2006). There is no significant difference of students' learning outcomes between online and face-to-face traditional courses (Carey, 2001; Press, 2005; Russell, 1999; Vroeginday, 2005). Clark (1994; 2000; 2007) concluded that there is nothing inherent in the technologies that elicits improvements in learning. In other words, researchers suggested each media is equally valuable for leaning and the amount of learning produced by different media is similar. If the message remains the same, it doesn't matter what media are used to deliver the message, and the effect for learning also remains the same. Other than learning outcomes, researchers have also compared students' satisfaction levels between different course delivery modalities. Carmel (2007) found that there was no statistically significant difference between the levels of student satisfaction, student retention or grade point average between students taking classes in traditional on-site modality vs. those attending class

via the hybrid modality. A number of instructional strategies can be used in blended and online course to improve the learning outcomes (Choi & Clark, 2006; Clark, Bewley, & O'Neil, 2006; Russell, 1999; van Merrienboer, Clark, & de Croock, 2002). To take the full advantage of both the online course delivery method and the face-to-face method, Dziuban (2004) asserted that blended learning should be approached not merely as a short-term solution as the bridge between face-to-face and full online courses, but rather as a fundamental redesign of the instructional model that is student-centered, interaction-enhanced, and assessment-mechanism integrated. With blended learning environments, instructors design programs and courses to mix and match the two teaching modalities to take advantage of the best pedagogical techniques of online and face-to-face learning (Picciano, 2006; Rovai & Jordan, 2004). Instructional strategies that blend face-to-face instruction, online projects, and activities that use asynchronous and synchronous instruction are the cornerstones for hybrid course design (D'Onofrio & Bowes, 2007).

Online Learners and Online Communication

Online Learners

Almost 3.5 million students were taking at least one online course during the fall 2006 term. From 2005 to 2006, the population of online learners increased nearly 10%. (Allen & Seaman, 2007). Better understanding of the characteristics and educational needs of the online learner helps administrators, instructors, and instructional designers to provide students with successful online learning experiences (Dabbagh, 2007; Galusha, 1998; Sahin, 2008; Simonson, 2006). Numbers of research studies have been focused on identifying conditions and characteristics necessary for a successful and competent online learner. Dabbagh (2007) stated that interpersonal and communication skills are critical competencies for the online learners.

Another important characteristic of online learners is that they are self-regulated (Rogers & Swan, 2004). Self-regulated learning is defined as individuals' capacity to actively and consciously control their own learning process in terms of cognition, motivation, and behavior (Zimmerman, 2002). Both self-motivation and self-regulation have been found as key characteristics for the successful online learners (Artino, 2008b; Dabbagh, 2007; Rogers & Swan, 2004). Dabbagh (2007) summarized that a successful online learner should be skilled in the use of online learning technologies, particularly communication and collaborative technologies, have a strong academic self-concept and good interpersonal and communication skills, have a basic understanding and appreciation of collaborative learning and develop competencies in related skills, and acquire self-regulated learning skills through the deployment of time management and cognitive learning strategies.

Online Communication

Online communication is defined as the basic level of discussion in an online format. Online communication directly affects students' satisfaction in an online learning environment (Dennen, Darabi, & Smith, 2007). To establish certain level of presence in an online course, students must participate in different formats of online communication. In an online course setting, online communication can be established to focus on course administration functions or course content related information such as course readings, assignments, group projects, and peer evaluations (Misanchuk & Anderson, 2001). Online communication can occur asynchronously or synchronously in an online course through different communication channels such as online discussion boards, e-mail, text chat, voice/video chat, online conferences, remote desktop control, or electronic whiteboards (Chelus, 2003; Cox & Cox, 2008; Elicker, O'Malley, &

Williams, 2008; LaPointe & Reisetter, 2008; Misanchuk & Anderson, 2001). Online communication has a number of advantages for supporting online learning (Contreras-Castillo, Pérez-Fragoso, & Favela, 2006; de Bruyn, 2004; Johnson, 2008). These benefits are connectivity and accessibility, equitable communication possibilities for students, and fostered student reflection, as well as boundlessness in terms of time and space (Zembylas & Vrasidas, 2007). In an online learning environment, there are two types of online communication tools. The first are asynchronous tools such as e-mail, threaded discussions, and Web pages. The second type of online communication tools are synchronous in nature and include text-based chat, audio/video conferencing, instant message services, and whiteboards (Humphreys, 2004). Park (2007) found that the synchronous communication tools enhance social interactions, strengthen the feeling of social presence, and encourage students to exchange ideas. On another hand, asynchronous tools enable online learners to communicate and collaborate during the entire course offering period of time (Baglione & Nastanski, 2007; Johnson, 2008). Asynchronous communication tools are useful for sustaining dialogue and collaboration over a period of time and providing people with resources and information that are instantly accessible. Asynchronous communication tools also have advantages over capturing the history of the interactions of a group, allowing for collective knowledge to be more easily shared and distributed (Ashley, 2003; Johnson, 2008; Yeh & Lahman, 2007).

Student Motivation

When examining the use of online teaching, researchers consistently note that motivation is a strong predictor of success (Baynton, 1992; Cavanaugh, 2003; Coggins, 1988; Cornell & Martin, 1997; Dille & Mezack, 1991; Fjortoft, 1995; Garland, 1993; J. M. Keller, 1999a; J. M.

Keller, 2008; Miltiadou, 2000). Since the 1930s, studies have been conducted to search for the "motor" and determine how much motivation related to behavior by these motors. Between 1930 and 1950, experimental studies of motivation were linked with the search for the causes of behavior and were associated with concepts such as instinct, drive, need and energization (B. Weiner, 1990). In the 1960s, there was a significant research shift from behaviorism to emphasis on cognition. Research on motivation began to focus on individual differences, with persons characterized as being high or low in achievement needs, anxiety, and internal controls (B. Weiner, 1990). In the 1980s, attention was focused on human behavior, particularly achievement strivings, individual differences in achievement needs, anxiety about failure, perceptions of control, and self-efficacy (Bandura, 1977; B. Weiner, 1990). There have been major changes in the research on motivation in the last sixty years and different definitions of motivation have emerged from the various theoretical approaches (Styer, 2007; B. Weiner, 1990). Pintrich and Schunk (2002) defined motivation as the process whereby goal-directed activity is instigated and sustained.

In order to provide a comprehensive motivation model that incorporates various motivational constructs with consistent definitions, Ford (1992) introduced the Motivational Systems Theory (MST). The MST model contains three main constructs which are personal goals, emotion, and personal agency beliefs (Ford, 1992). These three components are independent and contribute to learning achievement. They provide the person with information needed to decide whether to initiate, maintain, amplify, or inhibit some pattern of goal-directed activity (Ford, 1992). Bandura (1997) found that perceived self-efficacy is a strong predictor of performance and behavioral changes. Self-efficacy determines whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of

obstacles and aversive experiences. Clark (1999) introduced the Commitment And Necessary Effort (CANE) model of motivation based on the Motivational Systems Theory and self-efficacy research. In the CANE model, two stages of motivation are proposed. The first stage of the process is to actively pursue a goals and the second stage is to determine the amount of necessary effort required to achieve the chosen goal (Clark, 1999). For the first stage of task commitment, there are three variables influencing work goal commitments. These variables are goal value, emotions, and personal agency (Bandura, 1977; Baynton, 1992; Clark, 1999; Ford, 1992; J. M. Keller, 1999a).

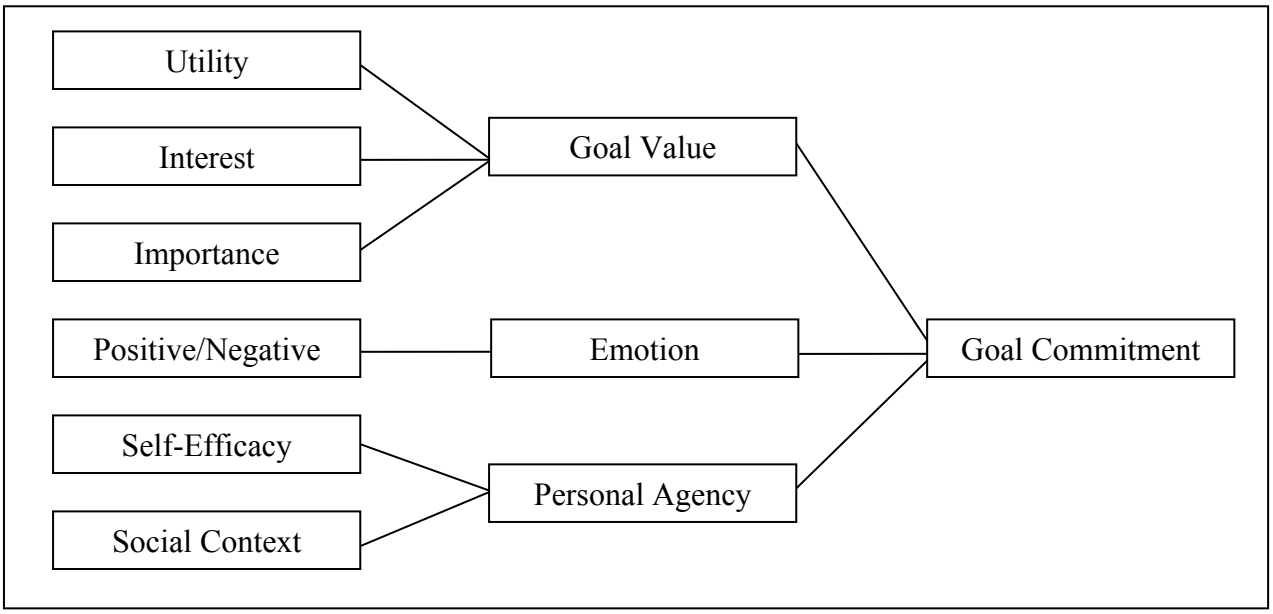

Figure 1: Cane Model of Factors Influencing Goal Commitment

(Clark, 1999)

Goal value is the belief that achievement of a work goal will increase our personal control or effectiveness toward our commitment to the goal (Clark, 1999). There are three types of goal values: utility, interest, and importance (Eccles & Wigfield, 1995; Eccles, 2005). Utility value is how tasks are related to future goals, such as career goals. Utility value is determined by

the individual's perception of the usefulness of the task for him or her (Pintrich & Schunk, 2002; Weiner, Freedheim, Schinka, & Velicer 2003). Interest is the enjoyment an individual experiences when commits to the goal and importance represents the significance to a person of doing well on a task because success confirms their own beliefs about their skill levels (Clark, 1999; Eccles, 2005). Positive emotions facilitate and negative emotions discourage goal commitment in an online learning environment. In another words, positive moods such as happiness and contentment increase motivation and negative moods such as anxiety, sadness, depression, and anger negatively affects motivation (Clark, 1999; C. Lee & Witta, 2001). Personal agency includes the beliefs concerning the extent to which our ability and contextual factors will facilitate goal achievement (Clark, 1999). People will evaluate these two considerations before committing to a goal. They will also consider whether they have enough knowledge and ability to achieve the goal and whether any external environmental barriers prevent them from achieving the goal. The second motivation process which is necessary effort is concerned with the amount and quality of the "mental effort" a person invests in achieving the knowledge component of a performance goal (Clark, 1999).

