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## ACCEPTANCE

This dissertation, A CASE STUDY OF STUDENT-INSTRUCTOR CONNECTEDNESS IN AN ASYNCHRONOUS, MODULAR ONLINE ENVIRONMENT, by ORAZIO ANTONIO D'ALBA, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree, Doctor of Philosophy, in the College of Education, Georgia State University.

The Dissertation Advisory Committee and the student's Department Chairperson, as representatives of the faculty, certify that this dissertation has met all standards of excellence and scholarship as determined by the faculty. The Dean of the College of Education concurs.

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## ABSTRACT

### A CASE STUDY OF STUDENT-INSTRUCTOR CONNECTEDNESS IN AN ASYNCHRONOUS, MODULAR ONLINE ENVIRONMENT

by  
Orazio Antonio D'Alba

The use of the Web as an instructional medium has gone hand in hand with the ever-increasing growth of the computer and the proliferation of the Internet and the World Wide Web. Early studies provided a foundation on building web-based learning environments and focusing on presenting the online content. However, as online or e-learning continues to grow, it has brought pivotal changes to the educational landscape (Gatlin). Online learning has now been adopted by many throughout the world, precipitating a shift in research from “how to develop courses online” to “what attributes best contribute to the success of an online course.” Research has been conducted on student satisfaction within an online environment and the significance of achieving an online community to enhance the educational aspects of an online course. Feeling involved in the community is vital to feeling successful in a course (Wegerif). Yet, the concept of connectedness between student and student as well as student and instructor warrants further investigation. This research associates connectedness with the perceived closeness between student and instructor. Using a qualitative case study of a completely online class, the researcher asked participants to respond to a questionnaire and participate in interviews in an attempt to analyze student-instructor connectedness within the online environment. This study addressed the following question: *Is student-instructor and instructor-student connectedness a part of this online community?* The implications of this research expand understanding of online learning and whether

student-instructor connectedness plays a role in student perception of the instructor, the class, and perhaps their satisfaction in a Web-based learning environment.

A CASE STUDY OF STUDENT-INSTRUCTOR CONNECTEDNESS IN AN  
ASYNCHRONOUS, MODULAR ONLINE ENVIRONMENT

By  
Orazio Antonio D'Alba

A Dissertation

Presented in Partial Fulfillment of Requirements for the  
Degree of  
Doctor of Philosophy  
in  
Instructional Technology  
in  
the Department of Learning Technologies  
in  
the College of Education  
Georgia State University

Atlanta, GA  
2014



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2014

## ACKNOWLEDGMENTS

My journey through my doctoral program would not have been possible if I did not have the love and support of my family. A special thank you to my loving wife who has supported me throughout and withstood many long nights.

Thank you to Dr. Brendan Calandra for providing me with the opportunity to teach as a graduate teaching assistant which sparked several ideas for the study.

I would also like to express my sincere gratitude to the members of my dissertation committee, Steve Harmon, Brendan Calandra, Laurie Dias, and Mary Ariail. Without their feedback and guidance this work would not have been possible. Thank you all for your generous time and input.

Lastly, I would like to extend a very special thank you to my dissertation committee chair, Steve Harmon. Even with the many projects and assignments that you attend to on a daily basis, you still found time to provide me with guidance, support, leadership, and motivation.

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## CHAPTER 1

### INTRODUCTION/PROBLEM

Throughout history, there have been many technological advances that have revolutionized the way people go about their day-to-day activities. The invention of the automobile has shaped how people get around, while the advent of television has transformed how one chooses to relax or watch sporting events. The microwave oven has provided a fast and convenient way to warm up certain foods, and clearly the computer has redesigned how people communicate and obtain information. Side by side with the growth of computer technology is the proliferation of the Internet and the World Wide Web. Along with this development, we have seen a rise in the use of the Web as an instructional medium. As Summers, Waigandt, and Whittaker (2005) state, “Few innovations in the past century have captured the imagination and interests of educators around the globe more than the World Wide Web” (p. 233). This interest has spawned the offering of online courses at many college and universities. According to a survey by the Sloan Consortium (2014), the number of higher education students taking at least one online course has surpassed 7.1 million. Universities are now offering a host of online learning opportunities that often consist of classes that have been traditionally taught in a classroom. These include anything from accounting and finance courses to web design.

Online learning can be described in several ways. Some refer to it as “distance learning” (e.g., Valentine, 2002), while others prefer to use the term “e-learning” (e.g., Sangrà, Vlachopoulos, & Cabrera, 2012) or “Web-based instruction” (WBI; e.g., Dickey, 2004). Regardless of what terminology is used, in essence, online learning can be described as distance learning in which, per Barker and Holley (1996), the teachers and

students are physically separated from each other during a majority of the learning process. Online learning originates from distance education, which was initially developed as a means to reach students who could not physically access the college campus. As Bejerano (2008) describes, educators created distance education so that they could structure the learning process while placing the responsibility for learning on students. This development came about in the 1990s when the Internet boom and the creation of new multimedia allowed distance education to take on new forms of instruction.

Dempsey and Van Eck (2001) defined online learning as any learning that uses the Internet to deliver some form of instruction to a learner or learners separated by time, distance, or both. Indeed with the technological advances that have taken place in the past decade, the demand for online learning has never been greater. There has been a marked increase in what are called “virtual universities” or what Dempsey and Van Eck (2001) refer to as universities without a traditional brick-and-mortar complement. Completely online universities, such as The University of Phoenix, now enable individuals to earn a postsecondary degree without ever physically stepping into a building or college campus.

A more recent and growing trend are MOOCs, Massive Open Online Courses. These online courses are aimed at unlimited participation and open access via the web. Bohle (2013) describes MOOCs as a way of opening the door to provide the “Ivy League for the Masses.” She goes on to cite *The New York Times*, which declared that 2012 was “The Year of the MOOC.” MOOCs are not limited to just colleges and universities. Corporations now have joined top institutions such as Harvard University, the Massachusetts Institute of Technology, and Stanford University in using leading MOOC

providers Coursera, Udacity, and edX to put courses online and free to anyone who wants to access them. Not all MOOCs are free, as some universities are charging tuition for them. Yet, it is considerably less than the standard tuition, allowing MOOCs to expand their student base and potentially reduce the cost of an education, while giving students college credit.

### **Problem**

Online or WBI environments are certainly different from regular classroom instructional environments. Online environments are more complex, and other factors need to be considered that are not necessarily a part of the traditional classroom setting. The type of networking or media used to house the online class, network and infrastructure support, instructor setup and preparation time, and learner or user participation are just a few items one needs to consider. Thus, online learning has become a popular focus for research. Early research was based primarily on discovering new instructional design attributes of web-based courses. Some focused on differences between online and traditional face-to-face, such as preparation time, while others reviewed advantages and disadvantages as well as proposed instructional models for building effective online classes.

In several of the early studies, Cassarino (2003) pointed out that the design of Web-based instruction must “take into account, cognitive processing of information, learning tasks, the learner, and ultimately, an instructional system as a tool” (p. 456). She went on to say that the Web is considered an instructional tool to assist with cognitive scaffolding. This teaching strategy originates from Vygotsky’s (1978) sociocultural theory wherein scaffolding facilitates a student’s ability to build on prior knowledge and

internalize new information. Vygotsky is known for studying and proposing social cognitive theories and neuroscience findings. He identified four states of learning (Advance Organizer, Modeling, Exploring, and Generating). Cassarino (2003) used these four stages as a basis for her model. She asserted that it supports the design of the learning interface and environment to accommodate the varied cognitive learning strategies of the learners. The model goes concurrently with how the human mind functions. She posits there is evidence that during cognitive activities, the human mind is under hierarchical control. Instructional designers, therefore, should make careful selection of instructional themes well suited for Web-based instruction. Mapping content on the Web to the cognitive strategy used by the learner is the way an eLearning environment should evolve (Cassarino, 2003).

In turn, Gallini (2001) attempted to provide a framework to use in designing what she called “technology-mediated learning environments.” Her constructivist/sociocultural model contains a “Technology Domain” with an infused design or dimension called Degree of Integration. There are three components that play a major role: (1) the role of the Web tools throughout the course (e.g., assignments are produced with Web tools), (2) description on how the Web tools are used (e.g., online synchronous discussions), and (3) course requirements regarding student use of the tools in meeting course objectives (e.g., students are required to participate in online discussions as a discussion leader and respondent). Students may feel frustrated if instruction and directions are not specific. Therefore, teachers must be very precise and clear about the learning goals and outcomes so that students know exactly what is expected of them. Furthermore, the structure of the



course should be clear and understandable to the students with a system in place to track student progress throughout the course.

Burke (2001) discovered that student interest and participation needs to be the main focus when designing WBI. There should be less emphasis on lecturing and more on active learning activities. Because instructors are no longer face-to-face with the students, they are no longer the major transmitters of knowledge.

Kang (2001) mentioned that one should try to imagine the online learner: Because he or she is geographically isolated from the class, he or she is more likely to get lost and become frustrated by the lack of immediate assistance and help that is available with traditional face-to-face classroom instruction. Students have to participate actively in the learning process by sharing knowledge and responsibilities. Teachers need to adapt their instructional strategies to the new learning environment.

The rise in popularity of online learning has not come without its share of criticism or controversy. Opponents argue that Web-based courses lack the personal feel that students receive in the more traditional face-to-face learning environments. According to Serlin (2005), “hand gestures, voice intonation, and facial expression, can all be very important in efficiently making things clear and conveying valuable nuance.” (p. 10). A study by Iowa State University (2012) noted that students tend to feel isolated from the instructor and classmates. Furthermore, an instructor may not always be readily available when students are studying or needing help. Without this closeness or student-instructor connectedness, many students tend to feel secluded and ultimately not fare well in the course. This study focuses on student-instructor connectedness or the perceived

closeness between student and instructor and whether it may exist in an online learning environment.

### **Purpose**

These early studies provided a foundation on building web-based learning environments and focusing on presenting the online content. However, as online learning or e-learning continues to grow, it has brought pivotal changes to the educational landscape (Gatlin, 2008). Online learning has now been adopted by many throughout the world, precipitating a shift in research from “how to develop courses online” to “what attributes best contribute to the success of an online course?” Examining online learning communities, the social networking aspects, and student-student as well as student-instructor interaction has now come to the forefront. Research has been conducted on student satisfaction within an online environment and the significance of achieving an online community to enhance the educational aspects of an online course. Feeling involved in the community is vital to feeling successful in a course (Wegerif, 1998). Thus, the concept of connectedness between student and student as well as student and instructor is still something that warrants further investigation.

In general, social connectedness is not a new concept. Lee and Robbins (2000) state that social connectedness is a critical component of one’s sense of belonging. They imply that students in a college setting who lack such connectedness may feel detached. High school students may react in a similar fashion as Blum (2005) states that students are more likely to succeed when they feel connected to school. This may be associated with social learning theory where, according to Bandura (1977), people learn through observing others’ behavior, attitudes, and outcomes of those behaviors. Social learning

theory explains human behavior in terms of continuous reciprocal interaction between cognitive, behavioral, and environmental influences. Fiske, Cuddy, Glick and Xu (2002) extend this to social psychology on the whole in that social relationships supply one form of motivation. Their research has shown that being on the same team or depending on another person makes people go beyond stereotypes and fosters collaboration.

In examining how social psychology and, more specifically, social learning theory may translate to an online environment, Hill, Song, and West (2009) found that social interaction plays a significant role in students' sense of learning and can be the key to their success. Woods and Ebersole (2003) investigated social interaction that cultivates connectedness within online learning using non-subject-matter-specific discussion boards that were not course related, but rather a place where students can place autobiographies and get to know each other as well as discuss any other issues. Like a virtual cybercafé, these discussion folders fostered a sense of connectedness and helped build virtual relationships.

### **Goal of the Study**

Much has been explored in terms of online community building, interaction, immediacy, and closeness as well as how these constructs enhance a student's feeling of belongingness and success within an online course. Yet an area that warrants further investigation is connectedness (perceived closeness); more specifically student-instructor connectedness and whether it exists in an online learning environment. Hence, in this study I analyze student-instructor connectedness within an asynchronous module online environment in an effort to answer the question:

*Is student-instructor and instructor-student connectedness a part of this online community?*

By analyzing whether student-instructor and instructor-student connectedness plays a role within the online community, we can try to build upon these findings to enhance the area of online learning. The implications of this research could expand our understanding of online learning and whether student-instructor connectedness plays a role in student perception of the instructor, the class, and perhaps their satisfaction in a Web-based learning environment.

