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Faculty understanding of key differences in educating the distance (online) versus traditional student: a descriptive study

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FACULTY UNDERSTANDING OF KEY DIFFERENCES IN EDUCATING THE DISTANCE (ONLINE) VERSUS TRADITIONAL STUDENT: A DESCRIPTIVE STUDY

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ABSTRACT

This descriptive research study examined if the training for online class delivery that post-secondary faculty currently experience includes best practices for online design and delivery.

As of 2015 most colleges and universities had indicated that offering online course programming was necessary to achieve key strategic goals for their institution. Demand for online classes is strong, but enrollment and re-enrollment in these classes have not consistently increased since 2009. Dropout rates have increased and are reported at twice that of traditional classes with students blaming the school or faculty, and faculty and academic leadership blaming the student for lack of self-motivation, which is key to successful online learning.

As online programming has become ubiquitous, academic leadership is no longer wondering whether they should offer online courses, but rather have shifted focus to how to address and maintain the satisfaction of the online student. Faculty training in online delivery can impact student motivation and satisfaction. This study examined what type of training faculty experience and as a result, whether they were able to indicate knowledge of best practices in demonstrating Presence in an online class, understanding importance, and methods, of Interaction, whether they understood the best practices associated with the Design of an online class, how design can impact student motivation, as well as whether faculty felt confident in their ability to deliver an online class, or prepared to communicate virtually with their online students.

A self-report survey was administered to more than 2800 faculty and 254 responded. The majority of participants acknowledged having received some type of training and were more likely to indicate knowledge of best practices than those that had received no training at all. Those that indicated training that included both design and delivery of an online class were more knowledgeable in the best practices than those that had received training in the software alone.

Finally, faculty that received training that included design and delivery elements were more likely to say they felt confident in their ability to deliver an online class and that they felt prepared to communicate virtually with their online students.

Chapter One: Introduction

Background

Distance learning, or online learning, is education delivered without the constraints of the traditional barriers of time and location.

Distance learning delivered via an electronic medium (the internet, computer) began to emerge in the late 1990s with colleges quickly seeing a way to make degree programs more accessible to those who, for a variety of reasons, are unable, or do not desire, to complete their college education through more traditional means (Anderson, 2011). Enrollment in online courses seemed to reach its peak in 2009, with growth on the decline nearly each year since. Institutions have cited the primary barriers to continued growth in demand for online classes as retention and re-enrollment (Allen & Seaman, 2013).

By 2002, less than 50% of all higher education institutions indicated that online education was a critical component of their long term strategy. By 2012, nearly three quarters of institutions reported that indeed, online education was important to their long term strategy (Figure 1; Allen & Seaman, 2013). However, by 2016, some institutions have indicated that growing their online programming is no longer critical to their long term business strategy (Smith, 2016) which is in direct conflict with the steady demand for online courses by students (despite the issues with retention and re-enrollment).

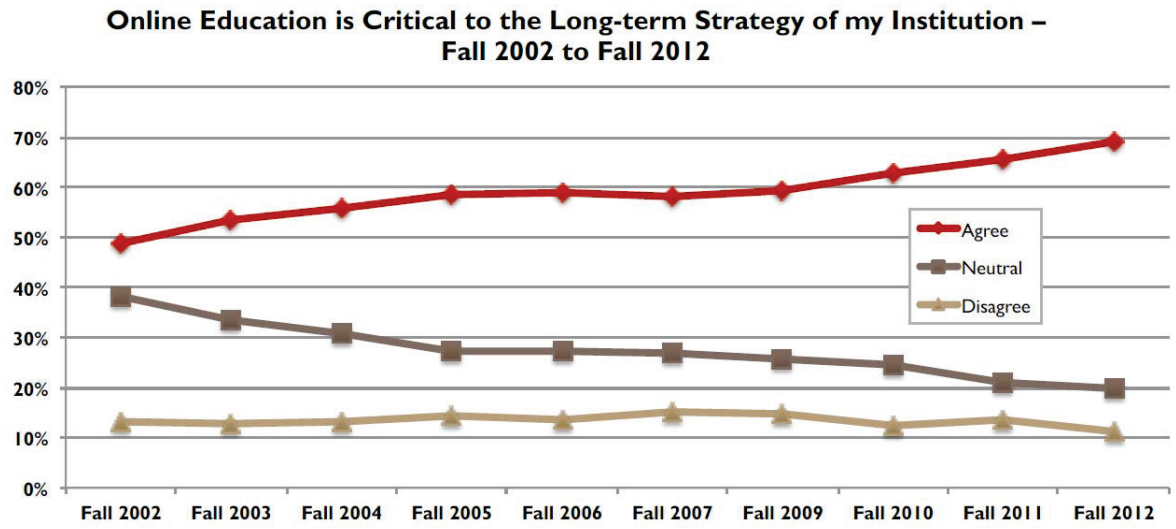

Figure 1. Online education is critical to the long-term strategy of my institution. From *Changing course: ten years of tracking online education in the United States*. Copyright 2013 by Babson Survey Research Group and Quahog Research Group, LLC. Reprinted with permission.

As of 2011, nearly 90% of public four-year colleges offered distance education, or education delivered electronically (Taylor, Parker, Lenhart, & Patten, 2011. As of 2013, 100% of these colleges offered distance courses with more than 62% offering degree programs fully online (Allen & Seaman, 2012. The efficacy of distance or online courses has been challenged by students and faculty alike (Allen & Seaman, 2012. Faculty and academic leadership have reportedly disagreed about the quality of the education received by students in distance classes versus traditional classroom delivered education; and some faculty may be failing to embrace online course delivery all together. Faculty acceptance, and students' perception, of quality in distance (online classes may be posing barriers to growth in online offerings (Allen & Seaman, 2012. Students' perception of quality and satisfaction may be impacted by faculty ability to deliver an online class effectively by failing to employ those practices indicated by the research to be the best for educating the distance student.

In 2011, student dropout rates in distance programs were reported to be twice that of dropout rates reported for traditional classes delivered in the face-to-face setting. However, despite higher student dropout rates for distance courses, demand for the courses have made distance programming an economical and practical way for colleges to increase student enrollment (Nonis & Fenner, 2011).

Statement of the Problem

Enrollment in online courses seemingly peaked in 2009 with a lower than predicted annual growth of 21.1%. A year later this growth dwindled to 10.1% and as of 2011 was a reported 9.1% (Allen & Seaman, 2013). Much of the research into why dropout rates are higher in distance courses than those of traditional courses focuses on faculty satisfaction, compensation, student motivation, student satisfaction, students ease of use of the technology, and faculty training in the technology used for delivering the online curriculum (Bradford, 2011; Lee, Srinivasan, Trail, Lewis, & Lopez, 2011; Wang, Peng, Huang, Hou, & Wang, 2008). Very little, if any, research is found to support quality of educator training in best practices when delivering a distance course. The studies that do exist point to the importance of interaction and educator presence, and how each of these factors are managed differently in distance education (Moore, 1989; Moore & Kearsley, 1996). Educators only versed in how to deliver traditional courses in a face-to-face environment and subsequently only trained in the technology used to deliver their courses online, may fall short in their ability to successfully deliver their course in the online format (Lo, 2010). This results in students' negative perceptions of distance course quality and dissatisfaction that ultimately leads to higher dropout rates and lower re-enrollment rates (Lo, 2010; Taylor et al., 2011; Wang et al., 2008).

Significance of the Research

Both faculty and the institutions they work for have an interest in preserving, even improving, distance course programming. The infrastructure investment is quite significant for the school (Bocchi, Eastman, & Swift, 2004; Dede, 2005; University Distance Courses, 2010), and as students demand better courses and improved access to courses, delivering distance courses may become a condition of employment for some faculty. As some tenured faculty may resist distance education, hiring of contingent and contract faculty and adjunct professors is on the rise (Chapman, 2011). To obtain these positions, these contingent faculty may be required to teach distance courses (Chapman, 2011).

The Sloan Consortium (now the Online Learning Consortium or OLC) supports five identified benchmarks for quality online education (Figure 2; Moore, 2005b). Among them, student satisfaction and faculty satisfaction are most relevant to this study. The Online Learning Consortium supports these benchmarks by noting that quality is in the eyes of the beholder (Moore, 2005b). Both faculty and students have a differing opinion on the quality of education received than that of academic leadership. Faculty note that the higher degree of difficulty in motivating students in distance classes is a barrier to achieving good learning outcomes (Allen & Seaman, 2012). Students note that the lack of interaction with faculty results in feelings of being too isolated. These elements both result in barriers to satisfaction in the distance setting; both points highlight the differences to be aware of when educating the distance, versus traditional, student (Lo, 2010; Taylor et al., 2011; Wang et al., 2008).

The American Federation of Teachers has identified two qualities that indicate an ability to deliver an online class. Preparedness for online instruction (POI) is indicated by faculty ability to use the technology, both hardware and software, to deliver their course; and they must be able to

design and deliver (communicate) curricula to the distance (online) student without the aid of visual and oral cues (1998-2000).

Figure 2. Sloan Consortium's five pillars of quality online education. From *the Sloan Consortium Quality Framework and the Five Pillars*. Copyright 2005 by Sloan-C. Reprinted with permission.

Purpose of the Study

The purpose of this study was to assess the type of training faculty currently experience and assess faculty knowledge of best practices for designing and delivering an online course. Also, this study examined faculty perceptions of confidence and ability in delivering an online

class, as well as whether they felt prepared to communicate virtually with their online students, as a result of the type of training they have experienced.

Research Questions

- RQ1: What are the demographic characteristics of the participants?

Rationale. An online class is a class that is taught either 100% online or more than 30% online for hybrid or blended courses (Allen & Seaman, 2013). Nearly 100% of colleges offer online or distance programming with 62% of colleges offering degree programs 100% online with online teaching becoming a condition of employment (Allen & Seaman, 2012; Taylor et al., 2011).

- RQ2: What type of online training do the participants in the study currently experience?

Rationale. Educators only trained in the technology used to deliver their courses may fall short in their ability to successfully deliver their courses (Lo, 2010).

- RQ3: Does Preparedness for Online Instruction training improve faculty understanding of the meaning of presence in an online or distance class?

Rationale. Instructors need not only be subject matter experts, but also they must know how to facilitate a collaborative learning environment that creates a sense of presence in a virtual environment. This creates meaningfulness, or high psychological texture in a distance class. Some elements of training may indicate introducing a balance between surprise and predictability, for example (Fontaine & Chun, 2010). Despite logistical distances, an online class that is supported with successful co-presence of both the student and the instructor can result in the same quality of education for the distance student as the education received by the traditional student. Maintaining an engaging environment where learners can experience personal

connectivity (presence) despite physical distances is essential in successful curriculum design (Ackerman, 2008; Stevens-Long & Crowell, 2010).

- RQ 4: Does Preparedness for Online Instruction training improve faculty ability to indicate presence in an online classroom?

Rationale. POI training, when employing best practices, will address such topics as feedback frequency. Feedback frequency and engaging the student using the technology is one area of concern for instructors transitioning to online teaching. Instructors may not know how to gauge the ideal level of interaction that would demonstrate presence in their online classroom(Bocchi et al., 2004). Either too much or too little interaction can serve as a de-motivator.

- RQ5: Does Preparedness for Online Instruction training improve faculty understanding of the meaning of 'interaction' in the design of an online class?

Rationale. Very early in the literature, researchers identified the importance of interaction between educators and students, and students with each other. This interaction can impact student motivation in the online environment (Goodwin, 1993). There is notable difference in not only how curriculum is delivered online versus face-to-face, but in also how interaction takes place (Gayol, 2010). Because of the physical and psychological gap students experience in the online/distance classroom, understanding that interaction (type and frequency) diminishes this gap may be critical to successful online class delivery as too much student autonomy may pose a threat to student success in this learning environment (Gayol, 2010; Grandzol & Grandzol, 2010; Lee et al., 2011; Moore, 1973).

- RQ6: Does Preparedness for Online Instruction training improve faculty ability to indicate interaction in an online classroom?

Rationale. Both students and faculty can work together to assuage the feelings of isolation through the use of tools and synchronous or asynchronous dialogue. High levels of interaction are important to student satisfaction (Gayol, 2010; Moore, 1989; Nandi, Hamilton, & Harland, 2012; Wagner, 1994). Tools found within the technology specific to accomplishing successful interaction include discussion forums, email, Skype, Wikis, and live/virtual office hours. These tools can help to create an environment where interaction can occur and can ultimately lead to a sense of community, possibly resulting in higher student satisfaction (Hudson, 2010; McInnerney & Roberts, 2004; Stevens-Long & Crowell, 2010; Yang & Liu, 2007-2008).

- RQ7: Does the Preparedness for Online Instruction training experienced by faculty improve understanding of design best practices for online courses and improve understanding of the role it plays in student motivation?

Rationale. Interaction with course content is an important consideration in online course design. Easy access to materials, clarity of materials, and active participation between the students, the materials, and the instructor are all relevant components of student-content interaction, a type of interaction necessary for engaging and motivating the student(Lee et al., 2011; Moore, 1989). Too little of this type of interaction can result in student frustration and lack of motivation. A course designed with these components in mind can have a positive impact on student retention (Bocchi et al., 2004; Ke, 2010; Nandi et al., 2012).

- RQ8: Does the Preparedness for Online Instruction training improve faculty perception of their general ability (confidence in their ability) to deliver an online course, including preparing them for virtual communication with their students?

Rationale. Little to no training in how to deliver an online course (or training that addresses the technology only) may impact faculty ability to successfully transition to the online environment. Faculty may rely too heavily upon writing assignments alone or limit interaction to weekly (or less often) discussion posts, thus impacting student motivation or increasing feelings of frustration with their online course (Grandzol & Grandzol, 2010; Solberg, 2011; Wilging & Johnson, 2009).

Key Constructs

Distance learning. Distance Learning, or Distance Education, is defined by the context of method of delivery. In this case, it is defined as education delivered electronically to a geographically dispersed student body. This can also be called "E-Learning" or "Online learning." The Instructional Technology Council has defined online learning as a method of delivering education to remote locations via the internet. It can also be delivered by television, CD-ROM, or broadcast satellite (Holsapple & Lee-Post, 2010). The Babson Survey Group has maintained a consistent definition of what constitutes an online course. In all of its research pertaining to trends in online education the definition has been that online courses are those in which course content is delivered online at least 80% of the time, and for blended (online/face-to-face) instruction course content is delivered online 30 to 79% of the time (Allen & Seaman, 2013). Web facilitated (fully online) would have content delivered face-to-face less than 30% of the time, and traditional courses would offer 0% use of online technology for content delivery (Figure 3; Allen & Seaman, 2013.)

Proportion of Content Delivered Online	*Type of Course*	*Typical Description*
0%	Traditional	Course where no online technology used — content is delivered in writing or orally.
1 to 29%	Web Facilitated	Course that uses web-based technology to facilitate what is essentially a face-to-face course. May use a course management system (CMS) or web pages to post the syllabus and assignments.
30 to 79%	Blended/Hybrid	Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has a reduced number of face-to-face meetings.
80+%	Online	A course where most or all of the content is delivered online. Typically have no face-to-face meetings.

Figure 3. Proportion of content delivered online. From *Changing course: ten years of tracking online eduaction in the United States*. Copyright 2013 by Babson Survey Group and Quahog Research Group, LLC. Reprinted with permission.

Training (in online delivery). The American Federation of Teachers (AFL-CIO) has recognized several key areas of required proficiency for online educators to aspire to. These include becoming skilled in using the technology required to deliver curricula, becoming qualified curricula designers within online technology, as well as developing those skills required to effectively communicate with geographically dispersed students in the electronic environment in the absence of visual and oral cues (Distance Education: American Federation of Teachers, Guideline for Good Practice, 1998-2000).

Chapter Summary

Chapter One explains the foundations of the study, describes the significance and purpose of the study, and the research questions and rationale of each. It also describes current trends in online enrollment, as well as trends in how post-secondary institutions view the importance of

online education to their long term strategic goals. The apparent decline in the growth of online class enrollment since 2009 is also discussed.

Two key constructs: training for distance education and what a distance or online class is, are defined for the purpose of the research. Preparedness for Online instruction (trained in delivery) is defined as possessing the skills to both communicate with a dispersed student body and possessing the ability to utilize the technology in doing so. A distance class is defined by the percentage of curricula that is electronically delivered to the student body, with 80% or more defining an online class, and less than 30% defining a hybrid traditional and online class; and finally 0% of curricula delivered electronically defining a traditional class.

The purpose of the study is also introduced. The significance of faculty training in research conveyed best practices in online or distance class delivery is examined. Five best practice areas were described including: faculty understanding of and ability to indicate presence in the online classroom; faculty understanding of and ability to indicate appropriate levels and types of interaction in the online classroom; the ability to design an online class; the ability to deliver an online class; and the understanding that all of these factors impact student motivation. Finally, this chapter discussed how the study examined faculty confidence in their own ability to deliver an online class, and whether they felt prepared to communicate virtually with their online students, as a result of the Preparedness for Online Instruction training they experienced.

Chapter Two: Review of the Literature

Introduction

The purpose of this literature review is to introduce major concepts and theories in online education. The review defines critical terms, and presents the importance of educator training in e-curriculum design and delivery. The review also addresses the impact of student satisfaction and motivation on retention and re-enrollment rates in the distance education (online environment. Literature reviewed focused on the following specific topics: definitions of online education, history and chronology of literature, theoretical frameworks, faculty views on distance education/online learning, statistical data/trends in online enrollment, cost of developing and maintaining an online program, and best practices as they relate to motivation, instructional design, and delivery.

Criteria for Selection

The literature sourced for this research had to meet several criteria: statistical data on dropout rates was only considered if reported after 2005. Older research was used to support chronological events to establish the timeline in which distance education evolved, to show how research improved over time or to draw comparisons with traditional education or learning theories.

Definition and History of Online Education and Chronology of Literature

Online/distance education definition. Online, or distance education, is defined in the context of method of delivery. The definition of an online class, distance class, e-curriculum or electronic curriculum, for the purpose of this work is any class delivered using electronic or digital means for an amount greater than 30% but less than 79% of coursework for blended-hybrid courses or any class delivered via the same means for more than 80% of

coursework (Allen & Seaman, 2013). It is education delivered electronically to a geographically dispersed student body (Holsapple & Lee-Post, 2006, as cited in Rudestam & Schoenholtz-Read, 2010).

The online student can be defined as any student fitting the statistical profile of being enrolled in at least one online course. As of 2012, according to the National Center for Education Statistics more than 40% of these students were under the age of 30, and 20% of these students were under the age of 25; meaning nearly half of online students were a population of millennial students (Snyder & Dillow, 2012, or those born since 1982 (Mason & Rennie, 2010. While the learning style of the online student is different from that of the traditional student, a more notable difference is specific to the learning style of millennial students (Mason & Rennie, 2010. These students not only have a preference to learn from sound and video (both conducive to learning via a technology interface they also have a preference for interactive and networked activities (teamwork as opposed to individual work (Mason & Rennie, 2010.

It is around the mid-2000s that researchers began to report on the importance of recognizing the differences in learning style between the face-to-face (traditional and the online student (non-traditional; Bennett, Evans, & Riedle, 2007. In 2001 there emerged a distinguishing set of terms to refer to students born with immediate exposure to technology versus those older students that had to adapt to new technologies. These two groups are referred to as digital natives and digital immigrants (Prensky, 2001. A more recent article observes that the rapid advancement of technology is influencing neo-millenials' learning styles and that learning institutions need to evolve as well to keep up. In doing so, these institutions need to continually invest in technology infrastructure (Dede, 2005.

History. The history of distance education dates back to print correspondence courses delivered via the postal service as long ago as the late 1800s (Anderson & Dron, 2010). Distance education delivery can be viewed generationally with mail correspondence serving as generation one. The second generation used television to provide education in the 1970s – 80s and was supported through the use of multimedia – both print and video (Anderson & Dron, 2010). Finally, the current generation of distance education is accomplished through technology enabled interaction between students and faculty. This third generation is web-based (online), it may be interactive, it may be one-to-one or one-to-many, and creates the existence of what we now call the digital or virtual classroom (Anderson & Dron, 2010). This also supports a relatively new learning theory called Connectivism (Siemens, 2005).

Chronicle of Literature

Although literature as early as 1993 reports that learners and educators perceived education delivered via the Internet might be just as successful as education delivered face-to-face (Huang, 2002) the literature does not start to report on massive growth of distance learning via the Internet until the late 1990s (Christensen, 2001).