To find out the level or degree that students are motivated, Keller (1983; 1999b) developed Instructional Materials Motivation Survey (IMMS) and Course Interest Survey (CIS) to measure Attention, Relevance, Confidence, and Satisfaction (ARCS) Motivational Model components and determine the audience's motivational condition in a certain learning environment. Attention refers to the ability to capture the interest of learners, to stimulate their curiosity to learn, and to hold their attention. Relevance refers to making the instructional content meaningful to the learners. Confidence refers to positive expectations for success by learners, and satisfaction refers to learners' positive feelings about their learning experiences.

Two instruments were designed to measure students' motivation (J. M. Keller, 1999a). The Course Interest Survey (CIS) was designed to measure students' reactions to instructor-facilitated learning environment, such as the survey question regarding instructor feedback and the teaching strategies. The Instructional Materials Motivation Survey (IMMS) was designed to measure students' motivational reactions to self-directed instructional materials and has been extensively used.

Research studies have used the ARCS model to evaluate student motivation and provided interventions to enhance their motivation levels (Dempsey & Johnson, 1998; Gabrielle, 2003; Gunter & Kenny, 2004; J. M. Keller, 1999a; J. M. Keller, 1999b; D. H. Lim, 2004; Paas et al., 2005; Song & Keller, 1999; Song & Keller, 2001). Gabrielle (2003) used both of Keller's instruments to measure students' motivation and applied instructional strategies from the ARCS model to positively affect students' motivation. Keller's motivational instructional model contains a ten-step design process for the development of motivational systems in work and learning settings (J. M. Keller & Suzuki, 2004). These 10 steps are: (1) obtain course information, (2) obtain audience information, (3) analyze audience, (4) analyze existing materials, (5) list objectives and assessments (6) list potential tactics, (7) select and design tactics, (8) integrate with instruction, (9) select and develop materials, and (10) evaluate and revise. Using the ten-step design process, different instructional strategies in each motivational category are selected and applied to stimulate motivation. Under attention, there are perceptual arousal, inquiry arousal, and variability motivational tactics (J. M. Keller, 1993; J. M. Keller & Subhiyah, 1993; J. M. Keller, 1999a). Perceptual arousal is to gain and maintain student attention by the use of novel, surprising, incongruous or uncertain events in instruction. Inquiry arousal uses learner-generated questions to stimulate students' information-seeking behavior.

Varying the elements of instruction can also maintain students' interest. For relevance, there are familiarity and goal-orientation and motive-watching strategies to motivate students (J. M. Keller, 1999a). The instructor can use examples to relate to the students' experience and values. Statements or examples that present the objectives and utility of the instruction are also very helpful. The instructor can also match the students' motivation profiles with appropriate teaching strategies. To improve confidence, the instructor can provide students with performance requirements and evaluation criteria, challenge levels that allow students to have a meaningful success experience, and feedback and opportunities for students to control the attributions of success. These three strategies are called learning requirements, success opportunities, and personal control (J. M. Keller, 1999b; J. M. Keller & Suzuki, 2004). To increase learners' satisfaction, the instructor can provide opportunities for learners to use newly acquired knowledge or skill, provide feedback and reinforcement that will sustain the desired behavior, and maintain consistent standards and consequences for task accomplishment (Dempsey & Johnson, 1998; J. M. Keller, 2006). These motivational strategies are supported by psychological constructs that provide the theoretical foundation for each category (see Table 1).

Table 1: Motivational Strategies in ARCS Categories

Attention	Relevance	Confidence	Satisfaction
Perceptual arousal	Goal orientation	Learning requirements	Intrinsic reinforcement
Inquiry arousal	Motive matching	Success opportunities	Extrinsic rewards
Variability	Familiarity	Personal control	Equity

(J. M. Keller, 2006)

Asleitner (2003) used the ARCS motivational strategies to enhance the attention, relevance, confidence, and satisfaction of a Web-based learning environment. He examined the effects of these motivational strategies on motivation and learning and concluded that these motivational strategies led to higher perceived success, higher motivation and better knowledge acquisition. Carson (2006) applied ARCS motivation measurements to investigate relationships between the motivation and learning style. He found high correlation between preferred learning styles and motivation.

Online Social Presence and Immediacy

Short, Christine, and Williams (1976) defined the term social presence as "… the salience of the other in a mediated communication and the consequent salience of their interpersonal interactions …" (p. 65). Mehrabian (1969) suggested that nonverbal cues such as facial expressions, body movements, and eye contact increased the sensory stimulation of interlocutors. Short, Christine, and William (1976) asserted that the lack of the capability of communication media to transmit nonverbal cues would have a negative effect on interpersonal communication. Fulk (1987) defined social presence as the extent to which a medium allows a user to experience others as being psychologically present. Researchers indicate that social presence is an important factor in the constructivist learning process that emphasizes the social interaction of learning knowledge (Gunawardena, 1995; Tu & McIsaac, 2002). Richardson (2003) interpreted online social presence as the degree to which a person is perceived as real in an online learning environment. Social presence is one of the most significant factors in improving instructional effectiveness and building a sense of community in an online learning environment (Aragon, 2003). On another hand, instructor verbal immediacy strongly influenced how students

interacted with teachers in an online course (Baker, 2004). Gunter (2007) asserted that students can be motivated through various interactions and instructional immediacy behaviors which lead to higher completion rates, improved self-efficacy, and cognitive learning.

There are number of instruments researchers have used to measure online social presence. Tu and McIsaac (2002) used Online Social Presence Self-Assessment and found four dimensions of social presence existed: social context, online communication, interactivity, and privacy. Social context is constructed from the online learners' characteristics and their perception of the online communication environment. Online communication refers to the attributes, application, and perception of the language used online. Interactivity consisted of those cooperative activities and communication styles used by online learners (Tu, 2005). Online learners consider the one-to-one online communication format more private than other publicly accessible communication formats (Tu & McIsaac, 2002). The Online Social Presence Self-Assessment includes thirty items evaluating these four dimensions of social presence based on the perception of the online learners themselves (Tu, 2000). The instrument measures social presence in three different Computer Mediated Communication (CMC) formats: e-mail, discussion board, and real-time chat. Computer Mediated Communication refers to the use of networked computers for communication, interaction, and exchange of information among participants (Tu, 2000). Gunawardena (1997) developed Social Presence Indicators to solicit the students' reactions on a range of feelings toward the medium of computer mediated communication. Richardson and Swan (2003) adopted the same Social Presence Indicators instrument to examine the relationship between online social presence and students' perceived learning and satisfaction.

Studies have concluded that online social presence can influence a student's satisfaction and persistence in an online course (Arbaugh, 2001; Richardson & Swan, 2003). Gunawardena (Gunawardena & McIsaac, 2004) found that social presence had an effect on student satisfaction and performance. Nevertheless, Swan (2005) also found that students who perceived greater interactions with the instructor also recognized that they learned more and were more satisfied with the courses. Gunter (2007) found that immediacy strategies improved student's satisfaction and cognitive learning. Online social presence was found highly correlated with satisfaction of online discussion, perceived learning, and online learning interaction (Gunter, 2007; Swan & Shih, 2005). Social presence is necessary to enhance and foster online social interaction (Tu & McIsaac, 2002). It is necessary for students to have a certain degree of online social presence in order to create a virtual community (Garrison et al., 2001). The goal for creating social presence in an online learning environment is to create a level of comfort in which people feel at ease around the instructor and the other participants (Aragon, 2003).

Relationship between Social Presence and Motivation

Most of the online social presence research addressed relationships between social presence and learning in the online learning environment (Bai, 2003). In order to understand students' motivation and provide appropriate interventions, there are four dimensions of motivation that need to be assessed using Keller's (1983; 1993; 1999a; 1999b) ARCS motivational model. Shin (2002) stated that most of the research had looked at the relationship between the varying extent of social presence and the level of student satisfaction and learning achievements. Limited research studies can be found in the literature that examine the relationship between online social presence and students' motivation directly in an online course

(Bai, 2003). Recently, more researchers were interested in investigating the relationship between these two variables. Bracken & Lombard (2004) found that children's perceived social presence can lead to the improvement of intrinsic motivation when they are learning with computers. Newberry (2004) found that social presence was correlated with students' motivation and satisfaction in online courses. Gunter (2007) reported a positive relationship between online social presence, student motivation and satisfaction. Weaver and Albion (2005) determined a significant relationship between students' perceived online social presence and their motivation to participate in online discussions; however, students' perceived online social presence declined over the semester. Wheeler (2005) suggested that social presence is an important feature of any successful learning activity, particularly within digital learning environments. Without perceptions of social presence, students may lose motivation, fail in their studies, and even drop out the course. Lin, Lin, & Laffey (2008) examined how social and motivational attributes influence students' online learning experiences and found a strong correlation between social presence and motivation.