### **Theoretical Framework**

Connectedness can be defined in several ways. As Gallien and Oomen-Early (2008) assert, “connectedness is operationalized differently in existing studies” (p. 474). Some tend to equate connectedness to immediacy based on Mehrabian’s meaning of “communication behaviors that reduce perceived distance between people” (Thweatt & McCroskey, 1998, p. 349). Others may refer to it as the sense of community with the instructor and other fellow students. For the purposes of my study, I associate connectedness with social presence, but more specifically, closeness. I define it as the perceived closeness between the student and instructor as well as the instructor and student.

Short, Williams, and Christie (1976) originally developed the theory of social presence to explain the effect telecommunications media can have on communication. They basically defined social presence as the degree of salience or prominence between two communicators using a communication medium. They defined various levels of social presence based on the communication medium. For example, people may perceive video as having a higher degree of social presence as compared to audio, which may be perceived as having a lower degree of social presence. The fundamental aspect of their theory is that they believed that a medium with a high degree of social presence is seen as

being sociable, warm, and personal, whereas a medium with a low degree of social presence is seen as less personal.

Wheeler (2005) states that certain forms of communication, such as the telephone, may evoke higher levels of social presence whereas other forms, such as e-mail, may show less. He proposes that “this may be because independent students prefer the affordance of immediate responses usually forthcoming when a telephone call is made. They can be more proactive, with the tutor or instructor responding to their demands and needs in real-time” (p. 6). With e-mail, the student relinquishes an element of control of the conversation in that “the instructor or tutor can decide when and how to respond (if at all) to the message” (p. 6). In this situation, students may feel less connectedness (i.e., experiencing less social presence) if they are not in control of the transaction.

According to Slagter van Tryon and Bishop (2009), social presence was originally conceived of as the number of communication channel affordances in mediated communication and further evolved in recent literature to include students’ perception of the presence of another in an online learning environment. Mehrabian (1967) used “immediacy” to describe communication behaviors that reduce perceived distance between people, and Slagter van Tryon and Bishop translated this to “e-mmediacy” when referring to an online environment. They characterize e-mmediacy as the social context of an online course that may achieve such perception. This state of social cognition experiences e-mmediacy or “those feelings of social connectedness one has with fellow online class participants” (Slagter van Tryon & Bishop, 2009, p. 293). Furthermore, per Kehrwald (2008), in online learning environments, “presence” creates the illusion of

reality (or direct experience) in participant's perceptions of mediated situations, thus affecting how close one feels or perceives another in an online environment.

The concept of presence in an online learning environment has also been captured in Garrison, Anderson, and Archer's (2001) Community of Inquiry model. Garrison et al. developed a community of inquiry model based on Dewey's (1933) practical inquiry model. This dynamic processing model is considered social constructivist in nature and was designed to define, describe, and measure elements supporting the development of online learning communities (Swan & Ice, 2010). Garrison et al. (2001) split community-based learning into three overlapping areas: social presence, cognitive presence, and teaching presence. They defined teaching presence as the ability to manage and coordinate learning activities and environments and cognitive presence as "the degree to which the learners can construct understanding through sustained reflection and communication" (Garrison et al., 2001, p. 11). Cognitive presence is classified into phases:

1. Triggering Event (that triggers issues for consideration)
2. Exploration (of issues, through brainstorming, questioning, and information exchange)
3. Integration (to construct meaning based on the ideas generated in Exploration)
4. Resolution (to build consensus as learners confirm their understanding and apply new ideas to solve problems)

The highest level, "Resolution," reflects higher-order knowledge acquisition and application. This is where critical thinking and deep and meaningful learning occur (p. 22). While teaching presence can directly and indirectly facilitate social interactions and stimulate higher levels of cognitive processing, the community of inquiry model also states that social presence may facilitate cognitive objectives by creating "the conditions for inquiry and quality interaction" in online learning contexts where learners feel secure

to communicate openly with each other and develop a sense of community (Garrison, 2007). While the community of inquiry framework was initially created to analyze asynchronous online settings, it has since been applied to synchronous online environments (Traphagan et al., 2010). Much has been written in regards to how the community of inquiry model measures learning. Rourke and Kanuka (2009) provide a comprehensive review of the literature of the past 10 years since the model was introduced. However, they voice concerns on how efficiently it measures deep and meaningful learning.

Similar to social presence and social connectedness, much has been written on psychological closeness. Mehrabian (1967) expands the definition of immediacy as the extent to which selected communicative behaviors enhance psychological closeness in interpersonal communication. As an example, nonverbal immediacy can be understood as a sense of psychological closeness produced by physical communicative behaviors, such as facial expression, eye contact, posture, proximity, and touch. Verbal immediacy, in turn, would be a sense of psychological closeness produced by word selection. For example, the use of the word “we” fosters increased relational closeness and is considered more immediate than the comparable statement “you and I.”

Closeness can be described as a characteristic portraying a relationship. Ben-Ari and Lavee (2007) define “closeness” as an attribute of close relationships. They state that it characterizes, and portrays the relationship. Often, the terms close relationship and relationship closeness are used interchangeably.

Social closeness is another term or area used to identify how one feels in relation to others in a social environment, such as a classroom or meeting. Horne (1977) refers to

a social closeness scale that can be used to measure classroom status or how an individual is accepted by his/her peers.

### **Definition of Terms for The Study**

For the purpose this study, the following terms or definitions will be used:

- Connectedness – The perceived closeness between student and instructor, and between instructor and student.
- Distance Learning – per Teaster and Blieszner (1999) distance learning has been applied to many instructional methods: however, its primary distinction is that the teacher and the learner are separate in space and possibly time” (pg. 741).
- eLearning/E-Learning – learning that is accomplished over the Internet, a computer network, via CD-ROM, interactive TV, or satellite broadcast.
- Online learning – similar to e-Learning, refers to using a computer linked to the internet
- Satisfaction – as it pertains to an online environment, the degree of satisfaction or fulfillment provided to the participant within an online learning environment.

Social Presence – Borrowing the term as originally defined by Garrison, Anderson, and Archer (200) as the ability to project one’s essence, personality, and social cues emotionally and socially within a community through communication technologies. In this study, social presence is the ability to project one’s essence, personality, and social cues emotionally and socially within an online learning environment.

- Web-based instruction (WBI) – per Khan (1997), teaching and learning supported by the attributes and resources of the Internet.

### **Summary**

Previous studies have focused on online community building, interaction, immediacy, and closeness. Further studies have attempted to show how a student’s feeling of belongingness can improve or enhance their success within an online course. However, connectedness (defined as the perceived closeness), more specifically student-



instructor connectedness and whether it exists in an online learning environment, is an area where further exploration can be made.

## CHAPTER 2

### LITERATURE REVIEW

The literature review is presented in several sections. These sections provide a framework for understanding the concepts relating to the research study. It first discusses online interaction and immediacy. From here, it moves to community and presence, where it highlights social networks, online community building, and social and cognitive presence. It concludes with a review of closeness and what has been investigated so far in terms of connectedness. By structuring the literary review in this fashion, I hope to demonstrate the progression of research towards community of learning and presence and how instructors can move towards connectedness in an online environment.

#### **Online Interaction and Immediacy**

Numerous studies have attempted to point out differences and/or similarities between a traditional classroom-based environment and online learning. Hutton (1999) surmised that “teaching and online facilitation is the dramatic shift in our role from an instructor-centered and more authoritarian classroom environment towards a more student-centered, collaborative and egalitarian learning environment” (p. 11). She also said that the online environment requires special challenges to creating a social learning community that is “fundamental to the quality of adult learning” (p. 11).

Summers et al. (2005) studied achievement and student satisfaction of an undergraduate statistics course that was taught online and face-to-face. They discovered that students in the web-based course learned statistics as well as students in the traditional classroom version. However, they also found that online students felt less satisfied with the course overall when compared to their face-to-face counterparts. They

state that the instructor's postings and explanations were not extremely beneficial. Furthermore, although the instructor shared quite a bit of enthusiasm for the course, there was not a sense of openness or concern towards students.

In attempting to analyze the importance of particular instructor actions on performance and satisfaction in online courses, Dennen, Darabi, and Smith (2007) developed an extensive review of literature and produced a list of 19 issues relevant to online learning. These include providing extensive feedback, providing examples, responding to student inquiries, communicating rules, and reviewing appropriateness of course materials. They determined that feedback is an important instructional strategy and that timeliness in instructor feedback to students is of greater concern to students than quantity. Furthermore, they concluded that simple communication and feedback is not enough. Having a regular presence in class discussion spaces is a critical task because learners are used to having an instructor in the face-to-face classroom and wish to see that same sort of presence in the virtual one.

Similarly, Gallien and Oomen-Early (2008) examined interaction between student and instructor within an online setting. They focused more on personalized versus collective feedback and found that students who received personalized feedback from the instructor on assignments were significantly more satisfied and performed academically better than students who simply received collective feedback. Interestingly, while quantitatively personalized feedback resulted in higher performance and satisfaction, this mixed methods study also revealed that students mainly related their level of satisfaction to the design of the course and availability or presence of the instructor.

Woods and Baker (2004) believed that high levels of interaction can have positive effects on the learning experience. They combined this with immediacy to put forth the idea that interaction and immediacy are intertwined and refer to the LaRose and Whitten model that uses social cognitive theory to build a framework that blends interaction and immediacy for Web-based courses (LaRose & Whitten, 2000). This model illustrates three possible sources of immediacy in the virtual classroom that may create feelings of closeness: interactions between teacher and student (teacher immediacy), interaction between students (student immediacy), and interactions with the computer system that delivers the course (computer immediacy). Woods and Baker used this as a foundation to develop their “Proposed Model of Interaction,” where the learner is in the center and has four potential realms of engagement: instructor, learners, content, and environment. This model certainly implies that learner-instructor communication will likely result in an increased feeling of psychological closeness between learner and instructor.

### **Community and Presence**

Interaction, immediacy, and a sense of belonging has led to the concept or idea of the online community. Brown (2001) described a three-level experience of making friends online and being accepted as an important part of being personally satisfied and having a sense of camaraderie. She identified the first level as making acquaintances or friends in which students found people on-line toward whom they gravitated. The second level is what she calls community conferment, where students felt as if they gained membership into the community by being part of a long, thoughtful, threaded discussion on a subject of importance to all. And the third level was camaraderie, which was achieved after long-term and/or intense association with others involving personal

communication. In essence, increased levels of community accompanied increased participation and engagement in the class and vice versa.

Wegerif (1998) investigated the sense of community in his study of a course delivered via an Asynchronous Learning Network (ALN). He noted that feeling involved in the community was essential to feeling successful in the course. He provided several recommendations for course design to make the most of the social aspects of learning. He recommended that students should have continuous access to the course to achieve the sense of an ongoing learning experience. Additionally, he noted that building a sense of community can occur through carefully structured exercises in which differences between students are not so obviously significant. For example, instructors might have a warm-up period with light-hearted exercises aimed more at getting to know each other than at formal learning.

Rovai (2002) attempted to measure classroom community within an online setting. Community may be defined as “a feeling that members have a belonging, a feeling that members matter to one another and to the group” (p. 198). Using a 20-item statement or survey, Rovai developed a Classroom Community Scale to measure overall classroom community. Using a five-point Likert-type scale and tallying up responses to questions such as “I feel that students in this course care about each other” and “I do not feel a spirit of community,” he concluded that the Classroom Community Scale can be an efficient and useful instrument to assess graduate students’ sense of classroom community. Rovai also noted that, while this instrument showed that it can gauge classroom community, it also contained subscales for connectedness and learning.

However, further research may need to be conducted to determine the extent of this connectedness, specifically student-instructor connectedness.

The ever-increasing use of online technologies and non-physical or face-to-face communication, gives rise to the social interaction and presence across the Internet. By expanding on the original social presence theory proposed by Short et al. (1976; level of awareness or presence of another), Biocca and Harris (2002) proposed to measure degree of social presence. They state that the fundamental characteristic of all mediated interactions is interacting with spaces and people that are not immediately present in our physical environment. Their report outlines a foundation for measuring social presence in terms of three levels. The first level, named The Co-presence of the embodied other, is when one senses or feels a level of awareness of another or others. The second level, The Subjective Level: Psychobehavioral accessibility of the other, is when one attempts to perceive the accessibility of the emotional, understanding, and behavioral states of the other. This is where someone tries to “read someone else’s mind” in an attempt to assess the other individual or individuals. The final or third level, Intersubjective Level: Mutual social presence, is the extent to which the perceptions of one interactant and the other are symmetrical both within either ones’ mind, as well as across both minds. In other words, both individuals perceive the other as being present and there is a mutual feeling of perception.

