

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

AN ANALYSIS OF ONLINE COMMUNITIES OF INQUIRY  
AND STUDENT SATISFACTION

A dissertation submitted in partial fulfillment of the requirements for the  
Doctor of Education Degree in Educational Leadership

By

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August 2014

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## Dedication

I dedicate this dissertation to God, my Lord and provider, who uncovered talents in me I didn't know I had and changed my life forever. Thank You for being my Dissertation idea and writing partner, may this work be to Your glory, benefit and pleasure.

To my Mom, Sharron, who has been and continues to be my greatest supporter. As an experienced corporate professional, you have a wisdom and logic towards life and goals which has kept me on the straight and narrow path. My accomplishments are yours, for never has a child been grounded in guidance and allowed to soar at the same time. I am filled with gratitude because you have been patient during the cranky times, humorous during the stressful moments, and proud during the entire process. Let's take a moment to bask in the glory of this Doctoral accomplishment...okay, what's next?! 😊

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## ABSTRACT

### AN ANALYSIS OF ONLINE COMMUNITIES OF INQUIRY AND STUDENT SATISFACTION

By

Heidi Hintz

Doctor of Education Degree in Educational Leadership

In an effort to assist students in acquiring the units they needed to graduate, the California State University 23-campus system began an online course program which allowed students from participating campuses to enroll in online classes offered by another participating campus. A solution to a fiscally-depleted system, previously forced to close numerous general education courses and deny students enrollment into the CSU higher education system, the 36-course online program was a test to determine if students would participate. Believing online teaching and learning may uncover new paths towards student persistence, which occurs when students are satisfied with their learning environments, this research set out to find the factors which significantly influenced students' satisfaction rates. This mixed study was designed to look for predictive variables using data collected from student surveys in conjunction with qualitative student interviews and was conducted at one of the California State Universities. The participants were students who were enrolled in one of six online courses being taught by instructors who, during the summer of 2012, were professionally-trained in redesigning their face-to-face classes into hybrid and fully online courses.

## **Chapter 1: Statement of the Problem**

### **Introduction: People and Technology**

In an experiment, Austrian physicist Erwin Schrödinger put a live cat in a box with a sealed vial of poison that would break open at a random time. While the box remained closed, the cat was thought of as both alive and dead. In quantum mechanics, there is a relationship between the observer and the transformations he or she places on the observed. In the case with the cat, there are two potential possibilities: the cat is alive or dead. On a universal level, there are numerous possibilities to numerous scenarios; we just have to choose. But once we choose, that is our reality. Regarding online academics, one must ask which has the more significant influence: technology or individuals? Neither, because technology influences individuals and individuals influence technology. However, this quantum relationship between technology and people is only significant if “we are looking at it,” otherwise it remains an unobserved phenomenon (Wheatley, 2006, p. 37). This study attempts to open the box and observe how online academics significantly influences the distant relationships between learner and teacher and the rates of satisfaction students have for flexible learning, course design, and online relationships.

### **Improving Student Access through Online Class Promotion**

Online education has grown exponentially over the past decade and for many scholars (Allen & Seaman, 2011; Ekmekci, 2013) it is no longer a novelty. An estimated “90% of higher education institutions provide some form of online instruction” and increasing numbers of institutions are incorporating online learning into their organization’s enrollment design (Collopy & Arnold, 2009, p. 85). Asynchronous

courses offer convenient access and the increased offering of more online classes each year is higher education institutions' response to students' demands for access (Ekmekci, 2013). Over the past decade, several California State University (CSU) campuses have improved students' access to classes with a variety of educational delivery methods. "Hybrid courses, online courses, and online degree/credential programs maximize campus space requirements, facilitate speed to graduation, and increase access to a campus degree" (Board of Trustees Meeting, CSU, 2009, p. 2). University leaders throughout the California State University system are interested in learning "how to best leverage system-wide expertise to increase the reach and benefits of CSU online offerings" (Board of Trustees Meeting, CSU, 2009, p. 2)

In spring 2013, the California State University higher education system began its online university geared towards helping students who were a "few units short of earning their degree" (Bermudez, 2012, p. 1). One of the benefits of Cal State University Online (CSU Online) is that students were able to register into otherwise full classes and complete their degree. In addition, the state benefits because when "a student doesn't finish school, the money the state gives for the student gets lost" (Bermudez, 2012, p. 2). In an effort to promote (CSU Online), increase technology use, and improve access for students, Dr. Dianne F. Harrison, President of California State University, Northridge and "huge advocate of technology in the classroom setting," has mentioned online academics at a collection of events (Harrison, 2013b). Dr. Harrison (2013b) stated, "Technology can be a tool by which we can individualize student learning...It's about the expectations students have that we are technology savvy, up to date and accessible on their time" (p. 1). Not unlike many higher education administrators, Dr. Harrison understands what

today's students' expect from a modern classroom and she knows that large percentages of faculty members are uncomfortable with emerging teaching and technology (Allen & Seaman, 2011).

While addressing California State University, Northridge faculty members, Dr. Harrison said, "The introduction of new technology tools...have helped make the flipped classroom more viable. Students can access content, anywhere, anytime" (Harrison, 2013a). In differentiating between vested stakeholders and people who were less enthusiastic about online education, Dr. Harrison (2013a) made the following statement at a teacher retreat:

I hope you are excited to try this [using online teaching tools] and I hope you are open to thinking about trying. If you are one of the generally one-third of educators who are consistently suspicious of anything online...or you just want to wait and see how others fare, that will be fine. For those who are ready and interested, please let me, your dean, your department chair, or whoever is the most appropriate know.

Before proceeding with the implementation of more online academic platforms, it seems faculty members need validation proving that if they change their methods of teaching, the effects will be for the betterment of their students. Miller (2012) reports that "at present, online faculty have insufficient evidence to tell them what specific features excite and engage students and urge them to succeed in their online classes" and if faculty had comprehensive data "they might opt to alter their instruction and course

design to improve student experiences” (p. 23). While research continues, Dr. Harrison and administrators including those managing California State University (CSU) Faculty Technology Centers (FTC) promote faculty development programs geared at strengthening the online skills of instructors. “Just take a baby step and see if it doesn’t help you. We have to get there on our own and at our own pace” (Harrison, 2013a). One of my goals is for the results of this study to provide instructors, administrators, designers, and students with answers regarding the effectiveness online classrooms have on access, teaching, and learning.

### **Flexible Learning and the Autonomous Learner**

Larreamendy-Joerns and Leinhardt (2006) provide a fascinating historical perspective as to how distance learning, the forefather of online education, keenly focused on independent student learning. The first non-traditional classroom, one that did not meet face-to-face, began with the idea of spreading democratization, the action of “increasing access to higher education” to “underserved populations (e.g., women, blue collar workers, farmers)” (Larreamendy-Joerns & Leinhardt, 2006, p. 573). Anna Eliot Ticknor, the daughter of a Harvard professor, founded the Society to Encourage Studies at Home in 1873. She began the “first correspondence study programs, that [were] distance, personalized instruction” and used the regular post mail to transmit questions and answers between instructors and students (Larreamendy-Joerns & Leinhardt, 2006, p. 573). Art, German, French, science, history, and English instructors mailed their “syllabi to the students, who were responsible for going through the assignments and submitting their memory notes to their correspondents for comment and discussion” (Larreamendy-Joerns & Leinhardt, 2006, p. 573). Students learned at their own pace, which was a

necessary benefit for late 19<sup>th</sup> century women, whose study times were limited because of domestic obligations.

Similarly, today's students have an array of personal responsibilities, and expect flexibility while they pursue their higher education goals. Distance learning, whether it is in the form of a hybrid or fully online course, offers this generation of busy students, many of whom are very familiar with search engines and social networks, the ability to acquire an education while fulfilling their personal responsibilities (Fulkerth, 2009). The term flexible learning largely encompasses the belief that students should be regarded as "active participants in the learning process" (Bibeau 2001; Ekmekci, 2013; Shea & Bidjerano, 2009). Universities are using innovative modes of teaching by implementing interactive technology which may require students to develop or improve their computing and learning skills. Consequently, learners may respond differently to an online learning environment, depending on their abilities and attitudes towards autonomous learning (Drennan, Kennedy, & Pisarski, 2005, p. 332).

Ekmekci (2013) states that it is "important for anyone teaching adult learners in asynchronous online programs to create a learning environment that is comfortable and non-threatening, is designed around learners' needs, builds and enhances learners' self-esteem, encourages active and self-directed participation...and...promotes critical thinking" (pp. 31-32). In addition, Ekmekci (2013), like Robinson (2009), reminds us that andragogy, the art of helping adults learn, requires instructors to provide adult students with opportunities to mesh their life experiences with new course materials through various exercises and assignments. Adult learners benefit from "learning perspectives that are problem-based in the present moment...and are better motivated by

intrinsic factors, as compared to extrinsic ones,” thus coursework that asks them to critically ponder on “newly acquired insights” are beneficial to the students’ overall understanding and engagement with materials (Ekmekci, 2013, p. 31). Garrison and Cleveland-Innes (2005) propose that establishing processes that challenge and stimulate students to engage is crucial to creating and maintaining a community of inquiry which has shown to improve student and instructor satisfaction rates.

### **Isolation versus Social Presence**

Teaching and learning remains in part a social undertaking, and the utilization of the Internet and other technology-based tools brings to light the effects that space, time, and psychological distance have on the relationship between teachers and their students. Part of this study examines the latest research which focuses on minimizing the isolation students and instructors experience in online teaching and learning environments. Social presence is a component that fosters the building of a community of learners (Aragon, 2003; Bibeau, 2001; Garrison & Cleveland-Innes, 2005) and some researchers believe that social presence is one of the primary components of an effective online learning environment (Stodel, Thompson, & MacDonald, 2006). Social presence has been defined as: “the ability of learners to project themselves socially and emotionally in a community of inquiry” (Rourke, Anderson, Garrison, & Archer, 1999, p. 3); and the “degree to which a person is perceived as a ‘real person’ in mediated communication” (Gunawardena & Zittle, 1997, p. 9).

Social presence is strongly associated with proximity and closeness, and the distance generated in the online environment prevents or weakens the social connection. Garrison and Cleveland-Innes (2005) believe we must remember that the main purpose of

education, whether it is attained through a face-to-face or online format, is to achieve specific learning outcomes, stating that interaction should be “more structured and systematic” (p. 134). However, since interaction is fluid communication, which is used to influence people’s critical thinking and reflections, it is necessary to “create a community of inquiry where interaction and reflection are sustained” and effective (Stodel, 2006, p. 2). When interaction includes critical inquiry, it moves past the simple action of information exchange and advances “various combinations of interaction among content, teachers, and students” to maintain a community of inquiry (Garrison & Cleveland-Innes, 2005, p. 134). It is ironic that technology solves the geographic problem and closes the isolation gap by letting students and teachers come together online, while at the same time creating a social isolation causing participants to feel disconnected. This study endeavored to link teacher’s online instructional models, which can reportedly increase social presence, with participation rates, which reportedly increase student satisfaction rates (Allen & Seaman, 2011; Bibeau, 2001; Rourke et al., 1999; Shea & Bidjerano, 2009, 2010, in press).

### **Professional Development**

Jackson, Jones, and Rodriquiz (2010) agree that faculty’s role is more of one who transmits knowledge to the student; making the student his own teacher, rather than the instructor being the one to stimulate the learning process. Dr. Deone Zell, Director of the California State University, Northridge (CSUN) Faculty Technology Center (FTC) acknowledges that changing an established pedagogy is a challenging feat in a loosely-coupled, academic arena. “Bringing about fundamental change is difficult in any organization, but especially so in professional theocracies such as hospitals and

universities in which highly trained and autonomous professionals, rather than administrators, largely control the core processes” (Zell, 2003, p. 74).

Persuading professionals, such as professors to make fundamental changes in their work practices is difficult because typically they...consider their work more a (calling) than a job. As a result of their autonomy and deeply ingrained patterns of beliefs and behaviors, unless [instructors] agree with the proposed or necessary changes in an organization's core processes, such changes do not occur (Zell, 2003, p. 74).

To address this issue, the California State University Board of Trustees suggests that learning outcomes “drive the choice and mode” of technology use and that faculty be provided with “professional development” in the “effective use of academic technologies...essential for success” (Board of Trustees Meeting, CSU, 2009, p. 3-4). A study conducted by Hiltz and Wellman (1997) found a connection between schedule flexibility, professional growth, “better course management” and faculty’s overall satisfaction with online education (p. 50). The CSU Board of Trustees (2009) suggested that California State Universities “use exemplary guidelines” when building online courses and faculty training programs (p. 3). The California State University (CSU) Quality Online Learning & Teaching (QOLT) rubric, developed to help faculty design quality online courses and to identify best practices for teaching them was used in this research. To date, there are no published studies using the CSU (QOLT) assessment tool to examine newly designed online courses taught by faculty, who are also graduates from

Faculty Technology Centers (FTC) throughout the California State University (CSU) system.

### **Factors Influencing Student Satisfaction Rates**

Online teaching and learning continues to grow throughout the United States higher education system and research that evaluates the effect online courses has on student interaction levels and subsequent satisfaction rates is needed (Garrison & Cleveland-Innes, 2005; Johnson, Aragon, Shaik, & Palma-Rivas, 2000; Shea & Bidjerano, 2009; Stodel et al., 2006; Strachota, 2006). From fall 2002 to fall 2010, the nation's rate of students "taking at least one online class" grew at a compound rate of 18.3% (Allen & Seaman, 2011, p. 11). Although Johnson (2000) and Grandzol and Grandzol (2010) show that demographic factors like age and gender influence student satisfaction rates, other scholars find student interaction and satisfaction rates rise when instructors design online courses with strong human presence characteristics (Aragon, 2003; Bibeau, 2001; Gunawardena & Zittle, 1997; Hersh, 2009; Moallem, 2007; Rourke et al., 1999; Shea & Bidjerano, 2009). As online courses continue to increase in popularity, finding and assessing the specific variables which lead to "higher rates of interaction between students and their instructors and peers" which leads to higher student satisfaction levels and persistence becomes critical (Moallem, 2007, p. 217).

#### **Social Presence**

According to Bibeau (2001), teaching and learning functions are inherently social endeavors; therefore, it is beneficial to understand the various effects geographic, temporal, and psychological distance has on instructors and students. Designing activities geared towards developing a level of social presence and engagement with

students produces a collaborative community of inquiry which bridges the communication gap created by the distance found in asynchronous classrooms (Barber, 2011; Bibeau, 2001; Ekmekci, 2013; Gunawardena & Zittle, 1995; Jackson et al., 2010; Rourke et al., 1999; Shea & Bidjerano, 2009; Shea & Bidjerano, 2010; Stodel et al., 2006). Hence, it is critical for instructors to have data defining the interpretable factors that most effectively provide students with opportunities to cognitively and socially interact with content, instructor, and other students, thus improving their ability to engage in higher-order thinking (Shea & Bidjerano, 2009).

### **Course Designs**

In developing new online courses, instructors who find platform designs that foster a community of inquiry will reportedly find students' learning processes and satisfaction rates increase and in some cases the satisfaction rates of the instructor will improve as well (Shea & Bidjerano, 2009). A great deal can be learned from instructors who design and develop new hybrid and fully online classes, and from the students who are enrolled in those new courses. Understanding students' perceptions about the usefulness of flexible learning and of becoming independent learners will provide instructors and web designers with information they can use to improve the quality of online learning environments. This research focused on six new, instructor-designed online courses at one of California's State Universities and assessed how online tools used to deliver academic instructions positively or negatively influenced students' overall perceptions of the course's effectiveness and satisfaction rates of the online community of inquiry.

## **Communities of Inquiry**

Communities of Inquiry (COI) are created when teachers and students move beyond the direct instruction method found in traditional face-to-face classrooms and establish a communicative system of teaching, social, and cognitive presence within the online environment. Gunawardena and Zittle (1997) and Shea and Bidjerano (2009) suggest that teaching and social presence typifies the processes required to create paths of intellectual engagement and cognitive presence in online learners. Swan, Garrison, and Richardson (2009) offer suggestions as to how teachers can stimulate the online teaching and learning experience, while Shea and Bidjerano's (2009) (COI) experiment only measures "teaching, social, and cognitive presence" indicators (p. 551). Gunawardena and Zittle (1997) believe that social presence is a strong predictor of student satisfaction and Rourke et al. (1999) contends communities of inquiry lead to persistence and course completion, which is one of the goals of the university where this study was conducted. Bibeau (2001), the only scholar found to have this opinion, warned that "too much social presence can negatively impact learning" in a teaching-learning environment based on social interaction (p. 36). To gain a greater and current understanding of the variables which enhance or hinder the teacher-student engagement processes taking place in online classrooms, research using the Community of Inquiry (COI) model (See Figure 2) was added to this discussion of online academics.

## **Standardized Practices**

Jackson et al. (2010) contends that although there are "faculty actions which positively influence student satisfaction in the online classroom, standardized practices...have not been fully identified, developed, and implemented" (p. 78). While

using the (COI) design, Shea and Bidjerano's (2010) research discovered little connection between standardized instructional design, teaching presence, and direct instruction. In other words, it would be beneficial to find specific instructional and design variables, such as the teacher's ability to use illustrations or clarify directions, and connect them to teaching presence variables which ultimately leads to improved online community interactions. For this study, the student portion of a standardized tool called the Quality Online Learning & Teaching (QOLT) rubric was used to examine redesigned courses and link them to students' satisfaction rates. At the writing of this dissertation, there are no reported studies that have examined newly-designed online classes developed and delivered by newly-trained instructors and linked them to student satisfaction rates using the QOLT rubric.

### **Participants' Satisfaction Rates**

Finally, Drennan et al.'s (2005) report examines students' personal locus of control characteristics and opinions towards technology's usefulness and links the data to students' satisfaction rates. Strachota (2006) defines general satisfaction rates as "the overall needs of the student have been met" (p. 4). In an attempt to factor in individual student characteristics, a variation of Drennan et al.'s (2005) study was used to generate a possible connection between student satisfaction rates and factors including students' locus of control, and students' perceptions about technology-which go beyond instructors' control. Drennan et al. (2005) also links improved student satisfaction rates with online education to students' positive perceptions regarding technology's usefulness and high student locus of control rates.

## **Significance of Research**

The purpose of this research was multidimensional as it explored the three aspects of a Community of Inquiry (COI) including the teaching, social, and cognitive presence factors to measure the effect they have on student satisfaction rates in six different online learning environments. Caldwell (2006) contends that online instruction “must be grounded in educational theory and not be solely based on educational content or on the technology used to deliver the information” (p. 6). While traditional learning concepts will evolve as technology “becomes more sophisticated, traditional learning theories will still serve their original intent, which is to facilitate the transfer of knowledge and promote the construction of new instructional models” (Caldwell, 2006, p. 6). Exploring students’ perceptions regarding teachers’ online instructional models, which can increase social presence, participation levels, and student satisfaction rates, is important because it uncovers correlating data about effective and non-effective course strategies. Additionally, assessing students’ locus of control, perceptions’ of technology’s usefulness, and ease of use, and linking that data to student satisfaction rates will provide online platform designers with a clearer understanding of whether students’ personal characteristics, a factor beyond the instructor’s control, affect satisfaction rates more or less than factors, such as social presence or course design, aspects within the instructor’s control.

### **Students’ Perspectives**

Drennan et al. (2005) touched upon two areas which are also found in the California State University (CSU) Quality Online Teaching & Learning (QOLT) rubric, the instrument used by the university where this research was conducted. Drennan et

al.'s (2005) study included students' perceptions about the ease and flexibility of online access and their capacities to be autonomous learners. Like Hersh (2009), Ryabov (2012), Thurmon and Wambach (2004), and Drennan et al. (2005) agree that students go through different processes when enrolled in online classes. Often, students will experience a learning curve in terms of using the tools effectively, followed by a stage in which they may have to establish new habits that accommodate the responsibility of being an independent learner. According to Caldwell (2006), "very few studies have explored how students view their own cognitive development," and this type of metacognition is "an important feature of [online] learning that has been neglected" (p. 4). Caldwell (2006) claims that some researchers believe online teaching and learning is effective but that few studies have investigated processes from the learner's perspective.

### **Locus of Control**

Drennan et al. (2005), Hersh (2009), Ryabov (2012), and Thurmon and Wambach (2004) believe that the assorted processes students experience in online classes lead to an enhanced awareness of their locus of control, which either enriches or challenges their level of engagement and satisfaction. For example, a student with an internal locus of control believes the outcome of his actions is based solely on his actions and will probably accept that a B on his paper is based on his writing skills and overall performance. While a student with an external locus of control believes that the outcome of her actions is based on external factors that are often outside of her control, thus she may believe that a B on her paper is based not simply on her work, but on how the teacher felt about her work, or perhaps based on the grades other students received as well.

In a series of reports, Handelsman, Briggs, Sullivan, and Towler (2005) found that students' personal learning styles are related to these intrinsic and extrinsic factors. Students who are intrinsically motivated often "seek challenging tasks, and maintain effective striving after they experience failure" (Handelsman et al., 2005, p. 185). Hill, Song, and West (2009) contend that students with this type of self-efficacy are confident learners when approaching and processing new tasks. For this study, it means that students whose learning goals are more mastery-oriented, meaning they are driven to become competent in the subject because they value personal knowledge, may master the technological tools early and ultimately find them easy to use and useful (Handelsman et al., 2005). In comparison, students who are extrinsically motivated often "adopt performance goals that focus on their gaining favorable judgments of their competence" (Handelsman et al., 2005, p. 185). For this study, it means that students whose learning styles are more performance-oriented, meaning they are driven towards "proving their ability to others," may engage with other students in online discussion boards thus building a more dynamic social presence and ultimately having a more satisfying experience (Handelsman et al., 2005, p. 185).

The ease of having the flexibility to learn and participate at any given time is a big factor in satisfying an online student with an internal or external locus of control, as well as intrinsic or extrinsic learning style. The key to providing quality online education per Drennan et al. (2005) and the instructors at the Faculty Technology Center (FTC), where this research idea was founded, is to offer students accessible and user-friendly web sites that complement many students' desires to retrieve information at any given time. To date, there is no reported data on students' views about the ease and flexibility of courses

designed using the (CSU) QOLT rubric and such information would provide designers with significant and specific student-originated data which could lead to professional development and improved online instructional course designs.

### **Quality Online Teaching & Learning (QOLT) rubric**

In 2003, after research showed that more online teaching and learning assessment instruments were needed, the staff, faculty, students, and administration members at California State University, Chico created a seven-section rubric (CSU, Chico, 2012, p. 1). Shortly after its inception, the California State University (CSU) Online branch initiated a program called Quality Online Teaching and Learning (QOLT) (CSU, 2013a). This QOLT platform was derived from a peer reviewed and designed program called Quality Matters (QM) founded by Maryland Online, Inc. (MOI). The rubric standards used by CSU Online and subsequently by the California State University, where this research was conducted, were acquired from QM's rubric workbook.

Specifically, the instructors at the researched CSU Faculty Technology Center's (FTC) Course Redesign Institute (CRI) used an adapted version of the CSU Online format, which was adapted from the original rubric designed by Quality Matters (QM). The lead Course Redesign Institute instructor, Dr. Li Wang, created a seven-section rubric called the California State University, Northridge (CSUN) Quality Online Teaching & Learning (QOLT) rubric and used it as a tool to guide instructors in developing online academic platforms (QOLT, 2012). In essence, each section of the QOLT instrument could be used to determine if an online course's content enabled students to meet learning outcomes, which in theory may heighten the interaction and satisfaction levels of all participants. Dr. Wang, with the help of two colleagues, one

being yours truly, designed a student version of the CSUN QOLT rubric which mirrored the faculty rubric. It was the student version of the CSUN QOLT rubric which was used to develop the student survey and interview questions for this research.

The six online courses examined in this study were developed using the faculty CSUN QOLT rubric guidelines. One goal of this research is to measure the perceptions of the students enrolled in the six different online courses and determine the usefulness and the ease of use of each online course. In essence, not only will student perceptions be measured, but the CSUN QOLT instrument will be assessed as well. For example, if students find one CSUN QOLT-designed online class more difficult to use than another CSUN QOLT-designed course, anomalies in the development of the two courses can be assessed against the QOLT guidelines and variances can be used by future instructors and course designers. As the first reported study to research the Quality Online Teaching & Learning (QOLT) rubric used as a California State University (CSU) Online standard instrument, this research will provide valuable information about the effectiveness newly designed courses, created by newly trained CSU faculty members, had on students' rates of interaction and satisfaction.

### **Purpose Statement and Hypothesis**

The purpose of this research is to examine the relationship between students' previous online knowledge; students' locus of control; students' perceptions about technology's usefulness; students' perceptions regarding technology's ease of use; students' perceptions regarding the teaching, social, and cognitive presence; and students' overall satisfaction rates. Based on the above research, my hypothesis is that satisfaction rates will be significantly higher for students who have positive perceptions towards their

previous online knowledge and skill levels; have an internal locus of control; have positive perceptions about technology's usefulness; have positive perceptions about technology's ease of use; and have positive perceptions regarding the teaching presence, social presence, and cognitive presence in their respective online classrooms.