Summary

The purpose of this study was to investigate the relationship between the level of student motivation and perceived online social presence in an online course over the entire semester, the level of online social presence and motivation students maintain in an online class over time, and relationships between these variables when moderated by gender and other variables. The review of the literature described theoretical concepts and research studies related to online education, motivation, and online social presence.

Previous research studies have established the relationship between students' online social presence, students' learning performance, and course satisfaction (Anderson & Harris, 1997; Arbaugh, 2001; Gunawardena & Zittle, 1997; Kreijns et al., 2004; Richardson & Swan, 2003; Rourke & Anderson, 2002; Tu & McIsaac, 2002; Wise et al., 2004). To improve students' motivation in an online course, Keller's ARCS model has been proven to be effective (J. M. Keller & Suzuki, 2004; Song & Keller, 1999; Song & Keller, 2001). The systematic, holistic motivational analysis of the audience as incorporated in the ARCS model will help the instructors to create and select motivational tactics that fit the motivational needs of the students (J. M. Keller & Suzuki, 2004). The relationship between online social presence and motivation in online learning environment over a period of time has not been adequately established. The reason to investigate the relationship between online social presence and motivation in an online course is that research about online social presence and motivation is needed for researchers to provide effective interventions to motivate students in the online learning environment.

CHAPTER THREE: RESEARCH METHODOLOGY

Introduction

This chapter presents the research design and procedures used in this study. The study population and sample selection, data collection instrument, data collection procedure, and statistical analysis utilized in this study are described in detail as well.

The purpose of this study was to investigate the relationship between the level of student motivation and perceived online social presence in an online course. The specific questions of the study were:

1. Was there a change in student motivation from the beginning to the end of the semester as measured by Keller's Course Interest Survey?
2. Was there a change in student perceived online social presence from the beginning to the end of the semester as measured by Gunawardena's Social Presence Scale?
3. What's the relationship between online social presence and student motivation?
4. What factors such as gender, verbal immediacy, and ethnicity influence social presence in an online course?

Design of the Study

The research design for this study was a correlational design. This method is suitable for examining, investigating, or discovering relationships between variables. This correlational research study examined the relationship between student online social presence and motivation in three sections of an online undergraduate educational technology course at the University of Central Florida (UCF) in Orlando, Florida. The study used multiple regression analysis to test

the relationships between student online social presence and motivation moderated by gender and the instructor's verbal immediacy.

Population and Sample Selection

The population for the study were university undergraduate students enrolled in three online sections of EME 2040, Introduction of Educational Technology during Fall 2007. The EME 2040, Introduction of Educational Technology course is delivered in all modalities at the University of Central Florida. Course delivery methods include face to face, blended or hybrid, and fully online. This is a required educational technology course for all pre-service teachers seeking certification in the State of Florida and became a mandated requirement by the Florida Department of Education in 1996 (Gunter, 2001). All state-funded institutions in Florida are required to offer sections of this class. In this course, pre-service teachers learn how to use and, more importantly, integrate technology into their other courses and their future classrooms (Gunter, 2001). The curriculum of this course consists of technology skills beyond computer literacy.

Shelly, Cashman, Gunter, & Gunter (2007) stated:

> While computer and information literacy are very important for educators, today's educators also must integrate technology as a tool to facilitate learning. Educators must be able to assess technology resources and plan classroom activities using any and all available technologies. These skills are part of integration literacy, which is the ability to use computers and other technologies combined with a variety of teaching and learning strategies to enhance students' learning. Integration literacy means that teachers can determine how to match appropriate technology to learning goals, objectives, and outcomes (p. 5).

Gunter and Kenny (2004) stated that "effective curriculum integration includes understanding how to integrate technology into the classroom curriculum successfully. This

course curriculum provides teachers a solid foundation of computer literacy, information literacy, and integration literacy" (p.34).

This class is taught in three different modalities; however, this study focused on the online sections. All three sections used for this study were taught fully online. There were three different instructors who taught each section. Course evaluation is based on discussions and reflections, lab assignments, quizzes, participation, projects, and a final integration project. Additionally, eCommunities were used in all the sections of EME 2040. The eCommunity utilized at UCF provides a complete list of the students' information such as major, bibliography, avatar, and contact e-mail address.

Instrumentation

Three instruments were used in this study to measure students' online social presence, motivation, and instructors' verbal immediacy behaviors. Data to examine demographic information was also gathered. Student demographic information was collected to elicit the students' personal and educational background information that included the last four digits of the phone number, gender, age, ethnicity, level of education and years of experience using technology and the Internet. The last four digits of the phone number, which are part of the students' ID numbers, were used to identify and match student responses. The first instrument used was Gunawardena's Social Presence Scale to measure students' perceived feeling of social presence in an online learning environment (Gunawardena & Zittle, 1997). The second instrument was Keller's (1993) Course Interest Survey, which contained 34 items that measure situational components of the ARCS Model for learner interest in an instructor-facilitated online learning environment. The third instrument was Gorham's (1988) verbal immediacy scale,

which consisted of 14 items measuring the instructor's "classroom" demeanor and name recognition as perceived by students. These instruments will be discussed in the followed sections.

Student Demographic Information

In this research study, the demographic questionnaire consisted of 12 items to elicit online students' personal and background information (see Appendix A). These question items included "Gender," "Age," ""Ethnicity," "Occupation Status," "How long have you been using the computer?" "How long have you been using the Internet?" "How many online courses have you taken before?" "Level of computer competency," and "Level of education."

Online Social Presence Scale

The Online Social Presence Scale (see Appendix A) measures students' perceived feeling of online social presence (Gunawardena & Zittle, 1997). A 12-item questionnaire was developed using a 5-point Likert scale with 1="Strongly Disagree," 2="Disagree," 3="Uncertain," 4="Agree," and 5="Strongly Agree." The Online Social Presence Instrument was used during the Fall 2007 semester on three different occasions: the second week, the eighth week, and the fourteenth week of classes. Sample questions entailed statements such as "I felt comfortable introducing myself in this online course," "I was able to form distinct individual impressions of some students even though we communicated only via online discussion, e-mail, and chat," and "I felt comfortable interacting with other students in this online course."

Gunawardena and Zittle (1997) used the Social Presence Scale to examine social presence as a predictor of student satisfaction within a computer-mediated conference context. Six paired items that measured the social aspect of the communication medium were selected to

serve as an argument for the validity of the social presence measure. High correlations were found between the social presence measure and the intimacy of medium measure suggesting that Social Presence Scale used in the study accurately measured the intended social presence parameters (Gunawardena & Zittle, 1997). Richardson and Swan (2003) used the Social Presence Scale to explore the role of social presence in an online learning environment and its relationship to students' perceptions of learning and satisfaction. Kreijns, Kirschner, Jochems, and Van Buuren's (2004) study resulted in a Cronbach's alpha that revealed a high internal consistency for Social Presence Scale scores, which was .81.

Course Interest Survey

Student motivation was measured in the Course Interest Survey (see Appendix A) compiled and validated by Keller (J. M. Keller & Subhiyah, 1993). The Course Interest Survey consisted of 34 items that measure situational components of the ARCS Model for learner interest in an instructor-facilitated online learning environment. For each item, students were asked to indicate how true a statement was. The items were measured on a five-point scale with 1="Not true," 2="Slightly true," 3="Moderately true," 4="Mostly true," and 5="Very true." Sample items included statement such as, "The things I am learning in this course will be useful to me," "You have to be lucky to get good grades in this course," and "I have to work too hard to succeed in this course." The overall Cronbach's alpha coefficient of .95 was reported in the Course Interest Survey with Attention .84, Relevance .84, Confidence .81, and Satisfaction .88, respectively (J. M. Keller, 2006; J. M. Keller & Subhiyah, 1993). Gabrielle (2003) used the Course Interest Survey to measure situational components of the ARCS model for learner's motivation in a particular course and found a significant difference between treatment and

control groups. These results suggested high validity and reliability of the Course Interest Survey instrument.

Verbal Immediacy Scale

The Verbal Immediacy Scale consisted of 18 items that measured the instructor's classroom demeanor and name recognition as perceived by students (Gorham, 1988). Swan (2002) studied the relationship between verbal immediacy and student learning in the online course discussions, and the results showed a Cronbach's alpha of .94 for the verbal immediacy scale items. Saechou (2005) reported a Cronbach's alpha of .90 for data comprised of items similar to those used in the instrument for this study. Jason (2004) measured the instructor verbal immediacy using similar items in an online classroom and established strong relationships between instructor verbal immediacy and cognitive learning. Occurrences were measured on a five-point frequency scale with 1="Never," 2="Rarely," 3="Occasionally," 4="Often," and 5="Very often." Sample items were "Uses personal examples or talks about experiences she/he has had outside of class," "Asks questions that solicit viewpoints or opinions," "Praises students' work, discussion or comments."

Data Collection Procedures

Three surveys were administered online during the Fall 2007 semester. During September, the second week of the semester, students were asked to complete the online questionnaires including student demographic information, the Social Presence Scale, and the Course Interest Survey. After the midterm examination, students were asked to complete a second questionnaire including the Social Presence Scale, Course Interest Survey, and Verbal

Immediacy Scale. Before the final exam, students were asked to fill out the third questionnaire including the Social Presence Scale, Course Interest Survey, and Verbal Immediacy Scale.

The researcher contacted the instructors of each section to discuss the importance of this study and explain the data collection procedure and schedule in August 2007, before the Fall semester. Prior to each survey, the researcher sent each instructor a reminder that contained the survey links and the administration period timelines. The instructors advised their students to take the online survey.