Wheeler (2005) affirms Short et al.’s (1976) assertions by stating that certain forms of communication, such as the telephone, may evoke higher levels of social presence, whereas other forms, such as e-mail, may show less. He continues with the premise that Short et al. hypothesized social presence to represent the perception that one

is communicating with people rather than with inanimate objects. “They see social presence as the ability of individuals to collaborate effectively through technology, even while located in different locations.” (p. 3). Wheeler adds that this is a form of “absent presence”—an illusion created by the human mind’s ability to manufacture feelings of connection and interaction, even when separated by distance. This is achieved

through the hearing of vocal inflections, paraverbal utterances and ambient sounds (in audio communication such as telephone conferencing), and via textual cues and non-verbal devices such as emoticons and images (in text based communication such as e-mail). (p. 3)

During visual communication (e.g., videoconferencing), audio and visual cues are present to create the impression of connection and absent presence. Wheeler (2005) adds that using free-form discussion areas so students can “let off steam” provides a sense of belonging to a community. These efforts “may create a sense of connectedness to unseen students across the void, which engender a perception of social presence” (p. 7).

Using their Community of Inquiry model, Garrison et al. (2001) attempted to define, describe, and measure elements supporting the development of online learning communities. They split community-based learning into three overlapping areas: social presence, cognitive presence, and teaching presence. Within this framework, they described social presence in terms of learners’ feeling secure to communicate openly with each other and develop a sense of community. Teaching presence, in turn, is the ability to manage and coordinate learning activities and environments. However, it appears that Garrison et al. place the most emphasis on cognitive presence or “the degree to which the learners can construct understanding through sustained reflection and communication” (p. 11). Cognitive presence is classified into four phases:

1. Triggering Event (that triggers issues for consideration)

2. Exploration (of issues, through brainstorming, questioning, and information exchange)
3. Integration (to construct meaning based on the ideas generated in Exploration)
4. Resolution (to build consensus as learners confirm their understanding and apply new ideas to solve problems)

Cognitive presence is operationalized through the Practical Inquiry model based on the more elaborate phases of Dewey's notion of reflective thought (Garrison, Anderson, & Archer, 2010). The model is based upon the work of John Dewey in that it considers education to be based on lived experiences, and learning in an educational context is to be applied to real-life situations. While teaching presence can directly and indirectly facilitate social interactions and stimulate higher levels of cognitive processing, the community of inquiry model also states that social presence may facilitate cognitive objectives by creating the actual conditions for inquiry and quality interaction within online learning contexts where learners feel secure to communicate openly with each other and develop a sense of community (Garrison, 2007). Garrison et. al. put forward that they may have elevated cognitive presence to a higher status within the community of inquiry model than perhaps they should have. "This could have been the result of its association with critical thinking — the ultimate goal of higher education." (p. 6). Indeed, it is the last or highest level, the "Resolution" phase, which reflects higher-order knowledge acquisition and application. The community of inquiry model effectively blends social, cognitive, and teaching presence, and describes social presence in terms of learners' feeling secure to communicate openly with each other and develop a sense of community (Garrison & Cleveland-Innes, 2005); yet it does not address the concept of connectedness in regards a student's perceived closeness to others. Furthermore, much has been written in regards to how the community of inquiry model measures learning. Rourke and Kanuka (2009) provide a comprehensive review of the literature of the past



10 years since the model was introduced. However, they question how efficiently it may measure deep and meaningful learning. Undoubtedly, the community of inquiry model has shaped many studies concerning online or e-learning within higher education, but “researchers need to conduct more substantial studies of learning to identify situations where students are engaged in critical thinking and higher order learning.” (p. 44). From here, suggestions can be made about the types and qualities of teaching presence, social presence, and cognitive presence. Nevertheless, while the community of inquiry model does not directly address the concept of connectedness in regards to a student’s perceived closeness to the instructor, the area of teaching presence can offer some insight into student-instructor connectedness.

Kanuka, Rourke, and Laflamme (2007) try to explore influences that may promote or contribute to student reflective thinking and critical discourse within an online learning environment. Basing their study on the cognitive presence section of Garrison, Anderson, and Archer’s Community of Inquiry model, they investigated five instructional methods (WebQuests, Debate, Invited Expert, Nominal Group Technique, Reflective Deliberation). Their case study revealed that while the WebQuest and Debate activities produced the highest levels of cognitive presence, the overall level of cognitive presence was low (i.e., not reaching the fourth and highest phase of cognitive presence, “resolution” within the community of inquiry model). This does suggest that developing highly structured, planned, and role playing activities can move students to higher levels of understanding and critical discourse.

To investigate whether teaching and social presence can lead to higher levels of cognitive presence within the Garrison et. al. Community of Inquiry model, Shea and

Bidjerano (2009) indicated that both teaching and social presence are correlated with cognitive presence. Using a survey instrument of 34 items, they developed a community of inquiry instrument to measure learner perceptions of teaching, social, and cognitive presence. They found that when dealing with online discussions, a lower comfort level with online discussion boards and techniques was strongly correlated with lower levels of cognitive presence while higher, more advanced comfort levels of discussion led to higher levels of cognitive presence. For teaching presence, when students saw their instructors taking an active role in focusing online discussions on relevant issues, they also reported higher cognitive presence. Therefore, student-instructor interaction does play an important role as stated in previous literature.

The popularity and growing trend of social networking sites such as Facebook indicate that many students already have a sense of online social presence. Joyce and Brown (2009) investigated how these Web-based social networking tools can enhance online learning. They proposed that using social networking tools to enhance social presence places responsibility on the students to participate by creating a personal space (e.g., a Facebook page) and using it to connect with others. They offer a list of literature that describes a number of strategies to support social networking within higher education. Today's generation of college students already have some sense or form of online presence and faculty need to look for ways to connect with their learners. However their definition of "connect" is not clear and further examination of such connectedness may be required.

The notion of exploring connectedness with social presence has been best proposed by Rettie (2003), who used uses a social psychology concept by Smith and Mackie

(2000) to state that “the pursuit of connectedness is one of the three basic motivating principles which underlie social behavior; this fundamental need for belonging and connectedness promotes social relationships” (p. 2). She added that even though the concept of connectedness is related to the concept of social presence, “Social presence is a judgment of the perception of the other participant and/or of the medium, whereas connectedness is an emotional experience, evoked by, but independent of, the other's presence” (p. 3).

### **Closeness**

Closeness is considered by some as a characteristic or trait. Carey (2002) states that people who are low on this trait usually are content to be by themselves and do not go out of their way to seek social interactions; people high on the trait would rather be with other people than be alone, and they actively pursue social situations. Some have actually attempted to measure this trait, particularly in the field of psychology, by using questionnaires or personality assessments. One of the more popular assessments or questionnaires is the Multidimensional Personality Questionnaire (MPQ1) developed by Watson and Tellegen (1985). Others tend to equate closeness with social distance or the acceptable distance to members in a group. For example, Japanese society has fostered a sense of social closeness as is reflected in the structures of the family, community, and workplace, as well as in the sense of national identity. The East Asian Institute at Columbia University (2009) attributes this to the historically long periods of reclusive isolation from the outside world.

In turn, closeness has been associated with social networking, more specifically online social networking. Mesch and Talmud (2006) mention that with the advent of the

Internet, many are using online social or community sites such as Facebook and MySpace. Wellman et al. (1996) describe these virtual communities as social networks that link individuals from different neighborhoods, cities, and countries. Wellman (1999) adds that computer-supported social networks may provide their members with companionship, social support, information, and a sense of belonging.

With the increase of online networking and communication, Waldeck, Kearney, and Plax (2001) set out to research and develop strategies for teachers using email communication. They refer to the psychological closeness per Mehrabian (1967) in terms of immediacy or degree of physical and/or psychological closeness between communicators. Typical behaviors that signal and enhance such closeness include eye contact, gesturing, forward body lean, smiling, positive head nodding, using students' first names, being responsive to student involvement, and appropriate self-disclosure. In the classroom, teachers use immediacy behaviors to signal warmth and friendliness. This tends to be more difficult when communication is not face-to-face. "Manipulating similar perceptions of closeness via computer-mediated exchanges is more difficult. Because the nature of the medium precludes physical closeness, only psychological closeness has the potential to be cultivated" (Waldeck et al., 2001, p. 58). By developing a scale to measure the use of email and email strategies, they indicated that the use of Rules of the Net (commonly referred to as "netiquette") can be an effective approach. Such netiquette would be to avoid writing in all upper case letters, use correct spelling and grammar, use acronyms and symbols or "emoticons" to convey emotion and maintain an air of informality (e.g., "LOL" for "I'm laughing out loud" and ":-)" for "I'm smiling"). The use of these nonverbal indicators of immediacy is more likely to manipulate

perceptions of psychological closeness via computer-mediated exchanges. Teachers that employ these nonverbal strategies increase students' use of e-mail to discuss personal or social issues with their teachers. The use of e-mail for this reason is evidence that e-mail correspondence can build psychological closeness and affect between teachers and students.

The use of nonverbal cues and netiquette may not only increase email communication but may also be useful across instant messaging or short message service (SMS). Spagnolli and Gamberini (2007) examined 173 personal communication exchanges via SMS among young adults and adults, aged 25-35 and 50-65, respectively. They concluded that the use of instant messaging and mobile devices tends to decrease the perceived distance among communicators, hence increasing the perceived closeness of the participants. This is especially evident when correspondence between communicators is reciprocated in a quick manner when responding to questions.

### **Asynchronous Online Courses**

Fully online courses have become increasingly popular because of participants' being able to access them at any time from any place. However, many argue that they lack the interaction that face-to-face courses have and the content or subject matter may be difficult to present. Kanuka (2011) emphasizes that it is essential that distance and online educators attend to the design and development of course content. "Thus, the design, development and delivery of the course content are key considerations." (p. 145).

Similarly, while analyzing discussions within an asynchronous online multicultural education course, Licona and Gurung (2011) found that students' experiences were fundamental in the development of new understandings as they engage in content.

This seems to correspond with earlier findings from Uttendorfer (2004) in that creating interactive online course content greatly facilitates instructor-to-student and student-to-student interactivity and participation and leads to more cognitive learning.

Instructor interaction along with developing sound content to maximize the students' experience is stressed by Slatinsky (2013), when she asserts that one of the major disadvantages of asynchronous online courses is the lack of immediate access to an instructor for questions or problems. This becomes an even bigger issue with highly technical or difficult content. She stresses that instructors need to incorporate more activities that engage the learner. These activities or assignments should involve interaction such as projects, scenarios, discussion boards, and images. Many learners retain information better if they can interact with it.

Additionally, asynchronous online courses tend to not engage students in class participation, discussions, etc. as do synchronous online courses. Therefore, content for asynchronous courses needs to be relevant and interesting. Decker and Cox (2007) advise instructors to make expectations clear and provide good guidelines for grading, such as rubrics.

### **Connectedness**

Connectedness with others has been widely studied, especially in a school or learning environment for it seems to foster better learning. An article published by the Centers for Disease Control and Prevention (CDC) in July 2009 states that school connectedness is an important factor in both health and learning, specifically at a K-12 level. "School connectedness is particularly important for young people who are at increased risk for feeling alienated or isolated from others" (CDC, 2009, p. 4). Several

strategies are provided for teachers, school staff, and parents to create processes that engage students to enhance their development and achievement.

Blum, Gates, and Carr (2010) define school connectedness as the belief by students that adults and peers in the school care about their learning as well as about them as individuals. School connectedness is a protective factor against harmful or negative situations or events, such as violence, smoking, sexual activity, and drug and alcohol abuse. They concluded that “students who feel more connected to school are more likely to have positive health and education outcomes” (p. 23).

Daves and Roberts (2010) explore this sense of social belonging or connectedness at a higher education level in their study of online teacher programs. The heart of their research was to observe whether there was a difference in the social connectedness of students in an online program compared to those in the traditional face-to-face program. A survey or questionnaire was administered to students enrolled in a face-to-face version of an undergraduate teacher preparation program and those enrolled in an online version of the same program. Interestingly, their findings indicated that students who communicate primarily through digital means feel more connected to those with whom they are communicating as compared to those who communicate face-to-face. This may be a result from students having to use technologies such as Blackboard, Desire 2 Learn, etc. on a greater scale, thus feeling a stronger sense of social connectedness to fellow classmates, whereas face-to-face students do not necessarily have to interact with each other in the traditional classroom.