Early in distance education, researchers identified that interaction in socio-collaborative environments played an integral role in stimulating and motivating students (Goodwin, 1993). It was also acknowledged that instructional designers would benefit from paying special attention to the needs of adult learners in the distance learning environment, specifically paying attention to their relationship between the interface (the tool), themselves and the instructor, as well as the relationship between instructor levels of interaction with the learner, and learner autonomy (Huang, 2002).

In the mid-1990s the urgency for colleges and universities to begin addressing technological advances, and the need to consider the potential growth in demand in order to stay relevant, also began to appear in literature (Christensen, 2001).

Around 2006, research on the distance learning student and the online learning environment was also increasing. Zirkle, Norris, Winegardner, and Frustaci (2006) referred to distance learning as "not new" (p. 103), citing the evolution of distance learning from written correspondence and courses delivered via radio and television to the now ubiquitous internet delivery method (online learning).

Research prior to 2000 was deemed to be of poor quality in its ability to predict successes or failures of distance learning programs (Urtel, 2008). The research that was conducted generally had inadequate sample sizes and did not control for several factors, including demographics, content, delivery format, or the instructor (Urtel, 2008). Researchers also often failed to disclose theoretical frameworks used when studying the distance education environment and many had varying definitions of an online learning or distance environment. The definitions and research applying theoretical frameworks evolved over the next several years (Gayol, 2010). It is from this timeframe we begin to find consistent statistical patterns to support growth in attendance and thus begin to address dropout rates as well.

Research on student satisfaction and motivation included in this review is specific to the online college student. The distance classroom is different from a physical classroom in not only how instruction is delivered but also in how students interact with each other and with instructors (Gayol, 2010). Distance students experience both a psychological and a physical distance; a phenomenon addressed further in Moore's Transactional Distance Theory below (Moore, 1973).

Theoretical Frameworks: Challenges Faced by the Online Student

This section presents three theoretical frameworks that describe challenges faced by the online student, the educator, and those institutions developing online courses. These include Moore's transactional distance learning theory, activity theory, and social learning theory. These theories suggest that a particular type of interaction may be necessary between faculty and students in a distance learning environment to establish "presence" in an environment where participants often interact asynchronously. They also suggest there may be competing agendas between developers, educators and administration or leadership at the schools. Finally, the importance of social learning to the online student is also addressed.

Transactional distance. Michael Grahame Moore, a leader in distance learning education, first published his theory: transactional distance learning in the 1970s. This theory refers to the psychological gap caused by the design of a particular curriculum (Moore, 1973). Moore proposed three crucial components to successful teaching and learning in a distance program. These are interaction (student-student, student-instructor, student-content), course structure, and learner autonomy (Moore, 1993a).

Interaction. Interaction is a way to engage the student using online technology. This can be accomplished via discussion forums, e-mail, synchronous communication, and Wikis, to name a few. The three types of interaction covered in this research are defined below.

Student-to-student interaction. Online students claim that the biggest barrier to academic success may be the feeling of isolation and lack of communication (Lee et al., 2011). Building an environment that promotes student-to-student or peer-to-peer interaction can mitigate these feelings of isolation and can build a student's sense of community (McInnerney & Roberts, 2004; Yang & Liu, 2007-2008). This can come in the form of both academic and non-academic

dialogue that occurs during team projects, student led discussions, and study groups. This type of social interaction, or co-presence, is considered an important component of a learning environment (Dede, 2005) and is critical to the success of distance programs/classes (Lee et al., 2011). Small, continuing or layered, group discussions may alleviate the feeling of isolation students experience in a distance program as well as result in more satisfaction and more successful learning outcomes (Stevens-Long & Crowell, 2010).

Student-to-student interaction can lead to more thoughtful peer dialogue in an online classroom than a traditional classroom because of two factors: asynchronous participation and the relative anonymity provided by the online classroom (Hudson, 2010). Asynchronous participation allows for uninterrupted responses that the learner can take time in forming, resulting in a more quality response than a learner may spontaneously provide in a face-to-face classroom (Hudson, 2010; Stevens-Long, 1999; Stevens-Long & Crowell, 2010). Learners may also feel more uninhibited in participation as they are in the confines of their own "safe" environment, or in the comfort of their own home, giving them the confidence to interject their own ideas into the conversation online (Hudson, 2010). Overall, this interaction is an important component in building a sense of community for the online student. This feeling of community (or lack of) can impact student satisfaction with their learning experience, thus affecting re-enrollment or dropout rates overall.

Student-instructor interaction. Student-instructor communication is another way that online classes may differ from traditional classes. According to one review of the research on learning environments, the quality of the student-instructor interaction may determine the success of teaching, thus the success of learning outcomes, in the online environment (Maor & Volet, 2007). Other research has indicated that the successful use of tools that support both

synchronous and asynchronous interaction between instructor and student is also important to successful interaction in the distance environment (Nandi et al., 2012). It is in the student-instructor interaction where expectations, as well as boundaries, are set. Students and instructors alike, work together to develop an appropriate feedback system (Nandi et al., 2012); and too little involvement on the instructor's behalf can lead to frustration and lack of motivation, or only grade-driven motivation, on behalf of the student (Ke, 2010).

Some researchers in online education suggest that the role of the educator is to guide or facilitate interaction and to allow the learner to be the architect or designer of their own learning experience, allowing for limited autonomy, and to act less as a presenter of the material. This may be referred to serving as a "guide on the side" as opposed to the "sage on the stage" (Easton, 2003) and is a concept also supported by Malcolm Knowles re-conceptualization of andragogy, or adult learning (Knowles, Holton, & Swanson, 2011, p. 339).

Student-content interaction. This third type of interaction addresses how easily the student can interact with or access the content and engage in the course materials given the course design (Moore, 1989). This includes the design and the expectation of discussion participation and overall course clarity, as well as course design.

Course structure/design. It is noted throughout this review that student-centered course design may be critical to successful learning outcomes of the distance student (Stevens-Long & Crowell, 2010). Course structure, or design, includes both the content and delivery tool as well as communication and instructor support. Beyond the geographical location of the student during the class, course objectives and assignments, the course design should address the amount, and quality, of communication and instructor support, defined further below (Lee et al., 2011). The timing of assignments and discussion due dates, as well as flexibility, are also all components of

successful course design. As the course progresses, the variety offered in instructor-learner participation will ultimately lead to a shared sense of classroom community, despite the distance and lack of participant synchronicity (Stevens-Long & Crowell, 2010).

Communication. The ideal level of communication on behalf of the instructor is a point of contention; students and instructors may have a difference of opinion on what this ideal should be. One study about online instructor roles in terms of communication, demonstrated this difference of opinion. While instructors felt it was sufficient to simply answer students' questions, while asking leading questions in the process, students felt instructors' response timing should also be fast, should provide feedback, should introduce new concepts, and should discuss solutions from different angles. In other words, students expect more in depth discussion, not just an answer to their discussion posts or questions (Mazzolini & Maddison, 2007).

Instructor support. Instructor support can be supplied by both the instructor and the technology. This type of instructional support includes instructor-student exchange, addressed above under communication, as well as the course structure or design. Each can serve to motivate and encourage students to master course materials and each are positively correlated to successful learning outcomes and perceived satisfaction (Lee et al., 2011).

The role of the instructor can also be defined as facilitator (Easton, 2003). Facilitation is the method by which instructors support students' understanding of the course content, is a key factor in student satisfaction with online learning, and is a first step in creating a student-centered learning environment (Nandi et al., 2012).

Learner autonomy. Moore's final point on successfully engaging the distance student is offering the learner autonomy. This is defined in distance learning as allowing the learner to be the architect or designer of their own experience; instructors only step in as needed to offer

support in an effort to assuage frustration (Moore, 1973). However, too much autonomy poses a threat to online learning success. Too much autonomy can demonstrate lack of instructor engagement, lacks boundaries in course design and expectations, and can actually be a de-motivator for students in a distance program (Gayol, 2010).

Activity theory. Engestrom's application of activity theory (1999) best addresses each of the components that may be present in the online education experience that when combined form an activity system.

Activity system. An activity system prescribes and defines the nature of, and participants in, the learning that can occur (Jonassen, 2010). The participants can be an entire school or college, or simply one class (electronic or otherwise). The topic of learning can be any topic at all. The system is supported by six components by which to define these participants. These components are: subjects or participants, objects, tools, rules, division of labor, and community (Jonassen, 2010).

Subjects include groups of individuals involved in the activity. Objects are the outcomes or goals as a result of learning. Tools are anything that aid the transformation or learning process and can include writing implements, books or computers. Division of labor defines the roles of the participants (teacher, student, administration, software developers). Finally, community represents all of the participants in the activity system that consistently engage with the learning (Choi & Kang, 2010) .

The activity includes the mediated learning achieved by the students. This activity is facilitated by the tools, the learning environment where education is delivered where rules are imposed and followed and where expectations are set by the educator. The computer is the tool that serves to mediate the activity of learning. In developing an online course, considering how

all participants and tools will interact is important. This interaction includes access to assignments, clear instructions, schedules for discussion posts, live-chat times, and virtual office hours of the instructor (Jonassen, 2010).

One can also use activity theory to address the tensions between several competing activity systems within one environment. Engestrom (1999) proposed the idea of multiple generation activity theory to address this phenomenon. This is described below.

Generation one activity theory. Early theorists Leont'ev (1974) and Vygotsky (1978), addressed the exchange that occurs between the subject, tools, object, and resulting outcomes, in early models of activity systems (Engestrom, 1999). Yrjo Engestrom (1999) referred to this framework as generation one activity theory. The subject represents who is involved in carrying out the activity; the object or objective is the purpose or the 'why' of the activity; the tools represent the means by which the activity is performed; and finally, the outcome represents the goals the subjects hope to achieve. Engestrom (1999) goes on to propose two more generations of activity theory and expands this original model to address four unique sub-systems: production, exchange, distribution and consumption, discussed further below.

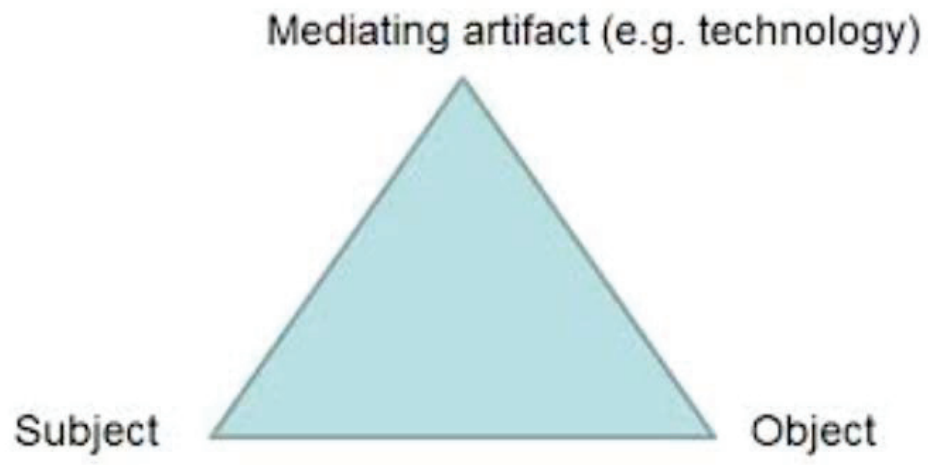

Figure 4. Generation one activity theory. From *Innovative learning work in teams in Perspectives on Activity Theory. Copyright 1999 by Cambridge University Press*. Reprinted with permission.

Generation two activity theory. This second generation suggests that the activity system has multiple voices and many points of view, traditions and interests. It provides for a division of labor amongst subjects. Different rules and traditions can be introduced, and it requires negotiation from all participants. As this type of activity system begins to develop, traditions, norms and cultures will begin to emerge (Engestrom, 1999; Jonassen, 2010).

Activity system – sub-systems. The production sub-system represents the original activity theory model of an Activity System and is addressed above in early theorists' notions of how human activity (learning) is social, not individual; the production sub-system addresses the subject, object and the tools used to create an action that affects the outcome, in other words, this sub-system as a whole, represents the intent of the activity (Engestrom, 1987; Jonassen, 2010).

The exchange sub-system dictates the communication, behavior, and cultural norms adhered to by the participants within the activity system. It is the component of the activity system that addresses explicit rules and prescribes the customs and methods of mediation that support how the community functions (Engestrom, 1987; Jonassen, 2010).

The distribution sub-system connects the activity of the system as a whole to the community by defining the division of labor. Amongst students this may be a horizontal division of labor as viewed in collaborative works; but between students and educators, and educators and administration, it is typically vertical, or top down, division of labor with educators dictating the work and student expectations, and administration setting goals and expectations of faculty (Engestrom, 1987; Jonassen, 2010).

The consumption sub-system addresses the community aspect of the activity system and explains how the participants or subjects (the community) interact to achieve the object or goal of the activity system. The consumption comes in the form of effort put forth by the subjects to affect the object (Holt & Morris, 1993; Jonassen, 2010). In applying this idea to the learning environment, the community is comprised of the educators or faculty, designers of the platform by which education is delivered, the students, and the institution's administration. It is within this community component that conflict may occur as the goals or objectives of the community members (the subjects) may pull in different directions possibly resulting in in failed outcomes or, alternatively, serving as a motivator for change. It is in this aspect Engestrom (1999) saw the need for a third generation of activity theory that allows for multiple, and conflicting, activity systems within an organizational structure.

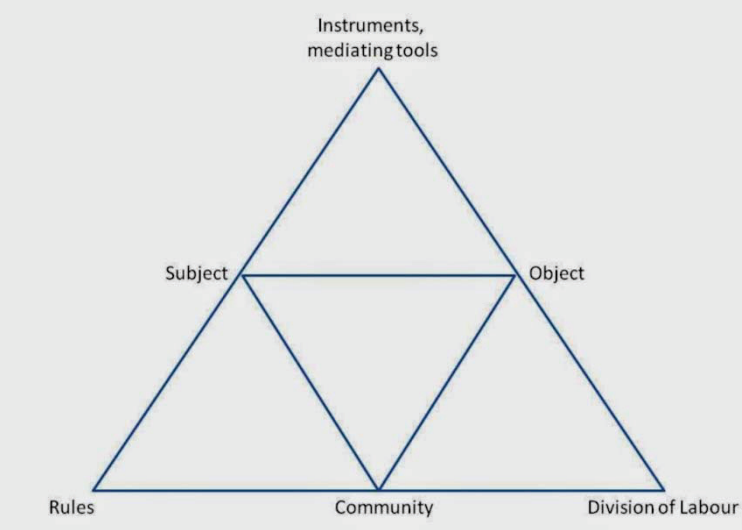

Figure 5. Generation two activity theory. From *Innovative learning work in teams in Perspectives on Activity Theory*. Copyright 1999 by Cambridge University Press. Reprinted with permission.

Generation three activity theory. Engestrom's (1999 third generation activity theory is the most applicable to the e- learning environment. It supports the notion of conflicting activity systems, each with its own agenda or objective. Engestrom (1999 notes the possibility of instability and internal tensions or contradictions created by multiple activity systems. These, however, can serve as motivators of change and development. The three activity systems present in the distance learning environment are organizational, pedagogical and technological in nature (Robertson, 2008. Attempting to classify the distance learning environment as one activity system cannot be done as multiple, and at times conflicting, outcomes are expected. Each system has its own agenda or object (objective which can result in competition among them to achieve these objectives).

Organizational activity system. Overall organizational sustainability is the objective of this activity system. This sustainability is measured by financial returns, brand reputation, and

political perspective; this latter measure dictating access to public funding in some cases (Robertson, 2008). The community or participants include the board members, senior management, administrative staff, and learning support staff. The division of labor is vertical or top down (Robertson, 2008). The rules within this activity system are dictated by legal regulations, politics, and social obligations. This system also dictates the allocation of human and financial resources for the institution overall, and thus, has a great deal of influence over both the Pedagogical and Technological activity systems (Robertson, 2008). One example of the rules dictated within this system is compensation and recognition of faculty. A 2012 study of 4,564 faculty and administrators questioned, in part, the perceived fairness of compensation with only 17% of administrators and 18% of faculty feeling compensation, and promotion, was fair for online faculty (Allen & Seaman, 2012).

Technological activity system. The objective of this activity system is to develop a sustainable delivery system that supports the educational organizational system's goals. In online learning environments, this activity system's participants are the programmers, designers, and those in management tasked with overseeing the school's return on investment and overall program sustainability. However, the quality of course delivery and ways of organizing the individual technologies for educational purposes are typically not the first to be considered by those developing the technology (Gibbs & Gosper, 2006; Robertson, 2008). The educator's voice is displaced by the software developer and the overseers of the school's revenue goals. Technological and marketplace concerns are addressed first, leaving those with educational goals (faculty) in a subordinate position. Rules for this system include systems security, reliability, and scalability. Ultimately, those who control the funding for these efforts may have

considerable influence and may override the voice of the concerned educator when addressing the design of online learning environments (Gibbs & Gosper, 2006; Robertson, 2008).

Pedagogical activity system. Participants in the pedagogical activity system include the students, the educators, counselors, librarians, and other support staff (Robertson, 2008). Their objective, or outcome, is successful learning and satisfied students. Beyond the human intellect, the teaching resources are also reliant on the software developed to deliver the curriculum; with or without the approval of the educator when it comes to development. The rules within this activity system are dictated by expected student outcomes or achievement, and these rules are established by the participants in the organizational activity system (Robertson, 2008) and, as previously noted, the developers in the technological activity system are more heavily influenced by those participants in the organizational activity system.

Overall, the organizational activity system controls the design, and to some degree, the outcomes, of both the technological and the pedagogical activity systems. However, without considering the educator's need for development in new pedagogies, such as online learning, the goal of delivering quality e-education is not sustainable (Robertson, 2008). Development beyond educator training in the technology is required (Nichols, 2007; Salmon, 2005).

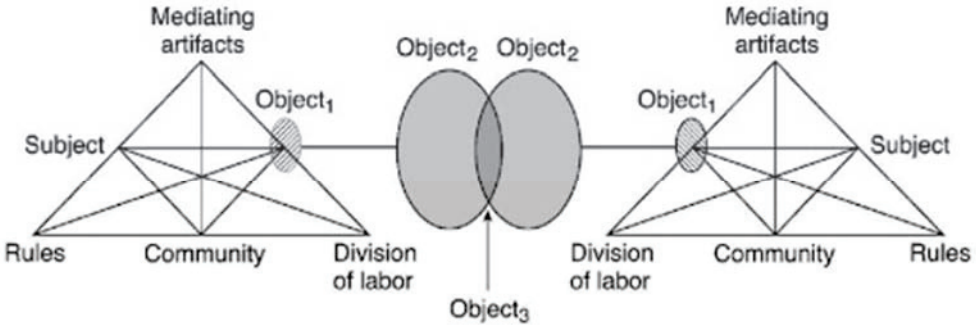

Figure 6. Generation three activity theory. From *Innovative learning work in teams in Perspectives on Activity Theory*. Copyright 1999 by Cambridge University Press. Reprinted with permission.

Social learning theory. Historically, activity theory has served as the framework through which different types of human activity, including learning, can be viewed. Early and contemporary theorists argued that conscious learning and activity are both interactive and interdependent, and that activity systems represent collective human constructions that cannot be reduced to individual actions (Russell, 1997. In other words, teaching cannot occur without students, learning cannot occur without teaching. These activity systems represent an interaction where meaning is constructed socially (Holt & Morris, 1993. This is a notion also supported by Albert Bandura's social learning theory (Bandura, 1977.

Bandura's social learning theory supports that both environmental and cognitive factors may play a role in defining how students can successfully learn online (Bandura, 1977 and that these factors each have a reciprocal impact on the other: environment (E, person (P, and behavior (B influence on the other (Figure 7:

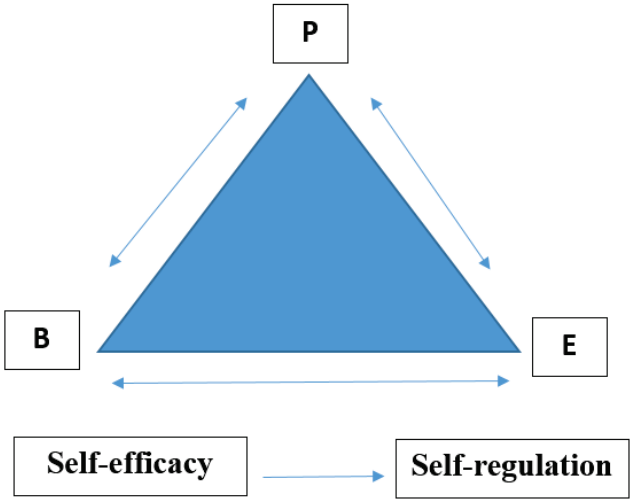

Figure 7. Social Learning Theory.