An e-mail was sent to each student asking for participation in this research study. Instruction on how to complete the online survey was provided at the beginning of each survey. It took approximately 20 minutes for students to complete the survey. A temporary ID was assigned to each student in order to track students' responses among three surveys. The IDs were the combinations of students' initials and last four digits of their phone numbers.

Student participation in this study was voluntary and anonymous. Students completing all of the assessment instruments were awarded a $10 iTune coupon at the end of the semester. The informed-consent letter (see Appendix C) was presented to students prior to their completing each survey. Whether or not students participated in the study, there was no detrimental effect on their relationship with the instructor, the researcher, or the university.

All the data collected from the online survey were imported into SPSS for further data analysis. In Course Interest Survey, questions 4, 6, 7, 8, 11, 17, 25, 26, and 31 were reverse coded and imported into SPSS. In Social Presence Scale, survey questions 1 and 9 were reversed coded and imported into SPSS.

Data Analysis

The internal consistency reliability coefficients for online social presence, motivation, and instructor's verbal immediacy were examined. Internal consistency reliability for the Online Social Presence scale was .78. Internal consistency reliability for the Course Interest Survey instrument was .84. Internal consistency reliability for the Verbal Immediacy Scale was .82. A repeated measure analysis of variance was used to examine whether online social presence and motivation changed significantly across a semester. Using repeated measure makes an experiment more efficient and helps keep the variability low. It helps to keep the result validity high and still allow for small subject groups. Regression was used to examine the relationship between students' online social presence and motivation over time. Multiple regression analysis was employed to examine whether the students' perceived online social presence was influenced by factors such as gender, ethnicity, and instructors' verbal immediacy behaviors.

Multiple regression is employed to account for the variance in an interval dependent, based on linear combinations of interval, dichotomous, or dummy independent variables (Garson, 2007). Multiple regression analysis is also a very flexible data-analytic system that can establish the relationship between a quantitative variable and factors of interest (Cohen & Cohen, 1983). Using multiple regression, other factors such as gender and verbal immediacy can also be added as independent variables to explore curvilinear effects. Furthermore, this study used repeated measure analysis of variance to examine whether online social presence and motivation changed over time. The benefits of using repeated measure in multivariate format is that the multivariate repeated measure design offers researchers multiple opportunities to test research hypotheses without the sphericity assumption (Minke, 1997).

Summary

This study is a correlational research study to examine relationships between students' online social presence and motivation. Students enrolled in three online sections of EME 2040, Introduction of Educational Technology, at UCF voluntarily and anonymously participated in this study. There were a total of 90 participants in three online sections. An online questionnaire with three varied scales was administered three times during the Fall 2007 term. The validated questionnaire comprised three scales and demographic questions. Data was collected and housed in a password-protected server. Repeated measure in SPSS was used to examine the changes of student perceived online social presence and motivation. Regression was used to analyze the relationship between online social presence and student motivation. Multiple regression was used to analyze the relationship between students' online social presence and verbal immediacy moderated by other factors.

CHAPTER FOUR: RESULTS

Introduction

The purpose of the study was to investigate the relationship between the level of student motivation and perceived online social presence in an online course. The study was further designed to determine what factors such as gender, verbal immediacy, ethnicity influence social presence in an online course. The questions for this research study were: (1) Was there a change in student motivation from the beginning to the end of the semester as measured by Keller's Course Interest Survey? (2) Was there a change in student perceived online social presence from the beginning to the end of the semester as measured by Gunawardena's Social Presence Scale? (3) What's the relationship between online social presence and student motivation? (4) What factors such as gender, verbal immediacy, ethnicity influence social presence in an online course? Questions 1 and 2 were answered using repeated measure analysis of variance. Questions 3 and 4 were answered using correlation tests and multiple linear regression analysis.

The results of the data analysis are presented in three sections. The first section presents the descriptive statistics of the survey respondents. The second section describes the characteristics of the data. The third section focuses on the results organized by the research questions.

Demographic Data

Participants were purposely sampled from the students' enrolled three sections of EME 2040, Introduction of Educational Technology, during Fall 2007. Seventy-four students from three sections responded to the study and 70 respondents are qualified for the analysis, which includes 23 respondents from section 1, 21 respondents from section 2, and 26 respondents from section 3. See Table 2.

Table 2: Online Course Section Completed

Section	N	%
Section 1	23	32.9
Section 2	21	30.0
Section 3	26	37.1
Total	70	100.0

Participation in the study was on a voluntary basis. Of the 70 students who participated in this study, 55 were female and 15 were male.

Table 3: Gender of Participants

Gender	N	%
Female	55	79.0
Male	15	21.0
Total	70	100.0

Participants' ages ranged from 18 to 30. The three main ethnic groups were African-American, Asian, and Caucasian. There were 10 African-American students, 6 Asian students, and 54 Caucasian students, as shown in Table 4.

Table 4: Ethnicity of Participants

Ethnicity	n	%
African-American	10	14.0
Asian	6	9.0
Caucasian	54	77.0
Total	70	100.0

The occupation status revealed that 39 of the participants (56%) were full-time students that did not have employment. See Table 5.

Table 5: Occupation Status of Participants

Occupation Status	n	%
Full-time worker	9	13.0
Part-time worker	22	31.0
Don't work	39	56.0
Total	70	100.0

All the participants had Internet access at home. The majority of the participants were using high-speed Internet access. Only two participants were using dial-up connections for the Internet. See Table 6.

Table 6: Internet Access at Home

Internet Access	n	%
Cable	29	41.0
DSL	38	54.0
Dial-up	2	3.0
Total	70	100.0

Among the 70 participants, the majority of the sample were sophomore students (n = 30) which was 43% of the participants. The results of the education level of participants are shown in Table 7.

Table 7: Education Level Completed

Education Level	n	%
Freshman	10	14.0
Sophomore	30	43.0
Junior	23	33.0
Senior	7	10.0
Total	70	100.0

When asking about years of using computer, the average was 9.2 years, and the average of Internet experience was 8.7 years. Years of computer experience ranged from 4 years to 16 years, and years of Internet experience ranged from four years to 13 years. This information is summarized in Table 8.

Table 8: Prior Technology Experience

	Mean	Std. Deviation	Minimum	Maximum
Years of using computer	9.23	1.95	4	16
Years of using Internet	8.74	1.64	4	13

This was the first online class for 31% of the students in this study, and 69% had taken at least one online course. Forty-eight students had taken at least one online course, as shown in Table 9.

Table 9: Internet Access at Home

Online Courses Taken	n	%
First online course	22	31.0
Completed 1 online course	16	23.0
Completed 2 online courses	18	26.0
Completed 3 or more online courses	14	20.0
Total	70	100.0

Descriptive Statistics

Online social presence, motivation, and verbal immediacy were investigated in this study. The possible point value for each variable ranged from 1 to 5. In Online Social Presence Scale, 5 represented the highest level of student perceived social presence and 1 represented the lowest level of student perceived social presence. The mean of the student perceived social presence level for the first survey was 3.84, and skewness was -.44. The mean of the social presence level for the second survey was 4.06, and skewness was -1.04. The mean of the social presence level for the third survey was 3.90, and skewness was -1.08. The statistical results of skewness and kurtosis indicated that the online social presence measurement was normal distribution. The skewness and kurtosis increased over time. The data skewed toward negative from beginning of the semester to end of the semester. The data was more peaked around the mean and had fatter tails in second and third surveys. Over time, student perceived online social presence measurements had less extreme deviations. The results are summarized in Table 10.

Table 10: Social Presence Measured

Social Presence	Mean	Std. Deviation	Skewness	Kurtosis
1st Survey	3.84	.28	-.44	.77
2nd Survey	4.06	.25	-1.04	1.65
3rd Survey	3.90	.39	-1.08	4.71

In Course Interest Survey, 5 represented the highest level of motivation and 1 represented the lowest level of student motivation. The skewness and kurtosis increased from the first survey to the third survey. The data skewed toward negative over time. The data peaked around the

mean during the middle of the semester and end of the semester. Measured motivation levels had less extreme deviations in the second and third surveys. The statistical results of skewness and kurtosis are shown in Table 11.

Table 11: Motivation Level Measured

Motivation	Mean	Std. Deviation	Skewness	Kurtosis
1st Survey	3.95	.30	-.59	.25
2nd Survey	4.12	.21	-1.58	6.10
3rd Survey	4.11	.28	-1.19	4.34

In Verbal Immediacy Scale, 5 represented the highest level of verbal immediacy and 1 represented the lowest level of verbal immediacy. The skewness and kurtosis increased from the first survey to the second survey. The Verbal Immediacy score had fewer deviations in the second and third surveys. The verbal immediacy scale measurement was normal distribution, as reflected in Table 12.

Table 12: Verbal Immediacy Measured

Verbal Immediacy	Mean	Std. Deviation	Skewness	Kurtosis
1st Survey	3.23	.44	-.82	1.31
2nd Survey	3.07	.25	-1.51	3.91
3rd Survey	3.40	.38	-1.25	3.07

Internal consistency reliability Cronbach α for the Online Social Presence scale was .78. Internal consistency reliability Cronbach α for the Course Interest Survey instrument was .84.

Internal consistency reliability Cronbach α for the Verbal Immediacy Scale was .82. The results shown in Table 13 indicate that the measures of online social presence, motivation and verbal immediacy are reliable measures.

Table 13: Reliabilities of the Instruments (Cronbach Alpha)

	Cronbach α for three instruments
Social Presence	.78
Motivation	.84
Verbal Immediacy	.82

Research Question 1

Was there a change in student motivation from the beginning to the end of the semester as measured by Keller's Course Interest Survey?

A repeated measure was conducted. The result indicated that there was a statistically significant change, from the pretest to the posttest, in student motivation from the beginning of the semester to midterm ($F_{1,69} = 23.89$ $p < .01$). Mean of the student motivation level increased from 3.95 to 4.12. The results of the repeated measure are listed in Table 14. Tests of within-subjects contrasts showed that student motivation increased statistically significantly from the beginning of the semester to midterm.