Shea (2006) used the Community of Inquiry model by Garrison, Anderson, and Archer (2000) along with the Classroom Community Scale developed by Rovai (2002) in

an attempt to measure how the teaching presence of the Community of Inquiry model can influence a student's sense of a learning community and connectedness. Teaching presence, per Shea, would be "effective instructional design and organization, the facilitation of discourse, and direct instruction" (p. 38). His findings indicated that a teaching presence of instructional design, organization, and directed facilitation significantly contributed to the learning community. Higher levels of teaching presence led to higher levels of feeling a part of the learning community. In addition, "a strong and active presence on the part of the instructor – one in which she or he actively guides the discourse – is related both to students sense of connectedness and learning" (p. 41). Students feel a higher sense of connectedness (per Shea "feelings regarding cohesion, spirit, trust, and interdependence," p. 41) if they feel the instructor is drawing in participants, creating an accepting climate for learning, keeping students on track, and diagnosing student misperceptions.

Cates and Slagter van Tryon (2002) emphasize this when they state that the absence of face-to-face social cues may lead to a "disconnected and isolating experience" (p. 4). They list several strategies to enhance social connectedness within an online environment. To help students connect with an instructor as an individual and enhance their perception of the human-human connection of teaching and learning, they recommend "admitting some measure of personal vulnerability" (p. 7) by sharing some course-relevant information about life and background. To overcome the sense of isolation and the delayed, non-immediate responsiveness, they suggest responding to all email messages in a timely fashion, "certainly within 24 hours if at all possible, even if all you are able to do is to make clear that you cannot address the student's message fully



yet. (For example, ‘Got your email. Am in middle of proposal deadline right now. Will get back to you ASAP.’)” (p. 8). And, to maintain a sense of contiguity and connectedness, they encourage making contact with each student weekly, “even if only through a generic e-mail” (p. 10).

Liang (2006) also links student connectedness with social presence and her interviews with the participants in her study revealed that social presence is based on one’s “sense of ‘being together,’ ‘be able to relate to-‘ and ‘feel connected with’ other members of the community” (p. 120). She describes several types of connectedness: quality connectedness, necessary connectedness, and valuable connectedness. Quality connectedness is the strength or feeling of social presence in the online environment. Necessary connectedness is the need to establish social presence or understanding that the need is different than a traditional face-to-face environment. Valuable connectedness is the culmination of combining quality and necessary connectedness in terms of how valuable the social presence or connectedness is to the student. Understanding these can enhance group cohesion, increase trust, build social relationships, and strengthen the overall social presence or sense of belonging to the virtual community.

Enhancing connectedness and social presence may be further improved by adding photographic images. Perry, Dalton, and Edwards (2009) explored the use of an innovative Photovoice technology or PV. Photovoice was originally founded by Wang and Burris (1997) as a participatory-action research methodology where researchers used photographs to elicit, bring forth, and draw out responses from participants on issues related to their health and community needs. Perry et al. (2009) transformed it into an interactive teaching technology for online instruction by purposefully selecting images to

generate discussion and involve learners actively in the online learning process. “Digital images, selected by the professor for their relevance to the topic of the week, were posted the first day of a new unit as part of the introductory discussion for a topic forum” (p. 3). Their results seem to indicate that PV contributed to the development of a sense of social connectedness in the virtual classroom. Social connectedness may have occurred because of the “sharing nature of the discussion that PV elicited” (p. 111). Online learning can be an isolating experience for some and Photovoice provided that social interaction element to the learning environment. Students found PV as a way to connect with others.

Differences between a sense of connectedness within online learning and traditional face-to-face instruction has been explored in a pilot study by Glisan and Trainin (2006) where 30 University of Nebraska graduate students completed a 20-question online Community and Connectedness Survey. The main focus was to explore whether online students feel isolated and alone or if they developed a sense of community and connectedness in online class environments. They defined connectedness in terms of Rovai (2002) as a sense of community with other fellow students. The study had a mixture of students taking only online classes and those taking both online and face to face classes. The results indicated that students taking only online classes (no face-to-face classes) have a lower sense of community in their online classes than do students who are taking both online and face-to-face classes. Online only students had a significantly lower sense of community and connectedness. In addition, Glisan and Trainin conclude that online students are more likely to view their classmates as strangers. This reinforces the theory or inference from prior research listed previously that there can be a negative

correlation between lack of teaching or social presence and online course satisfaction and fulfillment.

### **Satisfaction**

In addition to immediacy and social presence, research has also been conducted to measure students' perceptions of learning and course satisfaction. Richardson and Swan (2003) define social presence as the degree to which a person is perceived as "real" in mediated communication. However, because of the nature of online environments, there is no physical presence of an instructor or other students which can lead to some students feeling disconnected from others. This psychological difference in an online environment can affect a student's perceived learning and satisfaction with the instructor. After administering a survey instrument to students attending a course taught completely online, they performed a correlation analyses that showed a relationship between students' perceived social presence and students' perceived learning. In addition, they discovered a relatively strong correlation between perceived social presence and instructor satisfaction. They concluded that students perceive the presence of others as an essential part of their learning experience and a student's perception of satisfaction with an instructor is related to his/her perceptions of social presence.

Beqiri, Chase, and Bishka (2010) also investigated the potential factors affecting students' satisfaction with online courses. They administered a 3-part web questionnaire to both graduate and undergraduate business students taking an online course to capture students' sociodemographic characteristics, their perceptions about online and blended courses, and open-ended questions, asking students to share their own online experiences. Several interesting factors were found, such as graduate students' reporting that they

were more satisfied with the delivery of online courses than were undergraduate students. In addition, the number of courses completed online by students was another variable that was predicted to affect their satisfaction with online courses. This assumes that the more mature or experienced a student is, the more likely they will be satisfied with taking online courses. This study took place at a business school at one west coast university in the United States. A suggestion would be more research to determine if these results occur in other educational sites and disciplines.

### **Summary of Literature Review**

A review of the literature has shown that much has been explored in terms of online community building, interaction and immediacy, cognitive and social presence, and closeness. Research has shown how strategies in these areas can enhance a student's feeling of belonging and success within an online course. In prior research, models have been formulated to determine the extent of the online classroom community and its benefits. Some researchers have explored student-student and student-instructor interaction, as well as social and cognitive presence. Others focused on social connectedness, closeness, immediacy, and instructor feedback. However, there has not yet been research that focused on how student-student interaction and student-instructor interaction contribute to developing connectedness within an online learning environment. Hence, the focal point of the research presented in this study attempts to analyze student-instructor connectedness within the online environment and assist in answering the question of whether connectedness, as defined in this study, is indeed a part of the online community. Furthermore, focusing on several aspects of the teaching and social presence elements within Garrison's (2007) Community of Inquiry model may

support several factors that can lead to connectedness. Additionally, it may indicate the extent to which it can enhance the success of student satisfaction and achievement in an online course. Researchers and instructors can build upon these findings to enhance the area of online learning.

## CHAPTER 3

### METHODOLOGY

#### **Methodological Framework**

This study is centered on the social constructivism view of learning. The increase of Web-based or online learning has gone hand-in-hand with the rising tide of the constructivist epistemological paradigm or perspective. Learners form or construct their own knowledge based on theories, facts, examples, and models. Therefore, an instructor acts more as a facilitator and guides the learners towards the actual instructional goal and objective. Students learn by being active participants and not merely passive recipients. They are responsible for constructing their own knowledge. An instructor facilitates this knowledge construction by incorporating learning activities and fostering an environment that allows the learners to reflect on what they are to learn. This exploratory or discovery learning epistemology has significantly affected my feelings on teaching and learning. A “get your feet wet” hands-on approach is the essence of a rich learning environment. Web-based instruction can be very constructivist in nature and its environment can promote the collaborative and exploratory learning model as learners cooperate or collaborate with other learners and the instructor.

While there are quite a few constructivists models or theories that have been developed and proposed, according to Merrill (2002), all theories and models incorporate some or all of the basic instructional principles, such as learning is promoted when

learners are engaged in solving real-world problems and learning is promoted when existing knowledge is activated as a foundation for new knowledge.<sup>1</sup>

As learners engage in problem solving while collaborating with others, the concept of social presence comes into play, particularly in an online environment. Social presence, or being aware of others, can have an effect on how students interact. Short et al. (1976) stated that when social presence is low, group members feel disconnected and group dynamics suffer. Conversely, when social presence is high, members should feel more engaged and involved in group processes. Wheeler (2005) argued that social presence is an important feature of any successful learning activity, particularly within digital learning environments.

The theory of knowledge wherein groups construct knowledge for one another, collaboratively creating a small culture of shared artifacts with shared meanings, can be defined as social constructivism (Palincsar, 1998). The roots of social constructivism can be traced to Lev Vygotsky, who stressed the social aspect of learning and emphasized that learning takes place within the social context. He argued that individuals can, with help from others who may be more advanced, grasp concepts and ideas that they cannot understand on their own (Phillips, 1995). Vygotsky's (1978) sociocultural theory of human learning describes learning as a social process and the origination of human intelligence in society or culture. The major theme of Vygotsky's theoretical framework is that social interaction plays a fundamental role in the development of cognition.

Vygotsky believed everything is learned on two levels. The first level is through inter-

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<sup>1</sup> Note, this does not imply that Merrill favored constructivism over other epistemological concepts or ideas. Merrill based his findings on the premise that principles of instruction can be implemented in any delivery system or using any instructional architecture. Thus, regardless of theory or implementation, all contain some or all of these principles

action with others, which is then integrated into the individual's mental structure. The second level or aspect is the idea that the potential for cognitive development is limited to a "zone of proximal development" (ZPD). This "zone" is the area of exploration for which the student is cognitively prepared, but it requires help and social interaction to fully develop (p. 57). A teacher or more experienced peer is able to provide the learner with "scaffolding" to support the student's evolving understanding of knowledge domains or development of complex skills. Collaborative learning, discourse, modeling, and scaffolding are strategies for supporting the intellectual knowledge and skills of learners and facilitating intentional learning. Consequently, it is within this learning paradigm that I have based my epistemological stance and methodology.

### **Methodology**

Given that a case study refers to the collection and presentation of detailed information about a particular participant or small group, the methodology for this investigation was the qualitative case study approach. The basic premise of case study research is that it takes place in its natural setting (such as a classroom, neighborhood, or private home) and strives for a more holistic interpretation of the event or situation under investigation. Dooley (2002) described case study research as "one method that excels at bringing us to an understanding of a complex issue and can add strength to what is already known through previous research" (p. 335). Furthermore, Yin (1994) noted that case studies can also be used for both theory testing and theory building, which enables the researcher in generating theory.

I performed a within-case analysis in that I studied each student within the case, defined as the online course I chose to study. I then cross analyzed the results among the



students, looking for common themes or trends. Interviews with the instructor helped triangulate data and establish the context.

Further support was derived from tabulating the results of a brief online satisfaction questionnaire focusing on the last four questions or free form responses. To aid in the comparison of data, a constant comparison method was used. This enabled me to identify categories (themes or variables) and their properties. Glaser (1998) emphasized that constant comparison is the heart of the process. The constant comparative method involves breaking down the data into discrete “incidents” (Glaser & Strauss, 1967). Taylor and Bogdan (1984) summarized as follows:

In the constant comparative method the researcher simultaneously codes and analyses data in order to develop concepts; by continually comparing specific incidents in the data, the researcher refines these concepts, identifies their properties, explores their relationships to one another, and integrates them into a coherent explanatory model. (p. 126)

Using this approach, I focused on the following question:

Is student-instructor connectedness a part of the online community?

I expected that the outcomes of this research would expand understanding of online learning and whether student-instructor connectedness plays a role in student perception of the instructor, the class, and perhaps their satisfaction in a Web-based learning environment. Researchers and instructors might then attempt to build upon these findings to further enhance the area of online learning.

### **Context**

The context or setting of the study was centered around a completely asynchronous online course for undergraduate students focusing on the practical and efficient use of the computer. Delivered through the uLearn learning management system, this course covers how to use a computer as a tool for effective organization, analysis, and

communication of data. In addition to developing competence in word processing, spreadsheets, databases, and presentations, students also learned simple web page design and the efficient use of internet resources for reference and research. There are typically 10 or more online sessions offered for each full, 16-week semester periods with a total enrollment of 25 students per class.