It is within the online or traditional classroom, one would see the results of reciprocal behavior in self-efficacy of the learner and where self-regulation occurs. The behavior is not only modeled (imitated) from others in the learning environment (Bandura, 1977; Kearsley, 2003), but also rewarded or punished through vicarious reinforcement or punishment. For example, grades (good or bad), serve as an external motivation to model the expected behavior.

Bandura also observed that intrinsic motivation is important to learning, e.g., internal rewards such as pride and satisfaction or sense of accomplishment equate to a positive mental state. For learning to occur, however, he notes certain criteria must be present when modeling the learning experience: the learner must be able to pay attention, retain, reproduce-but in order for all three of these elements to be present, the learner must be motivated (Bandura, 1977). Intrinsic motivation can be nurtured in an environment where exchange exists between the student and the educator/facilitator.

Social learning theory for the digital age has been coined *connectivism* and fills in the missing components of other classical learning theories as learning in the digital age requires an entirely different approach due in large part now due to electronically delivered curricula

(Downes, 2007). Two principles of connectivism relevant to this literature review are: electronic learning may reside in non-human appliances and, nurturing and maintaining connections is needed to facilitate continual learning (Siemens, 2005). Below is a complete list of the principles of connectivism (Figure 8).

- Learning and knowledge rests in diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

Figure 8. Principles of connectivism. From *Connectivism: a learning theory for the digital in International Journal of Instructional Technology and Distance Learning*. Creative Commons Copyright 2005 by Duquesne University. Reprinted with permission.

The online learning or online education experience thus consists of three components: the learner, the content/structure and the educator/facilitator. All three must be adequately present for education to take place (Gayol, 2010. Learning is a process of connection, and nurturing and maintaining these connections (Siemens, 2005.

Faculty Satisfaction with and Perception of Online Programming

In 2007 there were more than 100,000 faculty involved in online teaching in the United States (Shea, 2007. As of 2009 this number had ballooned to more than one third of all college faculty reporting they had taught at least one online class (McCarthy, 2009. Faculty are a critical

element in quality online program design. They are also essential to the success of online programs, thus, their satisfaction, is important. Faculty satisfaction is highlighted as one of the five pillars of education quality, both online and face-to-face, according to the Online Learning Consortium (Moore, 2005a). As conditions of the teaching environment evolve, faculty perceptions of, or satisfaction with, their environment also evolve (Bolliger & Wasilik, 2009). As online education is now a permanent fixture in the education world, understanding what impacts faculty satisfaction in the online environment is important. Without satisfied faculty, successfully designed, quality courses cannot be delivered. If a quality course cannot be delivered, steady growth in online education cannot be sustained (Shea, 2007).

While some research suggests that faculty perceive the quality of online courses to be as good as or better than their traditional counterparts and also observed learning outcomes are as good or better as well, (Allen & Seaman, 2009; McCarthy, 2009), other research points to faculty concern about continued online growth, belief that online courses are inferior, and very few tools exist for assessing the quality of online courses (Allen & Seaman, 2012). In one study that looked at the attitudes and practices related to online education, two surveys were conducted of 4,564 faculty representing higher education institutions. This included part-time, full-time and tenured faculty. Faculty optimism about distance learning was assessed as was their opinion on the quality of online education. Fewer than half felt online class quality was the same as traditional or face-to-face instruction (Allen & Seaman, 2012). In both the 2009 survey and the 2012 survey, 49% and 50% of faculty, despite their beliefs on quality of online courses, still recommended online courses to their students (Allen & Seaman, 2012; McCarthy, 2009).

The reports also note that 64% of faculty indicated that it takes more effort to teach an online course than it does to teach a traditional face-to-face course and more than 85%

said it takes more effort to develop an online class. Additionally, faculty expressed dissatisfaction with support services in course development and delivery, rating these aspects as below average and rating technology support as average (McCarthy, 2009).

Bolliger & Wasilik (2009) conducted a survey at a public research university that asked faculty if they thought that it was more or less difficult to motivate students in an online environment. The purpose of the question was to determine the correlation between faculty's perception of their ability to motivate and their satisfaction in teaching online. The sample consisted of 122 instructors that taught at least one course online between 2007 and 2008 and 102 (or 82%) responded. Results indicated that there was a high correlation between faculty perception of their own ability to motivate students online and their level of satisfaction with online teaching (Bolliger & Wasilik, 2009). Students that lack motivation in their online classes lack satisfaction as well, a primary reason for dropping out or not re-enrolling (Taylor et al., 2011).

Impact of faculty satisfaction on dropout rates. This next section will establish the link between student motivation and satisfaction, as well as what impact motivation and satisfaction have on dropout rates in online education. A 2011 PEW study points to a disconnection between what college presidents perceive in terms of value and satisfaction in the online class format versus students' self-perceptions of value received. While half of the college presidents surveyed felt the educational value received in both the online and traditional formats were the same, more than two thirds of students who had taken an online class felt that the online classes did not offer the same value as traditional classes, demonstrating a clear disconnection between opinions of the education provider and the student (Taylor et al., 2011). Forecasted growth in enrollment in

online classes is on the decline for the first time (Allen & Seaman, 2009; Allen & Seaman, 2013).

Online student satisfaction. Student satisfaction is one key indicator of quality in an online program (Sampson, Leonard, Ballenger, & Colemen, 2010). One definition of student satisfaction (from the student's perspective) is defined by how easily they can achieve academic success (Keller, 1987; Lo, 2010). How easily the student can achieve success may be determined by course structure or curriculum design (Sampson et al., 2010). Key components of course design include: the technology used for delivery, the educator's content knowledge, and opportunities for student-student and student-teacher interaction. Lack of educator know-how in these online delivery fundamentals can lead to student frustration, lack of motivation and eventually, higher dropout rates than those seen with traditional classes (Taylor et al., 2011). Furthermore, research suggests that not all teachers are effective at online instruction, and those that are, still need to be better trained (Bocchi et al., 2004; Stevens-Long & Crowell, 2010). Some attributes of effective online teaching and traditional instruction are parallel. For example, in both settings, the instructor would need to be a subject matter expert and should be able to engage the students' interest. However, further to these skills in an online model, an effective instructor would also be able to facilitate a collaborative learning environment and create a sense of presence online (Stevens-Long & Crowell, 2010).

An additional indicator of student satisfaction are student performance outcomes (Sampson et al., 2010). These outcomes can be measured by several factors, including grade outcomes (as a result of testing, group projects, or written assignments), as well as withdrawals and course completions, and these measures may be necessary to determine course success (Picciano, 2002).

Statistical Online Program Revenue Data and Enrollment Trends

In 2002, when the quality of online programming was significantly debated (Bocchi et al., 2004) there were an estimated 17,000 online classes and just over two million students enrolled in at least one class. This represented a $2 billion industry spread over 50% of universities and colleges in the United States (Bocchi et al., 2004). In 2011 a reported 32% of students were enrolled in at least one online class in the United States and by 2012 nearly 100% of colleges and universities offered some online programming to nearly seven million students (Allen & Seaman, 2013).

Enrollment in online courses seemingly peaked in 2009 with a lower than predicted annual growth of 21.1%. A year later this growth dwindled to 10.1% and as of 2011 was a reported 9.1% (Allen & Seaman, 2013). Institutions have cited the primary barriers to continued growth in demand for online classes are retention and re-enrollment (Allen & Seaman, 2013).

Cost to Develop and Maintain

While the cost to deliver an online class is about the same as a traditional class, the cost for development, technology and training that are required for delivering the distance education program is expensive (Bocchi et al., 2004) and is consistently identified as one barrier to overcome by learning institutions (Stevens-Long & Crowell, 2010). The cost is, for the most part, absorbed up front in technology costs (infrastructure), course design, and teacher training (Bocchi et al., 2004; Dede, 2005; University Distance Courses, 2010).

Besides keeping up with the evolving needs of current students, there are several reasons an institution may have a keen interest in investing in the development of a good distance education program. Additional revenue stream is one reason. Another reason is maintaining a

reputation for quality program offerings and high dropout rates may be an indication of poor quality in the online program (Inan, Yukselturk, & Grant, 2009).

Another reason for protecting the investment in an online program may be to maintain an established method for teaching faculty new technology as well as meeting the accreditation standards of some professional education associations as some do mention the use of technology in their program criteria (Zirkle et. al., 2006). Meeting these accreditation standards can amount to an increased (or maybe sustained) revenue stream, helping an institution remain competitive in a time when demand for these accredited online programs may begin to decrease (Taylor et al., 2011; Zirkle et al., 2006).

Even though student dropout rates in distance learning programs are twice those that are reported for traditional classes delivered in the face-to-face setting, online class demand is still high enough to encourage institutions to protect or even grow this potential revenue stream (Aron, 1999; Diaz, 2002; Frankola, 2001 as cited in S. Nonis & Fenner, H., 2011). Increased student demand for online courses and improvements in technology (for delivery) have made this an economical and practical way to increase student enrollment (Nonis & Fenner, 2011).

Best Practices and Impact on Student Retention

Student motivation. One way that student motivation can be examined is on a scale that spans from intrinsic (internal) to extrinsic (external) motivation (Ryan & Deci, 2000; Xie & Ke, 2011). The classic definition of intrinsic motivation is doing something or learning something out of sheer desire to do so (Csikszentmihalyi, 1997); the human's "natural propensity to learn", whereas extrinsic motivation is to be motivated by external factors or self-regulation (Ryan & Deci, 2000). However, intrinsic motivation is considered by some to be key to students' overall success and may be impacted by the educator, interaction or environment (Sampson et al., 2010).

One aspect of intrinsic motivation is student self-motivation. If an educator can build and support an environment that promotes student self-motivation the student will then be intrinsically motivated to engage in learning behavior (Barab & Duffy, 2000). One example of student self-motivation as an aspect of intrinsic motivation was observed in Deci's classic 1975 puzzle for pay study. The study illustrates the difference between extrinsic and intrinsic motivation. College students were split into two groups; in one group students were paid to work on a puzzle and in another group participants received no pay to work on a puzzle. While early in the time allotted, the paid group enthusiastically did their work, eventually their interest diminished. In the unpaid group, puzzlers were found to have extended interest in the puzzle play that went well into their free time, exhibiting a self-motivated interest in the goal (Benabou & Tirole, 2003; Ryan & Deci, 2000). Extrinsic motivation alone may not be successful long term in goal achievement. It may even interfere with an individual's intrinsic motivation or self-desire to accomplish (Benabou & Tirole, 2003).

In applying this in the classroom setting, it is important to understand that extrinsic motivation may lead to goal achievement but may impact the desire (self-motivation) to actually learn.

Self-motivation and distance learning. Self-motivation is a key characteristic of the successful distance learner (Gayol, 2010). Students will enter a class possessing different levels of motivation and these motivation levels impact their learning outcomes. The educator's role is to pay specific attention to the conditions that create an environment that intrinsically motivates the student. A student enrolled in an online program for the first time may experience a challenge as they are forced to become more self-reliant in the learning process.

Educators own the role of guiding the student through this change and they can do so by manipulating the design of the online activities, differing the task difficulties, adjusting the pacing of the course delivery and increasing opportunities to learn (Wang et al., 2008).

Instructional design. Current literature supports that good instructional design is a successful component of an online course since teaching online amounts to more than just re-packaging traditional course content and uploading it to a delivery system (Fish & Wickersham, 2009; Jonassen, 2010). Both constructivist and social constructivist theories can be used to support a well-designed online course.

One aspect of constructivist theory maintains that students learn by building on their previous knowledge and past experience (Land & Hannafin, 2010). Another aspect of constructivist theory supports the concept that the student is an active participant in learning and instructors scaffold and guide that experience (Freeman, 2010; Hakkarainen & Korepanova, 2009). These are ideas that are again, mirrored by adult learning theorist Malcolm Knowles (Knowles et al., 2011).

Prior to the development of constructivist theory, learning theorist John Dewey promoted reflective activity as a critical part of problem solving, and applying meaning to a learning experience (Barab & Duffy, 2000; Swan, Garrison, & Richardson, 2009). Time for reflection is an important component of instructional design for the online student (Palloff & Pratt, 2000).

Social constructivism. The basic tenets of social constructivism provide for an emphasis on collaborative learning and highlight the importance of social and cultural context and further support the idea that learning is believed to occur in, and is explained as a product of, social interaction (Moore, 1973). Community is also an aspect of social constructivism, thus integrating learners into a community is important to the process of learning (Jonassen, 1994).

The work of classic learning theorists, like Vygotsky (1978) and Bruner (1990), provided a framework that may be utilized in developing online curricula (Freeman, 2010). Lev Vygotsky posed the idea that learning cannot be separated from its social context and that collaborative learning occurs through peer to peer interaction mediated by an instructor. Jerome Bruner, influenced by Vygotsky, also cited the educator as a key component of the learning process, calling the educator the designer of learning process (Freeman, 2010).

Electronic curriculum design may need to rely upon interaction as defined by Moore (1973), Dewey (1938), Vygotsky (1978) and Bruner (1990) with the understanding that successfully addressing student-student, student-instructor, and student-content interaction will drive student motivation and lead to satisfaction for both the instructor and the student, a component of overall online curriculum delivery success.

Despite logistical distances, an online course supported with successful co-presence of both the student and the instructor can result in the same quality of education received in a traditional class (Stevens-Long & Crowell, 2010) and maintaining an engaging environment where learners can experience personal connectivity despite physical distances is essential in the successful design of online curriculum (Ackerman, 2008).

Student centered learning environments (SCLE). Instructional design, integral to the SCLE, is a field supported by cognitive learning theories that stress how individuals think and learn. Learning, as a direct result of external stimuli, concludes in a permanent change in behavior (Land & Hannafin, 2010). When the principles and procedures of good instructional design are systematically applied, a quality education is the result (Bradford, 2011). Community and social interaction between the students (peer to peer) and the instructor (student to instructor) is one principle of, and a crucial step in, successful instructional design within the SCLE

(Bielaczyc, 2006) as this interaction establishes co-presence between educator and learner (discussed further below) by creating a social and collaborative online learning environment (Easton, 2003). Community and social interaction also contribute to a well-developed community of practice (defined below).

A defined community of practice extends beyond the co-presence of the participants, however (Barab & Duffy, 2000; Lave & Wenger, 1991). It includes the activity system in which participants have a common understanding or common goals. A classroom, online or otherwise, embodies the same characteristics as a community of practice in that it is a socially agreed upon context in which students come together with the common goal of learning something. The classroom is part of something larger, a program or university or even the overall society that places value upon participation and it reproduces; after a group of students successfully passes the program, a new group comes in and the process begins anew (Barab & Duffy, 2000).

The design of a student centered learning environment (SCLE) takes many or all aspects of the activity system into consideration. Student centered learning environments (SCLE/e-Design) establish the learning goal and the object of the learning activity. The foundation of a well-designed SCLE can be built upon the principles defined in activity theory, as noted earlier (Jonassen, 2010).

Activity Theory and Student Centered Learning Environments

In an SCLE students can be presented with problems to solve contextually, usually in the form of case studies where the problems are purposely ambiguous, or not all clearly defined, allowing for the student to have more ownership, encouraging confidence, and desire to solve the problem, an idea represented as important to adult learning, promoting satisfaction and motivation (Jonassen, 2010; Keller, 2006; Knowles et al., 2011). An SCLE can serve both the

face to face and the online environment, the research simply observes that an SCLE can serve the online classroom especially well as, by design, it promotes interaction, self-motivation and student self-efficacy as students can experience success through the volition of their own work process (Keller, 2006).

Technology based curriculum. In each step of the design process, online class designers, developers and instructors can, and do, significantly impact the social infrastructure of the distance classroom with their decisions (Bielaczyc, 2006). According to Bielaczyc (2006) there are four elements of classroom social infrastructure that should be considered in successful design of a technology based curriculum. These include cultural beliefs, practices, socio-techno spatial relations and interaction (Bielaczyc, 2006). Each of these elements collectively creates an extension of e-classroom design that goes beyond the technology used to deliver the course.

The cultural beliefs dimension defines the way the classroom is shaped; it defines whether fixed knowledge is used (books) or if students are encouraged to go beyond the textbook. The next two dimensions, practices and socio-techno spatial dimension support how the online classroom takes shape.

The practices dimension refers to how students engage with their instructor or their peers. It may include boundaries set by the instructor, assignment due dates, and what types of communication are expected (chat, email, discussion posts, or occasionally the live meeting online).

The socio-techno spatial dimension refers to the classroom design. In a face-to-face classroom this would be how desks are arranged or how the room is designed, in the online classroom this is the layout of the interface. This is less determined by the instructor, more determined by the school, technology department or the software design. But the instructor

should be able to choose from the enabled tools on the interface (live discussion, virtual classroom, Wikis, discussion boards.

It is essential that faculty transitioning from traditional to online curriculum delivery understand that interactivity and interaction are different components of classroom design. Wagner (1994 argued this difference early on in the advent of online/distance programs stating that interactivity is specific to the system and methods of connection and interaction refers to a mutual influence between objects and events (Wagner, 1994. Specifically, interaction refers to how students engage with other students, their instructor, or the technology/content beyond the classroom environment (Gayol, 2010). This is foundationally supported in Moore's transactional distance theory defined earlier, specifically the points on interaction (Moore, 1989).

Presence. How to translate the existence of immediacy, or presence that an instructor experiences in a face to face class room to the online classroom environment, is one of the challenges faced by curriculum designers and instructors alike. Presence is deemed a necessary component to assuage feelings of isolation as it is indicative of an environment where high interaction can occur (Bocchi et al., 2004). Successful interaction in each of the relationships described above can establish connections between faculty and students in the distance classroom. Presence in the online learning environment is defined as having the attention of the instructor and student peers in terms of collaboration and immediacy of feedback and may be necessary for successful learning to occur (Moore & Kearsley, 1996). In a face-to-face classroom, the existence of immediacy in communication is supported by the existence of non-verbal, but visible cues (head nods, eye contact) and is considered an important component of interpersonal communication (Fontaine & Chun, 2010; Mehrabian, 1971, as cited in Stevens-Long & Crowell, 2010).

Presence in a technology mediated environment is indicated by two factors in addition to interaction/interactivity: high psychological texture and high meaningfulness (Fontaine & Chun, 2010). High psychological texture, a product of all participants, is described as what is added to the technology platform to give the classroom meaning. It is described as those elements derived from previous online communication experience, shared knowledge of the syllabus or course assignments, continued reflections and other communication (Fontaine & Chun, 2010). High meaningfulness, established by the course designer or instructor, can be achieved in a distance class by providing the ideal mixture of surprise, drama, and predictability in course content (Fontaine & Chun, 2010).

For successful online class delivery, achieving balance between all of these factors may be necessary. For students and instructors alike that are new to online learning environments, achieving this balance can present a challenge. Handling any of the different class ecologies without instructors being fully involved (present) can lead to student frustration and stress (Fontaine & Chun, 2010).

The literature supports that best practices in delivering an online, higher education course are those centered around student-educator and student-student interaction, as instructors need to build strong, sustainable relationships with their online students to effectively deliver the course (Gayol, 2010; Major, 2010; Moore, 1989; Wagner, 1994). Furthermore, research suggests that developing a face-to-face and an online class is fundamentally the same in terms of content and learning outcomes; however, the delivery and interaction methods (with the students) are different (Ko & Rossen, 2008). According to Leni Wildflower (2010), Fielding Graduate School faculty and author, the key differences between the deliveries are environment and community: the traditional classroom provides for a very instructor-centric (lecture based) focus; the online

classes need to be more social or collaborative to be successful so instructor presence may take on more significant meaning. Without this collaboration and social aspect, students can feel alone, or even abandoned (Hudson, 2010; Wildflower, 2010). In all learning environments students need to see their instructors as "real people" (Wildflower, 2010). The development of community in an online class may be a critical component for student learning. In traditional classes, a student can work separately to achieve goals successfully. However, for online classes to be truly successful, social and group work may be more necessary. To successfully achieve what amounts to a highly collaborative relationship with their online students, instructors must be properly trained in methods that will result in this outcome (Gabriel & Kaufield, 2008).

Finally, successful interaction can increase the size of the community of practice providing real world opportunities for problem solving. Adult learners tend to also be significantly motivated by this last dimension (Knowles et al., 2011).

Delivery. Online delivery encompasses method of delivery and faculty training in delivery. There are two methods of delivery: asynchronous and synchronous, with the use of some technology platform (computer, application, software, etc.) to transmit the online course and digitally store course materials.

Faculty training, for the most part, consists of training in the technology. There is a lot of research on the success of this training, on faculty technology support, and how these two factors impact faculty satisfaction; however, there is not a lot of research on faculty training in the practices described above. It, if anything, it is non-existent. Locating courses in how to deliver an online class is not difficult, but no reports on their success seem to be available.