Table 14: Repeated Measure for Motivation Level between First, Second, and Third Surveys

Source	df	Mean Square	F	
TEST Level 1 vs. Level 2	1	2.13	23.89	*
TEST Level 2 vs. Level 3	1	.001	.02	

Note: *p<.01

The motivation level remained at the similar level from midterm to the end of the semester. The mean of the student motivation level remained at about 4.12 from midterm to the end of the semester. There was no significant difference in motivation level from midterm to the end of the semester ($F_{1,69} = .02$ $p > .05$).

The time interval can account for 14.2% of the change in student motivation. Figure 2 presents the changes in students' motivation level across the semester.

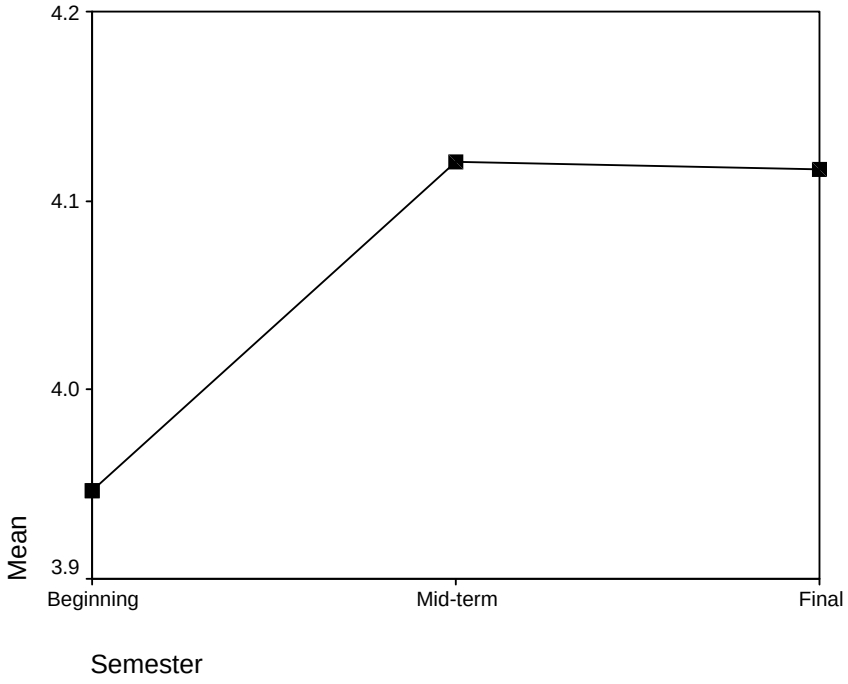

Figure 2: Student Motivation Level at Three Points during the Semester

Research Question 2

Was there a change in student perceived online social presence from the beginning to the end of the semester as measured by Gunawardena's Social Presence Scale?

A repeated measure was conducted to examine online social presence. The result indicated that there was a statistically significant change in student online social presence from the beginning of the semester to midterm ($F_{1,69} = 36.51$ $p < .01$). The mean of online social presence increased from 3.85 to 4.06. The results of the repeated measure are listed in Table 15.

Table 15: Repeated Measure for Online Presence between First, Second, and Third Surveys

Source	df	Mean Square	F
TEST Level 1 vs. Level 2	1	3.40	35.51*
TEST Level 2 vs. Level 3	1	1.94	10.65*

Note: *p<.01

The mean of online social presence significantly dropped from midterm to the end of the semester ($F_{1,69} = 10.65$ $p < .01$). The mean of student perceived online social presence level changed from 4.06 to 3.90.

The time interval can account for 14.2% of the change in student motivation. Tests of within-subjects contrasts showed that student perceived online social presence increased significantly from the beginning of the semester to midterm, and then the level of social presence significantly dropped back to the original level from midterm to the end of the semester. Figure 3 presents the changes in student perceived online social presence across the semester.

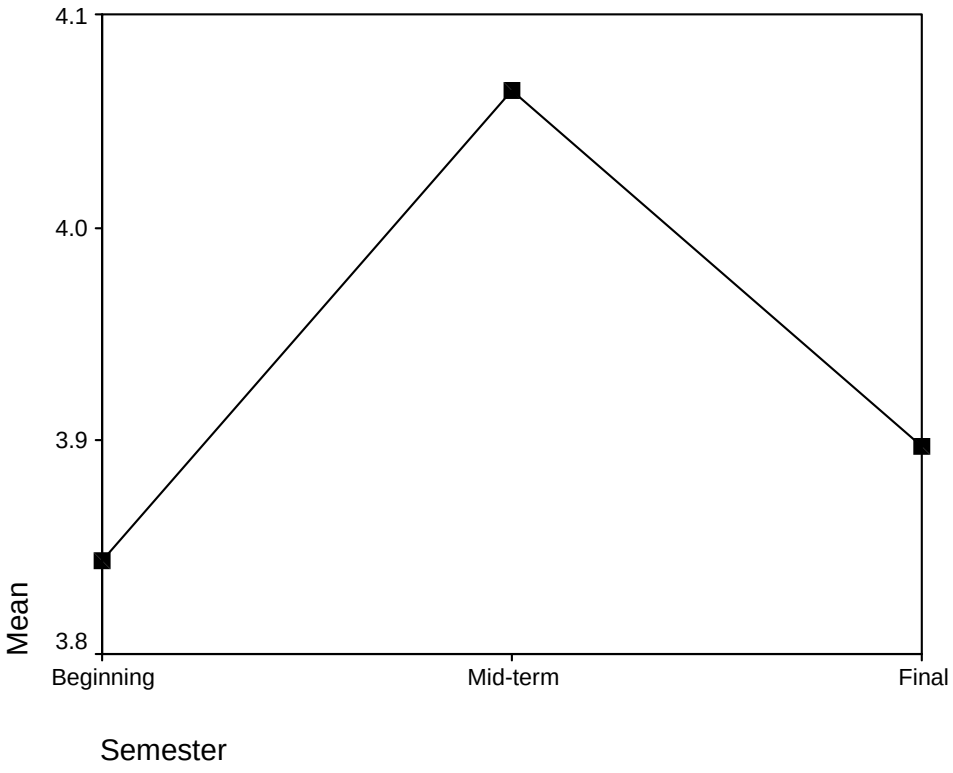

Figure 3: Student Online Social Presence at Three Points during the Semester

Research Question 3

What's the relationship between online social presence and student motivation?

Correlation tests were used to determine the relationship between online social presence and student motivation three times across the semester. In the beginning of the semester, the results showed that there was a significant relationship between online social presence and student motivation ($R = .50$ $p < .01$). Twenty-five percent of the variable can be explained by this model. During midterm, online social presence was found significantly correlated with student motivation ($R = .38$ $p < .01$). Fourteen percent of the variable can be explained by this model. At the end of the semester, online social presence was also found highly correlated with student motivation ($R = .60$ $p < .01$). Thirty-six percent of the variable can be explained by this model. This information is represented in Table 16.

Table 16: Correlation Calculation three times across the semester

		Soc. 1st	Soc. 2nd	Soc. 3rd	Mot. 1st	Mot. 2nd	Mot. 3rd
Soc. 1st	Pearson Correlation	1	.35 **	.10	.50 **	.35 **	.04
Soc. 2nd	Pearson Correlation	.35 **	1	.17	.31 **	.38 **	.08
Soc. 3rd	Pearson Correlation	.10	.17	1	-.15	.21	.60 **
Mot. 1st	Pearson Correlation	.50 **	.31 **	-.15	1	.35 **	-.10
Mot. 2nd	Pearson Correlation	.35 **	.38 **	.21	.35 **	1	.27 *
Mot. 3rd	Pearson Correlation	.04	.08	.60 **	-.10	.27	1

N = 70

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Research Question 4

What factors such as gender, verbal immediacy, ethnicity influence social presence in an online course?

Multiple regression was used to examine the relationship between online social presence and different factors such as verbal immediacy, gender, ethnicity, and interaction of gender and ethnicity. Interaction of female and African-American was not significantly related to online social presence (t = -.15 p = .88). Interaction of female and Asian was not significantly related to online social presence (t = .71 p = .48). R square for the regression model with verbal immediacy, gender, ethnicity, and interaction of gender and ethnicity was .16. Sixteen percent of the variable can be explained by this model.

Table 17: Coefficients of Predictors [a] with Verbal Immediacy, Gender, Race and Interaction

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	
(Constant)	3.09	.30		10.23	**
Verbal Immediacy	.28	.09	.37	3.16	**
Female	-.09	.08	-.18	-1.17	
African-American	-.02	.12	-.03	-.13	
Asian	-.06	.14	-.08	-.46	
Female x African-American	-.02	.15	-.03	-.15	
Female x Asian	.13	.18	.13	.71	

a. Dependent Variable: Social Presence
**Correlation is significant at the 0.01 level (2-tailed).

Since the interaction of gender and ethnicity was not significantly related to online social presence, a regression model with verbal immediacy, gender and ethnicity predictors was established. Ethnicity of being African-American was found not significantly related to online social presence, (t = -.38 p = .71). Fifteen percent of the variable can be explained by this model, as shown in Table 18.

Table 18: Coefficients of Predictors [a] with Verbal Immediacy, Gender and Race

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	
(Constant)	3.10	.29		10.66	**
Verbal Immediacy	.28	.09	.36	3.15	**
Female	-.08	.06	-.15	-1.27	
African-American	-.03	.07	-.05	-.38	
Asian	-.07	.09	-.01	-.08	

a. Dependent Variable: Social Presence
**Correlation is significant at the 0.01 level (2-tailed).

Race was found not significantly related to social presence, and a regression model with only verbal immediacy and gender predictors was created. Gender was found not significantly related to online social presence (t = -1.30 p = .20). R square for the regression model with verbal immediacy and gender was .15. Fifteen percent of the variable can be explained by this model. See Table 19.