**Guiding Research Questions:**

1. Is there a relationship between high student satisfaction levels and high perceived skill levels of previous online knowledge?
2. Is there a relationship between high student satisfaction levels and having an internal locus of control?
3. Is there a relationship between high student satisfaction levels and high positive perceptions of technology's usefulness?
4. Is there a relationship between high student satisfaction levels and high positive perceptions of technology's ease of use?
5. Is there a relationship between high student satisfaction levels and high levels of teaching presence?
6. Is there a relationship between high student satisfaction levels and high levels of social presence?
7. Is there a relationship between high student satisfaction levels and high levels of cognitive presence?

**Independent and Dependent Variables**

The independent variables for this study are students' self-reported previous online knowledge and their locus of control, as well as their perceptions of technology's usefulness and ease of use, and finally their views about their online classroom's

community of inquiry (teaching, social and cognitive presence) designed by their instructor. The dependent variable for this research is the levels of student satisfaction rates. Quantitative data was accumulated from student surveys, while qualitative data was amassed from student interviews.

### **Keywords and Definitions**

Cognitive Presence – when students make key connections with a subject and how it affects the order around them (Shea & Bidjerano, 2009).

Community of Inquiry (COI) – when students and teachers formulate a collaborative, “questioning but engaging, expressive but responsive and skeptical and challenging but supportive” learning environment (Barber, 2011, p. 8).

Course Design – instructors using technical tools and implementations to embed their instructive forum, develop message boards, create profiles, structure learning activities, as well as arrange feedback and conversation arenas, and academic environments for their students (Miller, 2012).

Distance Education – teaching and learning “situations in which the instructor and the learner or learners are geographically separated, and therefore, use electronic devices” for instructional communication (Caldwell, 2006, p. 3).

Locus of Control – A person’s internal or external locus of control refers to the degree to which the person “expects that a reinforcement or an outcome of their behavior is contingent on their own behavior or personal characteristics” versus the degree to which the person “expects that the reinforcement or outcome is a function of chance, luck, or fate, is under the control of powerful others, or is simply unpredictable” (Rotter, 1990, p. 489).

Online Academics – a derivative of distance education, online academics is a classroom setting where the instructor and student are separated in space but connected by technology. Due to real time synchronous communication tools, which can be used by the instructor when delivering a live lecture and other lessons, it should be noted that the instructor and student are not necessarily separated by time. Synchronous communication tools were not part of this study (Hutti, 2007).

Social Presence – “the ability of learners to project themselves socially and emotionally in a community of inquiry” (Rourke et al., 1999, p. 3); and the “degree to which a person is perceived as a ‘real person’ in mediated communication” (Gunawardena & Zittle, 1997, p. 9).

Teaching Presence – the observed interaction between students and instructor in which the instructor directs activities, triggers online discussions, and facilitates high levels of thinking and information exchange (Garrison & Cleveland-Innes, 2005).

Technological Tools aka Online Tools – learning management systems (LMS) using software and hardware include online communication tools, online multimedia instructional resources and library resources that substitute some or all of the commonly used teaching and learning processes found in traditional face-to-face classrooms (Board of Trustees Meeting, CSU, 2009, p. 5).

Triangulation – using numerous processes of data collection (e.g., surveys and interviews) from different participants (e.g., students from six different classes) in accordance with qualitative themes (Shea and Bidjerano, 2009).

## **Conceptual Framework**

Jackson et al. (2010) found significant correlation between high rates of student interaction and satisfaction in online classrooms where the instructor expressed clear expectations, provided quality feedback, and created an environment with low levels of technical difficulty. Students also reported feeling less isolated when social aspects including humor or emoticons were used in the online setting (Jackson et al., 2010). By building online courses using the community of inquiry framework, instructors develop online learning communities that emphasize the process of instructional conversations “that are likely to lead to epistemic engagement” (Shea & Bidjerano, 2009, p. 545). Learners must take responsibility for much of their learning in the online environment and activities which engage them in academic conversations make students equal and active participants.

As academic partners, students, many of whom are very tech-savvy, will invariably be looking for technological tools which are useful and easy to use. “Perceived usefulness relates to the likelihood of improved performance, whereas perceived ease-of-use reflects the degree of effort that one expects will be required from the prospective user” (Drennan et al., 2005, p. 333). Drennan et al.’s (2005) research implores future course-designers to build online classrooms with technology that is easy for students to use and assists them in gaining a better understanding of the topic in an effective manner.

As mentioned above, an original instrument called the Quality Online Teaching & Learning (QOLT) (2010) rubric was used in this research. The (QOLT) (2010) has seven sections, each matching one of the seven independent variables used in this study. For

example, the QOLT Section 1 entitled “Course Overview and Introduction,” is used by instructors to inform students about required “prerequisite knowledge and competencies” and about “a list of technical competencies necessary for course completion” (QOLT, 2012, p. 1). For this study, information from the QOLT Section 1 rubric was used to create student surveys which provided the “Previous Experience” independent variable (IV #1) data needed.

**Table 1. QOLT Rubric Descriptions with Independent Variables**

<b>QOLT Section #</b>	<b>QOLT Section Description</b>	<b>Independent Variable Description</b>
1	Course Overview and Introduction	Previous OL Experience (IV #1)
2	Assessment and Evaluation of Student Learning	Locus of Control (IV #2)
3	Instructional Materials and Resources Utilized	Usefulness of Technology (IV #3)
4	Instructional Design and Delivery	(COI) Social Presence (IV #6)
5	Technology for Teaching and Learning	(COI) Cognitive Presence (IV #7)
6	Learner Support and Resources	(COI) Teaching Presence (IV #5)
7	Accessibility and Universal Design	Ease of Use (IV #4)

Table 1 shows the seven QOLT Rubric Sections linked to the seven independent variables which were used in developing student surveys and interviews.

Alken (2011) suggests collecting data directly from “those who are the focus of data acquisition,” which in this case included the students enrolled in six newly-designed online courses (p. 89).

### **Overview of Methodology**

In using a mixed methods research design, which Creswell (2012) states “are procedures for collecting, analyzing, and mixing both quantitative and qualitative methods in a single study...to understand a research problem,” this mixed methods study aimed at finding predictive validity between one dependent variable (DV) and seven independent variables (IV) (p. 623). This research, while a mixed method, includes

quantitative statistical methods including multiple regressions and cross tabulations as well as qualitative interview data. Using survey and interview data from California State University (CSU) students enrolled in hybrid and fully online courses during the fall 2013 semester, this study proposed to connect satisfaction rates of students (DV #1) to students' previous online knowledge (IV #1), students' locus of control (IV #2), students' perceptions of technology's usefulness (IV #3), students' perceptions of the course technology's ease of use (IV #4), students' perceptions of teaching presence (IV #5), students' perceptions of social presence (IV #6), and students' perceptions of cognitive presence (IV #7). Inductive reasoning was used to apply expert theories which guided the design of the study's hypothesis which uncovered new and unique patterns and predictive relationships between student satisfaction rates and the overall effectiveness of each unique class community of inquiry. To better understand qualities that cannot be easily quantified, semi-structured student interviews were conducted. This data allowed the researcher to use inductive reasoning to study patterns and themes, and then use deductive tools to further analyze the data.

### **Limitations**

The limitations to the study included the size of the study. Since only students enrolled in six online courses were surveyed, at an average class size of approximately 40 students per class, the planned participation rate was estimated to be around 240 students. Due to a low number of online responses, a total of 123 surveys were collected. Another limitation is that this research was conducted at only one of the California State University campuses. Students were asked to volunteer for interviews and 10 students participated for a less than 10% survey-to-interview participation rate.

## **Organization of the Dissertation**

The following chapters in this dissertation include Chapter 2, the literature review, where factors that motivate students to learn were reviewed as well as information about the purposes of communities of inquiry, the measuring of satisfaction rates, and the design and effectiveness of online courses. The methodology section in Chapter 3 includes the methods and instruments used in this research, the setting and collection details, and the role of the researcher. Chapter 4 includes the data analysis and results as well as charts and tables. Finally, Chapter 5 includes a summary of the study, the findings and how they relate to the literature, final conclusions, and suggestions for future research.

## **Chapter 2: Literature Review**

The topic of modern online academics is important because it is growing throughout higher education, improving access for students, and becoming a part of our future educational culture (Jaggars & Bailey, 2010). Through an examination of recently published works, this literature review chapter focuses on defining the factors that go into designing effective online communities of inquiry. Whether the design elements encourage students to increase the quantity of time they spend communicating with classmates, or to engage in cognitively processing information, literature indicates that quality time in these areas cause students' levels of satisfaction to increase (Ryabov, 2012). This chapter outlines the problem as seen by the lead researcher and provides some guiding inquiries which support the stated hypothesis.

Online academics are defined in a larger context and the phases and possible fiscal benefits of implementing online programs are reviewed in Chapter 2. Student satisfaction, the dependent variable in this study, is highlighted and focus is given to faculty professional training and development. Pedagogical approaches towards building online classes encompassing communities of inquiry will further define the teaching, social, and cognitive presence factors. Students' locus of control including the effects of being a performance-approach or performance-avoidant type of student is examined. Extensive attention is given to the current legal aspects of creating useful online classes per universal design requirements, and adhering to Section(s) 504 and 508 of the Americans with Disabilities Act, and understanding the Copyrights and Fair-Use law. Finally, this chapter contemplates the views of those who oppose technology, and the gaps found in research.

## **Problem Statement, Hypothesis, and Guiding Research Questions**

Online teaching and learning continues to grow throughout the United States higher education system and research that evaluates the effects online courses have on student interaction levels and subsequent satisfaction rates is needed (Garrison & Cleveland-Innes, 2005; Johnson et al., 2000; Shea & Bidjerano, 2009; Stodel et al., 2006; Strachota, 2006). Although Johnson et al. (2000) and Grandzol and Grandzol (2010) show that demographic factors like age and gender influence student satisfaction rates, other scholars find student interaction and satisfaction rates rise when instructors design online courses with strong human presence characteristics (Aragon, 2003; Bibeau, 2001; Gunawardena & Zittle, 1997; Hersh, 2009; Moallem, 2007; Rourke et al., 1999; Shea & Bidjerano, 2009). As online courses continue to increase in popularity, finding and assessing the specific variables which lead to “higher rates of interaction between students and their instructors and peers” which leads to higher student satisfaction levels and persistence becomes critical (Moallem, 2007, p. 217).

My hypothesis is that satisfaction rates will be significantly higher for participants with positive perceptions towards their previous online knowledge and skill levels, participants with internal locus of control, participants who perceive the technology utilized in their online courses as useful and easy to use (Aragon, 2003; Bibeau, 2001; Gunawardena & Zittle, 1997; Hersh, 2009; Moallem, 2007; Rourke et al., 1999; Shea & Bidjerano, 2009). Additionally, I theorize that participants’ satisfaction rates will be higher in courses that foster advanced levels of teaching, social and cognitive presence (Aragon, 2003; Bibeau, 2001; Gunawardena & Zittle, 1997, Shea & Bidjerano, 2009; Swan et al, 2009).

### **Guiding Research Questions:**

1. Is there a relationship between high student satisfaction levels and high perceived skill levels of previous online knowledge?
2. Is there a relationship between high student satisfaction levels and having an internal locus of control?
3. Is there a relationship between high student satisfaction levels and high positive perceptions of technology's usefulness?
4. Is there a relationship between high student satisfaction levels and high positive perceptions of technology's ease of use?
5. Is there a relationship between high student satisfaction levels and high levels of teaching presence?
6. Is there a relationship between high student satisfaction levels and high levels of social presence?
7. Is there a relationship between high student satisfaction levels and high levels of cognitive presence?

### **Stages of Online Education**

Valentine (2002) provides a historical background of the beginnings of online instructions and his research provides some clear and comprehensive definitions of distance learning as well. Based on his examples, I've concluded that distance education also known as online academics and online education, is best defined as when an instructor and his or her students are separated in space but connected by technology. However, one challenge to this definition would be real time synchronous communication tools, which allows the instructor to deliver lectures through a skype-type

medium, thus only separating instructor and student by space not by time. According to Hutti's (2007) research, colleges in the mature phases of implementing an online academics program, whether synchronous or asynchronous, focus less on the credibility of online education, ownership or faculty compensation issues often found in the early stages of implementing online education. Instead, more effort and resources are used in enhancing the utilization of technology and in the building up of online environments that nurture quality interactions that close the communication gap between instructor and students.

To have an effective online program, a new pedagogical transformation or paradigm shift needs to occur amongst all members of the higher education establishment. Kosak, Manning, Dobson, Rogerson, Cotnam, Colaric, and McFadden (2004) state,

The prevalence of online distance education courses requires university faculty to face new challenges and make new decisions in the areas of course management and design, delivery method, student communication media, creation of an engaging learning environment, assessment, and use of new technologies (p. 1).

This means that instructors completely create the new learning environment from the look of the class webpage, to how they introduce themselves to their students, to what part of the class site students go to ask questions or post responses.

Restructuring a traditional course is all encompassing and although an instructor may utilize the same objective standards, the processes needed to reach those benchmarks

are different because information is being transmitted via the web. As Chick and Hassel (2009) contend, instructors are responsible for interweaving numerous pieces of data into comprehensive outcomes and this is not a task that can be achieved overnight. Using Fulkerth's (2009) suggestions to re-write curriculums using Bloom's Taxonomy and Verbs, as well as finding ways to intertwine new online data with old lecture notes as suggested by Chick and Hassel (2009), may take more time but will improve academic infrastructures and save time in the end.

In terms of fiscal benefits, Valentine (2002) hypothesizes that online education is expected to save universities monies usually spent on overhead such as operating costs and everyday fixed expenditures. "Many universities are feeling the pressure to control their costs, improve quality of instruction, focus on customer needs, and respond to the competitive pressures and distance learning technologies have the potential to assist in solving these problems" (Valentine, 2002, p. 2). Schools are in competition with one another and those that provide students with the latest, technologically delivered academics may find their enrollment numbers increase. Allen and Seaman (2011) add that as public institution leaders recognize that Open Education Resources (OER), basically "high-speed networks, nearly ubiquitous computing availability, and software to support teaching and learning" is freely available, they will recognize that the trend of online education is not a for-profit phenomenon or an external idea forced upon California public colleges, but has aspects that are appropriate "for their own institution[s]" as well (Allen & Seaman, 2011, p. 22).

## **Student Satisfaction**

Caldwell (2006) confirms that a large number of online studies focus on student satisfaction. In Hodges and Cowan's (2012) study, student satisfaction was directly linked to students' perceptions of their instructor's presence and how they communicated with the class. "Instructors and students must establish effective communication partnerships while engaged in online learning" and part of an instructor's pedagogy is to define what effective communication looks like in their classroom (Hodges & Cowan, 2012, p. 1). According to researchers, when instructors provide high levels of social and cognitive presence, students are highly satisfied. Chick and Hassel (2009) and Kitsantas and Chow (2007) agree that an engaging pedagogy requires the instructor to know his/her audience and to be able to connect with them, either face-to-face or over the web, in an effective, clear and direct manner. Although Hodges and Cowan (2012) provide some preliminary data on cognitive and social presence and dozens of references, which supports Chick and Hassel's (2009) more detailed study, the report lacks details about students' satisfaction.

Distance education, with its flexible scheduling and broader accessibility, is desirable to 84% of community college students who must work full-or part-time while balancing personal obligations (Jackson et al., 2010, p. 78). Studies show that plentiful and instructive interactions result in greater satisfaction and learning among enrolled online participants, while decreasing levels of interactions result in isolation and increased levels of dissatisfaction. In addition, a significant correlation exists between the amount of critical thinking involved in creating discussion board responses, student learning, and satisfaction. Shea and Bidjerano (2009) discovered that the expression of

clear expectations and timely feedback also directly impacted student satisfaction. Additional factors, which Jackson et al., 2010, identified as positively affecting satisfaction among online students, includes low levels of technical difficulties and high quality feedback on assignments.

### **Professional Training**

Discussions surrounding the increase of hybrid and fully online courses are occurring within many university systems as is the faculty training component (Harrison, 2013a). According to Johnson, Adams Becker, Cummins, Estrada, Freeman, and Ludgate (2013), “despite the widespread agreement on the importance of digital media literacy, training in the supporting skills and techniques is rare in teacher education and non-existent in the preparation of most university faculty” (p. 6). Valentine (2002) tackles the lack of training and classroom technology use by suggesting that technology itself is rarely the problem and that how instructors approach and use technology is quintessential. “Too often instructors do not design their lessons to take advantage of the technology presented [and] this affects the quality of the instruction” (Valentine, 2002, p. 3). Valentine (2002) suggests that instructors prepare their online class with the needs and goals of their students in mind, and recognize that with continued exposure, their competencies and attitudes towards online teaching and learning will improve.

According to Fulkerth (2009), the first stage in the redesign process is for faculty members to meet with trainers to discuss course content, and other general matters. This stage-setting step allows for informal information exchange among participants, but it provides faculty with a perspective that is important. The inaugural class of 13 faculty members at the university where this research was conducted experienced attending a

hybrid class when trainers of the University's Faculty Technology Center (FTC) enrolled them in a Course Redesign Institute (CRI).

Faculty members were given access to the course website one week prior to the first face-to-face meeting. During this period, called week zero, faculty members were encouraged to introduce themselves, post their pictures and read the assigned text readings. After week zero, instructors attended daily face-to-face, eight-hour seminars, which included nightly readings and weekly modules, for two weeks. The modules integrated textbook readings, electronic links to relevant articles and key concepts, and individual and group activities. Daily activities included small-group projects, online exercises, guest lectures, videos, individual assignments, and discussions about text readings.

Next, as if generated from the California State University (CSU) Online Faculty Technology Center (FTC) handbook, Fulkerth (2009) suggests that overarching standard objectives be broken down into smaller directives and then matched with weekly activities. For many instructors this may have been a rehash of common pedagogical practices, however for those who wanted to effectively redesign their courses, Bloom's Taxonomy and Verb approach as suggested by Fulkerth (2009) was very compatible with the online academic platforms. By using clear and concise verbiage during the early stages of building an online course, instructors ensure their students understand the objectives of the class.

After two-weeks of face-to-face meetings, CSU Course Redesign Institute faculty members continued developing their online class platforms via the web for six more weeks before attending their last meeting where they presented their final project, their

newly designed online class. One goal of the Course Redesign Institute trainers was to introduce faculty instructors to the fundamental balance between pre-meeting or outside class preparatory undertakings and in-classroom activities that occur in a flipped also known as hybrid course.

### **Course and Pedagogical Redesign**

Instructors are often uncomfortable with teaching strategies beyond traditional lecturing, therefore in order to develop an effective online course; instructors are encouraged to see technology as simply a means to delivering their specific topic of expertise (Chick & Hassel, 2009; Lattuca & Stark, 2009). Chick and Hassel (2009), whose research began when they advocated for feminist instructors to teach feminist-focused online classes, such as women's studies, implied that feminists were the only people who could teach the topic. Both authors recognized the negativity towards online teaching and set out to ascertain whether the subject they passionately taught could be transferred onto the online arena without any loss of importance or subject matter. They found no truth to the stereotypes about online education being less participative and instead became determined to not allow "technology to dictate [their] pedagogy" (Chick & Hassel, 2009, p. 197). In the end, they suggest that "pedagogical practices can and should drive the structure of the course, and the principles of [the specific subject matter] should be present from the beginning, rather than add-ons at the end" (Chick & Hassel, 2009, p. 197).

The objective of any teaching scenario should be to teach with a purpose and Lattuca and Stark (2009) suggest using two key components in course redesign: rationale and intended learning outcomes (ILO). The rationale is "the general goal that the course

is intended to address, what the intended learning outcomes state or more specifically what students are to learn” (Lattuca & Stark, 2009, p. 136). Instructors cannot design an online curriculum without first defining what students should know or be able to do by the end of the course. This type of backwards planning design helps instructors strategize activities and assignments in accordance with available online tools and forums. One of the most current movements in the academy today is toward "learner-centered" or "active learning" pedagogical practices (Jaffee, 2003, p. 230). Basically, when teaching and learning shifted from the physical to the virtual classroom, the “one-to-many, desk-podium ecological configuration was abolished” (Jaffee, 2003, p. 230). The social space that has fortified the teacher-student social roles, relationships, and pedagogical practices has been radically altered and replaced with opportunities to build new kinds of communities of inquiry.

### **Community of Inquiry**

The 19th-century German sociologist Ferdinand Tonnies defined "gemeinschaft," or community, as a “small, geographically distinct, kinship-interwoven groupings characterized by intimate, overlapping, and stable relationships” (Hiltz & Wellman, 1997, p. 45). Communities are now described in terms of their social relationships and networks, generally coming together because of a shared interest, rather than in terms of space. The ease of “contacting people facilitates the growth of relatively large virtual communities”, which are “often more heterogeneous in social characteristics, such as lifecycle stages, genders, ethnicities, and socioeconomic statuses” (Hiltz & Wellman, 1997, p. 47). Understanding the interactions for the purposes of inquiring and exchanging information is challenging. According to Garrison and Cleveland-Innes

(2005), students “are not always prepared to engage in critical discourse” in online environments (p. 136). Thus, it is suggested that the design of an online course include clear discussion boards and topics that move participants through “phases of inquiry (levels of thinking)” (Garrison & Cleveland-Innes, 2005, p. 136). The community of inquiry design should be a purposeful combination and interweaving of teaching, social, and cognitive presences in higher education online environments.

### **Teaching and Learning Presence**

Chick and Hassel (2009) believe that one part of developing a comprehensive online pedagogy is recognizing the knowledge levels students begin the course with and then constructing a teaching and learning environment that enhances student’s cognitive processing through teaching presence. Using techniques such as participatory “active learning, collaborative learning” instructors can fabricate creative ways to share knowledge with students and build a cultural online presence, an environment created by the instructor and the students where rules of engagement are understood by all participants. For example, instead of seeing students as empty vessels that need to be filled, which is a typical instructor-centered type of pedagogy, instructors should create spaces on their class webpages entitled “ask the class” or “hallway” (Chick & Hassel, 2009, p. 203). In these forums, students can ask questions and discuss the ways in which they are learning.

Research indicates that these communal types of student-centered learning forums are less linear and are improved upon when instructors are open to sharing their authority with textbooks and other websites (Chick & Hassel, 2009). For example, rather than control how information is distributed, an instructor who forgoes recording all of her

lectures and instead uses online presentations of other experts, shows her students how to become empowered learners. Students become the “primary constructor of knowledge” in the course when they are encouraged to bring their research to the class website, while the instructor serves as a guide (Chick & Hassel, 2009, p. 204). The goal is for students to gain knowledge of the topic through all avenues including books, websites, lectures, and other forms of research and for them to become independent thinkers.

Interaction between instructor and students is a critical factor for any successful classroom environment including those online. For communication and interaction to be effective, students need to feel comfortable asking questions and seeking help from their instructor and other authoritative figures. Kitsantas and Chow (2007) found significant association between students’ achievements and their level of self-regulatory aptitudes, or their ability to monitor their own learning, specifically in their abilities to seek out help when needed. In addition, they found that technology such as “computer-supported collaborative learning, multimedia/hypermedia, and more realistic learner simulations” used in many online classrooms alleviated some of the “psychological and logistic barriers found to affect traditional college students” seeking help (Kitsantas & Chow, 2007, p. 385). In other words, technology has proven to provide students and instructors with a new way of communicating with one another. Through email, which many students find to be less threatening than face-to-face communication, students are comfortable seeking out help and in collaborating with their classmates and instructor, which is a key factor in self-efficacy. Beile and Boote (2002) also found that continued exposure and use of online tools helped students relate to class materials and interact with their peers and instructor in more effective methods.

An experiment conducted by Kitsantas and Chow (2007) found that 86% of online participants, when given the option to privately seek help using tech-based tools like email, requested assistance. Whereas only 36% of students sought help from a research assistant whom they needed to meet with face-to-face. In the end, the researchers determined that “computers enhance student privacy by providing them with the freedom to fail without having to suffer the negative social consequences that would result in public displays of inadequacy” (Kitsantas & Chow, 2007, p. 385). Additionally, online communication tools like email give students the freedom to communicate without the constraints of distance and time, an attractive aspect of online education. Hodges and Cowan (2012) along with Chick and Hassel (2009) subscribe to the same ideal as Kitsantas and Chow (2007) in believing that on-going interactions amongst participants and instructor is central when delivering academic information and teaching any subject.

### **Social Presence and Previous Experience**

As new and better tools are made available to instructors and course designers, the goal to re-create the face-to-face classroom is doable but nonetheless fraught with social challenges. For example, a new student, whether enrolled in an online or traditional class, is a student who must face those first day anxieties of not knowing anyone or how to best communicate. Students who have little to no experience with online discussions may find online forums a “less than satisfactory learning experience” (Barber, 2011, p. 14). Additionally, the student who does feel comfortable expressing themselves and getting feedback from others may feel at a disadvantage in an online setting if the communication lines are not engaging. As mentioned by Aragon (2003), the ultimate online social presence is when the instructor and her students are comfortable within the

lines of communication to learn, share knowledge, and ask questions. The more welcoming the environment, which allows students and instructor to openly express themselves, and the more invested people feel, the more they will participate, thus creating a social presence.