As noted earlier in description of Organizational and Technological activity systems, faculty may have little say in what platforms are used for delivery or how they are designed as

their role lies within the Pedagogical activity system with decisions made at levels they are usually not invited to participate in. Faculty may feel educational needs should determine the use of technology, technology should not drive educational needs (Rudestam & Schoenholtz-Read, 2010).

Best practices. A lack of proven, consistently followed best practices for online education delivery may be one reason the industry is seeing a decline in forecasted growth as a result of dropouts and low re-enrollment (Allen & Seaman, 2013). One study on student retention that highlighted students' reasons for entering and dropping out of the Georgia Web MBA program, a University System of Georgia program that consists of five participant universities in Georgia, not only established the non-traditional student enrollment demographic but also found that limited faculty experience in online course delivery can be challenging to overall program success (Bocchi et al., 2004). This particular study looked at four class cycles with 123 students enrolled. These students demographically supported the description of the non-traditional student as they came to the program with an average of 11 years of business experience and an average age of 31.5. They also statistically fit the demographic profile of the non-traditional student by citing accessibility and work-life-school balance issues as a deciding factor for taking online classes. The study did note that areas of concern for professors related to the differences in level of interaction with students in their traditional classes and their online classes; specifically, feedback frequency, managing asynchronous delivery, and engaging the student using the technology. It also noted the importance of a well-delivered online program to student retention (Bocchi et al., 2004).

Instructors who only have a background in traditional classroom education and little to no training in how to deliver an online class may fall short in their teaching ability when attempting

to transition to the online setting. Interaction is often limited to discussion posts, writing assignments and low-level busy work (Solberg, 2011).

Chickering's Seven Principles of Good Practice is one framework somewhat in line with the literature. This framework does promote some aspects of interaction as a best practice, but as it was developed for the traditional classroom, it may

not be adequate to support best practices for online education today, or the evolving online education of tomorrow (Chickering & Ehrmann, 1996; Chickering & Gamson, 1987; Grandzol & Grandzol, 2010).

Balance. Educators that lack training in how to effectively use the available technology tools in an engaging way may overly rely on the use of writing assignments or busy work. The amount of writing, busy work, or low-level work expected by instructors may be a primary reason busy students withdraw from online classes. In one study of three University of Illinois cohorts (90 students), several factors were cited as primary reasons for withdrawal, including: low-level assignments, too much reading, lack of interaction with instructors and other students, de-personalized environment, and the technology overwhelming the content (Wilging & Johnson, 2009).

While the literature seems to support that high levels of interactivity is key to student satisfaction, thus, learning success (Gayol, 2010; Moore, 1989; Wagner, 1994), too much can be detrimental as one study suggests (Grandzol & Grandzol, 2010). A 2010 study points to several impactors, including online class size and overuse of discussion posts, referred to as interaction for the sake of interaction or arbitrary thresholds to meet a requirement (Grandzol & Grandzol, 2010). This study looked at one course management system used by six community colleges for a total of 349 business courses over a two-year period. Enrollment, faculty participation

(measured in responses), student participation (measured in communication and hits on the course site) and completion rates were evaluated. Both student participation and student participation were evaluated for effect on completion. The finding on arbitrary thresholds for communication, or communication for the sake of communication, on behalf of the student suggested that these requirements lead to lower completion rates (Grandzol & Grandzol, 2010).

Additional best practices include noting the importance of educator preparation and support are noted in later literature. Ongoing faculty support (possibly in the way of communities of practice), and adequate, continuous faculty training should occur through professional development opportunities. Additionally, to achieve a well-developed and successfully delivered online course, it may mean limiting faculty course load while they learn and adapt to a new pedagogy (Crawford-Ferre & Wiest, 2012; Fish & Wickersham, 2009). Faculty, without access to an effective training approach, or who find the work too time consuming or unrewarding, may be less likely to participate in online education endeavors (Crawford-Ferre & Wiest, 2012).

Despite the amount of supporting literature pointing at inadequate educator training, both educators and college leadership have leaned toward attributing student failure in the e-classroom environment to lack of student self-motivation, and while self-motivation is a driving force in the online learning environment, and by description a process owned by the student, attribution is strongly connected to motivation overall. Students may blame their failure to self-motivate on the institution or the educator (Wang et al., 2008).

Additionally, educators and institutions are blaming retention issues on the already busy lifestyle attributed to the typical online student. The research does not support this. While online students may make up a different student profile than that of the traditional student body, further

research shows online students tend to already carry a heavier course load and when questioned about reasons for dropping their online classes, outside life commitments were not listed as primary cause for dropping classes, but instead point to the extensive writing assignments and unexpected heavy course load by possibly mismanaged online classes (Solberg, 2011).

Chapter Summary

Online instruction is different than face to face instruction. And in an online class, students learn differently than they do in traditional or face-to-face classes. While online education began to emerge in the 1990s, researchers did not begin to report on the importance of understanding these differences until the mid-2000s. As a result of this understanding, a need to invest in technical infrastructure and faculty training became evident as well. Faculty training in online delivery seemingly stops at training in the technology, however; which is not enough to result in a successfully delivered online class. As a result, student satisfaction in online courses may be declining as evidenced by the low retention rates and low enrollment rates reported in 2010, 2011 and 2012. Online enrollment growth hit its peak in 2009 and growth has been on the decline since.

Maintaining a successful online course program is important to overall institution sustainability. Nearly 70% of all post-secondary institutions see online course offerings as critical to long term strategic success (Allen & Seaman, 2013). These courses provide an additional revenue stream for the school, but they also provide an option for students that may not otherwise have an opportunity to attend classes or complete their degrees. This means academic leadership may begin to focus more on what needs to be done to improve and sustain online student satisfaction.

As online students are motivated differently and have different expectations of the educator, educators may lack the training necessary to make a successful transition from face-to-face education to the online classroom. Additionally, institutions may be leaning toward blaming the students for lack of motivation, and students are attributing this lack of motivation to the course design, delivery, or skillset of the faculty.

In addressing the issue within the institution there are several competing systems, each with its own agenda. Each of these are the technological, pedagogical, and organizational systems. Faculty need to be trained in the technology and the delivery (the first two), and technology systems need to be purchased and maintained (a combination of the first and third system), and leadership needs to maintain enrollment while keeping costs down (organizational system). Activity theory, specifically a third generation of activity theory as proposed by learning theorist Engestrom (1999) is used to explain the push and pull between the competing activity systems engaged in preparing faculty for online education.

Lack of adequate training in best practices may be one reason for the decline in overall growth in online enrollment that saw ever increasing growth until 2009. Lack of faculty training in best practices may be evident to the students participating in online classes which can lead to higher dropout rates and lower re-enrollment rates. Considering the sizable investment in online program development, post-secondary schools may have an interest in preserving this offering to their students.

Chapter 3: Method

Introduction

This chapter describes the research objective, research questions, research design, construct and operational definitions, data collection procedures, subjects, and instrumentation proposed for this study. The study used quantitative methods employing a cross-sectional survey (all data collected at one time) that was administered electronically via the internet (Creswell, 2009).

Research Objective

Two factors indicate Preparedness for Online Instruction (POI): faculty must be able to use the technology, both hardware and software, to deliver their course; and they must be able to design and deliver (communicate) curricula to the distance (online) student without the aid of visual and oral cues (Distance Education: American Federation of Teachers, Guideline for Good Practice, 1998-2000). The goals of this research are to examine effects of POI training on faculty perception of their own ability when teaching online and to determine whether faculty are receiving POI training supported by best practices as described in the research (Ackerman, 2008; Bocchi et al., 2004; Fontaine & Chun, 2010; Gayol, 2010; Grandzol & Grandzol, 2010; Mazzolini & Maddison, 2007; McInnerney & Roberts, 2004; M. G. Moore, 1993a; Nandi et al., 2012; Stevens-Long & Crowell, 2010; Wagner, 1994).

Research Questions

The following research questions (restated from Chapter One) were used for this study. The first two research questions are demographic in nature to determine the characteristics of the participants (age, gender, years teaching online) and to determine what type of training has been experienced by the participants. The remaining six research questions are addressed in five

defined sections of the survey instrument that address presence, interaction, design, and ability (Figure 9). The survey instrument (27 questions) can be found in the appendix (Appendix A). The rationale for each was provided in Chapter One.

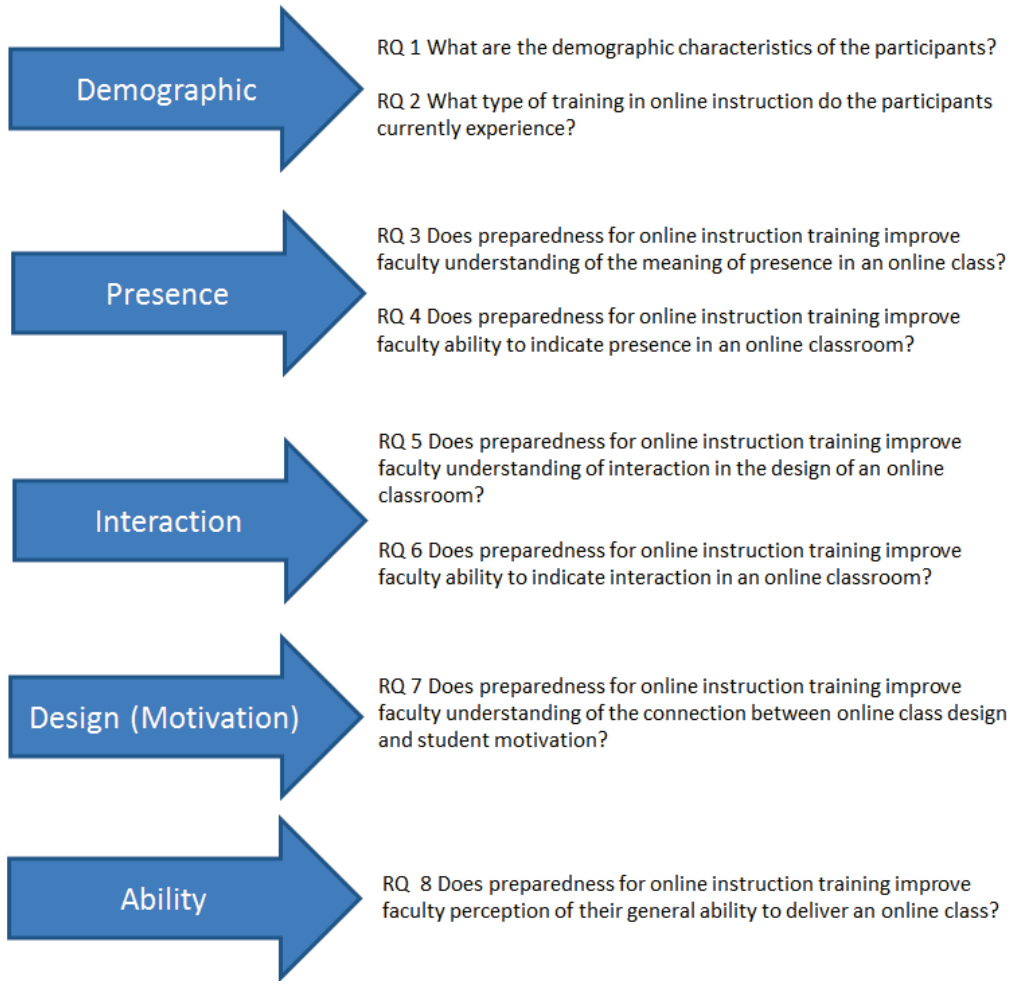

Figure 9. Research questions

Operational Definitions

Ability. Ability of faculty in this context is defined as knowing, and applying, the different skills required between delivering a face to face class versus a distance class (Lee & Busch, 2005. Faculty who deliver online courses must be both subject-matter experts and, to some degree, online teaching experts (Fernandez, 2001. One issue is that faculty must be able to

adapt to the lack of verbal and visual cues that traditional classrooms offer in real-time. Additionally, faculty must be able to adapt to the pace of online teaching as judged by their degree of interaction with their students (Sherry, 1995). Another factor faculty need to understand is how interaction with students and presence of the instructor (Moore, 1989) can translate to ability to successfully deliver an online class. In this study, perception of ability and preparedness to communicate virtually with online students were measured by responses to the last two survey questions in the self-report questionnaire (Appendix A).

Confidence. Faculty confidence can be defined as faculty perceived level of competency and anxiety, associated with delivering distance curriculum. The degree of faculty member's perceived competency may dictate how seamlessly technology is integrated into the learning environment. Higher confidence, possibly achieved through training, may impact the degree of, and speed at which adoption of distance education can occur (Osika, Johnson, & Buteau, 2009).

Design. Design, in this study, includes both the content of an online course and the method of delivery of this content (Lee et al., 2011). The delivery aspect of the course design addresses both communication (student-instructor, student- content, student-student) and instructor support (Lee et al., 2011; Mazzolini & Maddison, 2007). Specifically, design consists of the amount, and quality, of communication and instructor support and student/instructor interaction (Lee et al., 2011). Research suggests that this participation ultimately leads to a shared sense of classroom community, despite the distance and lack of participant synchronicity, and can have an impact on student motivation in the online environment (Lee et al., 2011; Stevens-Long & Crowell, 2010). In this study, instructor's knowledge of the design and delivery constructs were measured by responses to five self-report survey questions that address design and student motivation.

Online training. There is no one approach currently taken by higher education institutions to provide training for faculty transitioning to teaching online (Allen & Seaman, 2011. However, the American Federation of Teachers (AFL-CIO, for K-12 online education, has recognized several relevant areas of required proficiency for online educators to aspire to. These include becoming skilled in using the technology required to deliver curricula, becoming qualified curricula designers within this technology as well as development of skills required to effectively communicate with geographically dispersed students in the electronic environment in the absence of visual and oral cues (Distance Education: American Federation of Teachers, Guideline for Good Practice, 1998-2000). Training received by participants was measured by responses to six demographic questions on the self-report survey (Appendix A.

Impact and satisfaction. Student satisfaction impacts motivation, and is a key indicator in the student's decision to persist or dropout of a distance class (Levy, 2007. Distance courses do have a higher dropout rate than their traditional classroom counterparts. Students not satisfied with the educator or the design of the course are more likely to dropout. Factors cited that impact the decision to drop a distance class point to dissatisfaction with the course design or the educator, specifically, instructor performance and the environment, as well as course clarity (Fredericksen, Pickett, Shea, Pelz, & Swan, 2000; Lo, 2010. Faculty understanding of their impact on student satisfaction was measured by responses to five items on the self-report survey that addresses student motivation (Appendix A.

Presence. Students need to see their instructors as "real people". The traditional classroom provides for a very instructor-centric (lecture-based focus. The distance class may need to be more social or collaborative to be successful. Instructor presence may take on more significant meaning in the distance environment (Wildflower, 2010. This supports that the

development of community in an online class may be a critical component for success. Presence can be created with the use of discussion forums, e-mail and Skype. Activities, course materials, types of assignments (collaborative, group, shared presentations) and the level of communication all support the feeling of presence in an online class (Lee et al., 2011). Faculty understanding of presence was measured by responses to four items on the self-report questionnaire survey (Appendix A).

Perceived ability. Faculty perception of ability can be dictated by rate of new technology adoption. Factors, such as experience with new technology, current knowledge and skill as well as training, can impact the rate of adoption as these factors may contribute to faculty self-efficacy in delivering online courses (Zhen, Garthwait, & Pratt, 2008) . Without appropriate training or skills, some faculty may resist the use of technology for delivering their classes and administrators may need to understand the barriers caused by this lack of training on faculty perception of their own ability to deliver courses using distance technology (Cavanaugh, 2005). Additionally, faculty that deliver distance courses despite training and limited ability, may fail to successfully deliver their course in the online format, resulting in student negative perceptions of distance course quality and dissatisfaction that ultimately leads to higher dropout rates and lower re-enrollment rates (Lo, 2010; Taylor et al., 2011; Wang et al., 2008). Faculty understanding of this construct was measured by responses by two questions on the self- report survey about perceived ability to deliver an online and whether they felt prepared (Appendix A).

Research Design

A non-experimental, descriptive research design was used to collect data. A test for independence (dependence) between variables using chi square analysis was conducted where variables were both categorical and dichotomous (2 x 2 analysis). The strength of each of these

relationships, where a relationship was found to exist, was measured using the Phi Coefficient. Where variables were categorical but not dichotomous, a one-way ANOVA was performed to further test for effect.

The survey method was chosen as results can be quickly and efficiently gathered. Also, these results can describe a numeric trend or attitude of a population from which generalized claims can be made (Creswell, 2009). In order to proceed with this study, several actions relevant to the research design were taken:

- The problem was informally discussed with some online faculty to determine significance of the study.
- A review of relevant literature was conducted to determine the evolution of online education and best practices in delivery.
- A new instrument was developed to assess several areas relevant to faculty preparedness for online instruction (knowledge of best practices conveyed by the literature).
- Expert panel selection took place for instrument review (for content validation).
- A pilot study of the instrument was conducted amongst eight faculty for clarity in design (question clarity).
- Methodology for data collection was defined.
- The tools for interpreting the results were identified.

Instrumentation. The survey (Appendix A), created for this study, was designed to assess faculty understanding of best practices after having received training either in the technology alone or having received training that extended beyond the software that also included design and delivery. Faculty indication of knowledge of those components representing

the best practices for their online class design and delivery was explored. The areas considered address presence, interaction and design (impact on student motivation). The first eleven questions were demographic in nature, and were designed to eliminate participants not meeting the statistical profile of having received some degree of training (technology alone or POI) in delivering a distance class and having delivered at least one distance class at a post-secondary institution. The balance of the survey addressed the understanding, by faculty, of best practices utilized to deliver online classes.

The survey contained 27 items (two fill in the blank, six dichotomous (Y/N) questions, three multiple choice questions, and 16 scaled response questions). The survey was divided into five sections: demographics (or characteristics), presence, interaction, design (satisfaction/motivation impact), and faculty perception of ability & preparedness (Appendix A).

The demographic section contained eleven survey questions that addressed the type of online classes taught, type of institution at which the classes are being taught, type of training received, as well as gender and age. The section relating to presence included four survey questions that address both understanding of presence and ability to indicate presence in the online classroom. The section relating to interaction included five survey questions that addressed both understanding of what interaction is and the ability to indicate this in the online classroom. The section relating to online course design and its impact on student motivation includes five survey questions that address faculty understanding about the impact of online class design and its impact on motivation. Finally, the last section addressed faculty's self-perception of their own ability to design and deliver an online class and whether, as a result of their training, felt prepared to virtually communicate with their online students; two survey questions were asked (Appendix A).

Survey item selection was developed through a review of the literature that identified best practices. Three more stages were accomplished: expert panel review, as described below, a final instrument revision based on the feedback received from the expert panel, a pilot of the instrument for clarity, and any revisions suggested by the researcher's dissertation committee members were addressed.

Multiple choice, dichotomous and scaled survey question design, using a six-point scale were selected. Both multiple choice and dichotomous design were chosen because limiting answer choices helped to eliminate ambivalence in some responses; and those variables that are naturally occurring (i.e., training received in technology only requires a yes or no response) require limited checking of the data for reliability (Abo-Zena, 2010). Additionally, this survey was designed to be more efficient as it took less time to complete this type of survey than one that only uses a scaling method.

The scaling method was selected for some questions because multiple response options allow for differing degrees of opinion that can later be measured quantitatively using correlation coefficient analysis (Multon & Coleman, 2010). Scaled responses were measured from *Not Applicable (1), to Strongly Agree (6)*. However, during analysis a decision was made to collapse the scaled responses into binary "Agree/Not Agree" responses in order to conduct 2 x 2 table analysis to test for dependency between type of training and knowledge of best practices for online design and delivery.

Responses were categorized by topic and each question was identified by the broader research question category (Presence, Interaction, Design (motivation) and Ability/Confidence). During data analysis, basic descriptive analysis was employed to measure results, including frequency measures in demographic reporting to describe participants (Carr, 2010).

The survey tool. The survey was administered via Survey Monkey. The researcher used publicly available information via the internet to identify participants and contact information through the use of online school directories. Through additional research, the researcher was able to identify potential faculty participants that were first, second or third generation contacts through LinkedIn Professional and through professional membership at Online Learning Consortium, to establish a pool of participants. The survey invitation was sent via e-mail (Appendix C) using Survey Monkey but containing the academic email address of the researcher for return emails or questions.