The sampling strategy used was to select one of these online sessions that were not taught by the researcher and use this session as the case to study. A number of one through nine was assigned to the nine remaining sessions that were not taught by the researcher. The researcher then selected the 5<sup>th</sup> one or the one the in middle or median to use for the study. Using a session that was not taught by the researcher may have helped reduce any researcher bias that could have existed in that it may have inhibited students from speaking more freely. The study took place over an entire semester, or 16-week period. Throughout the semester, participants were requested to take part in online bulletin board discussions, email correspondence, and perform various activities enabling them to understand the concepts of applications such as Microsoft Word and Excel. All of these activities and items were used as data gathering techniques or devices for analysis.

### **Participants**

The approach of the study was to use the 25 students or participants that were enrolled in the particular asynchronous online course over a given 16-week semester. Students registered for this course were mainly undergraduate students within the College of Education, although there were several students from other colleges within the university and even one graduate student. For some majors, such as Exercise Science or

Early Childhood Education, this was a required or mandatory course, while others used it as an elective to satisfy their specific college major requirements. The class was roughly even in terms of number of males versus females. As an asynchronous, online course, there were no, set class or meeting times. Therefore, students logged in whenever and wherever they wanted. The instructor acted primarily as a facilitator and was available via email and discussion board postings. Assignments were given usually once each week at the beginning of the week, along with ample materials, tutorials, and reference tools. Students were responsible for completing the assignments and submitting them via an electronic dropbox within the learning management system. Several assignments consisted of having the students post their responses or reflections within the course discussion boards, while some assignments consisted of both dropbox submissions and discussion board postings.

Participants were asked to respond to a short, online satisfaction questionnaire approximately 3 weeks prior to the end of the semester to determine their overall feeling or level of satisfaction in the course. However, given the qualitative nature of the study, the primary purpose of the survey/questionnaire was concentrated mostly on the last four questions, which were mainly free-form responses of their thoughts regarding the course as it related to their overall sense of connectedness/closeness. Providing the survey 3 weeks prior to the end of the semester allowed enough time for those who wished to participate to answer the questions and to decide whether to participate in an interview. Furthermore, by waiting this close to the end of the semester, the researcher anticipated sufficient time had elapsed that students may have developed a sense of connectedness and satisfaction. A reminder was issued 2 weeks prior to the end of the semester to those

who had not yet responded. Please see Appendix A for a sample of the informed consent letter distributed to each student.

### **Data Sources**

One set of data sources used was the results and responses of the in-class activities, discussion boards, and email correspondence through the online learning management system, uLearn<sup>2</sup>. These provided insight into how well a student performed the assignments and class activities and if there was any instructor feedback. I could then consider whether teaching presence, as defined by Garrison et al.'s (2001) community of inquiry, may have played a factor. Furthermore, the discussion board postings assisted in analyzing how students communicated with each other in terms of how they responded, to fellow classmates' postings. This could also play into the social presence element of the community of inquiry model where they were feeling secure to communicate openly with each other and develop a sense of community.

Along with the class data, results from an online satisfaction questionnaire were compiled. The first part of the questionnaire consisted of the standard questions from the actual survey given to each student to evaluate the instructor at the end of each semester. However, the answers to the last four questions were the ones used primarily for the study. These consisted of free form response questions asking students to describe their feelings of connectedness with the instructor and their overall thoughts on the course. According to De Blecker (2011), a major advantage of the free-form comments is that

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<sup>2</sup> uLearn is an online learning environment. Within ULearn there are tools which enable discussions with peers, read course materials, take assessments and submit assignments. Instructors are able to select which tools are present in their modules and basically use uLearn as the classroom.

they can provide plenty of insight in how a participant perceives matters and why or the details related to a specific circumstance.

In conjunction with analyzing the results of the in-class activities, discussion boards, email correspondence, and survey questions, voluntary interviews were conducted and informants were asked to reflect on their experiences. Per Marshall and Rossman (2006), “Interviews have particular strengths. An interview yields data in quantity quickly” (p. 101). Additionally, “interviews allow the researcher to understand the meanings that everyday activities hold for people” (p. 102).

The following table lists the various data sources used and type of information gathered from these sources.

Table 1

<b>Source</b>	<b>Information Obtained</b>
Emails	Email correspondence of instructor to student and student to instructor
Discussion boards	Interaction between instructor to students, students to instructor, and student to student
Class activities/assignments	Course content, type of activity
Questionnaire	Students’ feelings about course and instructor
Questionnaire open-ended / free-form questions	Students’ detailed descriptions of their feelings of connectedness with the instructor, other students, and overall thoughts on the course and instructor
Interviews	Students’ personal reflections on their experiences within the course

### **Data Collection**

The data collection method used was to gather and analyze the results and responses of the in-class activities, discussion boards, and email correspondence through the online learning management system, uLearn. All data gathered was stored and housed on my laptop computer accessible only via a secure login and password.

While analyzing these results, I placed them in categories to group or cluster the data. Per Dey (1993), this becomes the basis for the organization and conceptualization of that data. "Categorizing is therefore a crucial element in the process of analysis" (Dey, p. 112). Patton (1990) adds that "the qualitative analyst's effort at uncovering patterns, themes, and categories is a creative process that requires making carefully considered judgments about what is really significant and meaningful in the data" (p. 406).

The interviews were conducted approximately 2 weeks prior to the end of the course via private email, chat, or telephone depending on the preference of the participant. According to Patton (1987), the primary or fundamental principle of interviewing is to provide a framework within which respondents can express their own understandings.

Interviews were selected randomly from the list of the "yes" responses submitted from the online questionnaire. For every five "yes" response that was submitted, a number 1 through 5 was assigned at random. The researcher then selected each of the responses that were assigned the number 4. The interviews took approximately 15 minutes to complete, and they consisted of semi-structured, open-ended questions to elicit the students' views (see Appendix C). Responses were transcribed and examined for similarities and differences. Using a method recommended by Creswell (1998), during the data analysis, the researcher looked for segments to code that can be used to describe information and develop themes. To ensure accuracy, the results were sent via email to the interviewees to verify accuracy and member-checking. Together, these results were incorporated with the analysis of the in-class activities and satisfaction questionnaire free form answers to identify any trends and determine if indeed student-

instructor connectedness is a factor that can be measured and exists within an online learning environment. As trends were identified, they were documented using a thick description. Holloway (1997) refers to this description as experiences in which the researcher makes explicit the patterns of cultural and social relationships and puts them in context.

The satisfaction questionnaire consisted of nine, short, Likert-type questions ranging from 5 (*strongly agree*) to 1 (*strongly disagree*) as well as four short-answer free form questions. The questionnaire was modeled and questions were taken from the actual university Student Evaluation of Instructor that is distributed electronically to each student at the end of a semester. Please see Appendix B for the complete version of the questionnaire instrument used for this research as well as Appendix D for the open-ended or free form questions.

Survey Monkey was used to gather the results of the online satisfaction questionnaire. This allowed for the simple, straight-forward method of creating and answering questions. Furthermore, anonymity could be established by not tracking the IP address of where the respondent completed the survey.

### **Data Analysis**

Data were first grouped or clustered into various classes or categories, such as objects, people, events, etc. This assisted in identifying patterns or themes. According to Dye, Schatz, Rosenberg, and Coleman (2000), “The act of categorizing enables us to reduce the complexity of our environment, give direction for activity, identify the objects of the world, reduce the need for constant learning, and allow for ordering and relating classes of events” (p. 2). Patton (1990) refers to this method of discovery or uncovering

patterns as inductive analysis in that patterns, themes, and categories of analysis "emerge out of the data rather than being imposed on them prior to data collection and analysis" (p. 390).

Once the data have been categorized into the various themes or classes, bits of related data can then be used for the purpose of comparison. Dey (1993) refers to this as grouping or organizing like bits of data with like bits of data. The categories and data bits can then be refined and even placed in subcategories to eventually form a definitive theme. Dye et al. (2000) used a kaleidoscope metaphor to explain the constant comparison style by first grouping the various color patterns into data bits. Then, as you continually compare the color and shape of each bit of colored glass, further categories or refinements are made until a well-established pattern or category array is reached. As mentioned previously, while Garrison et al.'s (2010) Community of Inquiry model does not specifically address connectedness, the elements of teaching and social presence contain several factors that may lead to connectedness. These factors include establishing curriculum content and learning activities as well as managing collaboration and timely communication. Therefore, the data were analyzed and themes identified in an effort to see if they could be categorized within the teaching and/or social presence elements of the Community of Inquiry. Additionally themes would then be identified and placed in other categories.

### **Procedure**

A first pass was taken to review all data gathered and then code the data using the online, qualitative text analysis tool Dedoose. Descriptors or codes were formed by the researcher, such as Activities, Connectedness, Content, Feedback, Frequency (of



instructor response), Presence, Realism, and Satisfaction. This assisted in placing each excerpt into the various categories or buckets. All data including assignments, emails, questionnaire responses, free-form responses and interview answers were processed and reviewed. Three examples of these responses follow:

I certainly felt connected with the instructor . . .

I was pretty satisfied considering that this was an online course . . .

I liked the course content was very convenient and I was given at least a week to do all of the assignments

These descriptors were initially chosen based on frequency of how often they were found in the data. They were coded based on key words found as described previously such as Content, Satisfaction, etc. Occurrences were compared and categorized, and relationships between the categories were developed.

Data was continuously analyzing to look at how different or similar one piece of data is to the other pieces. Then a second pass was taken to group the like categories based on the code labels or descriptors in terms of highest number of frequency or occurrence. From these, the responses were then analyzed and placed in “buckets” of categories.

After grouping or organizing these like bits of data, I performed additional analysis with a third pass to refine or “finalize” the data to form definitive themes. These themes were:

Content = Course content or assignments within the online class and students feelings

Satisfaction = Obtaining a sense of satisfaction after taking the online class

Presence = Overall feeling of instructor presence within the online class

Connectedness = Feeling of connectedness or closeness with the instructor

Realism = A feeling that the instructor is a real person

Feedback = Instructor feedback within the online course (such as replying to emails, providing grades, accessibility, and status of students' complete work). An example of data coding is provided in Appendix E.

### **Trustworthiness**

To enhance standards of trustworthiness within the study, several procedures put forth by Lincoln and Guba (1985) were used. Data and interpretations were shared with the participants (e.g., interview responses) as member checking to make certain participant answers and views are accurate. Additionally, Lincoln and Guba urge researchers to observe or analyze the setting for a long period of time, not just for several days. In this case, data gathering occurred over a full semester, that is, 16 weeks. Such prolonged, detailed engagement contributes to the credibility of my results. Furthermore, gathering data from multiple sources (such as discussion boards, email correspondence, and blog entries) and using multiple methods (such as uLearn, interviews, and questionnaires) provided a strong concept of triangulation. Triangulation enables or involves the use of multiple methods (interviews, observation, evaluation, surveys, etc.) to examine the same dimension of a research problem (Jick, 1989). Moreover, rich description enables readers to assess the transferability of my results. By addressing these various concerns—credibility, triangulation, transferability—I hope to establish the trustworthiness of my procedures and my results.

### **Summary**

Collecting a variety of data such as class demographics, in-class activities, discussion boards, and email correspondence provided me with detailed information

regarding the class. These data, along with questionnaire responses and interview answers, assisted in assimilating all the results into patterns, themes, and categories. This provided an effective representation of the study's findings. The results of the study are reported in the next chapter accordingly.

## CHAPTER 4

### RESULTS

This chapter presents the findings of this study, the purpose of which was to identify if student-instructor connectedness exists within an online environment. The chapter will begin with examples of the data analyzed, followed by the themes that were ultimately constructed from the data.

#### **Discussion Boards Analysis**

The data collected via the discussion/bulletin boards were forums or discussion “rooms” created within the uLearn environment by the instructor. They were in the form of postings by the instructor and students themselves. Discussion boards were the primary communication medium for students to post their answers and thoughts for certain class assignments. For example, one of the first student assignments was to post an introduction of themselves and share with the class some of the technology applications they use (e.g., Web 2.0 applications such as Wikipedia or Craigslist). For instance, students would post an entry similar to the following:

Hello all, my name is \_\_\_\_ and this my second semester here at \_\_\_\_\_. I am majoring in exercise science and I hope to eventually go to physical therapy school. I use a variety of Web 2.0 applications everyday for both academic and personnel use. Here are some of them...