Chick and Hassel (2009) found that class dynamics and the environment, which begins with a foundation of active participation, mutual respect for one another, and an awareness of the course objectives, helps build social presence in the classroom. In Chick and Hassel's (2009) online courses, students were encouraged to communicate and contribute throughout different peer-to-peer dynamics. For example, when one student had an opposing viewpoint, all students knew to follow respect guidelines when providing their responses. Students were asked to regularly communicate with each other and give attention to not only their personal learning goals, but to notice whether their classmates were learning as well (Chick & Hassel, 2009). As online courses utilize communication tools like discussion threads and skype-formats, students should be encouraged to thoughtfully plan out what they are going to communicate before posting to or speaking on a class site. Through experience and by connecting with others in numerous online social settings, interpersonal contacts and social presence is created and enhanced.

### **Cognitive Presence**

Thurmon and Wambach (2004) approach the benefits students gain through online learning from a cognitive processing stance. The question, "Do online learners experience greater senses of responsibility and thus perform better than do traditional face-to-face (F2F) learners?" is answered in a step by step process beginning with

Ryabov's (2012) theory that students spend more time engaged with course materials while in online classes. Because students spend more time engaged with the instructor via email and classmates via discussion boards, they feel a greater sense of responsibility for their success. This sense of responsibility causes students to be more enthusiastic about their work and thus they perform better and are thus more satisfied.

Social cognitive theory "recognizes the reciprocal relationship between a learner, the learning environment, and the learner's behaviors" (Crippen, Biesinger, Muis, & Orgill, 2009, p. 386). While a highly, motivated, self-regulated student is motivated to pursue learning goals, many students need the instructor to motivate them to engage in some form of deep cognitive processing. Dunlap, Sobel, and Sands (2007) suggest that triggering techniques leads students to recognize that there is a problem and exploration exercises encourages students "to follow their own paths through content, delving deeper into areas of interest" (p. 4). Asking students probing questions and challenging their assumptions leads to reflective inquiry, while "journaling, self-reflection questions, action planning, and goal setting" fosters metacognitive processes (Dunlap et al., 2007, p. 5).

Chick and Hassel (2009) found what they called the "Habits of Mind" to be useful. Although many instructors believe online classrooms to be an electronic form of their face-to-face classrooms, it is more complicated and important to engage students in higher-order thinking. Instructors should use general and specific "authors, texts, characters, facts, theories, and histories" and the subject materials and interweave all of the data into the course so students understand how the specific subject can be used after the course is over (Chick & Hassel, 2009, p. 208). Also, when students personalize the

topic and have opportunities to relate the subject to social and cultural issues, they can internalize the subject and make it part of their everyday thinking. Inclusive online discussions and the ability to use graphics, relevant websites, and other online tools, generate unique and individual epiphanies where students make key connections with the subject and its effect on the order around them (Chick & Hassel, 2009).

Gao and Lehman (2003) conducted an interesting study on the effects of “learning materials action levels on achievement and motivational perceptions” of students in a “web-based learning environment” (p. 367). While one group responded by providing answers to questions, the other group was encouraged to participate in interactive or generative activities like group or project work. Known as the proactive group, learners went “beyond selecting or responding to existing structures and began to generate unique constructions and operations beyond designer imposed limits” (Gao & Lehman, 2003, p. 367). In an online environment filled with limitless amounts of web-based tools, providing students with opportunities to stretch their creative abilities and engage with course material at the same time is possible and proving to engage students to learn in a manner unseen in years past. Ultimately, Gao and Lehman (2003) show that the interactive groups were more engaged and motivated than was the reactive groups whose only stimuli was in a question/answer format. In terms of quality of interaction, when students are proactive, they are more mentally engaged and satisfied with what and how they are learning.

### **Locus of Control**

Student engagement is when students "are attracted to their work" and those students who are engaged in self-monitoring and in understanding their personal

academic needs, have a tendency to persist with positive attitudes during challenges (Hersh, 2009, p. 56). In theory, online classrooms come with their own set of challenges and obstacles. So, when instructors design online courses with strong human presence features, a student is less tempted to quit or opt out of participating when difficulties arise. A well-organized, thoughtfully designed online course, which utilizes many of the tools mentioned by the authors above, provides an environment where students can clearly process and relate new information in a flexible, often creative, electronic manner. However, Gilman (2010) contends that “any number of possible factors could affect the quality” (p. 1) of an online experience particularly if “students’ goals for themselves [are] different from our goals for them” (Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010, p. 71) such as when an instructor wants the student to master the subject and the student is interested in demonstrating a surface understanding.

Students’ beliefs as to how well they learn and process information are predicated on their past and current unique experiences (Ambrose et al., 2010). A student who concentrates on performance goals uses grades and comparisons to measure themselves against other students. This is a key motivator towards engaging this type of student to learn a subject and provide a response or answer to prove gained knowledge. While a student who concentrates on mastering their performance, sets goals which focus on developing competency. These types of students hone in on their internal cognitive processes and strive towards comprehending a subject matter which guides their overall learning concepts and experiences. This type of mastery learning does not include any external comparisons to other students’ performances (Mesa, 2012). Goal theory highlights “how contexts play an important role in the development of goals, stressing in

particular that students ‘are sensitive to the emphasis teachers place on different types of achievement goals as expressed through instructional practice and the ways in which teachers respond to students’ accomplishments or shortcomings” (Friedel, Cortina, Turner & Midgley, 2010, p. 103).

Whatever the students’ personal locus of control is and whether they are a performance or mastery type of learner, online instructors are encouraged to clearly define scheduled assignments, critical deadlines, new announcements, readings, discussions, lectures, links, and any other class related piece of information to the course website. By doing this, instructors create an environment for autonomous learners, as well as for students who are more dependent on guidance and exchange. Ultimately, a website that is thoughtfully designed will consistently appease the masses including those students with physical challenges.

### **Universal Design and Technology Ease and Usefulness**

Government standards geared towards developing quality online platforms have been in place since the 1990s and organizations promoting the use of these platforms continue to gain legal ground in the courts. Daniel Goldstein, defense attorney for HathiTrust, an organization that won a 2013 lawsuit allowing it to continue building a digital library, believes it is becoming more apparent that technological tools commonly used in distance learning supplies print-disabled students with academic information in a format that is superior to traditional instruments (Concerning the promise of accessible technology, 2012). “Prior to the development of accessible digital books, the blind could access print materials only if the materials were converted to braille or if they were read by a human reader, either live or recorded” (Concerning the promise of accessible

technology, 2012). Historically, American society has tended “to isolate and segregate individuals with disabilities, and, despite some improvements, such forms of discrimination against individuals with disabilities continue to be a serious and pervasive social problem” (Americans with Disabilities Act of 1990, 42 U.S.C.A. § 12101 *et seq.*). Students with special needs are part of the growing student population demanding online outlets. Consequently, higher education institutes cannot continue using 6<sup>th</sup> Century pedagogical practices of educating all students because current laws won’t allow them and many students can’t use them. Fortunately, legal statutes are in place to support those students who need special online platforms. Laws also protect the people and organizations designing the electronic environments upon which these academic settings are built.

### **Legal Statutes**

Needless discrimination and prejudice “denies people with disabilities the opportunity to compete on an equal basis and to pursue those opportunities for which our free society is justifiably famous, and costs the United States billions of dollars in unnecessary expenses resulting from dependency and non-productivity” (Americans with Disabilities Act of 1990, 42 U.S.C.A. § 12101 *et seq.*). At the same time, evolving technology can provide people living with various forms of disabilities avenues which will get them closer to their goals of living quality lives. As a nation, our goals “regarding individuals with disabilities are to assure equality of opportunity, full participation, independent living, and economic self-sufficiency” (Americans with Disabilities Act of 1990, 42 U.S.C.A. § 12101 *et seq.*). However, if technology is designed in a manner that does not consider the needs of the disabled user, a percentage

of the population will be excluded from the “virtual world in the same way that they were historically excluded from brick and mortar facilities” (Concerning the promise of accessible technology, 2012).

When Congress passed the Americans with Disabilities Act of 1990, 42 U.S.C.A. § 12101 *et seq.*, it was in an attempt to eliminate discrimination “on the basis of disability in all areas of American civic and economic life” (Concerning the promise of accessible technology, 2012). Unlike individuals “who have experienced discrimination on the basis of race, color, sex, national origin, religion, or age, individuals who have experienced discrimination on the basis of disability have often had no legal recourse to redress such discrimination” (Americans with Disabilities Act of 1990, 42 U.S.C.A. § 12101 *et seq.*). Discrimination against these individuals has affected their abilities to gain employment, find housing, access education and other public services (Americans with Disabilities Act of 1990, 42 U.S.C.A. § 12101 *et seq.*). Ultimately, the purpose of the law was to “provide clear, strong, consistent, enforceable standards” which addressed “discrimination against individuals with disabilities” (Americans with Disabilities Act of 1990, 42 U.S.C.A. § 12101 *et seq.*). Recent literature (Howard, 2012; University of Washington, 2013; U.S. Department of Education, 2013) indicates that the Department of Justice’s Civil Rights Division zealously investigates discrimination complaints brought forth by disabled students whose access to education has been hindered by poorly-designed online platforms and technological tools.

### **Section 508**

Section 508 of the 1990 U.S. Americans with Disabilities Act provides Federal, state and local agencies with guidance for developing their online platforms and for

making access a priority. For example, Subsection heading (B) entitled, “Software and peripheral devices”, states that “except as required to comply with standards issued by the Access Board under paragraph (2), nothing in paragraph (1) requires the installation of specific accessibility-related software or the attachment of a specific accessibility-related peripheral device at a workstation of a Federal employee who is not an individual with a disability” (Americans with Disabilities Act of 1990, 29 U.S.C. § Section 508, Stat. 798 (1998)). Under this subsection, federal, state, local agencies and higher education institutions are not required to restructure every employee desktop. However, special accommodations must be implemented for the employee or individual with a disability so that they can perform their duties and/or have complete access to the same information as a non-disabled person.

Fundamentally, information is accessible to a person with a disability when it “can be accessed through more than one sense or ability” and the instruments needed to acquire that data need to be user-friendly as well (Concerning the promise of accessible technology, 2012). For example, a tool like electronic email, commonly used in businesses, governments, and academics, is not accessible to a visually-impaired employee or student if it is not adapted with a screen reader. Section 508 would not mandate that a business or the government provide screen reader software or hardware at every employee’s or student’s desk. Instead, the disabled person would be responsible for buying any needed screen reading hardware and perhaps the adaptable applications which plugs or taps into the institution’s compatible software. However, the next subsection of Section 508 shows that technological advancements may require that “any

new electronic mail software be compatible with screen reading software and hardware” (Concerning the promise of accessible technology, 2012).

Section (1) entitled, “Accessibility”, Subsection (A), states that “when developing, procuring, maintaining, or using electronic and information technology, each Federal department or agency...shall ensure...that the electronic and information technology allows” individuals with disabilities “access to and use of information and data that is comparable to the access” and “use of the information and data by such members of the public who are not individuals with disabilities” (Section 508 of the Rehabilitation Act - 29 U.S.C. § Section 508, Stat. 798). Empirical data shows that the leaders developing new online academic programs should create environments which are accessible to individuals with disabilities.

An internet site which is only accessible through the use of a computer mouse is inaccessible to people who have dexterity issues or visual impairments. Website designers should be cognizant that Section 508 may require that any agency using the Internet to distribute information to the public who does not have built-in accessible software may have to build and maintain a separate website (Concerning the promise of accessible technology, 2012). Because a significant amount of government data is distributed to and accessed by the public at large, agencies affiliated with the Federal government are tasked with ensuring that all electronic and technical information they develop for the public is user-friendly and accessible. Since the passing of Section 508, “at least 20 states have adopted their own versions of Section 508, requiring state agencies to buy accessible technologies” to guarantee their citizenry has access to online information (Concerning the promise of accessible technology, 2012).

## **Section 504**

Section 504 states that “no qualified individual with a disability in the United States shall be excluded from, denied the benefits of, or be subjected to discrimination under any program...that...receives Federal financial assistance” (Rehabilitation Act, 1973, Section 504, Stat. 794). Similar to Section 508, requirements under this statute include making “reasonable accommodations for employees with disabilities” (Rehabilitation Act, 1973, Section 504, Stat. 794). Reasonable accommodations include using tools or making alterations to programs that will ultimately provide and enhance the quality of communication for people with hearing and visual disabilities. Under Section 504, a person who believes he or she has been discriminated against can file a private lawsuit. Subsection (2) states that, “The remedies, procedures, and rights set forth in Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) shall be available to any person aggrieved by any act or failure to act by any recipient of Federal assistance or Federal provider of such assistance under section 794 of this title” (Rehabilitation Act, 1973, Section 504, Stat. 794).

In June 2009, the Department of Education and Department of Justice heard several complaints from the National Federation of the Blind (NFB), the American Council of the Blind (ACB), and “a coalition of disability rights groups collectively known as the Reading Rights Coalition” (Concerning the promise of accessible technology, 2012). The grievances claimed that universities and colleges were “violating their obligations under Section 504 by deploying...electronic book readers” that “did not have text-to-speech capacity” to students in the classroom (Concerning the promise of accessible technology, 2012). The devices which did not have navigation functions

prevented blind students from reading the book they needed to read, and from using the bookmark capabilities including the note taker feature.

In January 2010, the Department of Justice, who investigated all of the complaints, released a statement announcing that it “had reached settlement agreements” with Princeton, Arizona State University, Pace University, Reed College, and Case Western Reserve University (Concerning the promise of accessible technology, 2012). The reasoning behind these agreements was to make it clear that requiring students to use a new piece of technology, that is “inaccessible to an entire population of individuals with disabilities,” is discrimination and prohibited by Section 504 of the Rehabilitation Act of 1973 (Rehabilitation Act, 1973, Section 504, Stat. 794).

In June 2010, the Assistant Secretary for Civil Rights of the Department of Education and the Assistant Attorney General for the Department of Justice’s Civil Rights Division jointly released a “Dear Colleague Letter” to university and college presidents throughout the United States concerning the use of technology in higher education. The letter explained that requiring the use of electronic book readers and other technologies in the classroom “violates...Section 504 if the educational benefits provided by the technology are not made accessible to students with disabilities in an equally effective and equally integrated manner” (Concerning the promise of accessible technology, 2012). While “small providers are not required by subsection (a) to make significant structural alterations to their existing facilities for the purpose of assuring program accessibility, if alternative means of providing the services is available,” higher education institutions have the obligation to provide accessible technology (Rehabilitation Act, 1973, Section 504, Stat. 794). If the technology is unusable or

inaccessible to disabled students, the institution must make modifications or reasonable accommodations so the student with the disability can obtain the same information and have equivalent experiences within the classroom setting (Concerning the promise of accessible technology, 2012).

The usability of electronic text readers proves to dramatically and effectively enhance the academic experiences of print-disabled students. The ability to instantly download a textbook is a drastic difference from when blind students had to wait weeks or months into the semester to acquire their specially-formatted textbooks. Because they can be used by both disabled and non-disabled students, newly developed electronic book readers prove to integrate all students. Federal officers encourage developers to create devices that, if needed, have the ability to read the text aloud as well as have the ability to describe images (Concerning the promise of accessible technology, 2012).

The current transition of taking printed materials and formatting them into digital materials creates dynamic opportunities for print disabled students who can finally use the “same products as their peers who do not have disabilities” (Concerning the promise of accessible technology, 2012). It is this realization that we are living during a time when a hand-held device has the ability to give an underserved, minority group of students the freedom to learn and expand their knowledge that should inspire online developers.

### **Copyright and Fair-Use Act**

Under the Chafee Amendment to the Copyright Act, "authorized entities are permitted to reproduce or distribute copies . . . of a previously published, non-dramatic literary work . . . in specialized formats exclusively for use by the blind or other persons

with disabilities" (Copyright Law Amendment, 1996). A government agency or a nonprofit organization such as a public college or university has permission to supply special services like reproducing and distributing reading materials to print-disabled students (Copyright Law Amendment, 1996). Beyond college libraries, outside industries and developers have created online databases with downloaded books, materials, and literature in an effort to make them not only accessible to the print-disabled community but to everyone. Under the Copyright Law Amendment of 1996, a "nonprofit organization is understood to mean an organization that has been granted nonprofit tax exemption under section 501(c)(3) of the Internal Revenue Code". These types of organizations like the ones creating and populating digital libraries are seen as "agents of authorized entities and are, therefore, acting under implied authority" (Copyright Law Amendment, 1996). However, the path towards bringing a massive, public database to fruition has led to some lawsuits about copyrights and fair-use practices.

In October 2012, Judge Harold Baer Jr., of the U.S. District Court in Manhattan, ruled in favor of HathiTrust and its partners including the University of Wisconsin, Cornell University, Indiana University, the University of California and the University of Michigan (Authors Guild, Inc. v. HathiTrust, 2012). In the lawsuit, the Authors Guild and other professional groups claimed that HathiTrust and partners had "trampled copyright law by scanning millions of works, many still under copyright, and making them available for certain uses" (Howard, 2012, p. 2). HathiTrust defended itself by declaring that the scanning and use of educational materials "counted as fair use under copyright law[s]" (Howard, 2012, p. 1). Judge Baer Jr. agreed by stating, "In balancing the fair-use

factors, I concluded that copyright law's goal of promoting the Progress of Science would be better served by allowing the use than by preventing it" (Authors Guild, Inc. v. Hathitrust, 2012, p. 4).

The National Federation for the Blind, the Library Copyright Alliance, and some scholars supported the defendants by arguing that HathiTrust's "activities counted as fair use and contributed to the greater good" (Howard, 2012, p. 2). It should be noted that the National Library Service for the Blind and Physically Handicapped (NLS), has stated that "in the event that NLS is notified that a federal court has issued a final decision, holding that the work is an unauthorized publication and recall of copies is required, NLS will withdraw all copies of the infringing work" (Copyright Law Amendment, 1996). This statement suggests that when software applications geared towards helping a usually unrecognized group of citizens is available, it is best to apply the technology and not worry about who is and who is not getting publication credit until a court requires the scanning be halted.

Judge Baer Jr. agreed by stating that "mass-digitization work...is an invaluable contribution to the progress of science and cultivation of the arts" (Authors Guild, Inc. v. Hathitrust, 2012, p. 4). HathiTrust representatives in conjunction with Google, Microsoft and the above-described universities are currently building a Digital Public Library of America and continue to serve print-disabled scholars with accessible literature (Authors Guild, Inc. v. Hathitrust). They and other organizations will find that old copyright standards are obsolete. For example, producers who reproduce books into special formats are not required to place an "all rights reserved" copyright notice on the new edition (Copyright Law Amendment, 1996). Accordingly, the all rights reserved

copyright notice “originated [at] the Buenos Aires Convention of 1910. The effect of this Convention in the United States has always been unclear. Since the United States joined the Berne Convention in 1989, there clearly is no need to include [the] statement” (Copyright Law Amendment, 1996). With a bit of data-mining, one can clearly find some flexibility within copyright standards, and as it becomes more apparent that the needs of the minority groups of disabled students can be met with technology, standards prohibiting its use will be lessened.

### **Paucity of Court Cases**

The University of Washington, mentioned above as one of the defendants in the Authors Guild, Inc. v. Hathitrust, 2012 lawsuit, maintains its Access IT database using funding from the National Institute on Disability and Rehabilitation Research of the U.S. Department of Education. In an effort to exhaust my research, I referred to this university’s site and found some key pieces of information regarding current court cases or the lack thereof. In 2013, when I asked the University of Washington whether there were any court cases on “web accessibility and the obligations of postsecondary institutions under Section 504 or Americans with Disability Act of 1990?” the answer was “Not yet, but it is only a matter of time” (University of Washington, 2013, p. 1). By 2014, the university’s updated webpage showed a section titled, “Resolution agreements and lawsuits” and provided articles related to best practices, compliances, lawsuit details and final case decisions (University of Washington, 2014, p. 1). The university trusts that when a court is asked to make a decision regarding an accessibility case, it will refer to earlier cases and legal standards under the Americans with Disabilities Act and establish and use case precedent when making decisions.

In the meantime, the U.S. Department of Education, Office of Civil Rights (OCR) (2013), keeps complaint letters on file when a “postsecondary institution selects software programs and/or hardware equipment that are not accessible to people with disabilities”. “Historically, the accessibility of new hardware in the education context has been addressed as follows: a new innovation comes out, but accessibility is not built in. Time passes and accessibility issues are raised” (Concerning the promise of accessible technology, 2012). Delays in getting access causes undue burdens on people with disabilities forced to fight for equal access which ultimately may result in only minimal access (Concerning the promise of accessible technology, 2012).

Meanwhile, postsecondary institutions and other organizations, which are not required to provide access if it causes any undue burden defined as “an action requiring significant difficulty or expense,” will certainly find it more difficult to use the excuse that financing for online classes is unavailable (U.S. Department of Education, 2013). Although we must “acknowledge the limitations of drawing conclusions or making predictions based on resolution agreements, in the absence of judicial precedent, it is arguable that a court would adapt this reasoning and dismiss the ‘undue burden’ defense proffered by a postsecondary institution” (University of Washington, 2013, p. 3). Accordingly, the significant expenses of making information accessible to certain students would not be seen as an undue burden when the cost of software continues to decrease.

Institutions found to be discriminating against individuals with disabilities because the information contained on their websites was inaccessible under the Americans with

Disabilities Act of 1990 could be required to pay for redesigning websites as well as incurring the costs of effectively communicating website content to individuals (University of Washington, 2013, p. 4).

In terms of saving money, it seems like institutions that build accessible websites in the beginning will pay less and save on court defense costs in the end.

### **Continuous Growth**

In the December 2012 issue of *Campus Technology*, researchers estimate that by “2014 there will be 5.1 million higher education students solely in brick and mortar classrooms, 3.5 million in solely online classes, and 18.6 million students in blended or hybrid courses (combining face-to-face (f2f) teaching and learning with technology based activities)” (p. 3). Many academic leaders are expecting to see increasing numbers of blended classrooms and technologically-focused teaching techniques.

### **Comparative Perspectives**

Many educators do not support online instruction because they do not believe it actually solves difficult teaching and learning problems and may actually create additional problems. With technology constantly changing and developing complex networks, “the lack of stability in online learning environments, and the limited understanding of how much students and instructors need to know to successfully participate” is an issue for many educators (Johnson et al., 2000, p. 29). One of the reasons I pursued this topic is because according to Johnson et al. (2000) there is little research to precisely ascertain the pitfalls or benefits of online teaching and learning and faculty members who are being asked to develop web-based courses are wondering if

their students are learning in online environments. Johnson et al. (2000), states that “with little empirical knowledge about Internet-based education outcomes, the need for research in this area is not only timely, but also imperative” (p. 33). Similar to Johnson et al.’s (2000) research results, Grandzol and Grandzol (2010) showed that higher rates of interaction between students and their instructors and peers did not lead to increases in positive learning experiences. Grandzol and Grandzol (2010) agree that the trend of research is towards linking interaction with persistence. However, Johnson et al. (2000) believe other factors may have significant influence including age, gender and whether the student has prior experience with online classes, or was forced to take the class out of necessity.

Using best practices’ principles to define and assess online tools, McCabe and Meuter (2011) found that “although students enjoy using many of the course management tools, they do not see the tools as highly effective at enhancing the learning experience” (p. 149). Concepts including good communication between instructor and students, cooperation amongst peers, prompt feedback and activities that emphasize time on tasks are some of the assessment tools used by researchers. Using online calendars in addition to “articulating the amount of time students are expected to spend on a task” has helped students to manage their time and in some cases increased the amount of time students spent on tasks (McCabe & Meuter, 2011, p. 151). Also, McCabe and Meuter’s (2011) conclusions that the development of “course materials and processes with high levels of engagement [having] been found to motivate students to spend more time on task, which can foster learning,” compliments Ryabov’s (2012) correlation study showing student’s

grades improving by one letter grade when they spend an average of 19 extra minutes of time per week engaged with course materials (p. 151; p. 21).

While some believe online academics is inferior to face-to-face classroom environments, reports show approximately 2/3 of respondents believe online courses are the “same” or “somewhat superior” to face-to-face courses (Allen & Seaman, 2011, p. 13). Hiltz and Wellman (1997) contend that the more students experience collaborative "group learning" over “individual learning”, the “more likely they are to judge the outcomes of the Virtual Classroom as superior to those of the traditional classroom” (p. 47). On the positive side, Hiltz and Wellman (1997) found that with more collaborative learning, communities of inquiry were stronger and “students tended to work harder in Virtual Classroom-based courses because of the convenient daily access to class interaction and the need and motivation to keep up with the contributions of their instructors and classmates” (Hiltz & Wellman, 1997, p. 48). However, this enthusiasm was found in the early weeks of the semester and later in the semester students reported “they were more likely to stop attending class” when they became busy with other things (Hiltz & Wellman, 1997, p. 48). Ultimately, because the online classes being reviewed did not meet at a particular time and only required students to log on, students found it easy to postpone attending and procrastinated in completing assignments and fell behind (Hiltz & Wellman, 1997).