Population. The population consisted of faculty that have taught at least one online class. However, convenience sampling was employed and the researcher accessed members of the population that were readily available (Fritz & Morgan, 2010). A cluster sample strategy was utilized. Cluster sampling is accessing a population where potential participants tend to spend time together (Salkind, 2010). In this case, virtual communities of practice where faculty gather to learn, share ideas, and network. The group, rather than the individual, becomes the data point. The community of practice utilized was the Online Learning Community (OLC) and LinkedIn. The researcher is a paid member of the OLC and LinkedIn Professional.

The OLC encourages collaboration, sharing of knowledge and effective practice to improve online education in the areas of learning effectiveness, access, affordability for learners and providers, and student and faculty satisfaction. As per the terms and conditions of the researcher's OLC membership, no content that was generated nor was any content used to create the researcher's own contact database owned by OLC; no OLC contact databases, software, or other elements were used. BOT, or other content collection software, were not used to collect information. Each contact in the researcher's database was individually researched and contact

information was identified via publicly available sources and university directories over a two-month research period.

As a member of the OLC, the researcher was able to utilize content for non-commercial use as that information is made available as part of membership/subscription (which is member name only).

The researcher's own LinkedIn professional account was used to identify first through third generation connections with OLC members. This was cross-checked with publicly available records (contact directories, school websites) to create an e-mail contact database.

The OLC describes itself as a member sustained organization that makes professional development resources available to online educators. Additionally, OLC is a grant awarding institution that supports research in best practices for online education (Online Learning Consortium, n.d.). It should be noted that OLC has not funded this research in any way and the researcher has developed a contact database independent of OLC's own contact database.

LinkedIn is a global social networking website that links millions of professionals together by finding common connections (profession, colleagues, education and other interests). OLC has established the LinkedIn account that hosts more than 6000 online education professionals and students (LinkedIn, n.d.).

The invitation sent to the final faculty database explained the purpose of the study, length of time required to take the survey, incentives for participation and included researcher contact information and link to the survey.

Sample size. The survey was made available for a period of five weeks to 2824 faculty whose contact information was collected through public sources and LinkedIn Professional. The researcher took steps to identify profiles that were marked anonymous or otherwise noted for no

contact information available. These members were, or contacts, were eliminated from the final contact database.

It was not necessary to have a large response rate, or even a proportional (to the population) response rate (Shapiro, 2008). However, descriptive statistics generally require hundreds of respondents to achieve a confidence interval of 95% (Acheson, 2010; Hu, Zhao, & Yang). A 95% confidence level with a confidence interval of five is the goal of the researcher equating to a minimum of 138 responses required (Siegle, 2014; Wyse, 2012) and the survey collection did result in 254 completed questionnaires.

Validity, Reliability and Limitations

The researcher. The researcher for this study has had both extensive POI training and holds an MA in Media Psychology, an area that has specific focus on communication in virtual environments. The researcher has addressed communication in virtual environments both from the perspective of the student and later as faculty for a 100% online degree program at Bay Path College. The researcher continues to work with students as a course evaluator for Western Governor's University, another institution that offers 100% online degree programs. Despite this experience, the researcher holds no expectations or assumptions of participants, and is aware of the need to be open and void of personal opinion regardless of knowledge and experience (Richards & Morse, 2013). In addition, while the researcher has online faculty experience, she currently is not teaching any classes online or otherwise.

Construct and content validity. Content validity was achieved in two phases: through the literature review and expert supported construct validity (Yaghmaie, 2003). Construct validity was established by using a panel of experts that are familiar with the constructs to be measured (Phelan & Wren, 2005/2006). In this study, these are Presence, Interaction, Design and

Ability/Confidence. A five-member panel reviewed the survey instrument and provided feedback for suggested changes. A form was provided via e-mail to each expert (Appendix B) and experts were given one week to respond. A letter including the nature of the study and instructions (Appendix B) asked each expert to review and match the non-demographic survey questions to a research question to assure that each survey item measured the intended construct. If the majority (four of five, or five of five) correctly aligned a survey item with a research question, the survey question was considered sufficiently clear.

The panel of experts. Experts were chosen based on their experience with online education and faculty preparedness training for online instruction (POI). Upon approval of this research study, the panel was selected and formally invited to participate. Biographies of each panel member are included in Appendix G. The selection process occurred two ways: recommendation of experts from published online learning professionals and selection of faculty trainers in online education from universities that offer extensive programming online. The invitation is included in the appendix (Appendix B).

Limitations. When developing a new survey instrument, the primary limitation is the lack of support available for establishing its psychometric properties (Duncan, 2010) . Data does not exist that supports to what degree the items presented in the instrument measure the same construct; in this case, preparedness for online instruction training. Therefore, to mitigate this limitation and establish internal consistency (reliability), in addition to the expert panel review, a second pilot was conducted to ensure clarity of the instrument, including questions and instructions. Ten faculty possessing the same attributes (or very close) as the participants in the proposed targeted study were selected to participate and eight responded (Persaud, 2010).

Bias. Two issues faced with convenience sampling are sampling bias and selection. The first of the two issues is addressed in the data analysis chapter and selection error is addresses below.

Selection. The use of the Online Learning Consortium member group allowed for a convenience sampling process, a selection process that introduces sample bias, specifically, a confounding bias. Bias is any tendency that prevents unprejudiced consideration of a question (Kovera, 2010). Confounding bias is an additional factor that may be independently associated with responses. Interest in joining a community that promotes continued learning for educators in the area of online education is one such factor, however, this factor did not influence the outcome measures of this particular study and full results are discussed in Chapter Four (Kovera, 2010).

Careful research design can minimize selection bias (Kovera, 2010). To address selection bias, the survey instrument design included specific demographic questions to identify reasons participants joined the community in an effort to identify those members that joined to improve their knowledge of online education or to fill gaps in knowledge as a result of the type, or perceived adequacy of training received at their institution. Data analysis assessed dependency on these points. An additional question was asked of participants to determine if participation in a community of practice such as OLC had an influence on the current opinion of the quality of training they received.

The result of asking these questions helped to identify distinctly different groups which may be associated with response bias (Leighton, 2013). To further manage this bias, those that identified the reasons for joining the learning community as networking, recruiting, employment or sales and marketing reasons alone, with no online teaching experience, self-eliminated and

results were excluded from the analysis. Responses that indicated participants joined the learning community to improve their skills measured for dependency and full results are discussed in Chapter Four.

Over-representation of a particular type of respondent did not pose an issue in the convenience sample as every type of post-secondary institution has membership representation in communities of practice such as OLC, including post-secondary schools that are 100% online, both public and private four year colleges that offer a combination of online and traditional classes and programs, community colleges, technical colleges, and vocational colleges. Respondents answered a demographic question about type of institution they teach online at and issues related to confounding variables are addressed in Chapter Four.

Generalizing to the population. Bias of any kind can prevent generalizable results to a larger population. It is for this specific reason the chi square test for dependence was selected as a test for dependency between variables could be conducted. Where a relationship was found to exist, both the Phi Coefficient and Fisher's Exact measure could be used to determine how strongly the variables (training type and knowledge of best practice) are related. This methodology determined dependency between variables rather than generalizability to the population. By focusing the research in this manner, sampling bias concerns with convenience sampling are less of an issue (as the end goal is not to generalize, but to determine if relationships exists between training and faculty indication of specific best practices).

To assess whether a relationship existed between training and knowledge, participants must have received some degree of training and must have taught at least one online class. Using a convenience sample from a community of practice is the most efficient way to collect this

information from that specific demographic and achieve a response rate sufficient to achieve a confidence level of 95%.

Data Collection

In the Fall of 2015, an invitation (Appendix C) to participate in the incentivized survey was sent to participants by the researcher. Contact information of the researcher was provided as well as links to the survey and an electronic consent form. Over a period of five weeks, a reminder to participate was sent twice. A final reminder was sent the day before the survey closed. A deadline for survey completion was included in all communication. Faculty who completed the electronic consent acknowledgement became participants of the study.

Table 1

Timeframe of the Research

Week	1-Dec-14	8-Oct-15	16-Oct-15	16-Oct-15	23-Oct-15	2-Nov-15	4-Jan-16
Activity	Preliminary Defense	IRB	Expert Panel Review of Instrument	Instrument Revisions, Re-review	Pilot Instrument	Survey Start	Close Survey
Status	Complete	Complete	Complete	Complete	Complete	Complete	Complete

Data Analysis

Chi-square. A chi-square test for independence was used to determine if a statistically significant relationship existed between the type of training experienced by faculty and whether they had knowledge of specific best practices related to Presence, Interaction, and Design in the online class. Additionally, the analysis was also performed to determine if faculty perception of ability or confidence was significantly dependent on the type of training received.

Phi co-efficient. The Phi co-efficient was used to determine strength of relationship between variables where a statistically significant relationship was found to exist. The Phi co-efficient measures the strength of the relationship where variables are binary.

One-way ANOVA. The Phi-coefficient measure for strength between variables could only be used where responses were both binary and categorical. Because age is a continuous variable, to determine if age had any effect on responses to type of training received, a one-way ANOVA was performed.

Kuder-Richardson 21 and Cronbach's Alpha. Kuder-Richarson 21 and Cronbach's Alpha were used to test the binary results from the expert responses. Kuder and Richardson Formula 21 tests the internal consistency of measurements with dichotomous choices. In the case of this instrument, the responses of the expert panel members were either aligned with the researcher's assigned constructs, or not. Responses aligned with the researcher's assigned constructs achieved a score of one; those responses not aligned achieved a score of zero. Cronbach's Alpha was also used to measure internal consistency between the individual survey items. Likewise, a score of one would indicate perfect consistency and a score above .70 is considered to have internal consistency (Zaiontz, 2016).

Human Subjects Consideration, Compensation, and Consent

Human subjects consideration. The researcher submitted an application for permission to the Pepperdine Graduate School of Education and Psychology Internal Review Board. Letters of permission, survey questions and cover letters, advisor approval forms and other supporting documentation can be found in Appendix D and E.

Consent. Participation in the study was voluntary. Each participant was informed about the study, and any risks, prior to agreeing to participate. Participants agreed to participate in the study via electronic acknowledgement of consent at the start of the survey.

Compensation. The email addresses of participants were voluntarily submitted and were added to a lottery for four gift cards valued at $50 each. Each participant was assigned a number (in order of survey received). Gift cards were awarded upon random selection using a random number generator called Research Randomizer found online at http://www.randomizer.org/form.htm.

Research Randomizer. Once all surveys were collected and the survey closed, the online form was completed online at randomizer.org (Figure 10). This form allowed for a data set of four (number of gift cards to be awarded). After clicking "Randomize Now", the application randomly selected four numbers (Figure 11) from the complete list of number identifiers assigned to surveys collected. The researcher matched the participants' assigned numbers to email addresses provided for this purpose and contacted the recipient within 72 hours. Gift Cards were shipped directly from purchase point at an online gift card retailer and three of the four recipients acknowledged receipt as of this writing.

Figure 10. Research Randomizer template. Copyright 2008 by Urbaniak and Plous. Reprinted with permission.

Figure 11. Research Randomizer results example. Copyright 2008 by Urbaniak and Plous. Reprinted with permission.

Risk to participants. The primary risk of harm in survey research comes from breaches in confidentiality (Singer, 2004). To mitigate this risk, all identifying information in the survey results were eliminated from the statistical analysis. Inclusion of contact information for random drawing compensation was voluntary and this information was not retained, or attached, to survey results. While research was ongoing, any hard copy identifying materials were locked in a file in the researcher's office; any digital material is currently password protected.

In gathering demographical data, minimal or no risk to participants was expected as reporting routine, or everyday information, was not expected to be distressing (Cone & Foster, 2006). Other risks included loss of time and unhappy rumination in recalling points in one's career when they were dissatisfied with job performance, or ability, and may have generated feelings of inferiority. Feelings of job frustration may have been caused as well. Each of these risks were highlighted in the consent form along with resources for assistance that primarily focus on career improvement, classes, and workshops in the area of distance education (Appendix F).

Chapter Summary

The purpose of this chapter was to describe how the research questions support the objectives, to define the population, address sampling and data collection procedures as well as validity, limitations (including bias), human subject considerations, and compensation for participation in the study. Finally, how data is stored and protected was discussed.

Chapter 4: Analysis

This chapter provides an overview of the analysis of the quantitative data collected from 254 faculty that participated in this research. The following sections were included: (a) the Goal of the research re-stated, (b) the Demographic Description of the characteristics of the faculty participants, (c) Instrument, (d) Results and Analysis, and (e) the Summary. The demographics section describes the sample size, response rate, and response categories examined. The Instrument and Analysis sections review the procedures taken to establish internal reliability of the instrument, including statistics that support inter-correlation of the survey items, as well as how each survey item aligns with each construct highlighted in the research questions. The Analysis section also includes dependency tests between each described group by training received (independent variable) and knowledge attained (dependent variable 1) and ability/confidence (dependent variable 2). The results section will include a chi-square 2 x 2 cross-tabulation analysis of dependency and a calculation of the Phi coefficient for strength of relationship between the dependent variable and independent variables. Chapter Four contains summary tables of the SPSS output results. Finally, to address confounding variables where 2 x 2 analysis could not be performed, a one-way ANOVA was conducted and results are included.

Goal of the research

The goal of the research was to determine what training, if any, faculty receive in research supported best practices in three areas: Presence, Interaction, and Design; and to examine effects of this training on preparedness for online instruction and its impact on faculty perception of their own ability and confidence in designing and delivering an online class.

Demographic Data

A convenience sample method was utilized. Data sets were collected via a web-based self-report survey. The target number of complete responses was 250 college faculty that have taught at least one online class while only 138 was the minimum to achieve 95% confidence. Online faculty are defined as faculty that have taught at least one 100% online, or one hybrid class that occurs at least 30% online (Allen & Seaman, 2013). Surveys were sent to 2824 faculty representing 900 post-secondary institutions and 254 complete responses were received for a return rate of 9%. Six responses were incomplete and eliminated from the analysis.

Participants' responses were separated into five groups. Those that responded they had received (a) some type of training for delivering an online class, (b) those that received training beyond the software that included how to design an online class, (c) those that received training in the software only, (d) those that received training beyond the software that included how to deliver an online class, and (e) those that joined a learning community to supplement their institution provided training for online delivery. This latter group of responses was included to determine bias error, if any.

A demographic element was included in the survey instrument to collect data on gender, age, years teaching online, what type of institution the participant taught online classes at, and what type of training they have received. Frequencies and percentage of participants' gender, age, years teaching online, and type of institution where online classes have been taught are reported (Table 2).

Table 2

Table Frequencies and Percentages of Participant Demographic Responses (n=254)

Response Group 1 - Some Type of Training Received (N=232)

Gender	Age Range	% Gender	% 100% Online	% Hybrid	% Public Two Year College	% Public Four Year College	% Graduate School	% Vocational or Technical School	% Private Two Year College or University	% Private Four Year College or University	% Other
Female	26-30	1%	1%	1%	2%	1%	0%	0%	0%	1%	0%
	31-35	2%	1%	1%	4%	1%	0%	0%	0%	1%	0%
	36-40	10%	9%	9%	12%	9%	7%	33%	40%	15%	11%
	41-45	9%	9%	10%	14%	8%	6%	33%	60%	14%	11%
	46-50	7%	7%	7%	8%	6%	4%	0%	0%	9%	0%
	51-55	9%	9%	9%	14%	9%	12%	11%	0%	6%	44%
	56-60	9%	9%	11%	6%	9%	10%	11%	0%	9%	11%
	61-65	9%	10%	7%	10%	9%	16%	0%	0%	3%	22%
	66-70	5%	5%	6%	0%	6%	6%	0%	0%	2%	0%
	71-75	1%	1%	1%	0%	1%	1%	0%	0%	0%	0%
	Not given	1%	1%	1%	0%	2%	2%	0%	0%	0%	0%
Total Female		**64%**	**62%**	**64%**	**70%**	**63%**	**63%**	**89%**	**100%**	**62%**	**100%**
Male	26-30	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
	31-35	2%	2%	2%	4%	2%	1%	0%	0%	0%	0%
	36-40	4%	4%	5%	2%	5%	4%	11%	0%	6%	0%
	41-45	4%	4%	4%	6%	4%	2%	0%	0%	3%	0%
	46-50	4%	4%	3%	6%	4%	4%	0%	0%	7%	0%
	51-55	4%	4%	4%	6%	3%	2%	0%	0%	6%	0%
	56-60	3%	2%	2%	0%	3%	4%	0%	0%	0%	0%
	61-65	6%	6%	7%	4%	5%	8%	0%	0%	8%	0%
	66-70	6%	7%	7%	2%	8%	6%	0%	0%	3%	0%
	71-75	1%	1%	1%	0%	1%	3%	0%	0%	2%	0%
	Not given	1%	0%	1%	0%	1%	0%	0%	0%	1%	0%
Total Male		**36%**	**38%**	**36%**	**30%**	**37%**	**37%**	**11%**	**0%**	**38%**	**0%**
N=		232	205	162	50	148	90	9	5	86	9

(continued)

Response Group 2 - Training Beyond the Software That Included Design (N=186)

Gender	Age Range	% Gender	% 100% Online	% Hybrid	% Public Two Year College	% Public Four Year College	% Graduate School	% Vocational or Technical School	% Private Two Year College or University	% Private Four Year College or University	% Other
Female	26-30	1%	1%	1%	2%	2%	0%	0%	0%	1%	0%
	31-35	2%	2%	1%	5%	2%	0%	0%	0%	1%	0%
	36-40	8%	7%	6%	7%	6%	6%	33%	50%	13%	0%
	41-45	11%	11%	11%	14%	9%	6%	33%	50%	16%	17%
	46-50	8%	8%	8%	10%	7%	6%	0%	0%	10%	0%
	51-55	9%	9%	9%	14%	10%	12%	17%	0%	6%	50%
	56-60	8%	7%	9%	2%	8%	7%	0%	0%	6%	17%
	61-65	9%	9%	7%	10%	9%	16%	0%	0%	3%	17%
	66-70	5%	5%	6%	0%	7%	6%	0%	0%	3%	0%
	71-75	1%	1%	2%	0%	2%	1%	0%	0%	0%	0%
	Not given	1%	1%	1%	0%	2%	3%	0%	0%	0%	0%
Total Female		**62%**	**61%**	**60%**	**64%**	**62%**	**62%**	**83%**	**100%**	**61%**	**100%**
Male	26-30	1%	1%	0%	0%	0%	1%	0%	0%	1%	0%
	31-35	2%	2%	2%	5%	2%	0%	0%	0%	0%	0%
	36-40	4%	4%	5%	2%	4%	4%	17%	0%	6%	0%
	41-45	4%	5%	5%	7%	5%	3%	0%	0%	3%	0%
	46-50	4%	4%	3%	7%	3%	4%	0%	0%	6%	0%
	51-55	4%	4%	5%	7%	3%	3%	0%	0%	6%	0%
	56-60	3%	2%	3%	0%	3%	4%	0%	0%	0%	0%
	61-65	6%	6%	6%	5%	4%	7%	0%	0%	7%	0%
	66-70	8%	9%	9%	2%	9%	6%	0%	0%	4%	0%
	71-75	2%	2%	2%	0%	2%	4%	0%	0%	3%	0%
	Not given	1%	1%	1%	0%	1%	0%	0%	0%	1%	0%
Total Male		**38%**	**39%**	**40%**	**36%**	**38%**	**38%**	**17%**	**0%**	**39%**	**0%**
N=		186	164	129	42	116	69	6	4	67	6

Response Group 3 - Training in the Software Only (N=75)

Gender	Age Range	% Gender	% 100% Online	% Hybrid	% Public Two Year College	% Public Four Year College	% Graduate School	% Vocational or Technical School	% Private Two Year College or University	% Private Four Year College or University	% Other
Female	26-30	3%	3%	2%	7%	2%	0%	0%	0%	3%	0%
	36-40	16%	13%	16%	27%	18%	9%	33%	0%	22%	25%
	41-45	7%	6%	5%	7%	5%	12%	33%	100%	13%	0%
	46-50	5%	6%	5%	7%	5%	0%	0%	0%	3%	0%
	51-55	9%	10%	11%	7%	9%	15%	0%	0%	6%	25%
	56-60	16%	13%	16%	27%	11%	12%	33%	0%	19%	25%
	61-65	7%	7%	5%	7%	5%	9%	0%	0%	0%	25%
	66-70	3%	3%	4%	0%	2%	3%	0%	0%	0%	0%
	Not given	1%	1%	2%	0%	2%	0%	0%	0%	0%	0%
Total Female		**67%**	**64%**	**67%**	**87%**	**60%**	**61%**	**100%**	**100%**	**66%**	**100%**
Male	31-35	1%	1%	0%	0%	2%	3%	0%	0%	0%	0%
	36-40	4%	4%	5%	0%	4%	6%	0%	0%	6%	0%
	41-45	3%	3%	2%	0%	2%	3%	0%	0%	3%	0%
	46-50	7%	7%	5%	7%	9%	9%	0%	0%	13%	0%
	51-55	5%	6%	5%	7%	7%	6%	0%	0%	0%	0%
	56-60	1%	0%	2%	0%	2%	0%	0%	0%	0%	0%
	61-65	5%	6%	7%	0%	7%	6%	0%	0%	6%	0%
	66-70	5%	6%	4%	0%	5%	3%	0%	0%	3%	0%
	71-75	1%	1%	2%	0%	2%	3%	0%	0%	3%	0%
Total Male		**33%**	**36%**	**33%**	**13%**	**40%**	**39%**	**0%**	**0%**	**34%**	**0%**
N=		75	67	55	15	55	33	3	2	32	4