Table 19: Coefficients of Predictors [a] with Verbal Immediacy and Gender

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	
(Constant)	3.10	.29		10.86	**
Verbal Immediacy	.28	.09	.36	3.19	**
Female	-.07	.06	-.15	-1.30	

a. Dependent Variable: Social Presence
**Correlation is significant at the 0.01 level (2-tailed).

Verbal immediacy was the only variable significantly influencing student perceived online social presence ($t = 3.15$ $p < .01$). R square for the regression model with verbal immediacy was .13. Thirteen percent of the variable can be explained by this model. The resulting regression model was Online Social Presence = 3.05 + .28 (Verbal Immediacy). The results of the ANOVA calculation are listed in Table 20.

Table 20: Coefficients of Predictors [a] with Verbal Immediacy

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	
(Constant)	3.05	.28		10.73	**
Verbal Immediacy	.28	.09	.36	3.15	**

a. Dependent Variable: Social Presence
**Correlation is significant at the 0.01 level (2-tailed).

The results of the ANOVA calculation for four regression models are listed in Table 21. The R Squares for four regression models are listed in Table 22.

Table 21: ANOVA[a] Calculation

Model		df	Mean Square	F
b	Regression	6	.08	1.98
c	Regression	4	.16	2.88*
d	Regression	2	.23	5.84**
e	Regression	1	.39	9.89**

a. Dependent Variable: Social Presence
b. Predictors: (Constant), Verbal Immediacy, Female, African-American, Asian, Female Asian, Female African-American.
c. Predictors: (Constant), Verbal Immediacy, Female, African-American, Asian.
d. Predictors: (Constant), Verbal Immediacy, Female.
e. Predictors: (Constant), Verbal Immediacy.
**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Table 22: R Square for Regression Models[a]

Model		R	R Square
b	Regression	.40	.16
c	Regression	.39	.15
d	Regression	.39	.15
e	Regression	.36	.13

a. Dependent Variable: Social Presence
b. Predictors: (Constant), Verbal Immediacy, Female, African-American, Asian, Female Asian, Female African-American.
c. Predictors: (Constant), Verbal Immediacy, Female, African-American, Asian.
d. Predictors: (Constant), Verbal Immediacy, Female.
e. Predictors: (Constant), Verbal Immediacy.

Summary

Chapter Four provides an analysis of the data collected from three online instruments that were used in this study of online students. The study was conducted during the Fall 2007 semester at University of Central Florida (N=70). Three instruments were adapted and utilized to measure student demographic information, perceived online social presence, motivation, and verbal immediacy. This online survey was administrated three times across the semester. Data were analyzed to answer the four research questions presented in this study. The research questions were formulated to investigate the relationship between the level of student motivation and perceived online social presence in an online course. Chapter Five will interpret these findings and recommend further research.

CHAPTER FIVE:
SUMMARY, DISCUSSION AND CONCLUSION

Summary

In distance education courses, the attrition rate is higher than in the traditional course settings (Moore & Kearsley, 2004). Motivation was identified as a strong predictor of success of online learning (Dettori et al., 2006). Poor motivation led to high dropout rates among online learners. Other than the motivation factor, online social presence was found highly correlated to students' online learning outcome and perceived satisfaction (Richardson & Swan, 2003). This study was designed to investigate the relationship between the level of student motivation and perceived online social presence in an online course. The researcher also examined the level of online social presence and motivation students have for an online class over time and the relationship between these variables. In addition, the researcher measured the relationships between online social presence and other factors such as gender, ethnicity and instructors' verbal immediacy behaviors. Seventy students from three sections of an online educational technology course completed three online instruments: Social Presence Scale, Course Interest Survey, and Verbal Immediacy Scale.

Discussion of the Findings

Research Question 1

Was there a change in student motivation from the beginning to the end of the semester as measured by Keller's Course Interest Survey?

The data suggested that student motivation changed across the semester. Motivation increased significantly from the beginning of the semester to midterm. The mean of student motivation increased from 3.95 to 4.12. The student motivation remained at the same level from midterm to the end of the semester with no significant changes. In this research, students were enrolled in introduction to educational technology courses that were taught online. The survey result indicated that these students were motivated throughout the semester and stayed motivated. There are several possible reasons for the lower motivation level at the beginning of the semester. The familiarity of the course content and technical skills might be the reason for students having a higher motivation level during the semester and a lower motivation level at the beginning of the semester.

Xie (2006) reported a steady decline of student motivation over time in an online discussion environment. Students reported lack of facilitation by the instructor and lack of peer responses to their postings as reasons for their declines in motivation (Xie et al., 2006). In another study, students reported lack of computer interaction and human interaction in their learning process as the main reason they got bored with the instruction, which ultimately caused waning in their persistence (Kim, 2004). In recent studies, online social presence and instructional immediacy were identified and correlated with students' motivation (Gunter, 2007; Lin et al., 2008; Newberry, 2004; Weaver & Albion, 2005). To find out the relationship between

students' motivation and online social presence, not only students' motivation was measured over time but also online social presence was measured across the semester in this study. Furthermore, correlation between motivation and online social presence was examined across the semester. By monitoring the changes in both students' motivation and online social presence over time, the researcher was able to determine whether two variables were correlated all the time.

Research Question 2

Was there a change in student perceived online social presence from the beginning to the end of the semester as measured by Gunawardena's Social Presence Scale?

The survey data suggested that student perceived online social presence significantly changed across the semester. Student perceived online social presence significantly increased from the beginning of the semester to midterm. After midterm, their perceived online social presence dropped significantly. The mean of perceived online social presence increased from 3.85 to 4.06 from the beginning of the semester to midterm, and then it dropped back to 3.9 from midterm to the end of the semester.

Online social presence score reflects the sense of community in an online course (Aragon, 2003). The result suggested that students in this study had stronger feeling of community in the middle of the semester rather than at the beginning and at the end of the semester. Sixty-nine percent of the students in this research study had taken more than one online course before. The average number of years of using computer was 9.23, and the average number of years of using Internet was 8.74. The minimum number of years of using computer and Internet was 4. The data indicated that most of the students were very familiar with computers and using computer to access information over Internet. Technology was not found to be the cause for the fluctuation of the level of perceived online social presence. It is possible that students were not familiar with each other and felt less involved as a community at the beginning of the semester. At the ending of the semester, it is likely that students may have been occupied with course requirements such as final assignments and final exams, and spent less time communicating with each other. These causes might contribute to the significant changes of

online social presence over the semester. Weaver (2005) conducted a study that found students' perceived online social presence declined over the semester. This finding is consistent with the results found in this study. Weaver (2005) reported that participation encouraged participation in a form of a virtuous circle, and provided the initial impetus and modeling which were important to maintain high-level social presence in an online course. Yoon (2004) observed that virtual team members tried early on to enhance the social presence within an online environment, and the proportion of social behaviors decreased over time. Sharing personal background information and discussing the course became less frequent over time; however team members increased their efforts to build member relationships and support through making statements and exchanging fun and jokes (Yoon, 2004). The findings of this study support other studies and add to the field of research that instructors may need to change communication and assignments to increase students' participation with each other after a midpoint in the semester.

In previous research study, Weaver (2005) measured the social presence only twice in one online courses and found a small decline of perceived online social presence level from the first test to the second test; however, the result of this research study indicated that student perceived online social presence significantly increased, then decreased over time. This research supports the notion that the level of student perceived online social presence fluctuated over time in an online course. Comparing to motivation level, student perceived online social presence changes more significantly over time. It was possible that students' perceived online social presence levels were easily influenced by various factors such as instructors' verbal immediacy levels, online discussions, and course progress.

Research Question 3

What's the relationship between online social presence and student motivation?

Significant correlations were identified between online social presence and student motivation three times across the semester. From 14.44% to 36% of the variable can be explained by the correlation model. Student perceived online social presence significantly correlated to student motivation from the beginning of the semester to the end of the semester. Students with a stronger sense of online social presence had a higher level of motivation. Students with less sense of online social presence had a lower level of motivation. All three correlational tests indicated a strong relationship between these two variables.

The positive relationship between student motivation and online social presence was consistent with findings of previous research studies. Weaver (2005) found the existence of a relationship between learners' perceptions of social presence and their motivation for participation in online discussions. Gunter (2007) identified a similar positive relationship between online social presence and student motivation. Lin (2008) also reported a statistically significant correlation covariance between online social presence and student motivation.

This research study was designed not only to monitor and measure both online social presence and student motivation over time but also to examine the relationships between these two variables three times throughout the semester. The result revealed that students' perceived online social presence and motivation highly correlated to each other even though they fluctuated significantly over time. Weaver and Albion (2005) found a significant correlation between online social presence and motivation in both pretest and posttest. In their study, only the online social presence level significantly declined over times and the motivation level was similar from pretest to posttest. It was possible that students' motivation levels and perceived online social

presence levels affected each other in an online course. Students who were motivated to be successful in this online course were more willing to engage in online communication and may have been more comfortable with the environment. Through intensive online communication, these students would have higher levels of social presence feelings. On another hand, students with higher levels of social presence feelings were more willing to communicate with other online students and eventually were more motivated to succeed in this online course.

Research Question 4

What factors such as gender, verbal immediacy, and ethnicity influence social presence in an online course?

The regression model indicated that verbal immediacy was the only factor significantly influencing online social presence. Gender, ethnicity groups, and their interactions did not influence social presence significantly in this study. Students perceiving higher levels or more verbal immediacy had a stronger sense of community feeling.