Finally, skeptics of online learning raise concerns about the quality of online coursework. Some note that “rather than developing approaches to teaching that would take advantage of the capabilities of computer-mediated distance education, instructors in many cases transfer their in-class pedagogy to an online format” (Jaggars & Bailey, 2010,

pp. 1-2). In contrast, advocates of online learning, argue that “technology-enhanced education can lead to superior learning outcomes, and that higher online dropout rates are due not to the medium per se but rather to the characteristics of students who choose online courses” (Jaggars & Bailey, 2010, p. 2).

### **Gaps in the Research**

Sections of the seven-part California State University, Northridge (CSUN) Quality Online Learning and Teaching (QOLT) (2010) rubric stress the importance of setting up a webpage section where students and instructors can introduce themselves, tell a personal story, and interject unique tidbits as to why they are in the class, attending college, and more. The theory is that when participants introduce themselves, include an online photo and engage in open dialogue, relationships mirroring face-to-face classes are built. As I continued to collect data, my interests leaned more towards online course designs and how it affected the success or failure of online class sites. Aragon (2003) believes designers and instructors have the responsibility for creating the ideal environment, which includes social presence, a key element of a successful class. Excluding Hersh’s (2009) research where he compared asynchronous and synchronous dissemination systems, there is little data on which online tools, probably because they are too numerous to define, students prefer, however the following researchers have some opinions on the subject.

### **Synchronous and Asynchronous Environments**

The use of synchronous tools is still in the early stages of the university where I conducted my dissertation research. However, Bernard, Philip, Lou, Borokhovski, Wade, Wozney, Wallet, Fiset and Huang (2004) found that in comparing synchronous and

asynchronous formatted environments, the former favored the face-to-face classroom, while the latter was rated higher in areas of student satisfaction by online students. This means that when I distributed my surveys to the fall 2013 students, the satisfaction ratings from students were expected to be higher because the instructors in my research were not using synced up tools. It is interesting to note that while Hersh (2009) believes that an online environment is improved upon and made more personal through the use of synchronous tools, Bernard et al. (2004) found the opposite to be the case. The six instructors, whose classes I evaluated, created classrooms that were extremely different from one another however none used synchronized instruments.

### **Online Interactions**

Unlike Hersh (2009), who found online students to be more satisfied with aspects of their learning experiences, Johnson et al.'s (2000) study showed that students in a traditional academic format were more satisfied in some areas. The areas relating to student's interaction time with their instructor favored the online instructors. My study attempted to find relationships between the use of online tools and improved online interactions between students and instructors, thus providing some evidence Johnson et al. (2000) was unable to find in his study. The (QOLT) rubric used by the university I examined encourages its online instructors to utilize a number of techniques when designing their online courses including using instruments intended to engage students.

### **Summary**

Ultimately, an online program which fails to meet students' academic needs will be detrimental to any college attempting to remain competitive; therefore it is advantageous to assess the satisfaction rates of students who increasingly seem to desire

more online offerings. In September 2011, the Department of Education in cooperation with private industry launched Digital Promise, “a new national center for advancing learning technologies” (The White House, 2013, p. 3). The program purposes to collect breakthrough techniques that educators and entrepreneurs have developed and use a government mandated committee to distribute the new technological teaching methods to public academies and then oversee the implementation of the new programs into institutions’ curriculums.

In the meantime, while online education continues to grow, Accrediting Commissions along with Hersh (2009) and Johnson et al. (2000) focus on examining how students engage with course materials, their instructors and peers, and with active-learning. The timing of the Western Association of School and Colleges (WASC) (2008) to present its standards for online academia is vitally important because there are so many opposing views towards online education. As instructional designers, instructional users, and researchers move forward with developing and reviewing online education, WASC (2008) guidelines provide credibility to all online academic activities. WASC (2008) believes that it is important to identify technological usage and to assess course effectiveness using multiple methods of review. The report does not specify or recommend assessment tools, therefore my proposed study attempted to define and connect effective online practices with improved student satisfaction rates.

There is much to learn by delving into the experiences of those learning online. Understanding the online experience from the learners' perspectives by gaining insight into how, if at all, learners try to make sense of the ‘disconnect’ they feel due to lack of F2F contact provides important insights into how online learning environments can be

better designed and facilitated (Stodel et al., 2006, p. 2). Therefore, the purpose of this study was to identify what learners perceive as being the positive parts of the online learning environment and the ones they are most satisfied with and then provide some recommendations as to how online teaching and learning environments might be improved.

### **Chapter 3: Methodology**

The following chapter describes the purpose of the research, the design and setting of the study, the methods of collecting data, the student and faculty population and sample size. In addition, my research questions and the rationale behind the variables used as well as the survey questions asked are provided in this methodology chapter. Finally, the validity factors and method of analysis are summarized.

The purpose of this research is to examine the relationship between participants' previous online knowledge, participants' locus of control, participants' perceptions about technology's usefulness and its ease of use, participants' interaction levels within a web-based community of inquiry (teaching, social, and cognitive presence) and participants' overall satisfaction levels. My hypothesis is that satisfaction rates will be significantly higher for participants with positive perceptions towards their previous online experience and skill levels, participants with internal locus of control, and participants who perceive the technology utilized in their online courses as useful and easy to use (Aragon, 2003; Bibeau, 2001; Gunawardena & Zittle, 1997; Hersh, 2009; Moallem, 2007; Rourke et al., 1999; Shea & Bidjerano, 2009). Additionally, I theorize that participants' satisfaction rates will be significantly higher in courses that foster high levels of teaching, social and cognitive presence (Aragon, 2003; Bibeau, 2001; Garrison & Cleveland-Innes, 2005; Gunawardena & Zittle, 1997, Shea & Bidjerano, 2009).

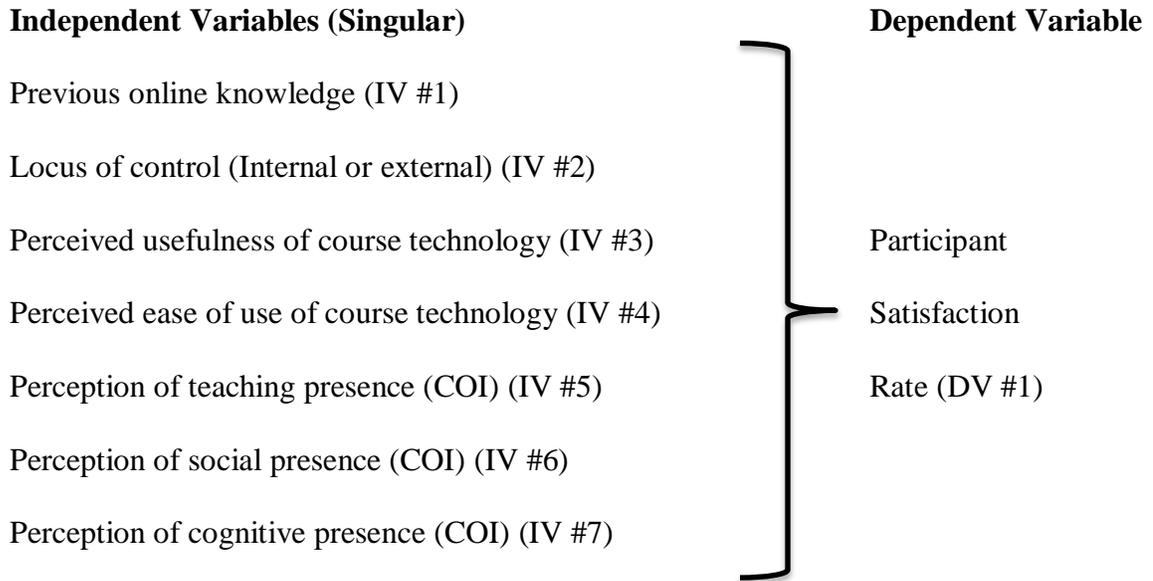
As mentioned in Chapter 1, an original, California State University (CSU) instrument called the Quality Online Teaching & Learning (QOLT) (2010) rubric was used in this study. Implementation of the QOLT rubric was critical in determining if QOLT-designed courses produced environments where faculty and students could engage

in effective online communication. QOLT designers hypothesize that instructors who develop online courses per QOLT standards will see engagement rates and social presence levels rise (Zell, 2012, p. 2). The QOLT instrument has seven sections, each matching one of the seven independent variables used in this study.

This research, while a mixed methods, includes quantitative statistical methods including multiple regressions and cross tabulations as well as qualitative interview data. The study was looking for positive relationships between variables, meaning “high values for one variable are associated with high values of another variable, and low values are associated with low values” (Trochim & Donnelly, 2008, p. 7). A high association of results creates a predictive validity and shows that the proposed hypothesis can measure or predict what was theoretically believed it would predict.

**Guiding Research Questions:**

1. Is there a relationship between high student satisfaction levels and high perceived skill levels of previous online knowledge?
2. Is there a relationship between high student satisfaction levels and having an internal locus of control?
3. Is there a relationship between high student satisfaction levels and high positive perceptions of technology’s usefulness?
4. Is there a relationship between high student satisfaction levels and high positive perceptions of technology’s ease of use?
5. Is there a relationship between high student satisfaction levels and high levels of teaching presence?
6. Is there a relationship between high student satisfaction levels and high levels of social presence?
7. Is there a relationship between high student satisfaction levels and high levels of cognitive presence?



**Figure 1. Seven Independent Variables and One Dependent Variable.**

### **Variables**

The independent variables for this study, as seen in Figure 1, include: participants' previous online knowledge; participants' locus of control; participants' perceptions of technology's usefulness; participants' perceptions of technology's ease of use; participants' perceptions of teaching presence, social presence and cognitive presence within the online course.

The dependent variable is participants' satisfaction rates within their respective online course(s).

## **Research Design**

Trochim and Donnelly (2008) define mixed methods studies as any “research that uses multiple research methods to take advantage of the unique advantages that each method offers” (p. 5). This study collected quantitative data in an effort to measure the relationships hypothesized in the above questions (Creswell, 2012). Qualitative methods were used to analyze and interpret the meaning of the data output in a broader thematic manner.

### **Students’ Previous Online Knowledge**

In determining the factors that raise student satisfaction rates, I found studies that indicate that students who have previous online knowledge recognize the benefits online learning offers them in terms of academic growth (Dobbs, Wald, & Carmen, 2009; Drennan et al., 2005; Hodges & Cowan, 2012). In one study, students who had previously taken online courses indicated that they would like to “see more instructors put materials online” because these students have learned how to work effectively within the online environment (Dobbs et al., 2009, p. 19). Drennan et al. (2005) and Hill et al. (2009) believe students’ learning experiences improve when they are stimulated to be autonomous and innovative learners. Because there is the possibility that students who have taken previous online courses will rate their satisfaction with their current online class higher than students who have never taken an online class, this study asked students to self-report the number of online classes they had taken prior to the fall 2013 semester. Participants were asked to report whether they had the technical skills required for the course as well.

## **Students' Locus of Control**

Several researchers agree that students experience an array of personal processes while becoming autonomous online learners (Drennan et al., 2005; Hersh, 2009; Ryabov, 2012; Thurmon & Wambach, 2004). All four researchers (Drennan et al., 2005; Hersh, 2009; Ryabov, 2012; Thurmon & Wambach, 2004) believe that these processes ultimately lead to students' heightened awareness or in some cases unawareness of their locus of control. Internal and external locus of control refers to the:

Degree to which persons expect that a reinforcement or an outcome of their behavior is contingent on their own behavior or personal characteristics versus the degree to which persons expect that the reinforcement or outcome is a function of chance, luck, or fate, is under the control of powerful others, or is simply unpredictable (Rotter, 1990, p. 489).

One of the characteristics of online learning is the increased flexibility, convenience and removal of time and place constraints. The responsibility lies with the learner as they control the "pace, flow and interactions" (Johnson, Gueutal, & Falbe, 2009, p. 551).

Recent research found that students with a more internal locus of control were more likely to leverage the environment to their advantage and utilize the available technology to its fullest (Dobbs, et al., 2009; Drennan et al., 2005; Johnson et al., 2009). While students with a more external locus of control reportedly focused more on the shortcomings of the technology used in the learning environment and thus were less

satisfied in their experiences (Johnson et al., 2009). In determining if students' rates of satisfaction correlated with their locus of control, two survey questions were asked. Derived from the QOLT-rubric, one question asked students to assess on a Likert-scale with 5=strongly agree; 4=agree; 3=neutral; 2=disagree; 1=strongly disagree; 0=N/A, whether they had multiple ways of measuring their progress in the class. Theoretically, if the instructor followed the QOLT-format and provided his/her student with clear ways to measure their progress, both an internal and external locus of control student would find some benefit, thus satisfaction from access.

Using the same scale, the second question asked students to respond to the question, "I like online tools (i.e., Discussion Boards, Lecture Capture, Quizzes) because they allow me to control my work." In evaluating the students' self-reported locus of control, the hypothesis attempted to find a relationship between internal locus of control reporters and higher satisfaction rates.

### **Students' Perceived Usefulness of Course Technology**

Perceived usefulness relates to the probability of improved student performance. The perceptions towards technology's usefulness relates to "the extent to which online flexibility assists a student's learning" (Drennan et al., 2005, p. 333). Distance education, with its flexible scheduling and broader accessibility, is desirable to "84% of community college students who must work full-or part-time while balancing personal obligations" (Jackson et al., 2010, p. 78). This study hypothesized that having the flexibility to learn at any given time was a central reason students were satisfied with online courses. To determine if there was a relationship between high student satisfaction rates and positive perceptions of technology's usefulness, students were asked to rate the following survey

questions using a Likert-scale with 5=strongly agree; 4=agree; 3=neutral; 2=disagree; 1=strongly disagree; 0=N/A:

- The online tools (i.e., Discussion Boards, Lecture Capture, Quizzes) used in the course help me understand what I need to accomplish in class.
- The online tools give me more flexibility to do my classwork.

Additional relationships beyond perceived usefulness of technology's (IV #3) and student satisfaction rates (DV #1) were examined as well. For example, Drennan et al. (2005) suggests that students with positive perceptions towards technology's usefulness and flexibility will generally find technology easy to use as well (IV #4).

### **Students' Perceptions of Technology's Ease of Use**

Technology comes in many different forms and can be applied to teaching and learning environments in numerous ways. Some instructors have found that using online calendars in addition to "articulating the amount of time students are expected to spend on a task" has helped students manage their time and in some cases increased the amount of time students spent on tasks (McCabe & Meuter, 2011, p. 151). This is an example of technology being an effective tool. However, technology could complicate instructor-student communication lines or challenge the student to a point where technology's usefulness is less than positive. For example, if a student becomes confused when he tries to access, read, and/or download the online calendar instructions, he may view the course technology as hard to use and thus be less satisfied with his overall online experience (Drennan et al., 2005).

As described above, a student's locus of control has been linked to his perceptions regarding technology's ease of use, which has been linked to the student's satisfaction rates. To determine if there was a relationship between high student satisfaction levels

and positive perceptions of the ease of technology use, students were asked to respond to the following questions using a Likert-scale with 5=strongly agree; 4=agree; 3=neutral; 2=disagree; 1=strongly disagree; 0=N/A:

- The course tools are easy to use.
- The course provides easy to use links to course materials.

The hypothesis for this part of the study regarding technology's ease of use (IV #4) was that students who perceived that the technology used in their online courses was easy to use would have higher overall satisfaction rates (DV #1) during the semester.

### **Students' Perception of Teaching Presence in a (COI)**

Teaching presence is one aspect of a teaching-learning model and when linked to social and cognitive presence completes the educational experience called a Community of Inquiry (COI) (See Figure 2) (Aragon, 2003; Bibeau, 2001; Garrison & Cleveland-Innes, 2005; Gunawardena & Zittle, 1997; Hodges & Cowan, 2012; Jackson et al., 2010; Rourke et al., 1999; Shea & Bidjerano, 2010; Stodel et al., 2006). Specifically, the action of the instructor, which creates the online teaching presence, includes their "ability to facilitate and direct cognitive and social engagements...in such a manner as to provide meaningful and educationally worthwhile learning experiences and outcomes for the enrolled students" (Jackson et al., 2010, p. 92).

Researchers (Salyers, Carter, Barrett, & Williams, 2010; Shea & Bidjerano, 2009) discovered that student satisfaction rates were higher for students who perceived that the faculty member engaged them fully and lower for students who perceived the teaching presence as weak. This study hypothesized the same theory: that student satisfaction rates would be higher for students who perceived a strong teaching presence was

generated in their online classroom. Students were asked to respond to two questions using the same, 5-point Likert-scale (5=strongly agree; 4=agree; 3=neutral; 2=disagree; 1=strongly disagree; 0=N/A) as described above:

- Information about how the instructor can help me learn is clear to me.
- The instructor's availability is clearly presented online.

### **Students' Perception of Social Presence in a (COI)**

Social presence, a second aspect of the Community of Inquiry model, is strongly related to the concept of immediacy and intimacy (Mehrabian, 1969). Hiltz (1997) deduces the virtual classroom is “both an instrumental group--in which students and instructors want to accomplish goals--and a community--in which students exchange emotional support, information, and a sense of belonging” (p. 46). Because online learners and instructors are separated by physical space, a concentrated effort must be made towards engaging in repeated interactions. This type of social interaction gives participants the ability “to project their personal characteristics into the community thereby presenting themselves to other participants as real people” (Stodel et al., 2006, p. 3).

Given that the function of social presence is to enhance the engagement rates and cognitive learning processes in students, which essentially influence students' overall experience and satisfaction rates, this study endeavored to find a positive relationship between students' social presence perceptions and their satisfaction with their QOLT-designed online course (Shea, & Bidjerano, 2009; Stodel et al., 2006). Students were asked to rate (5=strongly agree; 4=agree; 3=neutral; 2=disagree; 1=strongly disagree; 0=N/A) the following questions:

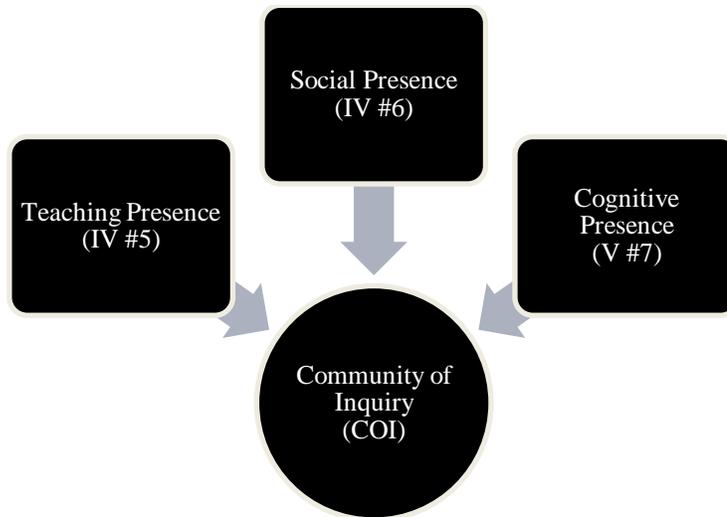
- The learning activities encourage me to interact with the instructor, the other students, and the coursework.
- I often visit the online class website.

### **Students' Perception of Cognitive Presence in a (COI)**

In addition to social presence, the COI model also highlights “cognitive presence,” which is defined as “the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry” (Stodel et al., 2006, p. 3). Liu (2008) believes that online environments that effectively incorporate high cognitive presence convince learners that they will learn better when they share their knowledge and interact with other students. For other researchers (Rourke et al., 1999; Shea & Bidjerano, 2009) the three components of the Community of Inquiry model do not work independently and essentially work as “an overlapping set of lenses” (Shea & Bidjerano, 2009, p. 545).

Thus, this study examined how instructors' course design choices positively or negatively impacted students' perceptions of the online learning setting which includes the teaching presence, social presence, and cognitive presence. In theory, the teaching presence influences the social presence which influences the cognitive presence (Shea & Bidjerano, 2009). In an effort to determine if high cognitive presence (IV #7) rates raised student satisfaction rates (DV #1), students were asked two questions (5=strongly agree; 4=agree; 3=neutral; 2=disagree; 1=strongly disagree; 0=N/A):

- While on the class website, my classmates and I share information.
- The instructor uses online tools that help me focus on the topic.



**Figure 2. A Community of Inquiry includes Teaching, Social, and Cognitive Presence.**

Figure 2 shows how the independent variable #5, Teaching Presence, independent variable #6, Social Presence, and independent variable #7, Cognitive Presence complete a Community of Inquiry. This study examined how instructors' presence, peer presence, and material engagement positively or negatively impacted students' perceptions of online learning and their subsequent satisfaction with their experiences.

### **Students' Satisfaction Rate**

Literature indicates that online conditions, which encourage students to engage in higher order thinking, complement today's education objectives of student-centered learning as an alternative to instructor-centered teaching (Chick & Hassel, 2009). In this new academic environment, students report being more satisfied with online activities designed at increasing their levels of interaction and cognitive learning, which has shown to improve their overall academic performances (Chen & Pederson, 2012; Chick & Hassel, 2009; Drennan et al., 2005; Gao & Lehman, 2003; Gunawardena & Zittle, 1997; Hersh, 2009). Hersh (2009) reported that distance learners experience advanced levels of

academic “reflective thinking (a component of deep learning that asks students how often they critically examine their own views, consider the views of others, and adapt their thinking on a topic)” (p. 57). Thus, students are more satisfied with their online courses when the community of inquiry (teaching, social, and cognitive presence) is a core part of the design (Hodges & Cowan, 2012).

Students also reported that they acquire more practical confidence in technological proficiencies, interpersonal skills, and career skills, as well as “social development and were generally more satisfied” when they engaged in online learning (Hersh, 2009, p. 58). Thus, empirical data shows that higher satisfaction rates are associated with students who have previous technical experience, an internal locus of control, positive perceptions about course technology’s usefulness, course technology’s ease of use, and a well-designed community of inquiry. This study proposed to correlate the above seven independent variables to one dependent variable of student satisfaction by asking students to respond to the following question using the 5-point Likert-scale (5=strongly agree; 4=agree; 3=neutral; 2=disagree; 1=strongly disagree):

- I was very satisfied with the online course.

### **Research Setting**

This study was conducted at the largest of the 23 public California State University (CSU) located in San Fernando Valley, CA with a population of nearly 37,000 students and approximately 4,000 faculty members and staff. Census data from fall 2011 shows an undergraduate population of 31,504 and graduate student body of 4,151 (CSU, 2013b). The university’s 2009 statistical summaries show a mean age of 24.4 with the largest population of 17,988 students being between 20-24 years old. Robinson (2009)

reports that distance learning is appealing to busy adult workers, an aspect which course-designers should consider when building online classes. For example, as more adults return to college to enhance their skills, many already have computer knowledge and the tendency to be self-starters, unlike many of their younger classmates. In light of this data, demographic information, including age and employment status, were requested on the survey in this study.

Although the California State University (CSU) Online office does not provide current stats regarding the numbers of students enrolled in distance learning, data shows that web-based teaching and learning is experiencing enormous growth (Allen & Seaman, 2011). In spring 2013, California State University (CSU) Online, based out of the California State University Chancellor's office, rolled out dozens of online courses which reportedly allowed 6,000 more students to enroll into California State University online classes (CSU, 2010). As an attendee of one the California State University (CSU) Faculty Technology Centers (FTC), I observed 13 (CSU) instructors work on redesigning their traditional face-to-face courses into hybrid or fully online courses in preparation and anticipation of the expected influx of students. Out of those 13 inaugural instructors, ten completed the platform needed for their online course and it was those ten instructors who were sent invitations to participate in this study.

Marshall and Rossman (1999) contend that researchers "cannot study all relevant circumstances, events, or people intensively and in depth," instead they select samples (p. 69). Because this study was conducted at one university and focused on students enrolled in courses redesigned by faculty members who were trained together, the sample avoids a common pitfall associated with "multi-institutional analysis" in which various and

different technology, support, and training are applied to online learning environments (Calfee & Sperling, 2010, p. 80). The instructional framework of each class included a course website that encompassed some community of inquiry design elements.

## **Research Sample and Data Source**

### **Quantitative Sampling and Data Collection Procedure**

This study used a mixed methods design and two data sources: student surveys, and semi-structured student interviews. During week 11 of the fall 2013 semester, participants for the quantitative portion of the study were surveyed. Participants were students who were enrolled in one of the online courses developed by one of six instructors who completed a professional training seminar in the summer of 2012. The Faculty Technology Center (FTC) at the California State University (CSU) focused in this research, graduated its inaugural group of thirteen instructors after an eight-week course redesign workshop. During the spring 2013 semester, the ten instructors who completed their basic course platforms were asked to participate in this fall 2013 study. Two instructors were not teaching an online course, and two instructors did not respond to my invitation to participate. The remaining six instructors (5 females, 1 male) agreed to participate and allowed their students to be surveyed while they were enrolled in one of six online courses (two 100-level; three 300-level; one 400-level).