(continued)

Response Group 4 - Training Beyond the Software that Included How to Deliver an Online Class (N=184)

Gender	Age Range	% Gender	% 100% Online	% Hybrid	% Public Two Year College	% Public Four Year College	% Graduate School	% Vocational or Technical School	% Private Two Year College or University	% Private Four Year College or University	% Other
Female	26-30	1%	1%	1%	3%	2%	0%	0%	0%	1%	0%
	31-35	2%	2%	1%	5%	2%	0%	0%	0%	1%	0%
	36-40	8%	7%	6%	8%	7%	4%	50%	50%	16%	13%
	41-45	10%	10%	11%	13%	10%	3%	17%	50%	16%	13%
	46-50	7%	7%	8%	8%	6%	6%	0%	0%	9%	0%
	51-55	9%	8%	8%	15%	9%	12%	17%	0%	4%	50%
	56-60	8%	8%	10%	3%	8%	7%	0%	0%	7%	13%
	61-65	10%	11%	7%	10%	10%	19%	0%	0%	3%	13%
	66-70	5%	4%	6%	0%	6%	4%	0%	0%	3%	0%
	71-75	1%	1%	1%	0%	1%	1%	0%	0%	0%	0%
	Not given	2%	2%	2%	0%	3%	3%	0%	0%	0%	0%
Total Female		**62%**	**60%**	**60%**	**63%**	**63%**	**61%**	**83%**	**100%**	**61%**	**100%**
Male	26-30	1%	1%	0%	0%	0%	1%	0%	0%	1%	0%
	31-35	2%	2%	2%	5%	2%	0%	0%	0%	0%	0%
	36-40	5%	4%	6%	3%	5%	6%	17%	0%	6%	0%
	41-45	5%	6%	5%	8%	5%	3%	0%	0%	4%	0%
	46-50	3%	4%	2%	8%	3%	3%	0%	0%	6%	0%
	51-55	4%	4%	4%	8%	3%	1%	0%	0%	7%	0%
	56-60	3%	2%	3%	0%	3%	4%	0%	0%	0%	0%
	61-65	7%	7%	7%	5%	5%	9%	0%	0%	9%	0%
	66-70	8%	9%	9%	3%	10%	7%	0%	0%	4%	0%
	71-75	1%	1%	1%	0%	1%	3%	0%	0%	1%	0%
	Not given	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%
Total Male		**38%**	**40%**	**40%**	**38%**	**37%**	**39%**	**17%**	**0%**	**39%**	**0%**
N=		**184**	**161**	**125**	**40**	**115**	**67**	**6**	**4**	**69**	**8**

Response Group 5 - Sought Supplemental Training Through Other Means Such as an Online Community of Practice (N=129)

Gender	Age Range	% Gender	% 100% Online	% Hybrid	% Public Two Year College	% Public Four Year College	% Graduate School	% Vocational or Technical School	% Private Two Year College or University	% Private Four Year College or University	% Other
Female	26-30	1%	1%	0%	0%	1%	0%	0%	0%	0%	0%
	31-35	1%	1%	0%	0%	1%	0%	0%	0%	0%	0%
	36-40	10%	9%	10%	17%	9%	9%	38%	50%	18%	14%
	41-45	11%	10%	12%	10%	8%	4%	13%	50%	16%	14%
	46-50	7%	7%	8%	3%	7%	6%	0%	0%	7%	0%
	51-55	11%	11%	10%	17%	12%	17%	13%	0%	7%	43%
	56-60	9%	9%	12%	7%	8%	9%	13%	0%	9%	14%
	61-65	9%	10%	7%	13%	7%	17%	0%	0%	5%	14%
	66-70	4%	3%	5%	0%	5%	2%	0%	0%	2%	0%
	71-75	1%	1%	1%	0%	1%	0%	0%	0%	0%	0%
	Not given	2%	2%	1%	0%	3%	4%	0%	0%	0%	0%
Total Female		**65%**	**64%**	**66%**	**67%**	**63%**	**68%**	**75%**	**100%**	**65%**	**100%**
Male	31-35	2%	2%	2%	7%	1%	0%	0%	0%	0%	0%
	36-40	5%	6%	7%	3%	7%	9%	13%	0%	7%	0%
	41-45	5%	6%	3%	10%	4%	2%	0%	0%	5%	0%
	46-50	4%	5%	3%	3%	4%	4%	0%	0%	7%	0%
	51-55	4%	4%	2%	3%	4%	0%	0%	0%	4%	0%
	56-60	5%	5%	6%	3%	7%	9%	13%	0%	2%	0%
	61-65	5%	6%	6%	3%	5%	6%	0%	0%	5%	0%
	66-70	2%	3%	3%	0%	3%	0%	0%	0%	2%	0%
	71-75	1%	1%	1%	0%	1%	2%	0%	0%	0%	0%
	Not given	2%	1%	1%	0%	1%	0%	0%	0%	2%	0%
Total Male		**35%**	**36%**	**34%**	**33%**	**37%**	**32%**	**25%**	**0%**	**35%**	**0%**
N=		**129**	**109**	**100**	**30**	**75**	**47**	**8**	**4**	**55**	**7**

Results of survey responses were examined in relation to each of the following research questions categorized into five areas: Demographics, Presence, Interaction, Design, and Ability/Confidence. The table below aligns instrument items with each of the research questions (Table 3). The research questions restated from Chapter Three are:

- RQ1: What are the demographic characteristics of the participants?
- RQ2: What type of online training do the participants in the study currently experience?
- RQ3: Does Preparedness for Online Instruction (POI) training improve faculty understanding of the meaning of presence in an online or distance class?
- RQ 4: Does POI training improve faculty ability to indicate presence in an online classroom? RQ5: Does POI training improve faculty understanding of the meaning of 'interaction' in the design of an online class?
- RQ6: Does POI training improve faculty ability to indicate interaction in an online classroom? RQ7: Does the POI training received improve understanding of the role online course design plays in student motivation?
- RQ8: Does the POI training improve faculty perception of their general ability to deliver an online course?

Part one of the survey consisted of demographic questions, 11 of which are described above; part two of the survey consisted of 16 scaled response questions related to four constructs (Presence, Interaction, Design and Ability/Confidence; Table 3).

Table 3

Item alignment for Research Questions

Research Question and Construct	Item Number in Instrument
Research Question 1 and 2	
Demographics	#3, 4 ,5, 6,7, 8, 9, 10, 11, 12, 13, 14, 15
Research Question 3 and 4	
Presence	#15, 16, 17, 18
Research Question 5 and 6	
Interaction	#19, 20, 21, 22, 23
Research Question 7	
Design	#24, 25, 26, 27, 28
Research Question 8	
Ability (Confidence in Ability)	#29, 30

For the second section of the survey, a Likert-type scaled survey instrument was developed and piloted to examine what specific training faculty had received in the research supported best practices reviewed in Chapter Two, and whether faculty felt confident or able to deliver an online class as a result of this training. The Likert-type questions were measured on a seven point and six-point rating scale ranked from Strongly Agree, Somewhat Agree, Agree, Neutral, Somewhat Disagree, Disagree, and Strongly Disagree, with the six point scaled questions eliminating the neutral response; however, for the 2 x 2 dependency analysis, responses were collapsed into binary scaled responses: agree or disagree; and a score of (1) and (0) were assigned respectively. This was determined to be the most efficient way to address multiple scale instrument items by providing broad comparisons between types of training

received (Groups) and knowledge of online teaching best practices using tests for dependency (Chi-Square) and strength of relationship (Phi Coefficient).

The scaled questions examined what type of training in online teaching faculty experienced and whether this training resulted in knowledge or understanding of the research supported best practices (Table 4). Two additional questions were asked that assessed faculty attitude toward their training and whether they felt confident or able to design and deliver an online class after their institution provided training.

Table 4

Items Studied within Presence, Interaction, Design, Ability/Confidence

Presence	Interaction	Design	Ability/Confidence
Student: feelings of isolation	Understand definition of interaction	Ease of interaction in the following ways: *Student: Content Student: Instructor Student: Student*	Prepared to virtually communicate after training
Communication frequency	Concept of virtual interaction	Varying the course design (methods/tools)	Able to deliver an online course after training
Instructor participation (beyond grading/posting)	Interaction beyond discussion posts and grading	Introducing surprises into the curriculum	
Issues related to feelings of isolation	Different types of interaction		
	Frequency of Interaction		

Instrumentation

The survey consisted of 27 questions. The population of the study was all faculty who had taught at least one online course either 100% online or a hybrid course taught more than 30% online. It is estimated that there are 1.5 million college educators in the United States

(National Center for Education Statistics) and that one third of all college faculty teach online making the population for this study approximately 455,000 faculty (Seaman, 2009).

A convenience sampling method was used to select participants through professional membership organizations of which the researcher is a member. Using both the Online Consortium LinkedIn web page (http://onlinelearningconsortium.org) and first through third generation connections via LinkedIn Professional (https://www.linkedin.com/) a database of participants was built. Upon identifying connections that wished to remain anonymous, as well as duplicate accounts (same member, faculty positions held at multiple institutions) a database of 2824 faculty was developed. An invitation and informed consent was emailed to the database (Appendix C). The informed consent advised participants of the content of the study, the risks, and the incentive offered.

The researcher utilized data collected from a self-report, web-based survey that was conducted over a five-week period. The instrument examined four constructs: presence, interaction, design, and ability/confidence.

Validity

Several steps were taken to establish validity. First, content validity was established during the development of Chapter Two and the literature review. Next, an expert panel was assembled to assess whether the instrument measured the four constructs highlighted and a pilot of the instrument was then conducted for clarity and ease of use. Face validity was established through operationalization of terms used in survey questions, and finally, the survey instrument reliability was assessed through response data analysis.

Expert panel. An expert panel was assembled by the researcher through professional referrals beginning with published experts in the field. Five experts were assembled. The expert

panel assessed whether each instrument item in the Likert-scale aspect of the survey measured the assigned construct. Panel members were sent the instrument, asked to review each question and select from the list of constructs the one they felt best supported the question asked (Appendix B). A binary measure was used to calculate expert response data. Responses that indicated agreement between the researcher and the expert were assigned a value of one. Those that were not aligned were assigned a value of zero. If four or more experts agreed on the construct, the survey instrument item remained unchanged. If less than four experts agreed, the instrument item would be revised. This process resulted in modest modification of one instrument item as two experts found the question to measure one construct. Each of the remaining three selected a different construct. This resulted in the re-wording of the question and a subsequent request of the expert panel to reconsider the modified question wording and re-assign the construct. The result was four experts agreeing on a single construct, one remained unchanged.

Analysis of expert panel results. The Kuder Richardson Formula 21 and Cronbach's Alpha were used to test the binary results from the expert responses. Kuder and Richardson Formula 21 tests the internal consistency of measurements with dichotomous choices. In the case of this instrument, the responses of the expert panel members were either aligned with the researcher's assigned constructs, or not. Responses aligned with the researcher's assigned constructs achieved a score of one; those responses not aligned achieved a score of zero. Cronbach's Alpha was utilized as well with no significant difference in the resulting alpha score (Table 5). Both resulted in a reliability alpha coefficient of .80. Results typically measure between zero and one, with anything above .70 considered reliable; items measuring closer to 1 on the scale are more internally consistent (Zaiontz, 2016).

Pilot. Ten online faculty were invited to participate in a pilot of the study to further establish instrument reliability. Eight faculty responded. Each have a professional relationship with the researcher. Faculty were asked to respond to the survey and make any additional comments or ask questions for clarification on each of the instrument items. The web-based survey instrument was found to have two minor technical flaws that involved adding a page break and adding a radio button to exit out of the survey if the participant answered NO to certain questions. No questions were modified and no other changes were made to the instrument based on feedback provided by the eight faculty responders.

Face validity. Face validity of the instrument was also established as the operationalized key term from each construct was utilized in many of the questions. Face validity is said to occur when the operationalization appears to measure the construct to which it refers. For example, the operationalized term *Interaction* was used in the five instrument items addressing that particular construct. These questions, on their face, appear to measure Interaction.

Instrument reliability. Cronbach's Alpha was used to measure for internal consistency of the Likert-Scaled Items and the dichotomous (Yes/No) questions related to type of training received. Scaled items were first collapsed into two scores: Strongly Agree, Agree, and Somewhat Agree received a score of one; Neither Agree - Nor Disagree, Somewhat Disagree, Disagree, and Strongly Disagree received a score of zero. The dichotomous survey items related to the type of training received were assigned a score of one for all Yes responses (indicating they had received a specific training type), and a score of zero for all No responses (that they had not received the specific training type). Survey questions were first grouped by construct measured (Training, Presence, Interaction, Design, and Confidence/Ability) and alpha scores were calculated. Sets to measure the individual constructs were arranged as follows: Training

(#9, 10, 12) Presence (#15-18), Interaction (#19-23), Design (#24-28), and Confidence/Ability (#29-30). The alpha was calculated for each. Summarized results and tables are below (Tables 5 and 6).

The dichotomous items (Yes/No on type of training received) achieved a score of .79 and the items addressing the individual constructs (Presence, Interaction, Design, Ability/Confidence) achieved scores as follows: Presence .87, Interaction .89, Design .87, and Confidence/Ability .89 indicating good internal consistency within each construct (Table 5). A combined measure of consistency was also calculated and a score of .95 was achieved indicating the constructs were internally consistent across all instrument items.

Table 5

Individual Constructs-Internal Consistency Measures

Survey Question #	#9, 10, 12	#15-18	#19-23	#24-28	#29-30
Construct	*Training*	*Presence*	*Interaction*	*Design/ Motivation*	*Confidence/ Ability*
Mean	2.370079	2.649606	3.385827	2.783465	1.606299
Standard Deviation	0.998449	1.577168	1.946316	1.935058	0.754592
Alpha	0.78559	0.86669	0.88999	0.87079	0.89035
Standard Error Margin	0.462326	0.57584	0.645549	0.695576	0.249868
Number of Items	3	4	5	5	2

Table 6

Cronbach's Alpha – Internal Consistency All Constructs (Survey Items #9 – 30, excluding # 11).

Survey Question #	#9-30
Construct	*Combined*
Mean	12.8
Standard Deviation	6.2
Alpha	0.9489
Number of Items	19

Confounding Variables

Research Question One examined the demographic nature of the participants including age, gender, years teaching online, whether participants teach (or have taught) 100% online or hybrid classes, and type of institution they currently teach online at, or have taught at in the past.

To determine whether responses to these questions presented confounding variables, a chi-square test for independence was conducted where both categorical and dichotomous variables were used (with binary results). If a statistically significant relationship ($p < .05$) was found, the Phi Coefficient measure was also calculated to determine the strength of the relationship (Vogt, 2005). The strength of the relationship, or association, is measured on a scale from negligible (< .00) to very strong (.80 to 1.00) (Cohen, 1988,1994; Rea & Parker, 1992; Table 7). Where variables were not both categorical and dichotomous (Age responses), the Phi

Coefficient could not be used to test the strength of the relationship and a one-way ANOVA was performed to further test for effect where a relationship existed. Results are summarized and discussed below (Table 8).

Table 7

Conventions for describing the magnitude of effect in 2 x 2 contingency tables

.00 and under .10	Negligible association
.10 and under .20	Weak association
.20 and under .40	Moderate association
.40 and under .60	Relatively strong association
.60 and under .80	Strong association
.80 to 1.00	Very strong association

Table 8

Summarized results of confounding variable analysis (N=254)

	Confounding Variables									
	Response Group One Some Type of Training		Response Group Two Software & How to Design		Response Group Three Software Only		Response Group Four Software & How to Deliver		Response Group Five Supplemental Training	
	Chi Square (Sig.)	*Phi*	*Chi Square (Sig.)*	*Phi*	*Chi Square (Sig.)*	*Phi*	*Chi Square (Sig.)*	*Phi*	*Chi Square (Sig.)*	*Phi*
Demographics										
Gender	0.368	N/A[a]	0.577	N/A[a]	0.482	N/A[a]	0.443	N/A[a]	0.561	N/A[a]
Age	0.838	N/A[a]	0.514	N/A[a]	0.860	N/A[a]	0.670	N/A[a]	0.031	N/A[b]
Type of Institution										
Public Two Year College	0.113	N/A[a]	0.126	N/A[a]	0.102	N/A[a]	0.024	0.171[c]	0.270	N/A[a]
Public Four Year College	0.117	N/A[a]	0.089	N/A[a]	0.126	N/A[a]	0.126	N/A[a]	0.479	N/A[a]
Graduate School	0.082	N/A[a]	0.393	N/A[a]	0.526	N/A[a]	0.633	N/A[a]	0.857	N/A[a]
Vocational School	0.893	N/A[a]	0.346	N/A[a]	0.792	N/A[a]	0.892	N/A[a]	0.990	N/A[a]
Private Two Year College	0.738	N/A[a]	0.323	N/A[a]	0.757	N/A[a]	0.344	N/A[a]	0.645	N/A[a]
Private Four Year College	0.142	N/A[a]	0.148	N/A[a]	0.052	N/A[a]	0.147	N/A[a]	0.935	N/A[a]
Type of Online Class										
Taught/Teach Hybrid	0.328	N/A[a]	0.107	N/A[a]	0.292	N/A[a]	0.165	N/A[a]	0.648	N/A[a]
Taught/Teach 100% Online	0.082	N/A[a]	0.125	N/A[a]	0.116	N/A[a]	0.093	N/A[a]	0.982	N/A[a]
Years Teaching Online[d]	0.632	N/A[a]	0.947	N/A[a]	0.951	N/A[a]	0.950	N/A[a]	0.490	N/A[a]

a. Chi Square >.05 no relationship to measure for strength

b. ANOVA used to re-test for effect of age on seeking out Supplemental training; no effect found p=.170

c. Relationship found (p=.024) between 2 year public institution faculty and seeking supplemental training; weak (.171)

d. Years teaching online ranged from <1 to 23 years

Age. No significant relationship was found between participants that had received some type of training, training that included design, training in software only, and training that included how to deliver an online class, and the age of the participant ($p > .51$). However, the chi-square test for independence indicated a statistically significant relationship between having received supplemental training and age ($p = .03$). Because both variables were not dichotomous, the Phi coefficient measurement for strength could not be used. However, a separate analysis of variance (ANOVA) was performed to compare the effect age may have had on faculty responses to the survey question relating to having sought supplemental training. This analysis showed that the effect of age was not significant ($p = .170$; Table 9).

Table 9

Effect of Age on Response to Supplemental Training

Tests of Between-Subjects Effects

Dependent Variable: Supplemental

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	13.067[a]	44	.297	1.231	.170
Intercept	35.303	1	35.303	146.345	.000
Age	13.067	44	.297	1.231	.170
Error	50.417	209	.241		
Total	129.000	254			
Corrected Total	63.484	253			

a. R Squared = .206 (Adjusted R Squared = .039)

Gender. No significant statistical relationship was found between the type of training faculty reported they experienced and their gender ($p > .05$).

Years of experience. No significant statistical relationship was found between the type of training faculty reported they experienced and number of years teaching online, whether they

teach 100% online or hybrid classes, and the type of institution they currently teach at (or have taught at; $p > .05$).

Institution type. Participants were asked to report whether they taught in a Public Two, a Public Four Year University, Graduate School, Vocational School, Private Two Year Institution, Private Four Year University. No significant relationship ($p > .05$) was found between participants' institution type and type of training received with the exception of the private two-year institution *(*$p = .024$ for training in how to deliver an online class). However, the strength of this relationship was measured using the Phi Coefficient and it was found to be weak (.171).

Class type (100% online/hybrid). Participants were asked to report whether they taught 100% online classes or if they taught hybrid classes. No significant relationship was found between type of training reported and type of classes faculty currently teach or have taught at (p =. 08).