There was also a Help Forum where students can post a question or issue and others may assist and answer that question. Students would post questions on problems they may be having or ask assistance or clarification from others. These consisted of entries similar to the following:

Hey guys is anyone having trouble with the etraining website. Every time I log in it shows an error screen.

Additionally, a few general, non-assignment or course discussion areas existed. These contained games such as Four Word Story where students create a jointly composed story; however you must construct a sentence containing only four words at a time. The next player would need to build on that sentence by also using only four words.

Following is an example:

In the beginning (*written by the first student*)  
 We ate some chicken (*written by the second student*)  
 We were able to fly (*written by the third student*)

As students began using these discussion or bulletin boards, many started to gravitate and associate with others that were in the same major or had similar interests. In reading through the postings, some students began to “bond” together based on like majors (e.g., Exercise Science students reaching out to other Exercise Science majors, Early Childhood Education students doing the same, etc.). Or students were drawn to each other based on several of the applications they used or listed, such as Tumblr, or Skype, or YouTube. For example:

Hi \_\_\_\_, I am an Exercise Science major as well. Congratulations on graduating this spring! I like how you explain the web tools you have used in a short and precise way.

### **Email Correspondence Analysis**

Similar to the discussion board postings, all email correspondence gathered was email through the uLearn system. Email correspondence was almost exclusively instructor to student and student to instructor. Students tended to communicate with each other via the course discussion boards. Email correspondence consisted primarily of feedback from the instructor to the students as it related to assignments such as grading,

answering student questions, informing students on class requirements and status of missing assignments. These included emails such as the following:

Hello All and welcome to the class! Please let me know if you have questions via the Ulearn email. I look forward to working with you and having a great semester.

Hi All, I see there are many postings on the discussion board for activity 1. Looking good. If you have not posted yet, please remember you need to do an intro and respond to two other students.

A few student emails to the instructor include the following:

Thanks for the e-mail explaining your expectations and our responsibilities! Very excited to be in the class and will have my assignments turned in early, every time. That's my new years resolution: to stay on top of all 5 of my classes this semester. Lol.

Good evening, I am looking at Activity 2 right now and have a few questions regarding the assignment. Approximately how many words/pages should this short paper be? Also, what exactly should be included in this paper? (i.e. description of the resource page, etc) Thank you for your time.

Out of the over 150 emails generated throughout the semester, over 3/4 were feedback emails from the instructor to the students. Some of these include the following:

Hi All, there were a few snafus with the dates on assignments but I think I have it all straightened out. For your Activity 2--your research does NOT need to be on something technology/computer related. It can be about ANY topic that interests you. And, by the way, Wikipedia IS NOT a scholarly reference. Please let me know if you have any questions.

Hi \_\_\_\_, I received your message regarding how to create another post on your blog. There should be a "button" that you clicked to allow you to create additional postings. Go back on your site and see if you are able to find it and do two more postings. Let me know if you still have issues.

Hi \_\_\_\_,| Thank you for submitting your assignment. Overall, a good job but when it is comes to PowerPoint presentations, it's not JUST the content, it's the way that it is presented which often will determine if your message is received in the manner you intended to deliver it. Too much animation, a background that doesn't seem to support the content and excessive sound effects all take away from the solid content you are trying to present. Hence, that is you lost 2 points.

Emails were categorized by type in terms of assignment-related dialogue, general explanations of how to perform a task, grades, and application or system issues (such as inability to access uLearn).

### **Assignments Analysis**

The class assignments were analyzed to assist the researcher in obtaining information on course content as well as analyzing the assignments where the use of the discussion boards were part of the assignment. An example is the following:

Assignment: Create a resume using Microsoft Word 2007. Include contact information, an objective statement, employment history. Making use of MS Word formatting tools will make the document more presentable Please attach your assignment as a Microsoft Word document.

Several assignments consisted of students posting their ideas, thoughts, and concerns on various topics and then commenting on classmates' postings. For example, the following post is an entry of a student for an assignment regarding internet privacy:

One of my biggest concerns about privacy online is about using my cards and other important information like social security number. Nowadays hackers can easily retract these information and use. This is mainly because I use net for shopping, paying bills etc. I worry about identity theft because of the consequences that can cause. It can possibly damage my reputation and my earnings. To avoid identity theft I try to use well known source and sites. Also I check my online banking account regularly. Changing passwords regularly is also a good method to avoid identity theft. Assignment information was also gathered as it pertains to submissions within the uLearn assignment drop boxes.

### **Questionnaire Analysis**

Questionnaire information was gathered to ascertain students' feelings about the course and instructor in general. A total of 14 participants answered the satisfaction questionnaire. Within the questionnaire, the responses were grouped by answer per response. These questions are listed in Appendix B.

In addition to the standard satisfaction questions, students were encouraged to elaborate and type in their thoughts and feelings on the four free form response items:

*Would you be able to describe your overall feeling of connectedness within this course (primarily your connection to the instructor and other students within this course)?*

*Do you feel that you can apply what you learned in this course to other areas?*

*While you were in the course, did you feel a strong sense of realism and/or closeness from the instructor and others?*

*Overall, how satisfied were you in this course?*

Furthermore, students were encouraged to add any additional comments that they had. A few students added comments such as, “The instructor seemed to care about the grades of the students with periodic update emails on our progress.” Another student wrote,

I like her [the instructor]. Because she is so anonymous I call her Professor Shredder because she reminds me of Shredder from the Teenage Mutant Ninja Turtles, like I picture her in front of the computer and all you can see is one hand on her desk chair. Maybe you can see she is stroking a cat, nonetheless! I love this image and for some reason I feel like I should do my best to obey and do a great job. Because I want to earn a great grade and a little bit because subconsciously I have it in for the Ninja Turtles and their awful pizza addiction. Tisk tisk...I always felt certain I could email any questions and get a good response to answer any question(s) I had quickly. So good...that it's eviiiiiiii... eham.. pardon. She is a great instructor, I would recommend her greatly.

Additional free-form responses are displayed in Appendix D.

### **Interviews Analysis**

Interviews were performed in order to obtain students’ personal reflections on their experiences within the course. There were a total of four participants who wished to participate in an online, chat interview. The interviews were conducted at a mutually convenient time via the Chat function within the uLearn online learning system. Each interview lasted an average of 15 minutes and consisted of short, simple questions similar



to the free form response questions within the questionnaire. Appendix C lists the questions used for the interview process. The responses provided corresponded with the questionnaire responses and free form answers. This served to form data triangulation along with the questionnaire, free-from response questions, discussion board postings, and email communication. Per Cohen and Manion (2000), triangulation is an "attempt to map out, or explain more fully, the richness and complexity of human behavior by studying it from more than one standpoint" (p. 254). This also assisted in establishing validity within the study. Responses to the interview questions matched or coincided with answers to the questionnaire. For instance, Interviewee 1 provided the answer "Yes, I felt a strong sense of realism with my classmates and teacher." to the question "Did you feel a strong sense of realism and/or closeness from the instructor and others while you were in the course?". This concurred with the interviewee's answer to a similar question in the free form response section of the questionnaire. Similarly, to the interview question "How satisfied were you in this course?", Interviewee 2 answered "*Overall, I was fairly satisfied with the course.*" This tended to agree to the response given within the questionnaire.

Based on the analysis performed a closer look at the resulting themes

**Content (*Overall feelings of course content within the online class*)**

The Content theme dealt with students' describing their overall feeling of the course content as it related to assignments, materials, subject matter, and general course structure. Responses such as the following were grouped into the Content theme:

I liked the course it was very convenient and I was given at least a week to do all of the assignments which was helpful.

The assignments were applicable and the course taught me the basic skills needed for college.

The subject matter is relative to everyday life. I used my experience with the material in everyday life to complete assignments.

**Satisfaction** (*Obtaining a sense of satisfaction after taking the online class*)

The Satisfaction theme consisted of students' overall satisfaction of the course. Student responses were mostly positive and were grouped based on similar comments such as the following:

I would have to say that overall I was satisfied with the course.

I am really satisfied with the course. I studied lot of new things like how to make a web page, blog, a professional presentation etc.

**Presence** (*Overall feeling of instructor presence within the online class*)

Presence consisted of students' overall feeling of the instructor describing instructor availability, accessibility, and interaction. Examples of this include the following:

I felt the instructor was always available

Teacher was great and very accessible

I feel that the instructor does a great job of being available to us even though the course is online and we don't have face to face contact.

**Connectedness** (*Feeling of connectedness or closeness with the instructor*)

The theme of Connectedness emerged as students described their overall feeling of connectedness with the instructor and in some cases with other students. One remark that fell within this theme consists of the following:

I certainly felt connected with the instructor thanks to the constant feedback. Being an online course, I believe this really helped!

Another comment that evinced the theme of Connectedness was this one:

I felt pretty close or connected to my instructor even though we are not meeting just like regular classes. She sent us personalized messages and remarks with the grade which makes you feel like you talk to a regular person. The connections with students were not as strong as with the

teacher. But we still connected with each other by commenting and reading each others' posts.

**Realism (*A feeling that the instructor is a real person*)**

The Realism theme captured comments or notes students mentioned regarding the instructor as being real person within the context of the online environment. A sense that the instructor was there in “real time” rather than asynchronously. Several comments capturing the Realism theme:

No doubt that I sensed closeness or realism! I enjoy using Reddit.com- an online community and I found the class to be as comfortable as communicating with fellow ‘redditors’.

I did feel closeness or realism to the fellow students that I knew and those that were in similar majors. We chatted back and forth. I would say I felt close to the instructor as well. I liked her sense of humor on occasion.

**Feedback (*Instructor feedback within the online course*)**

The theme of Feedback emerged as students commented on the instructor’s interaction with them in terms of grading, answering a question they posed, or simply replying to an email. Some of the Feedback responses include the following:

. . . thanks to her feedback and quick response to answering questions. I did not feel like my question or email was sitting there for days in cyberspace

The instructor seemed like she was always available and responded to email quickly.

## CHAPTER 5

### DISCUSSION

The purpose of this study was to analyze student-instructor connectedness within an asynchronous modular online learning environment. The study was guided by the following research question:

Is student-instructor and instructor-student connectedness a part of this online community.

Previously published research has shown that much has been explored in terms of online community building, interaction and immediacy, cognitive and social presence, and closeness. Researchers have provided studies where models have been formulated to determine the extent of the online classroom community and its benefits. Some studies have explored student-student and student-instructor interaction as well as social and cognitive presence. Others focused on social connectedness, closeness, immediacy, and instructor feedback. However, student-instructor connectedness within the online environment was an area that warranted further analysis. Furthermore, incorporating several aspects of the teaching and social presence elements of Garrison, Anderson, and Archer's (2001) Community of Inquiry model may help support several factors that can lead to connectedness.

#### **Connectedness**

Connectedness has been defined as the perceived closeness between student and instructor and between instructor and student. By reviewing the responses gathering in the theme of Connectedness or closeness, it is possible to attempt to answer the question of whether instructor-student connectedness is a part of this online community. When describing feelings of connectedness, 12 of the 14 participants responded positively in

that they felt there was a sense of closeness or connectedness. For example, one respondent said,

I did feel very connected with the instructor. It felt like she was always available.

Another student indicated closeness with the instructor in the following comment:

I felt pretty close to my instructor even though we are not meeting just like regular classes. She sent us personalized messages and remarks with the grade which makes you feel like you talk to a regular person. The connections with students were not as strong as with the teacher. But we still connected with each other by commenting and reading each others' posts (In some assignments).

And another student declared, "I felt very connected even though the course was entirely online." Students also indicated connection with other members of the class, as in the following statement: "I felt very connected with all in the course."

A common pattern or subject matter appeared in most of the responses dealing with closeness or Connectedness; instructor feedback and instructor presence. Remarks or comments such as the following illustrate this point:

I definitely feel connected and feel that the instructor does a great job of being available to us even though the course is online and we don't have face to face contact.

There wasn't a great amount of connectivity with the other students in the course, but the instructor tried to connect with the students more so through emails and announcements which made it convenient.

It seemed like she was always there and responded to my questions pretty quickly.

These observations tend to correspond to Garrison, Anderson, and Archer's (2001) social presence element of the Community of Inquiry model. They defined social presence as the ability to project one's essence, personality, and social cues emotionally and socially within a community through interaction and communication technologies. Within an

online learning or distance learning environment, Moore (1989) defined three core types of interaction: learner-teacher, learner-content, and learner-learner. Dialogue or interaction was recognized as a crucial variable in a distance education environment. By interacting via email, discussion boards, and other communication technologies, the instructor appeared to establish a good sense of social presence and connectedness. Two statements that reflect this connectedness are the following:

I wasn't connected so much with any other students but I felt if I needed to reach the instructor I could.