Course A was a 100-level, 3-unit Computer Science Honors hybrid class. Weekly, the course participants and instructor met for 1 hour and 15 minutes in asynchronous online sessions, at various times per the course syllabus, and for 1 hour and 15 minutes in face-to-face sessions. Course B was a 100-level, 3-unit Speech Communication hybrid class. Weekly, the course participants and instructor met for 1

hour and 15 minutes in asynchronous online sessions, at various times per the course syllabus, and for 1 hour and 15 minutes in face-to-face sessions. Course C was a 300-level, 3-unit Anthropology hybrid class. Weekly, the course participants and instructor met for 1 hour and 15 minutes in asynchronous online sessions, at various times per the course syllabus, and for 1 hour and 15 minutes in face-to-face sessions. Course D was a 300-level, 3-unit Anthropology hybrid class. Weekly, the course participants and instructor met for 1 hour and 15 minutes in asynchronous online sessions, at various times per the course syllabus, and for 1 hour and 15 minutes in face-to-face sessions. Course E was a 300-level, 3-unit Political Science fully online class. Weekly, the participants and instructor met for 2 hours and 30 minute in online sessions at various times per the course syllabus. Course F was a 400-level, 3-unit Special Education fully online class. Weekly, the participants and instructor met for 2 hours and 30 minute in online sessions at various times per the course syllabus.

Each course syllabus included procedures for communicating and exchanging information via online, as well as instructions for online and/or in-class participatory activities. The class sizes were as follows: Course A (Computer Science) had 28 students enrolled; Course B (Speech) had 25 students enrolled; Course C (Anthropology-Small) had 13 students enrolled; Course #D (Anthropology-Large) had 62 students enrolled; Course E (Political Science) had 88 students enrolled; Course F (Special Education) had 28 students enrolled for a total headcount of 244 students. With a high return rate multiplied by the 20-question survey, the data set was defined as being large enough to ensure that the independent variables in fact do predict the dependent variable outcome.

During the fall 2013 semester, the participating students were asked to complete a survey during week 11. At a designated date and time, at the beginning of an in-class session, for the four hybrid classes (100-level Computer Science Honors; 100-level Speech; two different 300-level Anthropology), the researcher asked students to complete a hand-delivered survey questionnaire and then she collected the completed surveys. A link to a confidential web-based survey site was provided to the students attending the 300-level Political Science fully online course, and the 400-level Special Education fully online course. The principal researcher transposed the quantitative survey data into the California State University, Northridge (CSUN) Statistical Package for the Social Science (SPSS) Version 18.0 database and ran statistical analyses on the variables (Wagner, 2010).

### **Qualitative Sampling and Data Collection Procedure**

During weeks 12 and 13 of the fall 2013 semester, the student participants for the qualitative portion of this mixed study were selected after they volunteered to participate in a semi-structured interview process. Before completing the week 11 surveys, students were given consent forms which included the researcher's contact information. Students were asked to contact her if they had any questions or were interested in participating in a 15-minute interview. Every student participant who emailed, texted, or called the researcher was promptly contacted, and time and place preparations for a confidential interview were arranged. Student participants were asked to describe their previous online and technical experience. They were asked to describe how they organized and processed their online classwork. They were asked to give their opinions about how flexible, useful, and easy they found the class technology. Students had opportunities to

detail their perceptions regarding the course teaching, social, and cognitive presence, as well as provide commentary regarding their overall satisfaction with their online experiences. All interviews were conducted in person and were recorded. Recordings were transcribed using Dragon 11.0 software and interviewees were given the option to read, revise, and redact any information they felt was sensitive or would have led to their discomfort if published.

### **Rights of Participants**

All participants were assured in writing that confidentiality would be protected and they were asked to complete an informed consent form which explained that participation was voluntary, as well as the purpose of the study, the potential risk, and discomforts to subjects, and the rights of participants. Electronic survey responses and interview transcriptions were maintained on my personal computer, which is password protected. Hard copies of surveys and transcribed interviews were locked in my personal safe, located in my home office.

### **Instruments and Data Analysis**

Participants' responses to the 20-question hand-distributed or online surveys, consisting of 5 demographic questions and 15 questions related to their online experiences, were analyzed using Statistical Package for the Social Science (SPSS) 18.0 software. Responses to survey questions were rated by students using a 1 to 5 Likert scale. With 1=strongly disagree; 2=disagree; 3=neutral; 4=agree; 5=strongly agree, the first 15 statements asked students to rate how well each statement described what the class was like for them. The last five questions asked students to provide demographic information including: the number of online classes they had previously taken, their age,

their gender, their employment status, and their grade level. As stated in Chapter 2, the survey instrument for this study was produced by the researcher using survey guidelines conducted by credible researchers as well as the student version of the California State University, Northridge (CSUN) Quality Online Teaching & Learning (QOLT) (2012) rubric, which the researcher co-authored (Aragon, 2003; Bibeau, 2001; Gunawardena & Zittle, 1997; Hersh, 2009; Moallem, 2007; Rourke et al., 1999; Shea & Bidjerano, 2009).

**Table 2. Framework of Survey Statements including Variable and SPSS Codes**

Survey Question Number	Variable SPSS I.D.	Variable Title and Number	Survey Statements	Survey Likert Scale and SPSS Codes
1	PREV1	Student's Previous Online Knowledge IV #1	Student understands the technical skills needed to succeed in the course.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
2	PREV2	Student's Previous Online Knowledge IV #1	Student's previous experience with using online tools such as the Internet helped the student succeed in the course.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
3	HABITS1	Student's Online Learning Habits IV #2	The online tools supplied the student with multiple ways of measuring his/her progress in the class.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
4	HABITS2	Student's Online Learning Habits IV #2	Online tools allowed the student to manage his/her course workload.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
5	USEFUL1	Usefulness of Course Technology IV #3	The online tools helped the student understand what he/she needed to accomplish in the class.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
6	USEFUL2	Usefulness of Course Technology IV #3	Working online meant the student had more flexibility to do his/her classwork.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
7	EASE1	Course Technologies Ease-of-Use IV #4	The course provided easy-to-use links to course materials.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
8	EASE2	Course Technologies Ease-of-Use IV #4	The course tools were easy to use.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A

9	TEAPRES1	Teaching Presence IV #5	Information about how the instructor can help the student learn was clearly presented online.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
10	TEAPRES2	Teaching Presence IV #5	The instructor's availability was clearly presented online.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
11	SOCPRES1	Social Presence IV #6	The learning activities encouraged the student to interact with the instructor, other students, and the coursework.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
12	SOCPRES2	Social Presence IV #6	The student often interacted with his/her peers on the class website.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
13	COGPRES1	Cognitive Presence IV #7	The instructor used online tools to help the student focus on the topic.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
14	COGPRES2	Cognitive Presence IV #7	The class website allowed the student to interact with the coursework.	5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree; 0=N/A
15	OVERSAT	Overall Satisfaction DV #1	The student's satisfaction level with the online learning environment was best described as:	5=Very Satisfied; 4=Satisfied; 3=Neutral; 2=Dissatisfied; 1=Very Dissatisfied; 0=N/A
16	NUMPREV	Number of Previous OL Classes	Prior to the fall 2013 semester, the number of blended/hybrid/fully online classes the student had taken:	<i>Fill in the blank.</i>
17	AGE	Age	Student's age:	<i>Fill in the blank.</i>
18	SEX	Gender	Student's gender:	1=Male; 0=Female
19	EE	Employment Status	Student's employment status:	2=Full time; 1=Part time; 0=Unemployed
20	CLASS	University Class Level	Student's university class level:	5=Graduate; 4=Senior; 3=Junior; 2=Sophomore; 1=Freshman

Table 2 begins with the survey number followed by the short-hand codes used to label the variables for SPSS. The third column contains the formal title of each variable while the fourth column is the statement used on the student surveys. The last column comprises of the Likert-scaled responses used in SPSS.

Students' self-reported demographic information provided nominal values and served as a means towards grouping and organizing cross-tabulations, while the Likert-scaled responses supplied the ordinal data sets. The seven independent variables (participants' previous online knowledge; participants' locus of control; participants' perceptions of technology's usefulness; participants' perceptions of technology's ease of use; participants' perceptions of teaching presence, social presence, and cognitive presence within the online course) and the one dependent variable (students' satisfaction ratings) were analyzed using multivariate regression to determine if there was a predictive value of improving student satisfaction rates with online learning environments (Allison, 1999).

Shea and Bidjerano (2009) believe that it is only through triangulation that we can “gain further insight into the ways that online education can benefit from ongoing advances in technology, pedagogy, and the science of learning” (p. 552). This study's mixed approach used quantitative methods (survey questionnaires) to test hypothesized relationships between the seven independent and one dependent variables; then in an effort to gather data that was not quantifiable, the qualitative portions of this study were acquired from student interviews (Chen & Pederson, 2012). The purpose of semi-structured interviews was to “discover what the learners were missing from online learning” and to discover the elements they felt would make the online learning

experience richer” (Stodel et al., 2006, pp. 4-5). Transcribed interviews were processed through Atlas Ti software which generated several themes described in Chapter 4. By embedding qualitative data into a quantitative study, the quantitative data model is validated per Hodges and Cowan (2012), particularly if the scores are shown to be “stable and consistent” (Creswell, 2012, p. 159). Finally, descriptive analysis on numerous data sets provided statistical calculations including the mean and the standard deviation which showed which independent variables most statistically influenced the dependent variable.

### **Role of the Researcher**

As the lead researcher, it was important for me to methodically consider my subjectivity before and during this research endeavor (Peshkin, 1988). While my teaching experience is limited to mainly one-on-one and small group teaching scenarios, it is my fifteen years of corporate human resources and aerospace experience which focuses the lens with which I view academic institutions, and which drives my strong conviction towards the use of available modern technology when appropriate. I ventured into this research with the support of three women who are prominent leaders in their respected fields, and who use technology to teach their students. However, when I began my search for a dissertation team, I was truly shocked and disheartened by the negative responses I received from approximately 40 members of the institution where this research was conducted. My dismay was eventually quashed when I recounted two other times in my career when I experienced strong, negative reactions towards technology.

The first time was during the mid-1990s, while working for Metals’ Technology, Inc., an aerospace company in Northridge, CA. I was the statistical analyst and office manager responsible for working with IT to build the company’s first online database.

My second encounter was with Dole Food Company, Inc. in 1999, where I again worked with IT to design the Human Resource department's first intranet browser-only website. After the roll-out of each database, I was responsible for training groups of employees on how to maneuver through and use each respective company website. I observed many users were nervous, anxious, and emotional while being trained on how to use the electronic databases. Many employees expressed they felt like the computer system was separating them from their colleagues and department heads. It would take time for employees to appreciate the time-saving convenience of having access to information from their desktops. In the meantime, I discovered that had I formed focus groups early on in the design process, I would have uncovered priceless pieces of information that would have been useful in gaining user buy-in, creating training programs, and in promoting the online product.

My dissertation pitch has been the same since day one of its inception: let's find out what the students want in terms of online education. If they are satisfied with the institution's online offerings because it allows those who commute or are too busy to go to the campus a chance to finish their education in a timely manner, which again is one of the goals of the California State University Board of Trustees, then let the data be used in developing more online classes. If students are not satisfied with university online courses, then let that data help developers as well. As far as I'm concerned, the data is in the box with Schrödinger's cat and we need to get them both out. Finally, as a former Fortune 100 employee, I have strong opinions about customer service and believe that students are the customers of our higher education institutions. They should have

opportunities to voice whether they are satisfied or not with their education and help institutions make improvements.

I am a historian and as such consider myself a thorough, systematic, and painstakingly detailed researcher. In addition, I am a professional interviewer, trained by the California State Employment Development Department and hold a Professional Human Resources Certificate. For approximately ten years, I conducted many interviews, and assessed and placed numerous interviewees in occupations that matched their skill sets. Subsequently, collecting qualitative data was not an issue as I understand the art of interviewing conversations and of gleaning valuable data. By valuable data, I mean honest information derived from an interviewee who feels at ease because I have made it clear that the utmost care will be given to keep their confidentiality. During this research, interviewees were made to feel like the valuable asset they are because they were providing the researcher with invaluable information that only they could provide. In the end, I am confident that I allowed the numerous amounts of data from this mixed methods study to naturally unfold and provide a wealth of information for my colleagues, future readers of this dissertation, and me.

## **Chapter 4: Results and Findings**

Chapter 4 contains two sections including the results of the quantitative survey analysis and the qualitative findings from participant interviews which provide the factors influencing students' overall satisfaction rates. Chapter 4 also discusses the Self-Regulated Learning (SRL) situations we place students in when they engage in learning via online. The personal metacognition students experience within Communities of Inquiry (COI) is also reviewed in Chapter 4 as well as a summary of the findings.

### **Results of Quantitative Analysis**

The purpose of this research was to examine the relationship between students' previous online knowledge; students' locus of control; students' perceptions about technology's usefulness; students' perceptions regarding technology's ease of use; students' perceptions regarding the teaching, social, and cognitive presence; and students' overall satisfaction rates.

The quantitative findings were derived from a data set of surveys that supplied the statistics data as well as participant demographic information.

### **Data Collection**

Data collection occurred over a three-week period during the fall 2013 semester at the California State University (CSU) focused in this research. Surveys were completed by 123 students during week ten, and then ten students participated in interviews during weeks 11 and 12. Quantitative data was downloaded, processed, and analyzed using SPSS v. 18. Qualitative data was transcribed using Dragon 11.0 software and then was uploaded into Atlas.Ti version 7.7 which provided the codes used to create the themed sections in this chapter.

**Table 3. Demographic Data of Participants from a California State University**

<b>Demographic Variables</b>	<b>Frequency</b>	<b>Valid percent</b>	<b>n</b>
<b># of Prev. OL Classes Taken</b>			
<i>0</i>	38	30.9	123
<i>1</i>	23	18.7	123
<i>2</i>	22	17.9	123
<i>3</i>	15	12.2	123
<i>4</i>	10	8.1	123
<i>5</i>	5	4.1	123
<i>6</i>	3	2.4	123
<i>7</i>	2	1.6	123
<i>8</i>	2	1.6	123
<i>10</i>	3	2.4	123
<b>Age of Participant</b>			
<i>18</i>	15	12.2	123
<i>19</i>	29	23.6	123
<i>20</i>	19	15.4	123
<i>21</i>	23	18.7	123
<i>22</i>	8	6.5	123
<i>23</i>	7	5.7	123
<i>24</i>	7	5.7	123
<i>25</i>	2	1.6	123
<i>26</i>	1	0.8	123
<i>27</i>	1	0.8	123
<i>28</i>	4	3.3	123
<i>29</i>	2	1.6	123
<i>33</i>	1	0.8	123
<i>38</i>	1	0.8	123
<i>46</i>	1	0.8	123
<i>48</i>	1	0.8	123
<i>53</i>	1	0.8	123
<b>Gender of Participant</b>			
<i>Female</i>	93	75.6	123
<i>Male</i>	30	24.4	123
<b>Employment Status</b>			
<i>Unemployed</i>	38	30.9	123
<i>Part time</i>	67	54.5	123
<i>Full time</i>	18	14.6	123
<b>Class Level</b>			
<i>Freshman</i>	17	13.8	123
<i>Sophomore</i>	29	23.6	123
<i>Junior</i>	39	31.7	123
<i>Senior</i>	32	26.0	123
<i>Graduate</i>	6	4.9	123

Table 3 provides the frequency breakdown of participant demographic information and supplies insight into participants' previous online knowledge. At 30.9%, almost 1/3 of the participants had never taken an online class before the fall 2013 semester. However at 48.8%, almost 1/2 of the participants had taken 1-3 online classes before the fall 2013 semester. The remaining 20.2% of participants were experienced online students having taken 4-10 online classes prior to the fall 2013 semester.

A large percent, at 87.8%, of the participants were 24 years old or younger with the remaining 12.2% being fairly distributed amongst non-traditional college age ranges. At 75.6%, there were three times as many female participants as male participants and at 54.5%, half those surveyed worked part time. Finally, the largest group to participate in this research reported they were at the junior university class level.

### **Descriptive Statistics**

Multiple regression testing provided descriptive statistics which uncovered the independent variables that significantly influenced students' satisfaction rates. The mean rating of students' overall satisfaction with their online learning environments was 3.91. On a Likert scale ranging from 1 to 5, this is a moderately high satisfaction rating.

As detailed in the methodology chapter, 123 students answered a 20-question survey. Each survey asked 14 questions directly related to one of seven independent variables, one question directly related to one dependent variable, and five questions gathered participant demographic details. As shown in Table 2, independent, dependent, and demographic information codes were used to process data through SPSS 18.0. Information for question 18, variable SEX titled gender, was coded as 0=female, 1=male. Data for question 19, variable EE entitled employment status, was recoded as

EE\_PARTTIME with 1=part time employment and 2=0, and EE\_FULLTIME with 1=full time employment and 2=0.

**Table 4. Descriptive Figures and Averages of the Study Variables**

<b>Variables</b>	<b>n</b>	<b>M</b>	<b>SD</b>
<b>DEPENDENT</b>			
Overall Satisfaction	123	3.91	.91
<b>INDEPENDENT</b>			
PREVOL	123	4.39	.79
HABITS	123	3.89	.90
USEFUL	123	4.16	.81
EASEOFUSE	123	4.2	.81
TEACHPRES	123	4.07	.88
SOCIALPRES	123	3.50	1.02
COGPRES	123	4.02	.82
# of Prev OL Classes Taken	123	2.07	2.28
Age of Participant	123	21.5	6.03
Gender of Participant	123	.02	.43
EE_FULLTIME	123	.15	.35
EE_PARTTIME	123	.55	.50

The information in Table 4, supplied by the 123 participants who completed a survey, includes the Mean survey results and demographic data as well as the Standard Deviation for all factors. In using the SPSS Likert scale of 0=N/A; 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; and 5=Strongly Agree, participants self-reported having high perceived skill levels of previous online knowledge at 4.39 and moderately high levels at 3.89 of study habits which were conducive to their online learning environments. At 4.16 and 4.2, participants agreed that the technological tools were useful and easy to use, respectfully. The online Community of Inquiry (COI) components which included a teaching presence, social presence, and cognitive presence were also rated moderately high at 4.07, 3.50, and 4.02. Students overall moderate to

high ratings of factors that were hypothesized to influence their overall satisfaction ratings generated and explained the fairly high 3.91 satisfaction rating.

**Table 5. Calculated Coefficients of Study Variables and Demographic Data**

<b>Independent variables</b>	<b><i>B</i></b>	<b>SE</b>	<b><math>\beta</math></b>	<b><i>t</i></b>	<b><i>p</i></b>
PREVOL	-.05	.09	-.05	-.55	.58
HABITS	.14	.11	.13	1.24	.22
<b>USEFUL</b>	<b>.41</b>	.11	.36*	<b>3.77</b>	<b>0*</b>
<b>EASEOFUSE</b>	<b>.32</b>	.09	.29*	<b>3.49</b>	<b>.001*</b>
TEACHPRES	.08	.09	.07	.87	.39
SOCIALPRES	-.07	.08	-.07	-.87	.39
COGPRES	.15	.10	.13	1.48	.14
# of Prev OL Classes Taken	-.04	.03	-.09	-1.38	.17
<b>Age of Participant</b>	<b>.04</b>	.01	.26*	<b>3.73</b>	<b>0*</b>
Gender of Participant	-.10	.14	-.05	-.71	.48
EE_FULLTIME	-.14	.19	-.06	-.75	.45
EE_PARTTIME	.06	.14	.03	.39	.70

*Note.* Variables with greatest influential significance to the dependent variable are in boldface. \* $p < .001$

Table 5 explains the relationship between the independent variables and the dependent variable.

The independent variable entitled USEFUL, with a  $t$  value of 3.77 and a  $p$  value of 0 is statistically significant and suggests a predictive ability in determining students' overall satisfaction rates with their online learning environments. The Unstandardized Coefficient ( $B$ ) figure of .41 means that as a participant perceives, by one unit, technology to be useful, their overall satisfaction with their online learning environment will positively increase by .41 or 41%.

The independent variable entitled EASEOFUSE, with a  $t$  value of 3.49 and a  $p$  value of .001 is statistically significant and suggests a predictive ability in determining

students' overall satisfaction rates with their online learning environments. The Unstandardized Coefficient (*B*) figure of .32, means that as a participant perceives, by one unit, technology to be easy, their overall satisfaction with their online learning environment will positively increase by .32 points or 32%.

The independent variable entitled Age of Participant, with a *t* value of 3.73 and a *p* value of 0 is statistically significant and suggests a predictive ability in determining students' overall satisfaction rates with their online learning environments. The Unstandardized Coefficient (*B*) figure of .04 suggests that as a participant's age increases by one unit, or one year in this case, their overall satisfaction score will positively increase by .04 points or 4%.

**Table 6. Model Summary of Regression Analysis on Variables**

Model	<i>R</i>	<i>R</i> square	Adjusted <i>R</i> square	Std. error of the estimate
1	.748a	.56	.51	.64

*a. Predictors: EE\_PARTTIME, Age of Participant, COGPRES, Gender of Participant, # of Prev OL Classes Taken, USEFUL, EE\_FULLTIME, PREVOL, EASEOFUSE, TEACHPRES, SOCIALPRES, HABITS*

Using SPSS v 18.0 multiple regression analysis procedures, Table 6 provided a model summary with an Adjusted *R* Square figure of .51. This measures the proportion of the total variability in the dependent variable that is explained by the independent variables. At .51, it can be reported that 51% of the total variability of students' satisfaction rates is explained by the independent variables (employment status, age of participants, gender of participants, number of previous online classes taken by participants, perceptions of technology's usefulness, participants' previous online

knowledge, perceptions of technology's ease of use, perceptions of teacher presence, perceptions of social presence, perceptions of cognitive presence, and students' online learning habits). Because there is no large discrepancy between the Adjusted *R* Square figure of .51 and the *R* Square figure of .56, one can conclude that there is no redundancy of the independent variables in the regression model.

**Table 7. Analysis of Variance (ANOVA)**

	<b>Sum of squares</b>	<b>df</b>	<b>Mean square</b>	<b>F</b>	<b>Sig.</b>
Regression	57.127	12	4.761	11.667	.000b*
Residual	44.889	110	.408		
Total	102.016	122			

*a. Dependent Variable: Overall Satisfaction*

*b. Predictors: (Constant), EE\_PARTTIME, Age of Participant, COGPRES, Gender of Participant, # of Prev OL Classes Taken, USEFUL, EE\_FULLTIME, PREVOL, EASEOFUSE, TEACHPRES, SOCIALPRES, HABITS*

*Note. \*<.001*

The ANOVA table also known as the analysis of variance provides a significant *P* value of .000. The *P* value of .000 is below .001 and thus concludes that the research model is significant as a predicting standard for the dependent variable.

### **Quantitative Conclusion**

The quantitative portion of Chapter 4 concluded that students' perceptions about technology's usefulness, students' perceptions about technology's ease of use, and students' ages influenced and improved students' overall satisfaction rates. The Model Summary of Regression Analysis on Variables number of .51 validated that the study's design was strong and the variables were varied. Acquiring this level of constituency began with the use of the California State University (CSU) Quality Online Learning &

Teaching (QOLT) rubric used to help faculty design quality online courses. Designed as a guide and assessment tool for faculty, the (QOLT) rubric was also used to create the student surveys used in this study. In the end, students were asked to complete a survey, which was directly linked to the rubric, which was used by the instructors who designed the online classrooms participants were enrolled in during the fall 2013 semester.

### **Results of Qualitative Findings**

The qualitative data was obtained from transcribed interviews and explained why certain factors were more statistically effective than other factors influencing students' overall satisfaction rates with their online learning environments. While the quantitative findings revealed there were three independent variables including students' perceptions about technology's usefulness, students' perceptions about technology's ease of use, and students' ages influencing and improving students' overall satisfaction rates, the qualitative results explained why these three variables were positive influences and how other factors also influenced students' ratings.

### **Data Collection**

As explained above, the qualitative data collection began during week ten of the fall 2013 semester. After participants completed a survey, they were asked to volunteer to be interviewed and ten students agreed to provide the lead researcher with detailed information about their online learning experiences.

**Table 8. Statistically Significant Variables and Participants' Responses**

<b>Significant qualitative themes</b>	<b>Dialogue</b>
<b>Independent variables</b>	
<i>Technology's Usefulness</i>	I think it was useful because everything was online like all the information you needed to study, tools you needed were online (Participant #I).
<i>Technology's Ease of Use</i>	They tell you when you can log on, the times in advance, so you already know and you can get credit for them (Participant #A).
<b>Demographic variable</b>	
<i>Age of Participant</i>	I feel like interactive classrooms are kind of like social networking within an educational setting. And it, I think, cause like being young ( <i>laugh</i> ) I am social, I use social networks a lot so I think being able to apply that to the educational setting helped me (Participant #I).