Several studies conducted recently have confirmed this similar research correlation between instructor immediacy and online social presence. Wheeler (2005) concluded that instructor immediacy was an important consideration when creating social presence in a distance learning environment. Gunter (2007) found instructor immediacy behaviors can positively facilitate feelings of closeness and liking by the participants in an online class throughout the semester and impact students' intrinsic motivation. Bozkaya (2008) reported that instructors' verbal immediacy communication skills enhanced learners' social presence in a synchronized distance learning environment. Schutt (2008) also identified a strong positive relationship between perceived instructor immediacy and perceived instructor social presence. When perception of instructor immediacy increases, perception of social presence increases. In Schutt's research, the regression equation showed that 71.2% of the variance in social presence could be predicted by the perception of instructor immediacy. In this study, 15.9% of the variance in social presence can be predicted by the perception of instructor immediacy over time.

The instructor's role was extremely important in an online class environment. Instructors found a way to create positive experiences even though neither the instructors nor the students

were physically in the traditional face-to-face classroom. They had an impact on students' perceived social presence through their online verbal behaviors. If the instructor scores higher on the verbal immediacy scale, students will have higher levels of social presence feeling. Therefore, instructor's verbal immediacy behaviors in an online course affect not only students' social presence feelings, but also their motivation levels.

Conclusion

The main goal of this study was met by determining the correlation between online social presence and student motivation. Research questions were answered by examining the changes of online social presence and student motivation across the semester and the relationship between both variables over time. A regression equation was established to determine the factors influencing online social presence.

A significant relationship was identified between student perceived online social presence and motivation. Perceived online social presence and student motivation significantly increased during the semester. Verbal immediacy was significantly related to online social presence. Gender and ethnicity did not significantly affect online social presence.

The research findings in this study were consistent with previous research findings. Recently, more research studies have been conducted to investigate online social presence and its impact upon motivation and learning outcome in online learning environments. Online social presence was found correlated with student motivation, satisfaction, performance, and eventually the cognitive leaning outcome (Gunter, 2007; Kreijns et al., 2004; G. E. Lee, 2008; Lin et al., 2008; Newberry, 2004; Richardson & Swan, 2003; Schutt, 2008; J. A. B. Smith, 2006; Swan, 2002; Wheeler, 2005; Wise et al., 2004). This research examined the relationship between

online social presence and student motivation across the semester and found significant correlations in the beginning of the semester, during the midterm, and at the end of the semester. Even though highly correlated with each other, the social presence significantly increased then decreased across the semester and the motivation level increased significantly and remained consistent over time. Social presence was found decreasing from pretest to posttest over time in earlier research (Weaver & Albion, 2005; Yoon, 2004). This research study measured online social presence three times and found that it increased significantly first then decreased significantly later in one semester. The possible reason for the fluctuation may be the change of content in online social communication. After the semester started, students tried to enhance the social presence by sharing personal background information and starting to discuss the course (Yoon, 2004). After midterm, such efforts became less frequent, and the online social presence decreased from midterm to the end of the semester. Compared to online social presence, student motivation increased significantly over time and remained same from midterm to the end of the semester. The student motivation increase result was contrary to earlier research; however, it matched the increase of student online social presence in this research study. The increase of online social presence level led to the increase of student motivation. Gunter (2007) stated that instructor immediacy affected student perceived online social presence and eventually motivated the students to a higher level cognitive learning result. Weaver (2005) observed that students looked forward to receiving responses to their postings and were more inclined to post again if they received responses in an online learning environment. Students' participation increased students' perceived online social presence feelings and eventually encouraged their participation again in a form of cycle. The instructor's role was also important in an online course

environment. The instructor's verbal immediacy behaviors affect students' online social presence feeling and their motivation levels.

Recommendations for Further Research

Based upon related research and the findings of this study, the following recommendations are made for future research:

1. Future research should examine the causal relationship between online social presence and student motivation. Online social presence was found highly correlated with student motivation repeatedly over the semester. It was possible that students with higher-level motivation were more inclined to participate in the online course chat, discussion, and e-mailing. Such social behaviors led them to higher levels of perceived online social presence. On another hand, higher levels of perceived online social presence may provide students higher levels of motivation. Therefore, instructor-facilitated online discussion may provide students higher-level perceived online social presence, which may lead to the improvement of students' motivation. Investigation of the causal relationship between these two variables will assist researchers and instructors to ensure students' success in an online course.
2. Further studies need to be conducted in other online courses and different course management systems. Online course management systems are Web applications that create, manage and deliver online courses to students. Online course management systems also manage students' enrollments and track students' performance. Most of these online course management systems provide common functions such as content management, communication, collaboration, and assessment. More advanced functions

include podcasting, synchronous meeting toolsets, wikis, blogs, RSS feed, and immersive learning environments. Popular platforms used by education institutions are WebCT, Blackboard, Desire2Learn, ANGEL, and Moodle course management systems. This research study gathered data from a single study using three online course sections within one specific course at one university in one semester using the WebCT platform, which limited the generality of the research results. More research in different populations of students enrolled in different online courses and universities are necessary to validate and expand the research results.

3. Additional qualitative research studies are necessary to investigate the reasons for the decrease of students' online social presence over time. Researchers need to examine online course discussions, course structure, individual assignments, group assignments, and online communication to find the causes and influencing factors contributing to the social presence decrease.
4. In this research study, 31% of the students reported that this was their first online course. Expectations and online learning experiences may differ between students with or without online course experience. Further data analysis should compare motivation, perceived online social presence, and verbal immediacy over time between students with previous online learning experience and students with no previous online learning experience.
5. In this research study, all the students had more than four years' experience of using computers and the Internet. Technology self-efficacy was not measured in this study. Future research should also examine the effect of technology self-efficacy and prior experience with social presence. It will be beneficial for instructors to know whether a

student with lower-level technical skill or confidence in technology use will feel less comfortable in an online learning environment and less motivated to participate in social interactions in an online course.

6. Further studies need done establishing best practices for instructors to monitor and enhance online social presence for students. It is essential to prepare sets of strategies that instructors can use to increase social interaction in an online learning environment. Identified strategies include providing frequent and specific feedback and praise, addressing the students by name in all correspondence, relating to the students on a personal and professional level, and using emoticons to create a supportive tone (Gunter, 2007).
7. In addition to focusing on instructional methods and strategies, additional research studies are necessary to compare students' online social presence and perceived instructor verbal immediacy levels with different learning styles. Learning styles have been found to influence not only academic outcomes but also how students interact with instructors (Cano, 1999; Sahin, 2008; Witkin, 1973; Witkin & Goodenough, 1977). Based on different learning styles, students have different preferences for different learning environments, and they may have different levels of online social presence and perceived instructor verbal immediacy in an online course. Understanding different learning styles, researchers would be able to develop more efficient and effective online instructional strategies.
8. Furthermore, an instructor verbal immediacy scale can be used in faculty evaluations for online courses and programs. Verbal immediacy levels significantly influence students' perceived online social presence. Instructors can affect students' perceived online social

presence and their motivation. A verbal immediacy scale can measure how the instructor facilitates the online course. Measuring and enhancing faculty online verbal immediacy will improve online course quality and student online learning experiences.

9. Some research studies indicated that learner characteristics have serious impacts on student perceived online social presence, immediacy behaviors, and related satisfaction and performance levels (G. E. Lee, 2008; Mykota & Duncan, 2007; Tu & McIsaac, 2002; Wheeler, 2005; Wise et al., 2004). Further studies are necessary to look at how students' demographic characteristics, gender, age, and cultural background influence their perceived online social presence. In this study, the researcher found that ethnicity did not influence the student online social presence level. However, how different cultural backgrounds and values influence students' online social presence levels was not measured and analyzed in this study. Further research studies need to compare students' online social presence levels among different online student populations with various cultural values and backgrounds.

APPENDIX A: QUESTIONNAIRE INSTRUMENT

Part I: Student Demographic Information

Thank you for your assistance! Your responses will remain anonymous

Temporary ID: _____ (initials and last 4 digits of your phone number)
Confirm your ID: _____

Part 1: Demographic Information Instrument

1. Course info: EME 2040 Section ___
   Instructor: ___ Name 1 ___ Name 2 ___ Name 3

2. Gender: Male Female
3. Age: _____
4. Ethnicity: African-American Asian Caucasian Hispanic Native American Other __
5. Occupation Status: Full-time worker, Part-time worker, Don't work
6. How long have you been using the computer? _____ years _____ months
7. How long have you been using the Internet? _____ years _____ months
8. Do you have an Internet access at home?
   ___ Yes ___ No. If Yes, what's the connection speed: __ Cable __ DSL __ Dial-up
9. How many online courses have you taken before: _____
10. Circle the Estimate your level of computer expertise:
    No experience, Novice, Intermediate, Expert
11. Circle the Level of education:
    Freshman, Sophomore, Junior, Senior, Post-Baccalaureate, Graduate Student, Other

Part II: Social Presence Scale

Use with the kind permission of Dr. Gunawardena, Charlotte N. (Lani) and adapted from the Social Presence Scale in 1997

For the following questions please circle the number which best reflects your online experience.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1. Messages in this online course were impersonal	5	4	3	2	1
2. Online discussion, email, and chat is an excellent medium for social interaction	5	4	3	2	1
3. I felt comfortable conversing through online discussion, email, and chat	5	4	3	2	1
4. I felt comfortable introducing myself in this online course	5	4	3	2	1
5. The introductions enabled me to form a sense of online community	5	4	3	2	1
6. I felt comfortable participating in online course discussion	5	4	3	2	1
7. The instructor created a feeling of an online community	5	4	3	2	1
8. The instructor facilitated discussions in this online course	5	4	3	2	1
9. Discussions using online discussion, email, chat tend to be more impersonal than face-to-face discussions.	5	4	3	2	1
10. I felt comfortable interacting with other students in this online course	5	4	3	2	1
11. I felt that my point of view was acknowledged by other students in this online course	5	4	3	2	1
12. I was able to form distinct individual impressions of some students even though we communicated only via online discussion, email, and chat.	5	4	3	2	1

Part III: Course Interest Survey

The writer expresses his thanks to Dr. John Keller for his permission to use the Course Interest Survey

There are 34 statements in this questionnaire, Please think about each statement in relation to the instructional materials you have just studied, and indicate how true it is. Give the answer that truly applies to you, and not what you would like to be true, or what you think others want to hear.