Analysis Procedure

Of the 260 responses received, six responses were incomplete. To achieve a 95% Confidence Level and 5% Margin of Error, a minimum of 138 responses were required and 250 responses was the target amount of responses; 254 complete responses were received, thus a 1.1% Margin of Error was achieved. Data was analyzed from 254 responses using the Data Analysis Tool Pak add-in in Excel for correlation and reliability scores of the Expert Panel results and the Instrument itself. IBM's SPSS Statistical Analysis Software was used for the chi-square cross-tabulation dependency tests to determine dependency between the dependent (training) and independent variables (knowledge of/confidence or ability in design and delivery of online classes. Fisher's Exact test was also used to determine whether a relationship existed. Finally, the Phi coefficient was measured to determine strength of relationship or effect of

training on the responses to the knowledge questions, if a relationship was found to exist. The Phi coefficient is generally used to estimate the magnitude of association in 2 x 2 contingency tables and used to calculate two nominal, dichotomous variables that have been coded either 0 or 1, as is the case with this analysis.

Data Analysis

Research Question Two addressed the type of training in online instruction the participants currently experience. Survey responses were divided into five groups: Group One having received some type of training in online class delivery, Group Two having received training beyond the software, including design, Group Three having only received training in the software, Group Four having received training in how to deliver an online class, and Group Five having sought training outside of their institution by participating in a learning community such as Online Learning Consortium (Table 10). The balance of the instrument assessed whether the participants had specific knowledge or understanding as a result of their training, in the research supported best practices for online teaching including Presence (Research Question 3 and 4), Interaction (Research Question 5 and 6), Design (Research Question 7) and whether training received resulted in a positive faculty perception of confidence/ability (Research Question 8). Results are summarized (Table 11) and discussed below.

Table 10

Frequencies and Percentages of Participant Responses to Type of Training Received

Response Group Number	Variable (Training Type)	Yes	%	No	%	Total Responses
Group 1	Some type of training	232	*91%*	22	*9%*	254
Group 2	Beyond the software/How to Design	186	*73%*	68	*27%*	254
Group 3	Training/Software Only	75	*30%*	179	*70%*	254
Group 4	Beyond the software/How to deliver	184	*72%*	70	*28%*	254
Group 5	Supplemental Training	129	*51%*	125	*49%*	254
Total Participants						254

Table 11

Summarized results by response group

Knowledge of Best Practices as a Result of Training Type

	Response Group One: Some Type of Training					Response Group Two: Software & How to Design					Response Group Three: Software Only[a]					Response Group Four: Software & How to Deliver					Response Group Five: Supplemental Training[b]				
N (Responses)	*232*					*186*					*75*					*184*					*129*				
Knowledge of Best Practices	*Yes*	*No*	*Chi Square (Sig.)*		*Phi*	*Yes*	*No*	*Chi Square (Sig.)*		*Phi*	*Yes*	*No*	*Chi Square (Sig.)*		*Phi*	*Yes*	*No*	*Chi Square (Sig.)*		*Phi*	*Yes*	*No*	*Chi Square (Sig.)*		*Phi*
Presence																									
Isolation	68.5%	31.5%	0.000		0.347	74.7%	25.3%	0.000		0.389	38.7%	61.3%	0.000		-0.332	76.1%	23.9%	0.000		0.427	69.8%	30.2%	0.032		0.135
Communication Frequency	74.1%	25.9%	0.000		0.394	81.2%	18.8%	0.000		0.451	44.0%	56.0%	0.000		-0.341	82.1%	17.9%	0.000		0.473	73.6%	26.4%	0.073		N/A
Faculty Participation	82.3%	17.7%	0.000		0.399	89.8%	10.2%	0.000		0.497	57.3%	42.7%	0.000		-0.306	89.7%	10.3%	0.000		0.483	82.2%	17.8%	0.054		N/A
Issues Related to Feelings of Isolation	59.5%	40.5%	0.000		0.234	67.2%	32.8%	0.000		0.376	37.3%	62.7%	0.000		-0.242	66.8%	33.2%	0.000		0.357	63.6%	36.4%	0.012		0.157
Interaction																									
Defining Interaction	72.4%	27.6%	0.000		0.326	81.2%	18.8%	0.000		0.476	46.7%	53.3%	0.000		-0.291	80.4%	19.6%	0.000		0.441	71.3%	28.7%	0.212		N/A
Understanding the Concept of Virtual Interaction	68.5%	31.5%	0.000		0.295	74.2%	25.8%	0.000		0.346	49.3%	50.7%	0.001		-0.200	75.0%	25.0%	0.000		0.366	72.1%	27.9%	0.007		0.168
Interaction Occurs Beyond Disc. Posts and Grading	71.6%	28.4%	0.000		0.293	80.1%	19.9%	0.000		0.451	44.0%	56.0%	0.000		-0.322	79.3%	20.7%	0.000		0.416	74.4%	25.6%	0.014		0.154
Different Types of Interaction	75.0%	25.0%	0.000		0.376	80.1%	19.9%	0.000		0.375	50.7%	49.3%	0.000		-0.268	80.4%	19.6%	0.000		0.379	74.4%	25.6%	0.095		N/A
Frequency of Interaction	74.6%	25.4%	0.000		0.345	81.7%	18.3%	0.000		0.433	46.7%	53.3%	0.000		-0.324	81.5%	18.5%	0.000		0.418	74.4%	25.6%	0.095		N/A
Design																									
Varying Methods/Course Content of Delivery	70.3%	29.7%	0.000		0.386	80.1%	19.9%	0.000		0.537	37.3%	62.7%	0.000		-0.369	78.3%	21.7%	0.000		0.464	71.3%	28.7%	0.022		0.143
Ease of Student to Student Communication	64.7%	35.3%	0.000		0.319	73.1%	26.9%	0.000		0.448	37.3%	62.7%	0.000		-0.297	72.3%	27.7%	0.000		0.411	64.6%	35.7%	0.137		N/A
Ease of Accessing Course Content	70.3%	29.7%	0.000		0.361	76.3%	23.7%	0.000		0.395	48.0%	52.0%	0.000		-0.230	76.6%	23.4%	0.000		0.397	69.0%	31.0%	0.171		N/A
Varying Communication/Introducing Surprises	30.6%	69.4%	0.002		0.192	37.1%	62.9%	0.000		0.337	16.0%	84.0%	0.006		-0.172	34.8%	65.2%	0.000		0.247	29.5%	70.5%	0.587		N/A
Ease of Student to Instructor Communication	65.9%	34.1%	0.000		0.328	73.7%	26.3%	0.000		0.428	40.0%	60.0%	0.000		-0.279	72.3%	27.7%	0.000		0.374	62.8%	37.2%	0.557		N/A
Ability/Confidence[c]																									
Prepared to Communicate Virtually w/Students	83.6%	16.4%	0.000		0.359	89.2%	10.8%	0.000		0.412	60.0%	40.0%	0.000		-0.305	89.1%	10.9%	0.000		0.399	81.4%	18.6%	0.368		N/A
Feel Confident in Ability to Deliver an Online Class	85.8%	14.2%	0.000		0.358	89.8%	10.2%	0.000		0.353	68.0%	32.0%	0.000		-0.225	90.2%	9.8%	0.000		0.364	82.9%	17.1%	0.546		N/A

a. Half or more did not demonstrate knowledge of best practices as a result of being trained in the software alone; yet more than half of those trained in the software alone still felt prepared and confident.

b. Supplemental Training Sought: N/A means no relationship exists; where a slight relationship was found in this group of responses, the relationship was weak (<.20).

c. Preparedness, Ability and Confidence were more likely to be demonstrated as a result of any type of training; however, those trained in design and delivery are more likely to feel prepared and confident in ability.

Group one: some type of training for online delivery was received. For RQ3 through RQ8, both a chi-square test and Fisher's Exact measure was performed and a statistically significant relationship ($p < .05$) was found between participants having received some type of training and their ability to indicate knowledge of presence, interaction, design of an online class, and report on their confidence and ability to deliver an online class, as a result of some type of training. Of the 254 participants, 91% (232) acknowledged having received some type of training in online teaching and 8% (22) had not. Results are below.

Isolation and issues related to feelings of isolation. Of the 232 faculty that received some type of online instruction training, 31.5% did not indicate knowledge of isolation and 40.5% did not indicate knowledge of issues related to feelings of isolation in the online student. The relationship between having received some type of training and knowledge of isolation and knowledge of issues related to isolation is significant χ^2 (1, $N = 254$), 30.60, $p < .000$ and χ^2 (1, $N = 254$), 13.91, $p < .000$. Faculty that indicated having received some type of training were more likely to demonstrate knowledge of isolation and issues related to feelings of isolation with the online student. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate (.347, .234).

Communication frequency and faculty participation. Of the 232 faculty that had received some type of training 25.9% indicated they did not understand the importance of communication frequency with their online students and 17.7% did not understand the importance of faculty participation. A chi-square test for independence was performed to examine the relationship between having some type of training and knowledge of communication frequency and importance of faculty participation. The relationship between these variables was significant, χ^2 (1, $N = 254$), 39.41, $p < .000$ and, χ^2 (1, $N = 254$), 40.51, $p <$

.000. Faculty that indicated having received some type of training were more likely to demonstrate understanding of the communication frequency necessary and the importance of faculty participation than those who had not received training. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate (.394, .399).

Defining interaction and understanding the concept of virtual interaction. Of the 232 trained faculty, 27.6% said they could not define interaction as a result of their training, 31.5% indicated they did not understand the concept of virtual interaction. A chi-square test for independence was performed to examine the relationship between having some type of training and knowing the definition of interaction and understanding the concept of virtual interaction. The relationship between these variables was significant, χ^2 (1, N = 254), 27.03, p < .000 and χ^2 (1, N = 254), 22.16, p < .000. Faculty that indicated having received some type of training were more likely to be able to define interaction and demonstrate understanding of the concept of virtual interaction than those that have not received training. The Phi Coefficient was used to measure the strength of the relationships and this was found to be moderate (.326, .295).

Interaction occurs beyond discussion posts and grading; different types of interaction, frequency of interaction. Of the 232 faculty that had received some type of training 28.4% did not indicate understanding that interaction occurs beyond discussion posts and grading, 25% indicated they did not know that different types of interaction could occur in the online classroom, and 25.4% did not have knowledge of interaction frequency. A chi-square test for independence was performed to examine the relationship between having some type of training and understanding that interaction occurs beyond the discussion posts, that different types of interaction can take place, and understanding of communication frequency. The relationship between these variables was significant, χ^2 (1, N = 254), 21.77, p < .000, χ^2(1, N = 254), 35.82,

$p < .000$, and χ^2 (1, $N = 254$), 30.24, $p < .000$. Faculty that indicated having received some type of training were more likely to demonstrate understanding that interaction occurs beyond discussion posts and grading, different types of interaction occur, and frequency of interaction necessary than those who had not received training. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate at (.293, .376, .345).

Varying Methods, ease of accessing course content, importance of varying the communication methods, and introducing surprises. The relationship between having received some type of training and knowing that varying delivery methods for content, allowing for ease access of course content, the importance of varying the communication methods, and how introducing surprises into the curriculum can impact student motivation, is significant ($p < .05$). Of the 232 trained faculty, 29.7% did not know that varying methods of delivery and access to course content was important to student motivation; and 29.7% did not know that varying the communication methods could impact student motivation, and 69.4% did not know that introducing surprises could impact student motivation. A chi-square test for independence was performed to examine the relationship between having some type of training and knowing that varying the methods and ease of access to course content, and varying the communication methods used, could impact student motivation. The relationship between these variables was significant, χ^2 (1, $N = 254$), 37.93, $p < .000$, χ^2 (1, $N = 254$), 33.03, $p < .000$, and χ^2 (1, $N = 254$), 9.35, $p = 002$. Faculty that indicated having received some type of training were more likely to demonstrate understanding that varying course content, the ease of accessing course content, the importance of varying the communication methods, and introducing surprises all impact student motivation than those who had not received the training. The Phi Coefficient was

used to measure the strength of the relationship and this was found to be moderate (.386, .361 and .192).

Ease of student to student/student to instructor communication. Of the 232 faculty that had received some type of training, 35.3% did not acknowledge understanding that the ease of student to student communication could impact student motivation and 34.1% did not acknowledge that student to instructor communication could impact student motivation. A chi-square test for independence was performed to examine the relationship between having some type of training and understanding that student to student/student to instructor communication can impact student motivation. The relationship between these variables was significant, χ^2 (1, N = 254), 25.82, $p < .000$ and χ^2 (1, $N = 254$), 27.31, $p < .000$. Faculty that indicated having received training were more likely to understand the importance of the ease student to student and student to instructor communication than those who had not received the training. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate (.319, .328).

Prepared-virtual communication and perception of faculty ability. Of the 232 trained faculty that received some type of training, 16.4% said their training did not prepare them to virtually communicate with their online students and 14.2% said they did not feel able to deliver an online class. A chi-square test for independence was performed to examine the relationship between having some type of training and having the confidence to communicate virtually with online students, and faculty perception of ability to deliver an online class. The relationship between these variables was significant, χ^2 (1, $N = 254$), 32.66, $p < .000$ and χ^2 (1, $N = 254$), 32.54, $p < .000$. Faculty that indicated having received some type of training were more likely to say they felt prepared to virtually communicate with their student and indicated they felt able to

deliver an online class than those who had not received training. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate (.359, .358).

Group two: training beyond the software, including how to design an online class. For RQ3 through RQ8, both a chi-square test and Fisher's Exact measure was performed and a statistically significant relationship ($p < .05$) was found between having received training beyond the software that also included how to design an online class, and participants' ability to indicate knowledge of presence, interaction, design of an online class, and report on their confidence and ability to deliver an online class, as a result. Of the 254 participants, 73% (186) acknowledged having received training beyond the software that included how to design an

Isolation and issues related to feelings of isolation. Of the 186 trained faculty, 25.3% did not indicate knowledge of isolation, and 32.8% did not indicate knowledge of issues related to feelings of isolation in the online student. The relationship between having received training beyond the software that included how to design an online class, and knowledge of isolation and knowledge of issues related to feelings of isolation in the online student was significant, χ^2 (1, N = 254), 38.53, $p < .000$ and χ^2 (1, $N = 254$), 35.98, $p < .000$. Faculty having received training beyond the software that included design of an online class were more likely to demonstrate understanding of isolation than those who had not received this training. The Phi Coefficient was used to measure the strength of the relationship between the variables and this was found to be moderate (.389, .376).

Communication frequency and faculty participation. Of the 186 faculty that received training beyond the software that also included how to design an online class, 18.8% indicated they did not understand the importance of communication frequency with their online students and 10.2% did not understand the importance of faculty participation. A chi-square test for

independence was performed to examine the relationship between having had training beyond the software that included how to design an online class, and knowledge of communication frequency and importance of faculty participation. The relationship between these variables was significant, χ^2 (1, N = 254), 51.76, p < .000, and χ^2 (1, N = 254), 62.79, p < .000. Faculty having received training beyond the software that included design of an online class were more likely to demonstrate understanding of the communication frequency than those who have not received training. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate (.451, .497).

Defining interaction and understanding the concept of virtual interaction. Of the 186 faculty that had received training beyond the software that included how to design an online class, 18.8% indicated they could not define interaction and 25.8% did not understand the concept of virtual interaction. A chi-square test for independence was performed to examine the relationship between having some type of training and the ability to define interaction and understanding of the concept of virtual interaction. The relationship between these variables was significant, χ^2 (1, N = 254), 57.63, p < .000 and χ^2 (1, N = 254), 30.34, p < .000. Faculty having received the training were more likely to demonstrate knowledge of the definition of interaction and the concept of virtual interaction than those who had not received the training. The Phi Coefficient was used to measure the strength of the relationship between these variables and this was found to be moderate (.476, .346).

Interaction occurs beyond discussion posts and grading; different types of interaction, frequency of interaction. Of the 186 faculty that had received training beyond the software that included how to design of an online class 19.9% did not indicate understanding that interaction occurs beyond discussion posts and grading, 19.9% indicated they did not know that different

types of interaction could occur in the online classroom, and 18.3% did not have knowledge of interaction frequency. A chi-square test for independence was performed to examine the relationship between having received training beyond the software that included design of an online class and understanding that interaction occurs beyond the discussion posts, that different types of interaction can take place, and understanding of communication frequency. The relationship between these variables was significant, χ^2 (1, N = 254), 51.62, p < .000, χ^2 (1, N = 254), 35.73, p < .000, and χ^2 (1, N = 254), 47.64, p < .000. Faculty having received training beyond the software that included design of an online class were more likely to demonstrate understanding that interaction occurs beyond discussion posts and grading, that different types of interaction can take place, and understanding of communication frequency, than those who had not received training. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate (.451, .375, and .433).

Varying methods and ease of accessing course content, importance of varying the communication methods, and introducing surprises. The relationship between having received training beyond the software that included design of an online class and knowing that varying delivery methods for content, allowing for ease access of course content, the importance of varying the communication methods, and how introducing surprises into the curriculum can impact student motivation, is significant (p < .05). Of the 186 trained faculty, 19.9% did not know that varying methods of delivery and access to course content was important to student motivation; 23.7% did not know that varying the communication methods could impact student motivation, and 62.9% did not know that introducing surprises could impact student motivation. A chi-square test for independence was performed to examine the relationship between having received training beyond the software that included design of an online class, and knowing that

varying the methods, ease of access to course content, and varying the communication methods used, could impact student motivation. The relationship between these variables was significant χ^2 (1, N = 254), 73.34, p < .000, χ^2 (1, N = 254), 39.55, p < .000, and χ^2 (1, N = 254), 28.85, p = 000. Faculty having received training beyond the software that included design were more likely to indicate knowledge that varying the methods of delivery, and allowing for ease of course content is important to student motivation but were not more likely to indicate knowledge of the importance of introducing surprises into the curriculum. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate to strong (.537, .395, and .337).

Ease of student to student/student to instructor communication. Of the 186 faculty that had received training beyond the software that included design of an online class, 26.9% did not acknowledge understanding that the ease of student to student communication could impact student motivation and 26.3% did not acknowledge that student to instructor communication could impact student motivation. A chi-square test for independence was performed to examine the relationship between having received training beyond the software that included design, and understanding that student to student/student to instructor communication can impact student motivation. The relationship between these variables was significant, χ^2 (1, N = 254), 50.95, p < .000 and χ^2 (1, N = 254), 46.61, p < .000. Faculty that received training beyond the software that included design were more likely to indicate knowledge that both ease of student to student, and instructor to student communication could impact student motivation. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate (.448, .428).

Prepared-virtual communication and perception of faculty ability. Of the 186 trained faculty that received training beyond the software that included design of an online class, only

10.8% said their training did not prepare them to virtually communicate with their online students and only 10.2% said they did not feel able to deliver an online class. A chi-square test for independence was performed to examine the relationship between having received training beyond the software that included design and having the confidence to communicate virtually with online students, and faculty perception of ability to deliver an online class. The relationship between these variables was significant, χ^2 (1, N = 254), 43.04, p < .000 and χ^2 (1, N = 254), 31.65, p < .000. Faculty that received training beyond the software that included design were more likely to say they feel prepared for virtual communication with their students and feel confident in their ability to deliver an online class. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate (.412, .353).

Group three: training in the software only. For RQ3 through RQ8, both a chi-square test and Fisher's Exact measure was performed and a statistically significant relationship (p < .05) was found between having received training in the software only and participants' ability to indicate knowledge of presence, interaction, design of an online class, and report on their confidence and ability to deliver an online class, as a result. Of the 254 participants, 30% (75) acknowledged receiving training in only the software used to deliver an online class and 70% (179) did not. Results were as follows:

Isolation and issues related to feelings of isolation. Of the 75 faculty trained in software only, 61.3% did not indicate knowledge of isolation, and 62.7% did not indicate knowledge of issues related to feelings of isolation in the online student. The relationship between having received only training in the software and knowledge of isolation and knowledge of issues related to feelings of isolation in the online student was significant, χ^2 (1, N = 254), 28.02, p < .000 and χ^2 (1, N = 254), 14.89, p < .000. Faculty having only training in the software used to

deliver an online class were more likely to demonstrate understanding of isolation than those who had not received training. The Phi Coefficient was used to measure the strength of the relationship between the variables and this was found to be weak (-.332, -.242).