Table 8 shows the three independent factors which were quantitatively found to most significantly influence students' overall satisfaction rates with their online learning environments as well as feedback from participants. In using a mixed methods form of research and data collection, one is able to combine the quantitative results with transcription themes to gain a better understanding of how one set of factors affected, in this case, the overall satisfaction rates of students.

While participants were guided through semi-structured interviews, they were encouraged to provide the researcher with personal insights and opinions as to why they rated their online learning environment experiences as high or low. While the results in

Table 8 show that technology's usefulness and ease of use gave participants a sense of control over their learning processes, participants also provided reasons for their high and low ratings that were not included in the quantitative survey collection. For example, the age of the participant, originally slated to serve as a demographic ordinal variable is clearly a significant factor, as shown in Table 5, and influenced students' satisfaction rates.

As shown in Table 8, Participant #A likes technological tools which are easy to use because she likes to know the dates and times when assignments are due allowing her to plan her academic tasks. While interviewing Participant #I, one learns she has an appreciation for useful tools which maintain everything in one online location. Participant #I also provided specific insight as to why she believes her age influenced her ability to positively perceive her online learning environment. "Being young [and using] social networks" helped her maneuver through the online educational setting.

The qualitative interview information provided throughout the remainder of Chapter 4 provides additional information about the three factors listed in Table 5 and other reasons why participants' overall satisfaction ratings were either high or low.

### **Self-Regulatory Critical Thinking in a Community of Inquiry (COI)**

Paul R. Pintrich (2004) suggests that when considering a self-regulatory (SRL) perspective of student motivation and learning, a bottom-up approach derived from "in-depth qualitative interviews with students about their own actual motivation, learning, and studying," provides a richer perspective of student's cognitive processes (pp. 385-386). Akyol and Garrison (2011), both well-versed in the online COI model, including the cognitive presence, teaching presence and social presence components, contend that

one can use the information students provide in determining if higher levels of thinking or metacognition are occurring. The skill of being aware and able to process one's own thinking and learning abilities is known as metacognition and while decades of research shows students with metacognition awareness are more successful throughout their traditional learning experiences, little research has examined students' metacognition levels in online learning environments within a COI (Akyol & Garrison, 2011).

When students are placed in online learning environments, educators inevitably ask them to self-regulate their progress. Thus the importance of "understanding metacognition in text-based online learning contexts becomes apparent when [we consider] the increased responsibility" students have to assume while maintaining a self-regulatory state (Akyol & Garrison, 2011, p. 183). Depending on the amount of time students spend away from the classroom, or the amount of work they are expected to complete on their own, students must stretch their capacity to self-regulate and critically assess their own development. Students are challenged to critically think about whether they understand the objectives they must attain and to consider what tools or help they need in order to overcome any personal learning hurdles that may cause them to fail.

### **Interviewed Participants**

Although some of the interview responses in this research provided insight into participants' personal study habits, learning preferences, and locus of control, the greater percentage of participant responses detailed how and why students were more or less satisfied with their overall online learning experiences. While interview inquiries ranged from seven to ten questions, depending on whether probing or follow-up questions were

asked, the copious feedback from participants was informative, complex, and used to design and write the qualitative themes in this chapter.

Ten students, out of the 123 students who were students, volunteered to respond to 7 interview questions. These questions were designed to directly correlate to the fourteen (2 questions per variable) quantitative survey questions. However, unlike survey responses, interview replies were answered in open-ended qualitative manners. Basically, students were asked to consider their overall satisfaction rates with their blended/hybrid/fully online courses and to provide qualitative descriptions about the factors that directly influenced those ratings. Students' responses were recorded and used to identify the themes and factors influencing their declared satisfaction ratings and are listed under the following categories accordingly.

### **Overall Satisfaction Rates**

The first interview question asked participants if their overall satisfaction with their blended/hybrid/fully online course was high or low and to explain the factors that raised or lowered their satisfaction levels. Five participants rated their overall experience as “very high” or “high” thus are listed under a category entitled, “High Overall Satisfaction Rate”. Two participants rated their overall experience as “Good” or “Satisfied” and are listed under a category entitled, “Good Overall Satisfaction Rate”. Finally, three participants rated their overall experience as “Neutral” and are under the category entitled, “Neutral Overall Satisfaction Rate”. No participants reported negative or unsatisfying overall satisfaction ratings.

### **High Overall Satisfaction Rate**

Four out of the five students who rated their overall experience as high, were found to relate closely to people who have internal locus of control qualities. This “internal-external attitude” is directly correlated to the belief one has about the relationship between one’s actions and the outcome of those actions which ultimately alters the way one behaves (Coleman & DeLeire, 2003, p. 702). Participant #A, a 20-year old junior, defined herself as an organized, self-taught learner, who had an appreciation for effective online tools. In comparing how the University’s newest online platform called Moodle 2 was different from the previous version she stated, “At first I wasn’t really sure on how to do this or what that was and then I got the hang of it and it’s actually way more organized and resourceful than the previous [online platform]...the improvements are actually great” (Participant #A).

As defined in Chapter 2, a person with an internal locus of control will usually rely more on oneself rather than others when solving problems. Participants #B, a 19-year old sophomore, #C, a 22-year old senior, and #G, a 22-year old junior, self-defined themselves as internal locus of control students as they valued having accessible online data which freed them to time manage their study periods, work schedules, and personal agendas. In the meantime, 19-year old freshman called Participant #I, who also rated her satisfaction as “really high,” leaned more towards being an external locus of control person, as she claimed to enjoy high levels of interaction with other people and liked to be told what she was doing wrong on a regular basis. Insights into these aspects and other factors influencing the above participants’ high overall satisfaction ratings are further discussed throughout this chapter.

### **Good Overall Satisfaction Rate**

Participant #E, a 20-year old sophomore, rated her overall satisfaction as good and was found to have external locus of control tendencies as she expressed enthusiasm when it came to working with the groups of students in her Anthropology class. “We have working groups and the online portion is how we communicate with each other and I think it works well for this kind of class” (Participant #E). She also expressed a relief knowing that the teacher would know what she was doing because everything was posted online for the instructor to read. The factors that went into Participant #E’s good satisfaction rating will be further uncovered in this chapter, as will 24-year old senior Participant #H’s, an internal locus of control student, who likes to complete her online assignments prior to deadline dates.

### **Neutral Satisfaction Rate**

Also explained in Chapter 2, when defining someone’s locus of control, one must review who the person blames or credits for output and whether they believe it was within their own personal internal control or whether external factors controlled the final output. In uncovering the factors that influenced 23-year old graduate Participant #D’s neutral satisfaction ratings, one finds a variety of complex external factors from technical uses, group projects, and other issues that are further reviewed below.

Also having a neutral overall experience was 24-year old senior, Participant #F, who self-described herself as being a dedicated student and someone who attempts to solve technology problems and learning issues by herself first before contacting her instructor. The reasons behind her neutral satisfaction rating directly correlated to the flexibility factor as she described the limitations that were placed on her schedule. “I’ve

taken other hybrid classes before and I found that...the individual studies are going to be very easy, very flexible. Whereas... with group hybrid courses, when we work in groups, you kind of have to work on everybody's schedule and so you're not allowed to be as flexible" (Participant #F).

For platform designers and instructors looking to raise students' neutral ratings, consideration for the autonomous student with an internal locus of control may be warranted. This type of student seems to appreciate the convenience of working within their time schedule and often prefers working alone on course materials. "When you're in a group and everybody has other priorities, like we're all working and different schedules and we're all commuters, you kind of have to work around each other. Whereas if it was individually, like I had taken an Econ class not too long ago that was hybrid and with me being in my individual element, I was able to really just work around my work schedule, class schedule, etc." (Participant #F).

Participant #J, a 21-year old senior, an internal locus of control student, attending one of the blended/hybrid courses, also considered her schedule when rating her overall experience as neutral. "I always study every day. I'm usually in the library for four to five hours. I don't really like going to class because it's only an hour and I don't really like doing the group work. So, I think I would be more satisfied if it was a fully online class" (Participant #J). Exploration into the other factors that influenced the above-described participants' overall satisfaction ratings with their blended/hybrid/fully online courses are examined further in the following sections.

## **New Ways of Communicating**

### **Convenient and Accessible Online Academics**

Interview question two asked participants to describe some of the unknown factors/variables that influenced their high satisfaction ratings. Most participants referred to how convenient online information was to access. “Because they [the instructors] have all the resources right there and since a lot of things are on PDF files, as soon as you click on the PDF, it’s right there” (Participant #A). Participant #C appreciated how the instructor used the latest technology making all necessary documents, including important course information, available anytime and anywhere. “I like that most of our readings are online so I can take my laptop to work or my phone and access pretty much all of my class material right then and there, which is great especially with the types of technology that we have available to us” (Participant #C). Many participants summarized that because technological tools are available, instructors should use them. These students come from a self-proclaimed Internet generation and relayed a clear message of expecting high-levels of technological use within academic arenas.

From a Self-Regulatory Learning (SRL) perspective, “it is not just individuals’ cultural, demographic, or personality characteristics” influencing their achievements and learning, nor is it just the “contextual characteristics of the classroom environment that shape achievement,” but it is an individuals’ “self-regulation of their cognition, motivation, and behavior that mediate the relations between the person, context, and eventual achievement” (Pintrich, 2004, p. 388). In an online learning environment, self-regulated learning takes on numerous forms for students. For example, Participant #B, a student who had a high overall satisfying online experience and Participant #H, a student

who had a good overall satisfying online experience, both self-regulated their workloads, often motivated to finish their assignments earlier than their due dates. “I can work any time that I want. As long as [the work is] turned in before the deadline, it should be fine” (Participant #B). “I can go on the online anytime I would like to complete the assignment. I mean there is a deadline, of course I would finish it a lot before the deadline, but I like having the deadline and going back and finishing it whenever I want to finish it” (Participant #H).

### **Open Lines of Communication**

Participants described how communication between their instructors and classmates helped stimulate their development and thus influenced their overall satisfaction rates. “Our instructor has done a good job at having us interact with one another. We opened the course talking about our needs, and some kind of autobiographies, and we would comment on each other’s [postings]. And then...each week, we would have [online] discussion boards...requiring feedback [for and from] your classmates” (Participant #G). Additional examination from a teaching and social presence perspective is considered later in this chapter.

In the meantime, reviewing lines of communication from a self-regulated learning capacity, one must acknowledge that in order for a student’s learning process to expand, he or she must have a standard with which to measure his or her progress. “The general example for learning assumes that individuals can set standards or goals to strive for in their learning, monitor their progress toward these goals, and then adapt and regulate their cognition, motivation, and behavior in order to reach their goals” (Pintrich, p. 387).

However, before the individual development of a student begins, an understanding of the instructor's objectives for the class must be clearly communicated in the beginning and throughout the course. "I think what I really enjoyed...about the hybrid class is...the feedback is very, um, it's fast feedback between the professor and the student. So, like I know [because of the quick feedback] what I'm doing wrong or if I need to fix anything or like what I'm doing well on," said Participant #I, another highly satisfied online learner.

### **Time Saver**

Students acknowledged that online classes often saved them time and for Participant #H it added to her overall good satisfaction rating. "It [an online class] does save me time" (Participant #H). But as students self-regulate their progress and assess their academic situations further, not all of them were happy with the direction technology is taking. "It seemed like it was no use. I mean, I could have e-mailed the teacher my information instead of just sitting there and I don't know, she does give some information, but I feel like she could just put that on Moodle" (Participant #J). While giving her overall satisfaction with online learning a rating of neutral, Participant #J was dissatisfied with having to physically travel to the campus and to her classroom to turn in a paper assignment and pick up a handout, which she believed could have been submitted and distributed via email or through the course's Moodle online platform. When asked if she thought Moodle tools could be used in a larger and more all-encompassing capacity, Participant #J replied, "Yes".

## **Self-Regulating Time and Organization**

### **Technology Increased Students' Abilities to Organize and Manage Tasks**

While it may not be plausible for all documents to be handed in or handed out via electronic format, it is apparent that the students interviewed, ranging in ages from 18 to 53 years old, have more online experience than past generations. Question three asked participants how their previous online knowledge, from social networking, and/or knowing how to use the Internet, helped them in their class. Their responses ranged from having a confidence in their skills, to being frustrated with the technology currently being used or not used in their classes, to their preference for blended/hybrid formats rather than fully online environments.

Participant #A stated, "I know how to use the Internet and I'm naturally organized". Many participants declared they were organized and detailed how they used a variety of technological tools which helped keep them organized, which made me wonder if this generation is more organized because of technology. In any case, participants were able to articulate, in enthusiastic detail, how they organized their schedules, assignments, workloads, and every aspect of their lives. "I feel like [my computer] just keeps me...going and I'm always on [it] anyway and I feel like that also helps keep me organized" (Participant #A).

When one applies the first of four phases of Pintrich's (2004) Self-Regulated Learning (SRL) model, one finds students go through a sequence of constructs and psychological modes of "cognition, motivation, and learning" (p. 388). During Phase 1, students are involved with planning and setting goals while gaining perspectives about what tasks they are required to complete, and what knowledge they are required to learn

during the duration of a course. “Planning and forethought activities can include setting specific target or cognitive goals for learning, activating prior knowledge about the material to be studied, as well as activating any metacognitive knowledge students might have about the task or themselves” (Pintrich, 2004, p. 392).

When asked how her previous online knowledge helped her in her hybrid course, Participant #F, who had a neutral overall experience, restated how online allows her to take control of her schedule. “If I have extra time throughout the day, I'm able to actually go and click on to my online class and actually work ahead. So where I could just knock out some of that work, whereas if it was a solely in class, um, classroom setting, or classroom environment, I would have to actually wait”. For a student to become an effective Self-Regulated Learner, she has to plan and monitor her own learning strategies, comprehend lessons, and make changes as needed. “In the traditional classroom, the instructor controls most of the aspects of the tasks and context. However, in more student-centered classrooms,” like with hybrid and fully online classrooms, “students are asked to do much more actual control and regulation of the academic tasks and classroom climate and structure (Pintrich, 2004, p. 399). For online learners, having a strong personal sense of responsibility seems mandated in these autonomous environments. “These types of classrooms obviously offer...students...multiple opportunities for contextual control and regulation” (Pintrich, 2004, p. 399). Nevertheless, whether the student is in a traditional or online course, planning and assessing one’s progress ensures successful accomplishment of goals and enhanced learning.

Participant #G stated, “having one previous online course helped me because it taught me how to time manage for an online course and how critical it is to keep

reminders for yourself because you don't have that face-to-face interaction and kind of offhand reminders from your instructors or classmates”. When asked whether her previous online knowledge enhanced or decreased her overall satisfaction rate, Participant #G stated, “I'd say it enhanced it. It made it much easier”. Most of the 10 participants seemed to have some form of personal organization style, which was augmented by technological tools, either provided by the class website or implemented by the student.

### **Using Web-based Moodle 2 – Challenging but Worth It**

Participant #C made a statement which was repeated by more than half of the students being interviewed. She said, “I pretty much have been using the Internet ever since it was created”. As self-proclaimed Internet and online application experts, these students were very critical of the flaws they found within the newest university-wide Moodle 2 platform as well as the lack of Internet access throughout the campus. Just prior to the fall 2013 semester, the university rolled out a new campus-wide system called Moodle 2 which became the platform used to harbor online classes and the university web functions. For some students, the new database was a transition and a challenge. “The only thing I think I struggled with initially was when they [the University] switched over to the new Moodle” (Participant #C).

Participant #C was also frustrated because instructors posted and updated their syllabus using PDF platforms rather than Word document, which she believed would have been easier to update and type on, but she did not lower her satisfaction rate due to these glitches. When asked whether Participant #C's satisfaction rates were increased or decreased because of her previous online experiences and why, she stated,

I would say it increased, um, because just being able to have instant access to things and to be able to interact on a cyber-level is really appealing especially since that's not just, you know, easy for us because we're used to it, but it's the way that everything is going, and so being aware of how things work online and the tools that are available, I think they'll transition well when I enter into the work force on a professional level like that.

Thus, in the end, even though Participant #C found Moodle 2, the newest University online platform, to have glitches, she, seemingly, having an internal locus of control personality, used the challenge of learning the new technology to sharpen her personal PC skills. “I think too...the challenges with PDF, [has] made me learn how to use PDF a little better and so even though it's annoying and initially it was frustrating, I've gotten used to it to the point where I know how to use it and how to make it do what I want it to do” (Participant #C).

In contrast, Participant #E, an external locus of control student, who rated her overall satisfaction as good, had serious issues with the incompatibility of hardware (smartphones, iPads), lack of campus internet access, and software (Moodle 2) logon problems. “I think that Moodle needs to get an app and I think that Moodle needs to get more phone-friendly because everyone is using phones and iPads, whatever [popular hardware]-friendly” (Participant #E). She claimed that the software worked great on her computer, but that she couldn't get the Internet on the whole campus, just in certain areas. “When I'm outside I don't get the Internet, so I go on my phone. Like when you're on the

grass outside, you don't get the Internet. So, I would like to be able to access all my schoolwork through my phone easier. Right now it doesn't work very well” (Participant #E).

Participant #E’s satisfaction with her online experience decreased because she had previous experience with websites that were more user-friendly and accessible using various pieces of hardware including smartphones. Students with online experience believe information that is accessible from a laptop is also accessible from their smartphones or iPads, unless the platform is not designed for these purposes.

I would say decreased because everything else is available on your phone and so every website, even like stuff we need to read, we can access through our phone, but I've heard from so many people who can't even barely login to Moodle sometimes and when we do everything doesn't always come up. Like it works sometimes but it's just not friendly (Participant #E).

For any Self-Regulating Learner (SRL) attempting to plan and monitor their tasks, having limited or no access to their files and needed information would predictably frustrate them. Guaranteed access to valuable information may be one of the reasons some students prefer blended/hybrid courses, where they know they will see their instructor a minimum of once a week, over fully online classes, where they may never see their instructor in a physical face-to-face capacity.

### **Blended/Hybrid versus Fully Online Courses Interactions**

While the cognitive, social and teaching presence aspects of the (COI) are further examined below, when Participant(s) #8 and #9 were asked if their previous online knowledge increased or decreased their overall satisfaction levels and why, both declared to needing a form of social networking only found in the physical classroom. “The hybrid classes increased my satisfaction rate, but, um, if it's all online classes, I feel like I'm not really learning much. I feel I do learn more in class and I would get more stuff done because the professor is there in front of me teaching (Participant #H). “I feel like interactive classrooms are kind of like social networking within an educational setting. And it, I think, cause like being young (*laugh*) I am social, I use social networks a lot so I think being able to apply that to the educational setting helped me” (Participant #I). Perhaps even without formally defining or being fully aware they are self-regulating their learning processes, students have numerous ideas about what environments they best learn and comprehend information in, which include those that allow them to organize and manage their schedules, those which are accessible through several forms of hardware and software avenues, and those which have an instructor whom they regularly meet face-to-face.

### **Students' Persistence**

In ascertaining how students' different types of locus of control influenced their online learning experiences and subsequent satisfaction ratings, students were asked to describe how their personal study and learning habits helped them in their blended/hybrid/fully online course, as appropriate. Participant #A described her online course webpage, “the whole schedule for the semester is...there already so you can scroll

down, in advance, see what you need to do and sometimes you can even do it ahead of time, which is what I like to do when I can [*laughs*]”.

With Participant #A, seemingly an internal locus of control person who self-regulates her work, one might question as to what the appeal is of having a syllabus online versus in paper form. After all when students are supplied with a hardcopy of a course syllabus, they have access to the entire semester’s schedule of assignments and due dates. However these online students expressed an enthusiasm about being able to scroll via their PC through an electronic syllabus. Is it because they can organize everything electronically and in one place on their desktops? Participant #C describes her reasoning for preferring an electronic syllabus.

I think that for me, I like to organize everything in my computer, like by classes and by dates and I mean I'm just really organized when it comes to that stuff. And not having to, I mean honestly, printouts are annoying now and then and like as much as they are helpful and I love to write things on them and sometimes I end up printing stuff anyway, I still like the option to not have to carry the physical copy in my hand. It's better access, it's more immediate, the fact that I don't have to go to the library and print everything out and I can just send it from my home, you know, I mean, it's just easier.

Participant(s) #2 and #3’s satisfaction and persistence levels were significantly increased because they were able to review the curriculum online, including assignments

due several weeks into the semester, and pace their personal workloads. “My philosophy is that I always get the work done in advance and I never wait until the last minute to get work done and that is why I rarely miss deadlines” (Participant #B). Participant #C contends she is the best at understanding how she needs her workload organized and states having her instructors give her handouts via electronically make it easier for her to study and accomplish her goals of processing information. “And I think that the more the professors do that [make items available online] and the more availability online that they have is easier for me and my study habits because it's just easier for me” (Participants #3).

The desire and need to control one’s cognitive processes may be stronger for an internal locus of control student, however if platform designers are attempting to create an online learning environment in which their students self-regulate their learning, it is highly recommended they post well-defined, thorough and organized information on their course websites. “As in any model of regulation...attempts to control, regulate, and change cognition should be related to cognitive monitoring activities that provide information about the relative discrepancy between a goal and current progress toward that goal” (Pintrich, 2004, p. 393). For example, if per an instructor’s objective, a student is expected to read a textbook and understand its contents rather than just finishing reading the book, than the self-regulated student must monitor his or her progress and change strategies, at any point, if comprehension is not being attained. The adjustments or reflections of the student “in terms of their cognitive judgments about how they did and their attributions for their performance” are “part of their attempts to regulate their

learning” and can best be mapped out when they are given clear directions and guidance (p. 393).

### **Teaching Students to be Self-Regulated Learners**

Based on students’ responses to my probing question regarding their study and learning habits, I asked myself; could online learning environments help a student become a self-regulated learner? If “regulation of behavior is an aspect of self-regulation that involves individuals’ attempts to control their own overt behavior,” could a structured learning environment develop strong study skills in students? (Pintrich, 2004, p. 398). Participant #G describes the learning curve she experienced as she worked under the purely online guidance of her hybrid instructor.

As far as studying like the textbook and comparing lectures to the text, it [the online platform] increased my skill in that area because you're not sitting in class and in the middle of the lecture with the professor's saying ‘this is going to be on the test’ or you know ‘listen to this, it's really important,’ you know, she doesn't say that. She does have a verbal lecture with a slideshow video with it, so it's like as if I were in class, but she doesn't quite play off of our facial, you know, like if our faces are like ‘I don't quite get it’ then she'll say, ‘let me elaborate more on this’ or you know things like that, so there wasn't that kind of face-to-face supplement to her lecture. But I had to learn how to look at what her lecture was and then see where that

showed up in the textbook and know that that's probably what was going to be on the text.

Whether Participant #G was an internal or external locus of control type student didn't matter because the teacher's instructions were clear. She asked her students to study the textbook and compare it with the accessible lectures in preparation for the exam. Also, one needs to consider a key factor, Participant #G had the teacher's online lecture to review as many times as she wanted until she gained a clearer understanding of how it related to the textbook, as she specified above.

Pintrich (2004) contends that "the general capability to control one's effort and persistence in the face of difficult, boring, or low-value tasks is an important self-regulatory strategy" (p. 398). When asked whether her overall satisfaction rate increased or decreased while she enhanced her study skills during her online challenges, Participant #G stated, "I would say [laughs]...it taught me to be a better studier. It was a little difficult at times. It took some time for me to be able to listen to the lectures during my free time, to read in my free time, and then have the drive to find the overlaps. But overall it increased my satisfaction".

### **Technology takes Students beyond the Classroom Halls**

#### **Easy to Use Technology**

In one of her fully online classes, Participant #A experienced synchronized chat rooms, which were scheduled in two-hour blocks, and where online attendance was mandatory. "They tell you when you can log on, the times in advance, so you already know and you can get credit for them" (Participant #A). In this Java environment, where numerous application software products from embedded PowerPoint presentations to

YouTube videos create a cross-platform setting, Participant #A and her classmates viewed the professor typing in one corner of the screen, while students used function keys to raise their hands. “This is something I haven't experienced yet, until this semester; we have live chats for the class, which I find really convenient” (Participant #A). In this type of online engagement, a teaching presence, a social presence, and a cognitive presence is created. As the instructor directs the lecture, PowerPoint and discussions, she creates a clear teaching presence. Students experience a social presence as they read other students postings and respond accordingly and a cognitive presence as they post their own questions and answers to the online chat room.

### **Useful Technology**

When asked to describe how useful and/or easy they found the course technology (i.e., Discussion Boards, Lecture Capture, Quizzes), interviewees relayed an array of answers. Responses ranged from having an appreciation for the easy convenience, and for the ability to squeeze in more courses because they didn't have to physically sit in a classroom, to finding their online class site boring and frustrating because the technology was not working properly. “I've been having online classes sense my freshman year. I prefer it that way, I don't have to get up and go to six different classes” (Participant #A). In probing for an elaboration on her statement, I asked Participant #A if she would have taken the six classes she was registered in if they were all face-to-face classes that met on campus, and she replied, “No”. Out of the ten students interviewed, Participant #A had the most expressed online class experience and clearly preferred not going to the campus to attend all of her six classes.