Think about each statement by itself and indicate how true it is. Do not be influenced by your answers to other statements.

	Very true	Mostly true	Moderately true	Slightly true	Not true
1. The instructor knows how to make us feel enthusiastic about the subject matter of this course.	5	4	3	2	1
2. The things I am learning in this course will be useful to me.	5	4	3	2	1
3. I feel confident that I will do well in this course.	5	4	3	2	1
4. This class has very little in it that captures my attention.	5	4	3	2	1
5. The instructor makes the subject matter of this course seem important.	5	4	3	2	1
6. You have to be lucky to get good grades in this course.	5	4	3	2	1
7. I have to work too hard to succeed in this course.	5	4	3	2	1
8. I do NOT see how the content of this course relates to anything I already know.	5	4	3	2	1
9. Whether or not I succeed in this course is up to me.	5	4	3	2	1
10. The instructor creates suspense when building up to a point.	5	4	3	2	1
11. The subject matter of this course is just too difficult for me.	5	4	3	2	1
12. I feel that this course gives me a lot of satisfaction.	5	4	3	2	1
13. In this class, I try to set and achieve high standards of excellence.	5	4	3	2	1
14. I feel that the grades or other recognition I receive are fair compared to other students.	5	4	3	2	1
15. The students in this class seem curious about the subject matter.	5	4	3	2	1
16. I enjoy working for this course.	5	4	3	2	1

17. It is difficult to predict what grade the instructor will give my assignments.	5	4	3	2	1
18. I am pleased with the instructor's evaluations of my work compared to how well I think I have done.	5	4	3	2	1
19. I feel satisfied with what I am getting from this course.	5	4	3	2	1
20. The content of this course relates to my expectations and goals.	5	4	3	2	1
21. The instructor does unusual or surprising things that are interesting.	5	4	3	2	1
22. The students actively participate in this class.	5	4	3	2	1
23. To accomplish my goals, it is important that I do well in this course.	5	4	3	2	1
24. The instructor uses an interesting variety of teaching techniques.	5	4	3	2	1
25. I do NOT think I will benefit much from this course.	5	4	3	2	1
26. I often daydream while in this class.	5	4	3	2	1
27. As I am taking this class, I believe that I can succeed if I try hard enough.	5	4	3	2	1
28. The personal benefits of this course are clear to me.	5	4	3	2	1
29. My curiosity is often stimulated by the questions asked or the problems given on the subject matter in this class.	5	4	3	2	1
30. I find the challenge level in this course to be about right: neither too easy not too hard.	5	4	3	2	1
31. I feel rather disappointed with this course.	5	4	3	2	1
32. I feel that I get enough recognition of my work in this course by means of grades, comments, or other feedback.	5	4	3	2	1
33. The amount of work I have to do is appropriate for this type of course.	5	4	3	2	1
34. I get enough feedback to know how well I am doing.	5	4	3	2	1

Part IV: Verbal Immediacy Scale

The writer expresses his thanks to Dr. Joan Gorham, for her permission to use the Immediacy Behavior developed in 1988

Please read each statement carefully; then indicate the frequency with which the instructor used each behavior by selecting the appropriate answer on the "never" to "very often" scale.

	Very often	Often	Occasionally	Rarely	Never	
1. Uses personal examples or talks about experiences she/he has had outside of class.	5	4	3	2	1	
2. Asks questions or encourages students to participate.	5	4	3	2	1	
3. Gets into discussions based on something a student brings up even when this doesn't seem to be part of his/her lesson plan.	5	4	3	2	1	
4. Uses humor in discussion.	5	4	3	2	1	
5. Addresses students by name.	5	4	3	2	1	
6. Addresses me by name.	5	4	3	2	1	
7. Gets into conversations with individual students	5	4	3	2	1	
8. Has initiated conversations with me.	5	4	3	2	1	
9. Shares funny anecdotes or stories	5	4	3	2	1	
10. Refers to class as "our" class or what "we" are doing.	5	4	3	2	1	
11. Provides feedback on my individual work through comments on papers, discussion, etc.	5	4	3	2	1	
12. Calls on students to answer questions even if they have not indicated that they want to participate the discussion.	5	4	3	2	1	
13. Asks how students feel about an assignment, or discussion topic.	5	4	3	2	1	
14. Invites students to contact him/her directly if they have questions or want to discuss something.	5	4	3	2	1	
15. Asks questions that solicit viewpoints or opinions.	5	4	3	2	1	
16. Praises students' work, discussion or comments.		5	4	3	2	1
17. Will have discussions about things unrelated to class with individual students or with the class as a whole.	5	4	3	2	1	
18. Is addressed by his/her first name by the students.	5	4	3	2	1	

APPENDIX B: UCFIRB PERMISSION LETTER

University of Central Florida

Office of Research & Commercialization

April 13, 2007

Yedong Tao
610 Forest Drive
Casselberry, FL 32707

Dear Mr. Tao:

With reference to your protocol #07-4360 entitled, "The Relationships between Motivation and Online Social Presence in an Online Class," I am enclosing for your records the approved, expedited document of the UCFIRB Form you had submitted to our office. **This study was approved on 4/12/2007. The expiration date for this study will be 4/11/2008.** Should there be a need to extend this study, a Continuing Review form must be submitted to the IRB Office for review by the Chairman or full IRB at least one month prior to the expiration date. This is the responsibility of the investigator.

Please be advised that this approval is given for one year. Should there be any addendums or administrative changes to the already approved protocol, they must also be submitted to the Board through use of the Addendum/Modification Request form. Changes should not be initiated until written IRB approval is received. Adverse events should be reported to the IRB as they occur.

Should you have any questions, please do not hesitate to call me at 407-823-2901.

Please accept our best wishes for the success of your endeavors.

Cordially,

Joanne Muratori

Joanne Muratori
IRB Coordinator
(FWA00000351 Exp. 5/13/07, IRB00001138)

Copies: IRB File
Glenda Gunter, Ph.D.

JM:jm

12201 Research Parkway • Suite 501 • Orlando, FL 32826-3246 • 407-823-3778 • Fax 407-823-3299

REVIS

Online Survey Consent Letter
(Request waiver of documentation of consent. Anonymous, no signatures needed)

Dear Student:

My name is Yedong (Terry) Tao and I am a graduate student working under the supervision of a faculty member, Dr. Glenda Gunter. You are being asked to participate in a study designed to understand relationship between the level of student motivation and perceived online social presence in an online course. This research project was designed solely for research purposes and no one except myself will have access to your responses. All responses will be kept confidential to the extent provided by law. You will receive $10 iTune online music store credits for your participation at the end of the semester. The $10 iTune coupon code will be given after you finished all three surveys.

Three surveys will be administered across Fall 2007 semester. It should not take more than 20 minutes to complete each survey. Your participation in this study is voluntary. And you must be 18 years of age or older to participate. You do not have to answer any question(s) that you do not wish to answer. Please be advised that you may choose not to participate in this research, and you may withdraw from this study at any time without consequence except the $10 iTune coupon. In order to receive $10 iTune coupon code, you need to finish all three surveys. Non-participation will not affect your grade. There are no direct benefits for participation other than the $10 iTune coupon. Also, there are no anticipated risks associated with participation.

If you have any questions about this research project, please contact me at (407) 484-3284 or by email at yedtao@mail.ucf.edu. My faculty supervisor, Dr. Glenda Gunter, may be contacted at 407-823-3502 or by email at ggunter@mail.ucf.edu. Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (IRB). Questions or concerns about research participants' rights may be directed to the Institutional Review Board Office, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246. The telephone numbers are (407) 823-2901 and (407) 882-2276.

Sincerely,
Yedong (Terry) Tao
Doctoral student

For the improvement of online education provided at UCF, your participation in this study is critical. Please help us to create a better online learning environment for you.

- ❑ I voluntarily agree to participate in this study.
- ❑ I am at least 18 years of age or older.
- ❑ I agree to participate in this study.
- ❑ I don't agree to participate in this study.

APPROVED
University of Central
Institutional Review
CHAIRMAN

APPENDIX C: INFORMED CONSENT NOTICE

Dear Student:

My name is Yedong (Terry) Tao and I am a graduate student working under the supervision of a UCF faculty member, Dr. Glenda Gunter. You are being asked to participate in a study designed to understand relationship between the level of student motivation and perceived online social presence in an online course. This research project was designed solely for research purposes and no one except me will have access to your responses. All responses will be kept confidential to the extent provided by law. You will receive $10 iTune online music store credits for your participation at the end of the semester. The $10 iTune coupon code will be given after you have completed all three surveys.

The three surveys will be administered across the Fall 2007 semester. It should not take more than 20 minutes to complete each survey. Your participation in this study is voluntary. You must be 18 years of age or older to participate. You do not have to answer any question(s) that you do not wish to answer. Please be advised that you may choose not to participate in this research, and you may withdraw from this study at any time without consequence except loss of the $10 iTune coupon. In order to receive $10 iTune coupon code, you need to finish all three surveys. Non-participation will not affect your grade. There are no direct benefits for participation other than the $10 iTune coupon. Also, there are no anticipated risks associated with participation.

If you have any questions about this research project, please contact me at (407) 484-3284 or by email at yedtao@mail.ucf.edu. My faculty supervisor, Dr. Glenda Gunter, may be contacted at 407-823-3502 or by email at ggunter@mail.ucf.edu. Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (IRB). Questions or concerns about research participants' rights may be directed to the Institutional Review Board Office, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246. Their telephone numbers are (407) 823-2901 and (407) 882-2276.

Sincerely,
Yedong (Terry) Tao
Doctoral student

- -

For the improvement of online education provided at UCF, your participation in this study is critical. Please help us to create a better online learning environment for you.

- ☐ I voluntarily agree to participate in this study.
- ☐ I am at least 18 years of age or older.
- ☐ I don't agree to participate in this study.

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