Earlier in the semester I felt more connected to other students because they were more readily available. The instructor seemed to take some time to answer questions so I had to rely more so on other students. Now I can say that I feel more connected with the professor since she has improved with communication.

These results correlate with Sung and Mayer (2012) and their study of social presence in an online environment. They reveal five factors that enhance social presence and connectedness. These include the following: social respect (e.g., receiving timely responses), social sharing (e.g., sharing information or expressing beliefs), open mind (e.g., expressing agreement or receiving positive feedback), social identity (e.g., being called by name), and intimacy (e.g., sharing personal experiences). These factors may be particularly important in distance or online learning situations in which students and the instructor are physically separated.

Similarly, LaBarbera (2013) found that students' sense of connectedness is strongly correlated to feedback on assignments and instructor interaction. Additionally, she found that personalized and frequent e-mail correspondence from the instructor increased a student's perceived sense of connectedness and students were more likely to report satisfaction with the online course. Furthermore, Slagter Van Tryon and Bishop

(2012) contend that online connectedness, or feelings one has with other online class participants (instructors, classmates, and teaching assistants) through computer mediated communication, is positively related to course success.

### **Feedback**

Chickering and Ehrmann (1996) highlighted feedback as one of the key elements in quality teaching within higher education. This seems true in an online environment as well for feedback seemed to play a major role and had a significant impact with connectedness as this respondent stated:

The regular feedback definitely made me “connect” with the instructor. Another respondent expressed a similar perception: “I did feel closeness because we could connect and ask any doubts through uLearn.” These remarks suggest a comparison illustrated by Woods and Baker (2004) that high levels of interaction can have positive effects on the learning experience. Additionally, Dennen et al. (2007) determined that feedback is an important instructional strategy and that timeliness in instructor feedback to students is of great concern.

Feedback appears to be evident with having presence or the appearance of being present. This also lends itself to higher feelings of connectedness. As Shea (2006) described, students feel a higher sense of connectedness if they feel the instructor is drawing in participants, creating an accepting climate for learning, and keeping students on track. Higher levels of presence led to higher levels of feeling a part of the learning community and is related both to students sense of connectedness and learning. This is illustrated in the following comments:

I felt her quick turnaround on my questions via email sort of made it as if she was available fairly quickly.

The instructor did a good job providing feedback and checking in periodically.

An example of this is the following emails from the instructor students advising them of upcoming deadlines and status of grading assignments.

Hi all, I went ahead and released the make up assignment to give you a couple of extra days. I'm still grading your Assignment 11 papers and have not started grading the Blogs yet. I plan to catch up on grading over the week.

Hi all, I have graded everything that has been submitted in the drop box so all grades are current. The only thing some of you may not have in your grades is the quiz. Some of you took it early; others are waiting. Do not wait until the last minute...PLEASE.

Swan and Ice (2010) reported that feedback enhances a student's perception of teaching presence. Therefore, feedback does play a major role. This relates to Diaz, Swan, Ice, and Kupczynski's (2010) assertion that a higher priority should be placed on providing timely feedback. This is certainly related to understanding students' perspectives of the course and what they sense as being important. As Eisner (1979) indicates, it is important to recognize the existence of a particular characteristic and student's perception of its respective importance. Responses from the students' observations such as

I did feel connected with the instructor because she did a great job in getting back to me on grades and status.

and

I felt pretty close to my instructor even though we are not meeting face to face just like regular classes. She sent us personalized messages and remarks with the grade which makes you feel like you talk to a regular person.

help reinforce the concept that feedback plays a key role in an online environment.



The results of the impact of feedback and teaching presence draws similarity with Hosler and Arend's (2012) study of feedback and students' perceptions of teaching and cognitive presence of the Community of Inquiry model. They found that teaching presence that incorporated individual instructor feedback helped support critical thinking. Students seemed to appreciate when an instructor encouraged them to "dig deeper into their analysis and how instructor's critiques were effective methods for improvement" (p. 224).

Understanding the importance of feedback is emphasized by Coll, Rochera, and de Gispert (2014) in their study involving teacher feedback to students working in small groups in an online collaborative learning environment. The feedback was well-received by the students and kept the student groups engaged. The study also showed this helped in knowledge building and students' approach to accomplishing the task. Heischmidt and Damoiseau (2012) also found that online instructors need to consider the important dimensions of content, format and feedback in order to increase the chances for overall satisfaction with the online course experience. In their study of an undergraduate, online business course, Heischmidt and Damoiseau discovered that there was a positive correlation between student satisfaction and the level of instructor feedback. They conclude that instructors need to focus on their accessibility and make sure they facilitate ease of communication between instructor and student.

Espasa and Meneses (2010) studied the positive effects of feedback in an online teaching environment. Students took the feedback given by the instructor to improve their learning experience and perform tasks and assignments better. Regular feedback from the instructor improved the student's academic performance and satisfaction with the course.

Collis, de Boer, and Slotman (2001) refer to feedback centered on the communication of learning results in an online environment. Their study described a range of feedback strategies to communicate results. For example, feedback can be offered individually (e.g., tailored to the work of each student) or in groups (e.g., online meeting rooms).

Mason and Bruning (2001) summarized several studies involving feedback in computer-based instruction. They concluded that instructional designers should design feedback strategies that will maximize the educational benefits of computer-based instruction.

With the proliferation of MOOCS (massive open online courses) where enrollment can have thousands of students or participants, Suen (2014) remarks that without formative assessment and feedback, “MOOCs amount to information dump or broadcasting shows, not educational experiences” (p. 312). While it is difficult, if not impossible, to provide individual feedback to students within MOOCS, one solution may be to provide feedback to students in general. An example may be where instructors would provide answers to a limited number of most popular questions posted in the MOOC online discussion forum.

However, it is not just feedback but the frequency and timeliness of the feedback that were a factor as well. For example, there were several student comments that conveyed timeliness as an important element, such as

She responded quickly to all my questions which really helped a lot  
and

Whenever I asked a question or was not sure about something, she was always very good at getting back to me pretty fast

Heischmidt and Damoiseau (2012) showed that timely and comprehensive feedback helped improve the quality of the students' online experience. This is even more relevant to online courses because of the delivery methods of online courses and those of face-to-face courses differ greatly. "The online course does not provide the course participant with the opportunity to interact with the faculty before, during or after a traditional face to face delivery of a course" (p. 94). Heischmidt and Damoiseau emphasize that instructors of online courses need to pay very close attention to the dimensions of content, format, and feedback.

Timeliness of feedback appears to coincide with satisfaction as well. Students who responded or commented on feedback or quickness of instructor response also mentioned their overall satisfaction with the course. This can also improve a student's overall quality of the course. Espasa and Meneses (2010) discovered a positive relationship between feedback and student final performance. Students that had received feedback after assignments achieved better academic results. Espasa and Meneses also found a positive association between student satisfaction with the course and feedback received after performing assignments.

Johnston, Killion, and Oomen (2005) conducted a literature review that identified key contributors to student satisfaction with online instruction. Interactions with the instructor as well as timely feedback were among the significant contributors to student satisfaction.

Additionally, Glazer and Wanstreet (2011) conducted a survey of doctoral students to measure connectedness in terms of students' relationships with other students

and students' relationship with the faculty or instructors. They concluded that to foster connectedness to faculty, immediate instructor feedback is recommended.

### **Realism**

Realism also was a theme that seemed to capture certain aspects of closeness along with connectedness and the social presence element of the Community of Inquiry. This theme took into account key words that seemed to deal primarily with viewing the instructor as a real person or live person within an online environment. Several participants mention realism and closeness as illustrated by these comments:

I did feel some realism. As I mentioned before she corrected and commented the assignments quickly which helped me, also made her a real person.

I guess there was some realism thanks to her feedback and quick response to answering questions. I did not feel like my question or email was sitting there waiting for a response. So I guess she felt real as real as can be within an online scenario.

Stein and Wanstreet (2003) affirm that when the degree of social presence is high, interaction will be high. This increases the ability of people to be perceived as real, three-dimensional beings despite not communicating face-to-face.

### **Presence**

Along with Feedback and Realism, the timing or quickness of the instructor's response was something that participants seemed to equate with high levels of presence and connectedness. As evident in several of the comments relating to feedback and realism, the fast response time was contributed to the students experiencing the instructor as present:

It felt like she was available pretty much since she answered my emails pretty fast.

She corrected and commented the assignments quickly

I think there was realism thanks to her feedback and quick response to answering questions.

I did feel closeness with the instructor as if she was present and readily available because we could connect and ask any doubts through ulearn.

## **Content**

Content referred to course content as it related to assignments, materials, subject matter, and general course structure. Students felt that the overall course content and materials were well presented, as is evident in this statement:

The assignments and materials covered in the course were great. I will be using some of the skills I learned such as PowerPoint, and Excel which I have already been applying in my Statistic classes.

Another example is this comment:

The subject matter is relative to everyday life. I used my experience with the material in everyday life to complete assignments, so I will most definitely take what I learned and apply it to my daily life going forward.

These comments tend to relate to Kanuka's (2011) emphasis that development and delivery of the course content are key factors. Additionally, this corresponds to Decker and Cox's (2007) stating that content for asynchronous courses needs to be relevant and interesting. Baghdadi (2011) highlights that sound content is essential for effective teaching and learning. High-quality course content is critical for a successful learning experience. Furthermore, Zimmerman (2011) stresses that instructors should include more interactive content as a way to achieve student success. Ensuring that the content is easy to access and engaging could heighten the motivation of learners. This will encourage students to spend more time with course materials and provide a richer learning experience.

This correlates with Barbour's (2012) study where he conducted interviews of online course participants. The results suggest that effective asynchronous course content

design is related to making that content engaging. In Barbour's study, students indicated that the asynchronous course content was "just plain" (p. 234) and that "they could probably make it a little more flashy, it's a little boring to look at now" (p. 234).

In another study with K-12 online teachers and course developers, Barbour (2007) reported that two of the seven principles for effective asynchronous course content design were related to making that content engaging. He recommended that course developers should refrain from using too much text and consider the use of visuals to replace or supplement text when applicable. Multimedia should also be used to enhance the content and should not be used simply because it is available.

### **Satisfaction**

Satisfaction seemed to be prevalent in many remarks by students and tends to be associated with connectedness. The data suggest that there appears to be a pattern where connectedness and satisfaction are both viewed strongly. There appears to be a pattern in which respondents that listed a strong sense of connectedness also exhibited a high level of satisfaction. For instance, a student rated their level of connectedness quite high in this response: "I felt connected with my fellow students and the instructor. If I had a question it was always answered." Another student also stated a high level of satisfaction: "I am very content or satisfied with the course."

Another example where the connectedness level ranked high and seemed to correlate with satisfaction can be seen in this observation where the student commented: "The connectedness between the teacher and us students was really good." She then went on to comment on satisfaction indicating: "I am very satisfied with this course."

These results tend to correspond with findings from Richardson and Swan (2003), where they conclude that students perceive the presence of others as an essential part of their learning experiences and a student's perception of satisfaction with an instructor is related to his or her perceptions of social presence. Glisan and Trainin (2006) also suggest that there can be a negative correlation between lack of teaching or social presence and online course satisfaction and fulfillment. Similarly, Stein, Wanstreet, Calvin, Overtom, and Wheaton (2005) affirm that the lack of interaction among peers and instructors will impede learning and satisfaction with online courses.

In their study of students from two community colleges, Jackson, Jones, and Rodriguez (2010) found that student satisfaction with online courses appears to be impacted by instructor actions within the course. The greater the connection between faculty or instructor and student, the greater the satisfaction.

Woods and Ebersole (2003) also stated that building a strong and positive faculty-student relationship helps foster a greater sense of community within the online environment. This, in turn, contributes to a higher degree of satisfaction with the overall learning experience.

Additionally, community or sense of belonging seemed to resonate with students. The data revealed some of the comments and postings students had with one another seemed to show some bonding with each other. Students that had the same major and/or the same interests appeared to reach out to each other. For example, one student commented to another:

Hi \_\_\_\_, I like how we have the same major and personal goals but I also like how straight and to the point you were about defining each web forum. What other classes are you taking this semester?

Another example is the following:

Hey \_\_\_\_, I also like Indian movies. Here is a good website.....

This relates to what Wheeler (2005) discovered in that using free-form discussion areas provides students with a sense of belonging to a community. Daves and Roberts (2010) also indicated that students who communicate primarily through digital means feel more connected to those with whom they are communicating due to the lack of face to face contact.