Some experts believe students who need autonomous atmospheres to cognitively process a question and render a response, prefer an online environment over a face-to-face condition. “In postsecondary settings, students have much more freedom to structure their environment in terms of their learning. Much of the learning that goes on takes place outside the college lecture hall or classroom, and students have to be able to control and regulate their study environment” (Pintrich, 2004, p. 400). When students self-regulate their learning, they use strategies to “control their own cognition, motivation, affect, and behavior, as well as the college context” and thus tend to invest more effort into their successes (Pintrich, 2004, p. 401). Participant #I provided a personal explanation as to how her overall online class experience was enhanced by the ease of use and usefulness of the technology used by her instructor:

I think it was useful because everything was online like all the information you needed to study, tools you needed were online. And it was easy to access because...if it was just handed out in class you could easily lose things, but if it's online, you can like, oh, I can lose a copy, but I can just print out another one. And, um, like it's not limited to like [inaudible] the people like who go to that class time, it's for everyone who's in the class that can see what's on there [class website] and it helps me study a lot because it's like I have everything I need online. Like, I don't have to go searching for it in books or backpack and stuff like that.

Clearly Participant #I appreciated the benefits of having everything from textbook data to other documents in an electronic format. While her instructor used technology to provide Participant #I with logistical freedoms, Participant #F's instructor used technology to highlight the most important reading assignments and topics. In responding to a question about the usefulness and ease of technology use, Participant #F stated,

I think they're very useful. Because they [the tools the instructor used] condensed the readings into mainly main points and so to be able to go back and reread your discussion is definitely a great study mechanism or you can even look at other group's [responses] and see how they perceived different readings. Because everybody perceives different things in different ways and so that [feature] definitely really enhanced it [my learning].

In other cases, participants describe having the teacher engaged in discussions similar to the one described above, thus creating a teaching presence and completing the community of inquiry paradigm. Having a teaching presence in an online learning environment is solely based on the instructor teaching, but in many cases the instructor is responsible for building and maintaining the classroom platform. For example, Participant #G and her classmates benefitted when their instructor created and then changed mid-semester the classroom site making the tools easier to use and more usefulness as well. Participant #G describes her experience,

It was a little weird for me at first, just getting used to the format that was laid out very nicely with the main course information immediately available, visible links to discussion boards immediately available on the homepage. There was a little bit of feedback to the teacher, I didn't give this personally, but...-the farther we got in to the course I think she started getting feedback about how people were tired of scrolling down to look for the weeks and then she changed the format to be a drop-down menu so you could drop down the menu and click the week you wanted to go to.

While attending the summer 2012 Course Redesign Institute with the instructors involved in this research, I watched firsthand as these lecturers were shown how to utilize and manipulate technology in order to make changes to their online class webpage and thus provide their students with useful and easy to use tools.

### **Technology Not Useful if Not Properly Used**

People of all ages process numerous amounts of information via the computer and the students in this research described how critical it was to them to have everything accessible online because it is how they cognitively process data. "When things are not on the database, it's like more like, why not? Why not do this, this way, you know?" (Participant #C) For Participant #C and other students, a page number in a book is normally a click away and a study guide matching the textbook data is another click away, as is a YouTube video or lecture detailing how the textbook's information and the

supplemental study guide culminate into key pieces of information. But when technological tools are not being used or aren't available, students get frustrated and overall experiences and satisfaction ratings plummet.

Participant #E's satisfaction was decreased because she found the software platform called Moodle 2 to be difficult to use and not very useful in meeting her academic needs. "Those things have been great [inaudible] in my previous semesters too, but we just started using Moodle 2 and I've had more problems with Moodle 2 than anything. Moodle 1 was like everything worked great and I liked it a lot, but I've even had professors having problems with Moodle 2. I just think they need to have a little bit more um, tech savvy people working on the site" (Participant #E). Technical difficulties are familiar to everyone, and online environment problems result in frustrations amongst students and professors alike. Knowing a semester is approximately 15 weeks in duration, it becomes imperative to have well-designed, tested, and working online classroom platforms at the ready for students prior to week zero. Otherwise, not only time, but momentum and persistence may be lost.

As a non-traditional aged student, I have a unique adult perspective since I went back to college after working in the private sector for a decade and a half. About six years before beginning my Doctorate work, I earned my Master's degree in History after reading dozens of books, typing key pieces of information into my computer, all in preparation for my qualifying exams and subsequent thesis assignment. However, from 2011 to 2014, while working on my Doctorate research and coursework, I've realized I have purchased or borrowed very few hard or soft copy books because most of the necessary articles and full textbooks I've been required to read are a click away. For

someone who is approximately twice as old as the average 18-24 year old college student, who has been using computers since birth, I have developed new learning habits and cognitive processes that are directly connected to online platforms. With such insightful student information, surely the faculty members and administrators of higher education institutions can understand the need to provide today's modern students with the tools they are most comfortable using when learning.

Participant #C sums up the direction students are taking their institutions of technological student-centered learning.

I haven't really had that issue with professors not doing that [putting information online]. I feel like a lot of professors here, at the University, really make an effort to put everything on Moodle. I think I've only had like one professor and then we [my classmates and me] would end up just bothering him until he would do it [put information on Moodle] [both laugh].

In order to remain self-regulating learners, also known as today's online class attendees, students must engage in "contextual control and regulatory processes," which involve their "efforts to control and regulate the tasks and context" college students confront in classrooms (Pintrich, 2004, p. 399). Students like Participant #C are active participants in their learning and thus will demand clarifications, require proper and quantitative usage of available technology, and expect useful academic programs designed to benefit their learning objectives.

## **Community of Inquiry (COI): Teaching, Social, and Cognitive Presence**

### **Teaching Presence**

Part of this research examined the online community of inquiry which is created when there is interaction between the teacher, other students, and the class/course material. Participants were asked to describe their online interaction with their instructor, classmates, and course material. Participant #A had a unique perspective of online academics because she had taken and was simultaneously enrolled in several hybrid and fully online courses. While enrolled in one of the six courses, which did not use synchronized live chat tools and was the focus in this research, Participant #A shared insight about her other courses, whose instructors did use synchronized tools. When asked to describe her perceptions regarding the online teaching presence, she compared the amount of time her fully online instructor spent in live chats versus her hybrid instructor, whom met face-to-face with the class once a week.

She [the fully online instructor] gets involved when we have the live chats and she asks us our opinions and everything like that. Because some professors don't always interact with us. I feel like it would be more interesting, because it's a fully online class, so I can see why she would [interact with the class] versus the other hybrid classes because we see them, so it's probably why they do it that way (Participant #A).

Although Participant #A realized the hybrid instructor, knowing she would be spending in-class time with her students, might not want to spend as much time in online

chats as the fully online instructor, Participant #A still believed online interactions would be more enhanced if instructors interacted more with their students thus creating a teaching presence. In a follow up question geared to gauge the student's perception regarding the cognitive presence and engagement with the course material, I asked Participant #A, "do you feel like that interaction with the teacher and with the students in those [online] forums...engaged you more with the course material"? She said, "I do. Because I feel like I'm learning because I can't stand taking a class where they're just talking and I'm not getting anything out of it. So, I feel like I'm learning a lot and I'm staying interested and on top of my assignments" (Participant #A).

### **Cognitive Presence**

Aykol and Garrison (2011) believe critical thinking, an important aspect of higher learning, is the concept of "thinking about thinking and [is] more metacognitive than cognitive" (Akyol & Garrison, 2011, p. 183-184). Guided by an instructor's learning goals or lesson plans, a large part of a student's overall learning process must involve their personal insight and awareness of how they think they are doing to meet those learning objectives. The high satisfaction rate given by Participant #A, when asked about the cognitive presence she experienced, was directly related to her determined persistence and a sense of ownership for her own learning. She acquired more intellectual interest and stimulus with the course subject while in online chats than she did from the in-class discussions as per her statement, "I can't stand taking a class where they're just talking and I'm not getting anything out of it".

### **Social and Cognitive Presence**

Participant #B provided an example of where two points of her class COI, the social and cognitive presence, occurred while she and her classmates worked on material-focused projects within their peer groups. “We actually had interaction between each of us, like so far I have learned two projects in that class. When we had to work on the first project there were two people in each group and we had to communicate through e-mail or the University box” (Participant #B). Communication by group members occurred via email or class website, which shows students were required to articulate their thoughts, theories, questions, and answers in comprehensive written formats. At the cost of being misunderstood, this process of written versus verbal communication utilizes a different kind of cognitive processing, which may sharpen the reading and writing skills of students.

### **Social Presence**

Participant #B was asked to elaborate as to whether one of the course objectives was to communicate using technology only. She replied, “Yes. The second project, the last one that we just turned in, it was about history of computers and computing and she divided groups into four people in each group. And we had to communicate electronically, my group used Skype to have conversations and communicate to each other. That's how we got the job done” (Participant #B). Research participants often mentioned the ability to communicate frequently with their other classmates because of the convenience of using some form of electronic tools. This type of communication built around project engagement helps build up the material cognition at the same time building up the online social presence which is critical in creating a strong COI.

### **Perfect Triad of Interaction**

Participant #C described what she called a perfect triad of interaction, also known as an effective COI. “I’ve actually had that perfect interaction” (Participant #C). Every week in her class, she and her classmates engaged in a social activity which involved them cognitively processing and sharing their ideas and thoughts about other students’ submissions while being guided by their instructor. “We upload and blog our field notes or we have to respond, or give a sample or whatever and then we submit that on to Moodle and then after we submit it we have to access the other students’ submissions and we have to comment” (Participant #C).

Barber (2011) believes integration is an important indicator of effective cognitive processing. When students are “connecting ideas, transforming knowledge into coherent ideas, concepts, insights, and understandings,” cognitive presence exists (p. 6).

Participant #C continued, “And we have to comment kind of extensively on or ask questions and so, once we comment then the professor will then go in and comment also on our submissions and the other students’ submissions. So it's this triad of interaction over this one piece of work and it happens for every single student. And so, I think that's a perfect example of that [community of inquiry]” (Participant #C).

### **Guided and Assessed Practices**

Small changes in the andragogical practices to incorporate the three principles of a community of inquiry (teaching presence, social presence, cognitive presence) seem to synergetically stimulate students’ learning effectiveness. Guided practices “is a way of structuring students’ pre-class activities and as a means of teaching students self-regulating learning behaviors” (Paller, June 2012). Participant #E explains how the

online COI was structured by the instructor and implemented by the students. “For the course material, we're doing a journal every week and also work using [online] to turn in all of our papers. We're using [the class website] for ethnographic journal...and that's how the teacher...knows what we're doing in our field study program cause we don't really have a way of communicating that” (Participant #E).

One sees here that part of the teaching presence is not just having the teacher present in a physical or virtual manner, but it is about having a clear set of learning objectives as the central focus of what is to occur during the teaching and learning phases. “Learning outcomes are statements of what a learner is expected to be able to do at the end of a particular (set of) learning opportunities” (Paller, June 2012). The instructors participating in this study reviewed teaching and assessment practices during their training at the university’s Faculty Technology Center (FTC).

Faculty members reevaluated, updated, and in many cases, rewrote their syllabi, first by removing subjective vocabulary like “understand” and “appreciate” from student learning objectives. According to Paller (2012), “a clear set of learning objectives is at the heart of any successful learning experience, it’s an essential ingredient for self-regulated learning since self-regulating learners need a clear set of criteria against when to judge their learning progress”. The problem is students’ abilities, skills, and prior knowledge are unobservable. The solution is to create clear learning objectives measureable and observable, making an online environment filled with written dialogue and written communication, the perfect environment for assessing students’ progress (Paller, June 2012).

A final step of guiding students towards self-regulating progress is to give students reasonable tasks they can accomplish on their own and reserve the more difficult tasks and objectives for face-to-face meetings, when the course is a blended/hybrid. Over time, students will combine the knowledge they learned while completing pre-class assignments with in-class complex assignments and master a subject under the Guided Practice method. Participants #7 appreciated how her blended/hybrid instructor had the students check in weekly using the online class discussion boards for a project that was to be worked on for the entire semester. This formative assessment of students' progress reduces the anxiety many students experience when they feel like they are teaching themselves, or are expected to figure it on their own. This can be particularly overwhelming for student taking fully online classes.

Okay. I did mention the discussion boards and interacting with other students which was new to me as far as online courses go. The professor seems very accessible. She gives us questionnaires...like after our first exam, and then another one recently before our big final project is due, to kind of gauge where we are and then she presented that feedback to us in a way that said, 'this is what I'm seeing people are concerned about, here's what I'm seeing people are understanding' and elaborating on what needed to be elaborated on (Participant #G).

Bonnie Paller (June, 2012), Director of Academic Assessment Program, and one of the FTC guest speakers, stated:

As we know with our classes, we have different levels of cognitive activity that we might demand, request, require or encourage of our students. The simplest level is that of pure knowledge, being able to define or describe or find or identify some dates, some information that we have chosen. But we want more than that as students' progress in their levels of learning. We want them to comprehend, we want them to apply, we want them to analyze at a certain point, we want them to synthesize, and we want them to evaluate.

Based on Paller's professional development lessons, one finds Participant #G's instructor using methods that guide students towards a higher level of information processing. Participant #G and her classmates are learning course materials at a higher cognitive level because their instructor is consistently evaluating their progress and controlling the information so as to ensure it is accurate, meaningful, and applicable to learning outcomes. Students like Participant #G benefit from this type of regulated learning which is cohesive, engaging, and measureable.

### **New Insights about what is Important to Online Students**

#### **Hybrid-Yes, Fully Online-No**

Participants' final responses when asked whether they would take another course designed like the one they had just finished confirmed students have a preference for hybrid courses over fully online classes. Participants' reasoning included having an appreciation for the time flexibility which online offers them, but only in small quantities. Students felt more secure about accomplishing the requirements of their courses when

they knew they would see and be able to ask their instructor questions in a face-to-face fashion at least once a week. Under this umbrella of communication, participants saw improved interactions with their instructors and peers because conversations, that took place online and in the classroom, were more course-specific and thus more meaningful to students' understandings. Finally, participants developed new self-regulating learning and academic planning skills as they became more responsible for their overall cognitive processing of information.

### **Time Flexibility**

For Participants #1 and #6, finding a way to balance their academic goals with their personal and public activities which enhanced their overall academic experience had been achieved because of the flexibility their online classes offered them. "I definitely would if it "fits in with my schedule because I work too and I'm part of a sorority, so it's like my schedule, my life is like always on the go, like even after this [interview] I have a sorority meeting to attend to, so I never really have, like time, online is helpful in many ways" (Participant #A). "Yes. I like the flexibility" (Participant #F).

The time flexibility and ability to cut down on travel time was important to many students as expressed by Participant #I who stated she would take another online course.

I would because it's very convenient because going to classes is kind of very, it's like a struggle [inaudible] to make your way to class is like a big hassle. Having it online is a lot easier for students a lot now because it's like everything is online and you can do it at any time and you can easily contact your professor and other classmates and

it just makes the learning experience a little bit easier on the student (Participant #I).

When expressing their desire to save time and have more flexibility, participants didn't just consider the time they saved on traveling to and from their physical classrooms, but they consistently described the acceleration of communication that occurred between them, their instructors and their peers.

### **Face-to-Face Interaction**

The above-described detail contradicts the theories many instructors have about online education breaking down the lines of communication. One of the primary concerns expressed by faculty members redesigning their courses is that they believe hybrid courses will cause them to lose contact with their students. However, during the redesign process instructors learn how to use new ways to communicate with their students. Subsequently, students become more engaged because they are communicating with their instructors using communication methods that they are familiar and comfortable using which ultimately builds stronger communities of inquiry.

Notwithstanding, students are treading lightly when it comes to the amount of technology they allow to come between them and their instructors. For example, Participant #E stated, "I don't want to ever take a fully online class because I like that interaction. But half online is good because you have both" (Participant #E). A balance of quick and constant online communication mixed with regular doses of old-fashioned body language seems to be the preferably model as described by the following participant:

Yeah, I do value face-to-face, I don't think that I would take a completely online class. I think I process better when someone is talking to me rather than just listening to somebody online and having that interaction. I feel also too when you have an instructor in the room, they can kind of sense whether things are processing with the students and when they're not. And I mean, I don't know how it is in really true online classes, but I would assume that they wouldn't get that feedback even like through body language. And so, I mean I would love to definitely take more hybrid classes in the future, but I don't think that I would ever take just a completely online course”

(Participant #C).

Ultimately, online academics are new to students too and they rely on their instructors to create comprehensive environments using certain technology tools. However, the rationale and appropriateness for using particular communication tools needs to be appropriate as discussed by Participant #H who detailed why she took another hybrid course rather than a fully online course. “It does help me understand the information a lot more in class when the teacher does explain it. I feel like through e-mail it wouldn't be the same. Even though the professors are very prompt to respond to e-mail” (Participant #H). In other words, it is suggested that certain technologies are best used for general informative communications, while face-to-face class times should be used for more elaborate lessons. While faculty and students assess how technology

affects their communities of inquiry, each party is learning new ways of teaching and learning too.

### **Self-Regulating Learning and Planning Skills**

Participants described relying on their personal learning and planning skills in order to successfully reach their instructor's objectives. As one participant affirmed her willingness to enroll in another hybrid class, she admitted it enhanced her self-regulated learning and planning skills. "I think I would [enroll in another hybrid course] because I learned a lot from it, I had to learn a lot from it because I needed to rely on my own, you know, processes of learning. She [the instructor] guided us, of course, and gave us the material, but I had to time manage and do all that stuff" (Participant #G).

As Participant #G plans her future academic goals, she and the other research participants have a number of options in terms of class availability because the university continues to build its online course offerings.

This course I'm taking is a requirement for my program and its suggested time is in the summer of next year and I've already taken a summer school course and they're expensive and their time-consuming and I don't like to drive to campus for just one class. I know that my job prospects are based on the number of units that I earn in upper division graduate courses and so I've actually considered taking an online course here and there to kind of fill-in and get more credits without really overwhelming myself by having to be physically present (Participant #G).

The potential significant effects online courses, particularly hybrid formats, offer faculty and students include flexible time management, effective lines of communication, and new andragogical styles of teaching with a self-regulating learner component. Akyol and Garrison (2011) suggest there are three dimensions of metacognition students experience and which instructors can utilize when creating their online learning platforms.

### **Qualitative Conclusion**

#### **3 Dimensions of Metacognition within the Community of Inquiry (COI)**

The first dimension is “knowledge of cognition” and refers to the awareness one has of self and as a learner “in a broad sense” (Akyol & Garrison, 2011, p. 184). In asking participants about their personal study procedures and perceptions about their online courses, they critically assessed their experiences and articulated how their academic processes affected their perceptions. Examples of knowledge of cognition are “students’ assessment of how they learn best, what they know or do not know about the subject matter, or how they feel with regard to the task or their ability” (Akyol & Garrison, 2011, p. 184). For example, Participant #H described the environment she learned best in, “If it's an all online class, I feel like I'm not really learning much. I feel I do learn more in class and I would get more stuff done because the professor is there in front of me teaching. I would get more stuff done and actually be determined to do it” (Participant #H). In determining the overall Cognitive Presence (Independent Variable #7), qualitative results found many students like Participant #H were very aware what tools, time, and technology they needed to successfully learn a subject.

The second dimension called “monitoring of cognition,” like the third dimension, is generally observed during the student’s learning process (Akyol & Garrison). During the monitoring of cognition process, the student will assess a task, and strive to have a clear understanding as to the effort required to complete the task. It is suggested that in this realm, a platform designer or instructor should take “responsibility for [their] teaching presence” by encouraging “students to reflect on each other’s contributions and their contribution to the developmental progress toward the intended goals” (Akyol & Garrison, 2011, p. 184). Participants’ responses to questions regarding the teaching presence (Independent Variable #5) in their online course were found to be fairly positive. “Well, I know that...[in] the fully online class, other than having everybody being able to talk on the chat, she [the instructor] also posts forums that we can all respond to, I mean she wants us to talk online to each other and share our opinions on some of the most controversial topics” (Participant #A). Similar feedback showed clear connections between instructors and students were made and added another piece to the COI dimension.

Finally, Akyol and Garrison’s (2011) third dimension of metacognition called “regulation of cognition,” also captured during the student’s learning process, is based on the “enactment and control of the learning process through the employment of strategies to achieve meaningful learning outcomes” (p. 184). Supporting the social presence (Independent Variable #6) portion, the third part of the COI, researchers contend that students meta-cognitively benefit greatly when the learning environment is a regulated collaborative process. When “students are engaged in asking for help or suggesting help

to others to reciprocally enhance the learning experience and the realization of intended outcomes,” social presence is achieved (Akyol and Garrison, 2011, p. 184).

On numerous occasions, participants expressed how they asked their instructors or classmates for assistance and how they quickly received assistance. Participants described experiencing camaraderie while receiving help from their peers and giving assistance to their classmates. “My peers are always really helpful and they're willing to share where they are, and how they perceive certain things in the readings. So, we're all able to somewhat share ‘this is what the readings say, this is what I've experienced’ and I thought that was really cool” (Participant #F). It’s clear there is a heightened awareness of how valuable clear and concise information is for the learner and that clarifying discussions occurring online and in the classroom is critical. As students awaken to the realization they are responsible for their learning, they will look for ways to limit the distractions that would hinder their metacognitive processing. They will utilize personal understandings, previous experiences, and data from their communities of inquiry to achieve their academic objectives.

### **Summary of Findings**

In Chapter 4, the results of regression testing concluded that three variables including technology’s usefulness, technology’s ease of use, and age statistically influenced students’ overall satisfaction ratings, a median of 3.91, with their online learning environments. The Model Summary showed that 51% of the total variability of the dependent variable is explained by the independent variables in this research. With a model summary of 51% and an Anova table showing a significance p value of <.001, the research was determined to be substantial in its design. Demographic information, except

for gender with its 3:1 ratio, was spread fairly evenly across the board and validated the researcher collected data from a sample of participants who are the same average age and university level of today's academic populations.

The most significant independent variable was technology's usefulness at 3.773 and qualitative interview data explained that participants desire technological tools that are effective, work properly, and add organization to their online learning platform environments. At 3.732, participants' age was the second most significant variable. With a Mean age of 21.5, interviewed participants explained how their generation has been using computers and the Internet since birth and that how they process and manage their lives is technologically-based and operated. Finally, technology's ease of use variable with an average rating of 3.486 was further explained as participants described some of the problems they had with the university's new Moodle 2 platform and the frustrations that derived from those experiences.

## **Chapter 5: Discussion and Conclusions**

### **Overview of the Problem**

The purpose of this dissertation was to determine the variables which significantly influenced students' overall satisfaction ratings with their online learning environments of which there is minimal literary and researched documentation. By understanding the factors which positively and negatively affect students' satisfaction and subsequent persistence ratings, the designers of higher education online classrooms can improve teaching and learning environments. The hypothesis was that satisfaction rates would be significantly higher for students who had previous online knowledge; had an internal locus of control; had positive perceptions about technology's usefulness; had positive perceptions about technology's ease of use; and had positive perceptions regarding the teaching presence, social presence, and cognitive presence in their respective online classes.

### **Overview of the Research**

The model of survey questions and student interviews used in this research showed that factors including positive perceptions of technology's usefulness, technology's ease of use, and age statistically increased students' satisfaction rates. The quantitative and qualitative results derived from the seven main research questions are summarized in this chapter. The implications based on survey and interview results are detailed in each section of Chapter 5 as are recommendations for improving online teaching and learning environments and communities of inquiry.

## **Summary of the Findings**

### **Research Question One**

Question one aimed to understand how students' previous online knowledge prepared them for learning in an online classroom and subsequently influenced their satisfaction in the class. The hypothesis was that there would be a relationship between high student satisfaction levels and high perceived skill levels of previous online knowledge, but the quantitative data did not support this theory. On the other hand, the high average of 4.3902 calculated from the survey data along with the student interview information showed it was significant when a student had positive perceptions towards their previous online knowledge and skill levels. Participants revealed there is a common thought process shared amongst people who rely on technology for numerous functions. Participants stressed about how important being organized and aware of academic responsibilities was to them. Participants relished having their calendars and checklists a click away.

While they were free from their classrooms, students were still grounded by their digital desktops. Students carried their books, papers, e-mail accounts, class websites, dictionaries, calendars, PowerPoint presentations, and files in their pockets. Although information about a student's personal online knowledge is unpredictable, assessing a student's technological strengths and weaknesses before a course begins provides online instructors with an average standard which can be used when setting student learning outcomes. In the end, while the quantitative numbers for question one did not support the stated hypothesis, students were clear when they explained how their confidences in using technology stemmed from their being lifelong users of technology.

The practical implications were defined by Participant #C who stated, “When things are not on the database, it's like...why not?” For higher education decision-makers, the proposition of not using more technology to teach students is perplexing to today’s learners. For future researchers, there are numerous opportunities to investigate the statistical, emotional, and psychological reasons why some educators refuse to acknowledge that the same technological tools they use to e-mail, keep appointments, formulate PowerPoint presentations, conduct their research, and write their publications are the same tools their students use. Here, one can surmise that if the technology both parties use is not being used to teach and learn, synergetic opportunities are being lost and according to the students interviewed, so are satisfaction levels.

### **Research Question Two**

Question two attempted to better understand which locus of control type of students taking online classes during the fall 2013 semester were more satisfied. The two survey questions and interview prompts helped define whether a student was a confident learner who had an internal locus of control or had a more social external locus of control personality. Literature implied a student with an internal locus of control had personal skills and attitudes which would mesh well in environments where they have some type of control over their learning and thus would be more satisfied and inclined to persist (Klein & Keller, 1990, p. 140). Unfortunately, the quantitative data did not support this hypothesis.

Qualitatively, the data was surprising because both internal and external types had their reasons for appreciating their online learning environments. For the internal locus of control students, having technical control over their academic schedules and being able

to implement electronic strategies for completing their assignments, and having it all accessible through their personal computer or cell phone, empowered these students and seemed to give them a sense of life and work balance. The insight not found in the literature is the effect online learning environments had on external locus of control type students. As stated by Participant #E, she liked having her work displayed on the class website for her instructor to review. She preferred having not just her finished project or paper reviewed, but she wanted all of her hard work and efforts regularly acknowledged by her instructor.

For online classroom designers, the implications are their ability to provide students having various personal and work habits with environments where they can perform to the best of their abilities. According to Drennan (2005), researchers have found that “the learning processes of individuals are affected negatively if the individuals believe that they have no control over reinforcements that they receive” (p. 332). For future researchers, examination into interactions occurring between different types of learners may assist instructors with methods of building better project groups and activity teams. Uncovering how different personality types communicate may lead to the development of new online communication tools and improved interactions amongst instructors and students.

### **Research Question Three**

Question three directly related to how the classroom environments were designed and whether the students found the technical tools to be useful or not. Quantitatively, survey data showed that when students perceived the technology on the class site to be useful, their satisfaction rates statistically increased as hypothesized. In interviews,

students echoed how important it was to them that they have effective and efficient course tools as explained by Participant #C, who preferred receiving documents in formats she could download and update on her personal computer, rather than only view in PDF form.

Ultimately, today's students, whether they've taken one or ten online classes, have tremendous knowledge and appreciation for useful technology. They also know and are sometimes frustrated when tools are poorly designed and don't work properly. At the time of this study, the technology called Moodle 2 used by the University, had some kinks, but in the end those flaws were apparently not big enough to lower the overall satisfaction rates of participants. Dobbs, Wald, and Carmen (2009) found students are less satisfied when technology problems arise. Students experience feelings of isolation and lack “a sense of belonging” when their abilities to effectively communicate are interrupted by technological glitches (Dobbs et al., 2009, p. 12). Valentine (2002) continues this argument by asserting that “for the student, an inability to get a flow to the class and feel like progress is being made can hinder the learning process” (p. 6). Those students, who are used to “traditional face-to-face instruction and who do not have a tolerance for ambiguity, will have a difficult time” (p. 6).

The recommendations for platform designers and online instructors are very basic. First, they need to integrate useful online teaching and learning technology. Second, they need to research new and old technological tools to determine which are most useful. Third, they need to ask students for feedback and then implement those suggestions. For researchers, the plethora of technological tools including software and applications available for use when building online classrooms vary and having

information as to which tools work most effectively in teaching students would expand the knowledge of online designers.

The implications are that the university needs to provide effective technology for students both outside and inside the classroom. Effective technology means high satisfaction rates, which means that students are encouraged and enabled to perform better academically and in their work and personal lives. This can lead to them acquiring higher grades, liking their school better, and graduating on time, or perhaps early. Improved grades and stellar graduation rates could lead to improved university ratings and reputations, which could lead to increases in new enrollments and tuition income. Improved technology could lead to fewer repetitive and ineffective questions and dialogue which could lead to higher teacher satisfaction rates too.

#### **Research Question Four**

Question four asked students to ascertain whether the technology used in their class was easy to use. Unlike Drennan (2005) who found “ease-of-use was not related to student satisfaction,” regression testing in this study confirmed the hypothesis that when students' perceived or discovered technology was easy to use, their overall satisfaction levels increased (p. 337).

The students in this research and in Drennan's (2005) study were surveyed towards the end of the semester, and Drennan (2005) contends that “perceptions of ease-of-use may have changed as students became less apprehensive and discovered that the course materials were not difficult to use after the initial introductory period” (p. 337). For the participants in this study, whose satisfaction rates rose because they found the technology easy to use, it is possible that while they had problems with Moodle 2 at the

beginning of the fall 2013 semester, by week 11 and 12 when interviews were conducted, students had mastered their course websites powered by Moodle 2, because they gained increased confidences in their abilities as implied by Drennan (2005).

The implications derived from this knowledge are that course designers should test and ensure the tools they use on their classroom sites are easy to use. Students stated they disliked cumbersome and needless actions which called for them to drill down to what they needed. In other words, per participant #G, users preferred drop-down lists and having the most current information on the first page of the online course rather than having to scroll through weeks' worth of data. Finally, if the technology is easy to use, students will want to use it more.

#### **Research Questions Five, Six, and Seven**

The Community of Inquiry (COI) model including the teaching presence, social presence, and cognitive presence was believed to not only work as a triad entity but was hypothesized to significantly increase students' satisfaction rates. Survey question(s) five, six, and seven asked students to rate the level of presence or engagement they had with their teacher, peers, and course materials. Quantitatively, students' assessments of the COI they experienced had no significant influence over their satisfaction rates. However, their average ratings were moderately high at 4.065 for teaching presence, 3.4959 for social presence, and 4.0244 for cognitive presence. Additionally, interviews confirmed that instructors were available and group members worked together to reach goals, which confirmed that some quality forms of teaching, social, and cognitive presence was occurring.

Similar to Valentine (2002) who found “direct interaction with the instructor played no role in students’ satisfaction,” the quantitative numbers in this study also don't support the hypothesis that when positive perceptions of teaching presence, social presence, and cognitive presence increase, students’ satisfaction ratings also increase (p. 8). However, the high average ratings do offer some implications. For example, students including Participant #I revealed that having all their course materials including texts, notes, syllabi, assignment postings, e-mails, group work, and more in one online location was preferable to having some documents online and others in paper form. She explained how it helped her cognitively process information better by having important, relevant documents in one organized, online location.

As experts contend, Communities of Inquiry (COI) are basically back-and-forth dialogues that occur between people communicating via the web, in this case, online instructors and their students (Aragon, 2003; Bibeau, 2001; Garrison & Cleveland-Innes, 2005; Gunawardena & Zittle, 1997; Rourke, Anderson, Garrison, & Archer, 1999; Stodel, Thompson, & MacDonald, 2006). One of the reasons communities of inquiry need constant improvements is because we have taken the natural process of physical face-to-face interactions and made them digital which comes with a host of potential complications. For Garrison (2005), these finding suggest that “simple interaction, absent of structure and leadership, is not enough” (p. 145). Without the aid of body language, it becomes critical for instructors and students to use clear written diction when communicating. The benefit to improving digital and written communications is that it may cut down on miscommunications between instructors and students, and “further

study is very much needed to understand the nature of online interaction that will support high levels of learning” (Garrison, 2005, p. 145).

Over time, instructors will find opportunities to freshen up their syllabi by removing superfluous information and replacing it with weekly online postings which may or may not include links. Gao and Lehman (2003) believe the ideal way of motivating students is to enhance the way “they cognitively process information” (p. 6). While students and instructors use software which makes grammatical errors blatantly obvious and easy to fix but may “lower cognitive processes”, techniques which cause students to use their proactive skills will cause “a deeper understanding of the material [and] deeper engagement” (p. 6). My personal assertion is that instructions from instructors will be streamlined and unequivocally hard to misinterpret because it will be clearly written and accessible to students. Additionally, assessment of work produced by and communication between both instructors and students will be available to department heads and accreditation groups making record-keeping easier.

The implications for new instructors include having access to examples of course webpages produced by seasoned colleagues. Fresh ideas may develop from this environment of shared teaching and learning. The concerns faculty members have over losing a sense of communication with their students is answered by the students interviewed in this research. Interviewees claimed to have an almost euphoric sense of communication with their self-regulated learning peers and instructors because they were tapped in 24 hours a day. Participants describe knowing how and when they learn best, and most felt pleased with the quality of work they submitted to their instructors.

While the parameters of this research did not allow time to collect grades, the participants claimed to be at the top of their classes and within their majors. Future researchers should consider studies which ascertain the actual grades of students who perceive they are excelling in their online communities of inquiry.

### **Age Demographic Variable**

The biggest surprise of this study was the quantitative results of the age demographic. While small at .04, the Unstandardized Coefficient (*B*) figure obtained from regression analysis showed the age factor was statistically significant in altering students' overall satisfaction rates when the students' ages increased by one unit or one year. This fact does not completely support the qualitative data derived from the interviews. For example, the 10 students interviewed were all under the age of 24. But it was their confidences with online tools which made it seem they, the younger students, would be overwhelmingly more satisfied than their older peers. With the average age of the 123 participants being 21.5, one might conclude the younger students are the audience most satisfied. However, the quantitative numbers imply the older the student, the more satisfied they are with their online learning environment.

One theory based on these results are that older students, many of whom work, have family responsibilities and have to commute to campus, are more satisfied because of the flexibility online courses offer them. Dobb et al. (2009) agree that students opt for online courses “due to the time commitments, such as work and family, which made it difficult for them to come to campus for class” (p. 12). The implications are very positive for today's online instructors as their older students, many who work, have

family responsibilities and commute to campus, will be very satisfied with the flexibility online courses offer them.

Shea and Bidjerano (2009) suggest that the increased number of researchers hypothesizing “connections between age and levels of satisfaction and engagement with text-based online environments” suggests that the “emergent net generation is or will soon be too technologically sophisticated to find the typical largely text-based, asynchronous learning management systems in use today relevant or useful for their learning” (p. 545). Thus my personal theory as to why older students in this study are more satisfied with their online experience is because they have fewer experiences with online tools, thus they have fewer comparisons, and thus they are ultimately less critical of the tools being used. For example, one could assume that for every online social media tool learned and used by an older student, a younger student knows and uses 5-20 online tools capable of accomplishing the same task. (i.e. Facebook vs. Facebook, Tumbler, Instagram, YouTube, Pinterest, Snap Chat, Vine, Twitter, LinkedIn, and more...). Ultimately, a student with a lack of online tool knowledge or comparable insight, like an older student, will be more satisfied with whatever is offered to them.

For future researchers, insight into why and how an older student is more satisfied with online learning than their younger peers would add to the andragogical knowledge also known as the art and science of teaching adults, which is ultimately the goal of higher education institutions.

## **Conclusion**

While online teaching and learning communities will never replace face-to-face interactions, it is important to recognize that only through research and evaluation can we understand how to better interact and perform in these electronic environments. This dissertation discovered that the students learning in one California State University are knowledgeable about technological tools and comfortable with using them. They are confident self-regulating learners who are critical towards online environments which use poorly designed tools. They are humble about their technological knowledge base and excited about being able to continuously communicate with their peers and instructors via online portals. Finally, these students anticipate completing their degrees quickly, thanks in part to the CSU online course program designed to help them accomplish their academic goals in timely manners.

## **Recommendations**

Researchers interested in shedding light on online education need to investigate the technological or attitudinal aspects influencing students' success and persistence rates. The significant information uncovered in this dissertation determined that in order to be successful in their learning, students want and need technology that is useful and easy to use. While Moodle 2 was the software and platform preference of the researched university, future researchers may want to ascertain how well students perform using other tools. Perhaps there are courses designed which utilize useful and easy to use tools and harbor a superior community of inquiry component. Such a study would add to the quest to improve online communication and increase students' overall learning experiences. Additionally, as higher education institutions prepare to use more online

classes to compensate for cancelling traditional courses, faculty and course designers need to know how to assemble, observe, and assess quality learning environments.

The researcher of this dissertation observed one case of online courses and discovered a whole host of significant possibilities relating to online academics, leading her to conclude that education like observation is only significant if action is applied.

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## **Appendix A**

### **CALIFORNIA STATE UNIVERSITY, NORTHRIDGE**

#### **COMMUNITIES OF INQUIRY: AN EXAMINATION OF STUDENT SATISFACTION IN ONLINE LEARNING AND TEACHING ENVIRONMENTS**

#### **EMAIL INVITATION TO PARTICIPATE IN ONLINE SURVEY**

Email sent to California State University students enrolled in fully online 300-level Political Science Course E and in fully online 400-level Special Education Course F.

Dear CSU Online Student,

As a California State University student enrolled in a blended/hybrid or fully online class, you are being asked to participate in Communities of Inquiry: An Examination of Student Satisfaction in Online Learning and Teaching Environments, a study conducted by Heidi Hintz as part of the requirements for the Ed.D. degree in Educational Leadership and Policy Studies.

Participation in this study is completely voluntary. The purpose of this research is to examine the factors that affect students' overall satisfaction rates with online learning environments.

Please read the below consent form and then click the Survey Monkey link to complete the online survey. You will need to print out your attached "Golden Ticket" from a PC.  
<https://www.surveymonkey.com/s/HKXBNX3>

Thank you so much for your time and effort,

Heidi Hintz, ELPS Doctoral Candidate and Lead Researcher

## **Appendix B**

### **California State University, Northridge**

#### **IMPLIED CONSENT TO ACT AS A HUMAN RESEARCH PARTICIPANT**

Communities of Inquiry: An Examination of Student Satisfaction in Online Learning and Teaching Environments

As a California State University, Northridge student enrolled in a blended/hybrid or fully online class, you are being asked to participate in Communities of Inquiry: An Examination of Student Satisfaction in Online Learning and Teaching Environments, a study conducted by Heidi Hintz as part of the requirements for the Ed.D. degree in Educational Leadership and Policy Studies.

Participation in this study is completely voluntary. Please read the information below and ask questions about anything that you do not understand before deciding if you want to participate. The researcher listed below will be available to answer your questions.

#### **Researcher:**

Heidi Hintz, CSUN ELPS Doctoral Candidate  
Department of Educational Psychology and Counseling  
18111 Nordhoff Street  
Northridge, CA 91330-2208  
(805) 304-7555  
heidi.hintz.68@csun.edu

#### **Faculty Advisor:**

Dr. Carolyn J. Maeder, Professor  
Department of Educational Psychology and Counseling

18111 Nordhoff Street  
Northridge, CA 91330-2208  
(818) 677-2835

## **PURPOSE OF STUDY**

The purpose of this research is to examine the factors that affect students' overall satisfaction rates with online learning environments.

## **SUBJECTS**

### *Time Commitment*

This survey will involve approximately 10 minutes of your time.

## **PROCEDURES**

You will complete a seven section survey rating your: previous online experience, learning habits, perceptions towards the usefulness of the course technology, perceptions towards the course technologies ease-of-use, perceptions about the teaching, social, and cognitive presence. Finally, you will provide your overall satisfaction rate level with the online learning environment and provide basic information about yourself.

## **RISKS AND DISCOMFORTS**

This study involves no more than minimal risk. There are no known harms or discomforts associated with this study beyond those encountered in normal daily life.

## **BENEFITS**

There are no known benefits from participating in this study.

## **ALTERNATIVES TO PARTICIPATION**

There will be no negative effect if you do not participate in this confidential survey study. The only alternative to participation in this study is not to participate. By completing the survey and receiving a copy of this implied consent form, you understand that you are giving consent for your survey data to be used in the above-mentioned study.

## **COMPENSATION, COSTS AND REIMBURSEMENT**

### ***Compensation for Participation***

For completing the attached survey, you will be given a “Golden Ticket” redeemable for \$10 if you participate in a 15 minute one-on-one interview. For the first 30 participants only; offer expires Friday, November 22, 2013 @ 8:00 pm.

If you are one of the first 30 students to email the researcher, you will be given an interview date, time, and location.

The location of interviews will include a conference room in the Education Leadership and Policy Studies (ELPS) department located in the Education Building.

If you participate in a 15 minute face-to-face interview with the lead researcher, you will exchange your ticket for \$10 after the interview.

### ***Costs***

There is no cost to you for participation in this study.

## **CONFIDENTIALITY**

The lead researcher will ensure that survey information is kept on a password-protected computer and/or hard copies are stored in a locked file cabinet located in her private home office. Hard copies of code sheets will be locked in a safe located in the lead researcher’s private home office.

### ***Subject Identifiable Data***

There will be no identifiable information collected about you during the survey process.

### ***Data Access***

Only the lead researcher will have access to data. Publications and/or presentations that result from this study will not include identifiable information about you.

### ***Data Retention***

Five years post-publication, the lead researcher will erase and destroy all files pertaining to this research.

## **IF YOU HAVE QUESTIONS**

If you have any comments, concerns, or questions regarding the conduct of this research please contact Heidi Hintz at [heidi.hintz.68@csun.edu](mailto:heidi.hintz.68@csun.edu) or 805-304-7555.

If you have concerns or complaints about the research study, research team, or questions about your rights as a research participant, please contact Research and Sponsored Projects, 18111 Nordhoff Street, California State University, Northridge, Northridge, CA 91330-8232, or phone 818-677-2901.

Thank you in advance for your time and effort. **Don't forget to print out the attached \$10 GOLDEN TICKET from a PC.**

Heidi Hintz

Lead Researcher and Doctoral Candidate, CSUN Ed.D. Program

## **Appendix C**

### **CALIFORNIA STATE UNIVERSITY, NORTHRIDGE**

#### **COMMUNITIES OF INQUIRY: AN EXAMINATION OF STUDENT SATISFACTION IN ONLINE LEARNING AND TEACHING ENVIRONMENTS**

#### **INTERVIEW PROTOCOL**

##### **Introduction:**

Hello and thank you for taking time out of your busy day to meet with me. Before we begin with my questions, let's take a few moments to review and sign the Consent Form of which you will be given a copy.

##### **Timing:**

I have approximately seven questions and the entire process should take approximately 15-30 minutes. Do you have any questions before we begin with the interview?

##### **Interview Question #1:**

Was your overall satisfaction with your blended/hybrid/fully (as appropriate) online course high or low?

##### **Interview Question #2 (Follow-up to Q#1):**

Can you describe some of the factors/variables that influenced your high/low satisfaction rate?

##### **Interview Question #3:**

How did your previous online experience help you in the class?

**(Probe)**

Did it enhance or decrease your overall satisfaction with the course?

**Interview Question #4:**

How did your personal study and learning habits help you in the class?

**(Probe)**

Did they enhance or decrease your overall satisfaction with the course?

**Interview Question #5:**

Can you describe how useful and/or easy you found the course technology (i.e., Discussion Boards, Lecture Capture, Quizzes)?

**(Probe)**

Did the online tools enhance or decrease your overall satisfaction with the course?

**Interview Question #6:**

Part of my research examines the online community of inquiry which is created when there is interaction between the teacher, other students, and the class/course material.

Can you describe your online interaction with your instructor, classmates, and course material?

**Interview Question #7:**

Would you take another course designed like the one you just finished?

**(Probe)**

Why or why not?

**Closing Questions:**

Do you have any other insights regarding your online course experience that you would like to add? Do you have any questions for me?

**Final Follow-up Plans:**

Thank you again for taking time to respond to my questions. Your feedback is invaluable to my research. Let me remind you that your name and any personal information will be kept in confidence.

As a thank you and as promised, here is \$10 for your time and participation. Please sign the following receipt, which will be kept in a locked location in my home office.

Also, I will let you know when transcripts are ready for your review so we can plan another meeting where you will have an opportunity to review your responses and sign if you approve.

Thanks again, I'll be in touch.

## **Appendix D**

### **California State University, Northridge**

#### **CONSENT TO ACT AS A HUMAN RESEARCH PARTICIPANT**

Communities of Inquiry: An Examination of Student Satisfaction in Online Learning and Teaching Environments

As a California State University, Northridge student enrolled in a blended/hybrid or fully online class, you are being asked to participate in Communities of Inquiry: An Examination of Student Satisfaction in Online Learning and Teaching Environments, a study conducted by Heidi Hintz as part of the requirements for the Ed.D. degree in Educational Leadership and Policy Studies.

Participation in this study is completely voluntary. Please read the information below and ask questions about anything that you do not understand before deciding if you want to participate. The researcher listed below will be available to answer your questions.

#### **Researcher:**

Heidi Hintz, CSUN ELPS Doctoral Candidate  
Department of Educational Psychology and Counseling  
18111 Nordhoff Street  
Northridge, CA 91330-2208  
(805) 304-7555  
heidi.hintz.68@csun.edu

#### **Faculty Advisor:**

Dr. Carolyn J. Maeder, Professor  
Department of Educational Psychology and Counseling  
18111 Nordhoff Street

Northridge, CA 91330-2208

(818) 677-2835

## **PURPOSE OF STUDY**

The purpose of this research is to examine the factors that affect students' overall satisfaction rates with online learning environments.

## **SUBJECTS**

### *Time Commitment*

This interview will involve approximately 20 minutes of your time.

## **PROCEDURES**

You will be asked to describe your satisfaction with your online course experience and detail some of the factors that made your experience positive or negative. Audio recordings of your interview will be transcribed and proofread by you for accuracy.

## **RISKS AND DISCOMFORTS**

This study involves no more than minimal risk. There are no known harms or discomforts associated with this study beyond those encountered in normal daily life.

## **BENEFITS**

There are no known benefits from participating in this study.

## **ALTERNATIVES TO PARTICIPATION**

There will be no negative effect if you do not participate in this interview. The only alternative to participation in this study is not to participate.

## **COMPENSATION, COSTS AND REIMBURSEMENT**

### ***Compensation for Participation***

For participating in this 15 minute face-to-face interview with the lead researcher, you will exchange your “Golden Ticket,” receive \$10 and sign a receipt.

Offer is good for the first 30 participants only and expires Friday, November 22, 2013 @ 8:00 pm.

### ***Costs***

There is no cost to you for participation in this study.

## **CONFIDENTIALITY**

### ***Subject Identifiable Data***

All identifiable information that will be collected about you will be removed and replaced with a code. A list linking the code and your identifiable information will be kept separate from the research data.

### ***Data Storage***

The lead researcher will ensure that interview information is kept on a password-protected computer and/or hard copies are stored in a locked file cabinet located in her private home office. Hard copies of code sheets will be locked in a safe located in the lead researcher’s private home office.

### ***Data Access***

Only the lead researcher will have access to data. Publications and/or presentations that result from this study will not include identifiable information about you.

### ***Data Retention***

Five years post-publication, the lead researcher will erase and destroy all files pertaining to this research.

**IF YOU HAVE QUESTIONS**

If you have any comments, concerns, or questions regarding the conduct of this research please contact Heidi Hintz at heidi.hintz.68@csun.edu or 805-304-7555.

If you have concerns or complaints about the research study, research team, or questions about your rights as a research participant, please contact Research and Sponsored Projects, 18111 Nordhoff Street, California State University, Northridge, Northridge, CA 91330-8232, or phone 818-677-2901.

**VOLUNTARY PARTICIPATION STATEMENT**

You should not sign this form unless you have read it and been given a copy of it to keep. **Participation in this study is voluntary.** You may refuse to answer any question or discontinue your involvement at any time without penalty or loss of benefits to which you might otherwise be entitled. Your decision will not affect your relationship with California State University, Northridge. Your signature below indicates that you have read the information in this consent form and have had a chance to ask any questions that you have about the study.

*I agree to participate in the study.*

\_\_\_\_\_ I agree to be audio recorded

\_\_\_\_\_ I do not wish to be audio recorded

\_\_\_\_\_  
**Participant Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Printed Name of Participant**

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**Researcher Signature**

---

**Date**

---

**Printed Name of Researcher**

## **Appendix E**

### **CALIFORNIA STATE UNIVERSITY, NORTHRIDGE**

#### **COMMUNITIES OF INQUIRY: AN EXAMINATION OF STUDENT SATISFACTION IN ONLINE LEARNING AND TEACHING ENVIRONMENTS**

##### **MEMBER TRANSCRIPTION REVIEW**

###### **Greetings and Instructions:**

Thank you for meeting with me again. Please take a few moments to review the following hard copy transcription of our interview together.

Please note, we are required to include the “um’s and ah’s,” but that they will probably be removed before being imbedded into my final report.

Do your responses sound like your voice and the perspective from which you were describing your online experiences?

Do you want to change, modify, or delete any of your responses in part or in full?

Do you want to add any additional comments to your transcribed responses?

Do you have any questions?

If everything meets with your approval and you give me permission to use your responses in my Dissertation and/or future publications, please sign the transcript’s front page.

Thank you for your time, effort, and participation. Please take my card and contact me if you have any questions or want to keep in touch. Thank you!