## CHAPTER 6

### RECOMMENDATIONS

#### **Recommendations**

Connectedness has been defined and explored in many different facets. There is spiritual connectedness, in terms of one's physical self as a part of many mainstream religions; and social connectedness, in the sense of the social belonging with others. Connectedness has also been strongly associated with closeness and one's feelings of belonging with others or being part of group. This study characterized connectedness as the perceived closeness between student and instructor. This perceived closeness may be more difficult to gauge within an online environment as opposed to a more traditional, face-to-face teaching format. Kang (2001) describes online learners as being geographically isolated from the class and lacking the immediate assistance and help that is available with traditional face-to-face classroom instruction.

The results of this study suggest that connectedness or perceived closeness can be achieved in an online setting. With increased interaction and feedback from the instructor, students tend to feel more connected. This appears to highlight Garrison, Anderson, and Archer's (2001) social presence element of the Community of Inquiry model. By interacting via email, discussion boards, and other communication media, the instructor appeared to establish a good sense of social presence and connectedness. This gave the feeling of being constantly available and help connect with the students. Therefore, instructors should incorporate tools promoting a strong level of interaction with the students. This tends to highlight Slatinsky's (2013) argument that instructor

interaction is critical and one of the main disadvantages of asynchronous online courses is the lack of instant access to an instructor for questions or problems.

The results tend to show that instructor feedback on assignments and general overall questions can also provide a measure of connectedness. This result is similar to Shea's (2006) finding that students feel a higher sense of connectedness within an online environment if they feel the instructor is drawing in participants and creating a climate for learning. Furthermore, Dennen et al. (2007) emphasize that timely feedback appears to be an important instructional strategy. Instructors within an online environment should provide feedback in a timely manner and integrate exercises that encourage collaboration and communication. This would greatly enhance the atmosphere of learning. Kanuka (2011) stresses that it is essential that distance and online educators attend to the design and development of course content. Key considerations within an online environment are the design, development, and delivery of the course to make it more engaging for the students.

Furthermore, the timing or quickness of the instructor's response was something that participants seemed to equate with high levels of presence and connectedness. As Shea (2006) emphasized, having an instructor with a strong and active presence relates to students having a positive sense of connectedness and learning. Therefore, the promptness of feedback ought to be an item that the instructor should be aware of.

It can be debated that the introduction of the Internet and the World Wide Web has changed our lives more than any other previous technological innovation. Indeed, the introduction of the Internet and web-based instruction has opened up a new frontier for instructional design and analysis. As the field of instructional design and analysis

continues to evolve, we as trainers, instructors, and researchers need to harness this amazing power of the World Wide Web to develop and deliver e-learning programs that maximize learning potential. Prior research has shown that Web-based instruction does differ from traditional, face-to-face instruction. Initially, research focused on models that assist in providing carefully structured guides for course creation. More recently, studies have taken place to determine the scope of the online classroom community and its benefits. Others have explored student-student and student-instructor interaction and immediacy as well as instructor feedback. In this research, I attempted to further explore online learning and whether student-instructor connectedness played a role in student perception of the instructor, the class, and perhaps their achievement in a Web-based learning environment.

#### *Limitations of the Study*

This study may have been limited in several factors. External validity may have been of some concern from the standpoint of reactive effects of experimental arrangement (i.e. the Hawthorne<sup>3</sup> effect). There could possibly been several students that attempted to deviate or respond differently knowing that they were participating in a research project. In addition, they may have falsely answered questions or submitted a response thinking that those are the answers that the researcher was looking for. One attempt to possibly overcome this may be to perform the study over several semesters and analyze whether certain trends exist.

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<sup>3</sup> The Hawthorne effect – individuals' behaviors may be altered because they know they are being studied was demonstrated in a research project (1927-1932) of the Hawthorne Plant of the Western Electric Company in Cicero, Illinois. First led by Harvard Business School professor Elton Mayo along with associates F.J. Roethlisberger and William J. Dickson.

The concept of generalizability could have also been considered a limitation. Generalizing a qualitative component may be limited in that the findings are situational in terms of being unique to each study. However, a reader may develop his or her own theory of the study which can be extracted or exported to provide explanation for the experiences in other comparable situations. Myers (2000) states that partial generalizations may be possible to similar populations. The use of thick descriptions may assist with alleviating this limitation for, per Lincoln and Guba (1985), thick description can describe a phenomenon in sufficient detail where one can begin to evaluate the extent to which the conclusions drawn are transferable to other times, settings, situations, and people.

### **Direction for Future Research**

While this study showed that connectedness can be a part of an asynchronous online course setting, further research is still warranted. This study dealt primarily with a single case study of an asynchronous online environment. Additional case studies can be performed to reinforce the findings found here or discover nuances that did not emerge in my data collection. Furthermore, variations to this study can be made such as measuring connectedness in a real-time, synchronous online situation.

The advent of the Internet and web-based instruction has opened up an entirely new area for instructional design and analysis. It is still a new frontier that needs further exploration. Similar to how Americans pursued the westward expansion to foster our Manifest Destiny in the 19<sup>th</sup> century, we should pursue and expand the area of online learning. Continued research activity can provide instructors the understandings and tools they need to bolster the learning experience of online or distance learning.

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## APPENDIXES

## APPENDIX A

## INFORMED CONSENT

A CASE STUDY OF STUDENT-INSTRUCTOR CONNECTEDNESS IN AN  
ASYNCHRONOUS, MODULAR ONLINE ENVIRONMENT INFORMED CONSENT

Georgia State University  
Department of Middle Secondary Education and Instructional Technology  
Informed Consent Form

Title: A Case Study of Student-Instructor Connectedness In An Asynchronous, Modular Online Environment

Principal Investigator: Dr. Stephen Harmon  
Orazio A. D'Alba, Student Investigator

Sponsor: Georgia State University

**Purpose:** You are being asked to volunteer for a research study called "A Case Study of Student-Instructor Connectedness In An Asynchronous, Modular Online Environment" The purpose of the research study is to better understand student-instructor connectedness and presence within an online classroom community.

**Procedures:** To be in the research study, you will be asked to complete a short online satisfaction questionnaire and participate in a brief interview. The anonymous survey will be completed online, three weeks prior to the end of the semester, and the interviews will take place two weeks prior to the end of the semester either through email or chat (whichever your preference). Your responses will be handled in a confidential manner with no names associated with any of the data collected. You will only be able to take the survey once and you will not be personally identified. This study will only be for this semester and will conclude once the semester ends.

**Risks and Benefits:** In this study, you will not have any more risks than you would in a normal day of life.

**Benefits:** There may be no potential benefit to you other than a satisfaction that you have contributed to a research that studies the interaction and student-instructor connectedness in a Web-based class. The benefit to society is such that educators can gain insight into any such connectedness and interaction with the optimism of enhancing the online learning community.

**Voluntary Participation and Withdrawal:** Participation in this research is voluntary. You have the right to not be in this study. If you decide to be in the study and change

your mind, you have the right to drop out at any time. You may refuse to answer any question or stop participating at any time. Whatever you decide, you will not lose any benefits to which you are otherwise entitled.

**Confidentiality:** We will keep all your records private to the extent allowed by law. Only Dr. Stephen Harmon and Orazio D'Alba will have access to the information you provide. Information may also be shared with those who sure the study is done correctly (Georgia State University Institutional Review Board). We will use a pseudonym (fake name) rather than your name on all records. The transcripts of the interviews will be kept in Orazio D'Alba's secured computer which is locked, password, and firewall protected. Your name and other facts that might identify you will not appear when we present this study or publish its results. You will not be identified personally.

**Contact Persons:** Contact Dr. Stephen Harmon at [swharmon@gsu.edu](mailto:swharmon@gsu.edu) or Orazio D'Alba at [odalbal@gsu.edu](mailto:odalbal@gsu.edu) or 770-819-0385 if you have questions, concerns, or complaints about this study. You can also call if think you have been harmed by the study. Call Susan Vogtner in the Georgia State University Office of Research Integrity at 404-413-3513 or [svogtner1@gsu.edu](mailto:svogtner1@gsu.edu) if you want to talk to someone who is not part of the study team. You can talk about questions, concerns, or suggestions about the study. You can also call Susan Vogtner if you have questions or concerns about your rights in this study.

**Copy of Consent Form to Subject:** We will give you a copy of this consent form to keep. If you are willing to volunteer for this research, please click in the box that states "Yes, I would like to participate in this study." Another email will be sent with a secure and confidential link to a short, five-question survey (approximately 2 weeks prior to the end of the semester) administered through Survey Monkey. If you do not wish to participate, simply click the box that says "No."

## APPENDIX B

## SATISFACTION QUESTIONNAIRE

Directions: Below, you will see a series of statements concerning a specific course or program you are presently taking or have recently completed. Read each statement carefully and click on the choice to the right of the statement that comes closest to indicate how you feel about the course or program. There are no correct or incorrect responses. If you neither agree nor disagree with a statement or are uncertain, simply select the Neutral option. Do not spend too much time on any one statement, but give the response that seems to describe how you feel. Please respond to all items.

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

- 1) I am satisfied with how the instructor provided assignments relating to the goals of this course.
- 2) The class sessions were interesting and worthwhile.
- 3) The instructor was accessible to students outside of class.
- 4) Goals and/or objectives of the course were met.
- 5) How would you rate the overall teaching effectiveness of the instructor?
- 6) Do you feel that you can apply what you learned in this course to other areas?
- 7) Overall, how satisfied were you in this course?
- 8) While you were in the course, did you feel a strong sense of realism and/or closeness from the instructor and others?
- 9) Did you sense a feeling of connectedness within this course (primarily your connection to the instructor and other students within this course)?

## APPENDIX C

## FOLLOW-UP INTERVIEW QUESTIONS

The following semi-structured interview questions will be asked to participants that have voluntarily provided their email address upon completion of the satisfaction questionnaire. The interviews will either be conducted via private email, chat, or telephone depending on the preference of the participant.

1. Can you please describe your overall feeling of connectedness within this course (primarily your connection to the instructor and other students within this course)?
2. Do you feel that you can apply what you learned in this course to other areas?
3. While you were in the course, did you feel a strong sense of realism and/or closeness from the instructor and others?
4. Overall, how satisfied were you in this course and why?
5. Did you feel that the instructor was "real" in the sense that she was there and not a virtual instructor?
6. Would you take another online course? Why?
7. What would you change about this course?
8. What changes can the instructor make to make him/her seem more "real"?

## APPENDIX D

## QUESTIONNAIRE FREE FORM QUESTION RESPONSES

**Instructions**

Please feel free to provide a response or elaborate on any of the following questions.

1. How would you describe your overall feeling of connectedness within this course (primarily your connection to the instructor and other students within this course)?
2. What, if any, parts of the course content that you learned in this course can be applied to other areas (other courses, work environment, etc.)?
3. While taking the course, did you feel a strong sense of realism and/or closeness from the instructor and others? Can you please describe this sense of realism and/or closeness?
4. Overall, how satisfied were you in this course and why?

## APPENDIX E

## EXAMPLE OF DATA CODING ANALYSIS

Example of first pass data analysis: Assigning descriptors or codes that occurred in the data (Activities, Connectedness, Content, Feedback, Frequency (of instructor response), Presence, Realism, Satisfaction, etc.).



Satisfaction

*“I was pretty satisfied considering that this was an online course...”*

*“I was very satisfied with the course”*



Connectedness

*“I certainly felt connected with the instructor...”*

*“I wasn't connected so much with any other students but I felt if I needed to reach the instructor I could”*

*“The connectedness between the teacher and us, students was really good. She gave some assignments that we could discuss and work together through ulearn and it helped in knowing each other”*



Realism

*“No doubt! I did feel a sense of realism in the course from the instructor”*



Content

*“I liked the course content was very convenient and I was given at least a week to do all of the assignments”*

*“Absolutely I can apply what I've learned, especially all that I learned about Excel.”*



The second pass to establish the categories based on the code labels or descriptors in terms of highest number of frequency or occurrence.

1. Content
2. Satisfaction
3. Presence
4. Connectedness
5. Realism
6. Feedback
7. Online Environment
8. Course Effectiveness

The final pass was to refine or “finalize” the data to form definitive themes.

1. Content
2. Satisfaction
3. Presence
4. Connectedness
5. Realism
6. Feedback (such as replying to emails, providing grades, accessibility, and status of students' complete work)