Communication frequency and faculty participation. Of the 75 faculty that received training only in the software used to deliver an online class, 56% indicated they did not understand the importance of communication frequency with their online students and 42.7% did not understand the importance of faculty participation. A chi-square test for independence was performed to examine the relationship between having been trained in the software only, and knowledge of communication frequency and importance of faculty participation. The relationship between these variables was significant, χ^2 (1, $N = 254$), 29.62, $p < .000$, and χ^2 (1, $N = 254$), 23.76, $p < .000$. Faculty having received training only in the software were less likely to demonstrate understanding of the communication frequency necessary for online delivery. The Phi Coefficient was used to measure the strength of the relationship and this was found to be weak (-.341, -.306).

Defining interaction and understanding the concept of virtual interaction. Of the 75 faculty that had received training only in the software used to deliver an online class, 53.3% indicated they could not define interaction and 50.7% did not understand the concept of virtual interaction. A chi-square test for independence was performed to examine the relationship between having been trained in the software only and the ability to define interaction and understanding of the concept of virtual interaction. The relationship between these variables was significant, χ^2 (1, $N = 254$), 21.57, $p < .000$ and χ^2 (1, $N = 254$), 10.19, $p < .000$. Faculty having received the training were less likely to demonstrate knowledge of the definition of interaction and the concept of virtual interaction than those who had not received training in the software

only. The Phi Coefficient was used to measure the strength of the relationship between these variables and this was found to be weak (-.291, -.200).

Interaction occurs beyond discussion posts and grading; different types of interaction, frequency of interaction. Of the 75 faculty that had received training in only the software used to deliver an online class, 56% did not indicate understanding that interaction occurs beyond discussion posts and grading, 49.3% indicated they did not know that different types of interaction could occur in the online classroom, and 53.3% did not have knowledge of interaction frequency. A chi-square test for independence was performed to examine the relationship between having some type of training and understanding that interaction occurs beyond the discussion posts, that different types of interaction can take place, and understanding of communication frequency. The relationship between these variables was significant, χ^2 (1, N = 254), 26.32, $p < .000$, χ^2 (1, N = 254), 18.22, $p < .000$, and χ^2 (1, N = 254), 26.69, $p < .000$. Faculty having received only training in the software were more likely to lack of understanding that interaction occurs beyond discussion posts and grading, that different types of interaction can take place, and understanding of communication frequency, than those who had not received training. The Phi Coefficient was used to measure the strength of the relationship between the variables was found to be weak, (-.322,-.268, and -.324).

Varying methods and ease of accessing course content, importance of varying the communication methods, and introducing surprises. The relationship between having received training in the software only and knowing that varying delivery methods for content, allowing for ease access of course content, the importance of varying the communication methods, and how introducing surprises into the curriculum can impact student motivation, is significant ($p < .05$). Of the 75 faculty that were trained in the software only, 62.7% did not know that varying

methods of delivery and access to course content was important to student motivation; 52% did not know that varying the communication methods could impact student motivation, and 84% did not know that introducing surprises could impact student motivation. A chi-square test for independence was performed to examine the relationship between having received training in the software only, and knowing that varying the methods, ease of access to course content, and varying the communication methods used, could impact student motivation. The relationship between these variables was significant, χ^2 (1, N = 254), 34.50, p < .000, (1, N = 254), 13.45, p < .000, and X^2 (1, N = 254), 7.55, p = 000. Faculty having received training in the software only were not more likely to indicate knowledge that varying the methods of delivery, and allowing for ease of course content is important to student motivation but were not more likely to indicate knowledge of the importance of introducing surprises into the curriculum. The Phi Coefficient was used to measure the strength of the relationship and this was found to be weak (-.369, -.230, and .-172).

Ease of student to student/student to instructor communication. Of the 75 faculty that had received training only in the software used to deliver an online class, 62.7% did not acknowledge understanding that the ease of student to student communication could impact student motivation and 60% did not acknowledge that student to instructor communication could impact student motivation. A chi-square test for independence was performed to examine the relationship between having received training beyond the software that included design, and understanding that student to student/student to instructor communication can impact student motivation. The relationship between these variables was significant, χ^2 (1, N = 254), 22.44, p < .000 and χ^2 (1, N = 254), 19.78, p < .000. Faculty that received training in the software alone were less likely to indicate knowledge that both ease of student to student, and instructor to

student communication could impact student motivation. The Phi Coefficient was used to measure the strength of the relationship and this was found to be weak (-.297, -.279).

Prepared-virtual communication and perception of faculty ability. Of the 75 faculty that received training in only the software used to deliver an online class, 40% said their training did not prepare them to virtually communicate with their online students and 32% said they did not feel able to deliver an online class. A chi-square test for independence was performed to examine the relationship between having received training only in the software and having the confidence to communicate virtually with online students, and faculty perception of ability to deliver an online class. The relationship between these variables was significant, χ^2 (1, N = 254), 23.60, p < .000 and χ^2 (1, N = 254), 12.86, p < .000. Faculty that received training only in the software were less likely to say they feel prepared for virtual communication with their students and feel confident in their ability to deliver an online class. The Phi Coefficient was used to measure the strength of the relationship and this was found to be weak (-.305, -.255).

Group four: training beyond the software, including how to deliver an online class. For RQ3 through RQ8, both a chi-square test and Fisher's Exact measure was performed and a statistically significant relationship (p < .05) was found between having received training beyond the software that also included how to deliver an online class, and participants' ability to indicate knowledge of presence, interaction, design of an online class, and report on their confidence and ability to deliver an online class, as a result. Of the 254 participants, 72% (184) acknowledged having received training beyond the software that included how to deliver an online class, and 28% (70) did not. Results were as follows:

Isolation and issues related to feelings of isolation. Of the 184 trained faculty, 23.9% did not indicate knowledge of isolation, and 33.2% did not indicate knowledge of issues related

to feelings of isolation in the online student. The relationship between having received training beyond the software that included how to deliver an online class, and knowledge of isolation and knowledge of issues related to feelings of isolation in the online student was significant, χ^2 (1, N = 254), 46.41, $p < .000$ and χ^2 (1, $N = 254$), 32.43, $p < .000$. Faculty having received training beyond the software that included delivery of an online class were more likely to demonstrate understanding of isolation than those who had not received training. The Phi Coefficient was used to measure the strength of the relationship between the variables and this was found to be moderate (.427, .357).

Communication frequency and faculty participation. Of the 184 faculty that received training beyond the software that also included how to deliver an online class, 17.9% indicated they did not understand the importance of communication frequency with their online students and 10.3% did not understand the importance of faculty participation. A chi-square test for independence was performed to examine the relationship between having had training beyond the software that included how to deliver an online class, and knowledge of communication frequency and importance of faculty participation. The relationship between these variables was significant, χ^2 (1, $N = 254$), 56.91, $p < .000$, and χ^2 (1, $N = 254$), 59.29, $p < .000$. Faculty having received training beyond the software that included delivery of an online class were more likely to demonstrate understanding of the communication frequency than those who have not received the training. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate (.473, .483).

Defining interaction and understanding the concept of virtual interaction. Of the 184 faculty that had received training beyond the software that also included how to deliver an online class, 19.6% indicated they could not define interaction and 25% did not understand the concept

of virtual interaction. A chi-square test for independence was performed to examine the relationship between having training beyond the software that included how to deliver an online class and the ability to define interaction and understanding of the concept of virtual interaction. The relationship between these variables was significant, χ^2 (1, N = 254), 49.40, p < .000 and χ^2 (1, N = 254), 34.04, p < .000. Faculty having received training beyond the software that included how to deliver an online class were more likely to demonstrate knowledge of the definition of interaction and the concept of virtual interaction than those who had not received the training. The Phi Coefficient was used to measure the strength of the relationship between these variables and this was found to be moderate (.441, .366).

Interaction occurs beyond discussion posts and grading; different types of interaction, frequency of interaction. Of the 184 faculty that had received training beyond the software that also included how to deliver an online class, 20.7% did not indicate understanding that interaction occurs beyond discussion posts and grading, 19.6% indicated they did not know that different types of interaction could occur in the online classroom, and 18.5% did not have knowledge of interaction frequency. A chi-square test for independence was performed to examine the relationship between having received training beyond the software that also included how to deliver an online class and understanding that interaction occurs beyond the discussion posts, that different types of interaction can take place, and understanding of communication frequency. The relationship between these variables was significant, χ^2 (1, N = 254), 43.89, p < .000, χ^2 (1, N = 254), 36.52, p < .000, and χ^2 (1, N = 254), 44.28, p < .000. Faculty having received training beyond the software that included delivery of an online class were more likely to demonstrate understanding that interaction occurs beyond discussion posts and grading, that different types of interaction can take place, and understanding of

communication frequency, than those who had not received training. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate (.416, .379, and .418).

Varying methods and ease of accessing course content, importance of varying the communication methods, and introducing surprises. The relationship between having received training beyond the software that also included how to deliver an online class and knowing that varying delivery methods for content, allowing for ease access of course content, the importance of varying the communication methods, and how introducing surprises into the curriculum can impact student motivation, is significant ($p < .05$). Of the 184 trained faculty, 21.7% did not know that varying methods of delivery and access to course content was important to student motivation; 23.4% did not know that varying the communication methods could impact student motivation, and 65.2% did not know that introducing surprises could impact student motivation. A chi-square test for independence was performed to examine the relationship between having received training beyond the software that included delivery of an online class, and knowing that varying the methods, ease of access to course content, and varying the communication methods used, could impact student motivation. The relationship between these variables was significant, χ^2 (1, $N = 254$), 54.73, $p < .000$, χ^2 (1, $N = 254$), 39.95, $p < .000$, and χ^2 (1, $N = 254$), 15.46, $p = 000$. Faculty having received training beyond the software that included delivery were more likely to indicate knowledge that varying the methods of delivery, and allowing for ease of course content is important to student motivation but were not more likely to indicate knowledge of the importance of introducing surprises into the curriculum. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate at (.464, .397, and .247).

Ease of student to student/student to instructor communication. Of the 184 faculty that had received training beyond the software that included delivery of an online class, 27.7% did not acknowledge understanding that the ease of student to student communication could impact student motivation and 27.7% did not acknowledge that student to instructor communication could impact student motivation. A chi-square test for independence was performed to examine the relationship between having received training beyond the software that included delivery, and understanding that student to student/student to instructor communication can impact student motivation. The relationship between these variables was significant, χ^2 (1, N = 254), 39.95, p < .000 and χ^2 (1, N = 254), 35.58, p < .000. Faculty that received training beyond the software that included delivery were more likely to indicate knowledge that both ease of student to student, and instructor to student communication could impact student motivation. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate (.411,.374).

Prepared-virtual communication and perception of faculty ability. Of the 184 trained faculty that received training beyond the software that included delivery of an online class, only 10.9% said their training did not prepare them to virtually communicate with their online students and only 9.8% said they did not feel able to deliver an online class. A chi-square test for independence was performed to examine the relationship between having received training beyond the software that included delivery and having the confidence to communicate virtually with online students, and faculty perception of ability to deliver an online class. The relationship between these variables was significant, χ^2 (1, N = 254), 40.41, p < .000 and χ^2 (1, N = 254), 33.67, p < .000. Faculty that received training beyond the software that included delivery were more likely to say they feel prepared for virtual communication with their students and feel

confident in their ability to deliver an online class. The Phi Coefficient was used to measure the strength of the relationship and this was found to be moderate (.399, .364).

Group five: voluntarily sought supplemental training through an online learning. For RQ3 through RQ8, both a chi-square test and Fisher's Exact measure was performed and both statistically significant relationships ($p < .05$) and insignificant relationships ($p > .05$) were found between having sought supplemental training, and participants' ability to indicate knowledge of presence, interaction, design of an online class, and report on their confidence and ability to deliver an online class, as a result. Of the 254 participants, 55.9% (129) acknowledged having sought supplemental training, and 44.1% (125) did not. Results were as follows:

Isolation and issues related to feelings of isolation. Of the 129 trained faculty, 30.2% did not indicate knowledge of isolation, and 36.4% did not indicate knowledge of issues related to feelings of isolation in the online student. The relationship between having sought supplemental training and knowledge of isolation and knowledge of issues related to feelings of isolation in the online student was significant, χ^2 (1, $N = 254$), 4.60, $p = .032$ and χ^2 (1, $N = 254$), 6.24, $p = .012$. Faculty having sought supplemental training were more likely to demonstrate understanding of isolation and issues related to the feelings of isolation in the online student than those who had not sought supplemental training. The Phi Coefficient was used to measure the strength of the relationship between the variables and this was found to be weak (.135, .157).

Communication frequency and faculty participation. Of the 129 faculty that sought supplemental training, 26.4% indicated they did not understand the importance of communication frequency with their online students and 17.8% did not understand the importance of faculty participation. A chi-square test for independence was performed to

examine the relationship between having sought supplemental training, and knowledge of communication frequency and importance of faculty participation. The relationship between these variables was not significant, χ^2 (1, N = 254), 3.21, p =.073, and χ^2 (1, N = 254), 3.73, p =.054. Faculty having sought supplemental training were more likely to demonstrate understanding of the communication frequency than those who have not received the training.

Defining interaction and understanding the concept of virtual interaction. Of the 129 faculty that had sought supplemental training, 28.7% indicated they could not define interaction and 27.9% did not understand the concept of virtual interaction. A chi-square test for independence was performed to examine the relationship between having sought supplemental training and the ability to define interaction and understanding of the concept of virtual interaction. The relationship between having sought supplemental training and being able to define interaction was not significant, χ^2 (1, N = 254), 1.56, p =.212. The relationship between having sought supplemental training and understanding the concept of virtual interaction was significant, χ^2 (1, N = 254), 7.15, p =.007. Faculty having sought supplemental training were more likely to demonstrate knowledge of the definition of interaction and the concept of virtual interaction than those who had not sought supplemental training. However, where a significant relationship was found, the Phi Coefficient was used to measure the strength of the relationship between having sought supplemental training and understanding the concept of virtual interaction and this relationship was found to be weak (.168).

***Interaction occurs beyond discussion posts and grading; different types of interaction, frequency of interaction*.** Of the 129 faculty that sought supplemental training, 25.6% did not indicate understanding that interaction occurs beyond discussion posts and grading, 25.6% indicated they did not know that different types of interaction could occur in the online

classroom, and 25.6% did not have knowledge of interaction frequency. A chi-square test for independence was performed to examine the relationship between having sought supplemental training and understanding that interaction occurs beyond the discussion posts, that different types of interaction can take place, and understanding of communication frequency. The relationship between these variables were either statistically significant but weak (.105) or not significant so no relationship existed. χ^2 (1, N = 254), 6.00, p =.014, χ^2 (1, N = 254), 2.80, p .095, and χ^2 (1, N = 254), 2.80, p < .095. Faculty having sought supplemental training were more likely to demonstrate understanding that interaction occurs beyond discussion posts and grading, that different types of interaction can take place, and understanding of communication frequency, than those who had not received training.

Varying methods and ease of accessing course content, importance of varying the communication methods, and introducing surprises. The relationship between having sought supplemental training and knowing that varying delivery methods for content, allowing for ease access of course content is significant (p < .05); the relationship between having sought supplemental training and knowing the importance of varying the communication methods, and how introducing surprises into the curriculum can impact student motivation, is not significant (p > .05). Of the 129 trained faculty, 28.7% did not know that varying methods of delivery and access to course content was important to student motivation; 31% did not know that varying the communication methods could impact student motivation, and 70.5% did not know that introducing surprises could impact student motivation. A chi-square test for independence was performed to examine the relationship between having sought supplemental training and knowing that varying delivery methods and ease of access can impact student motivation; the relationship was statistically significant, χ^2 (1, N = 254), 5.22, p = .022. The Fisher's Exact

measure was also significant at $p = .03$. The Phi Coefficient was used to measure the strength of this relationship and it was found to be weak (.143).

A chi-square test for independence was performed to examine the relationship between having sought supplemental training and, and knowing that varying the communication methods and introducing surprises into the curriculum can impact student motivation. The relationship was found to be insignificant ($p > .05$), χ^2 (1, $N = 254$) 1.87, $p = .171$, and χ^2 (1, $N = 254$), .295, $p = .587$. Faculty that sought supplemental training were more likely to indicate knowledge that varying the methods of delivery, and allowing for ease of course content is important to student motivation. Faculty were not more likely to indicate knowledge of the importance of introducing surprises into the curriculum.

Ease of student to student/student to instructor communication. Of the 129 faculty that had sought supplemental training, 35.7% did not acknowledge understanding that the ease of student to student communication could impact student motivation and 37.2% did not acknowledge that student to instructor communication could impact student motivation. A chi-square test for independence was performed to examine the relationship between having sought supplemental training, and understanding that student to student/student to instructor communication can impact student motivation. The relationship between these variables was insignificant ($p > .05$), χ^2 (1, $N = 254$), 2.21, $p = .137$ and X^2 (1, $N = 254$), .344, $p = .557$. Faculty that sought supplemental training were more likely to indicate knowledge that both ease of student to student, and instructor to student communication could impact student motivation. As no relationship exists, strength of relationship was not measured.

Prepared-virtual communication and perception of faculty ability. Of the 129 trained faculty that sought supplemental training, only 18.6% said their training did not prepare them to

virtually communicate with their online students and only 17.1% said they did not feel able to deliver an online class. A chi-square test for independence was performed to examine the relationship between having sought supplemental training and having the confidence to communicate virtually with online students, and faculty perception of ability to deliver an online class. The relationship between these variables was insignificant ($p > .05$), χ^2 (1, $N = 254$), .812, $p = .368$ and χ^2 (1, $N = 254$), .365, $p = .546$. Faculty that sought supplemental training were more likely to say they feel prepared for virtual communication with their students and feel confident in their ability to deliver an online class. As no relationship exists, strength of relationship was not measured.

Chapter Summary

Results for Group One indicated a moderate relationship exists between having received some type of training and ability to indicate understanding or knowledge in the four constructs examined (Presence, Interaction, Design, and Confidence/Ability). While faculty were more likely to indicate knowledge or understanding as a result of some type of training, for concepts relating to Presence, Interaction and Design 25% to 69% did not indicate understanding of the concepts. More than 14% expressed lack of confidence or ability to deliver an online class as a result of only having received some type of training. The strongest relationship was found to exist between having received some type of training and ability to indicate understanding of the importance of faculty participation. The weakest relationship was found to exist between having received some type of training and faculty understanding of the importance of introducing surprises into the curriculum.

Results for Group Two indicated a moderate to strong relationship exists between having been trained beyond the software, including how to design an online class and ability to indicate

understanding or knowledge in the four constructs examined (Presence, Interaction, Design, and Confidence/Ability). While faculty were more likely to indicate knowledge or understanding as a result of training beyond the software that included design on an online class, for concepts relating to Presence, Interaction, and Design, 10% to 63% did not indicated understanding of the concepts, however, 11% or less indicated lack of confidence or ability to deliver an online class. The strongest relationship was found to exist between having received training beyond the software that included how to design an online class and understanding the importance of varying the methods of, and ease of, access to course content.

Results for Group Three indicated a weak relationship exists between having been trained in the software only and ability to indicate understanding or knowledge in the four constructs examined (Presence, Interaction, Design, and Confidence/Ability). While faculty were more likely to indicate knowledge or understanding as a result of being trained in the software only, for concepts relating to Presence, Interaction, and Design, 43% to 84% did not indicate understanding of the concepts, and 32% to 40% indicated lack of confidence or ability to deliver an online class.

Results for Group Four indicated a moderate relationship exists between having been trained beyond the software, including how to deliver an online class and ability to indicate understanding or knowledge in the four constructs examined (Presence, Interaction, Design, and Confidence/Ability). While faculty were more likely to indicate knowledge or understanding as a result of training beyond the software that included delivery of on an online class, for concepts relating to Presence, Interaction, and Design, 10% to 65% did not indicate understanding of the concepts, however, 11% or less indicated lack of confidence or ability to deliver an online class. These results very closely mirrored the responses in Group Two. The strongest relationship was

found to exist between having received training beyond the software that included how to deliver an online class and understanding the importance of faculty participation. The weakest relationship was found to exist between having received training beyond the software that included delivery of an online class and the importance of introducing surprises into the curriculum.

Results for Group Five indicated either a weak or no relationship existed between having sought supplemental training and ability to indicate understanding or knowledge in the four constructs examined (Presence, Interaction, Design, and Confidence/Ability) as a result of institution provided training. While faculty that sought supplemental training were more likely to indicate knowledge or understanding as a result of their institution provided training for concepts relating to Presence, Interaction and Design, 18% to 71% could not indicate understanding of some concepts and 17% to 18% indicated they felt confident or able to deliver an online class.

The results of the chi-square test for independence indicated a statistically significant relationship between the age of respondents and whether or not they chose to seek out supplemental training in online instruction. A separate ANOVA was conducted to determine if age did impact the responses to having received supplemental training and this analysis concluded that the effect of age was not significant.

Faculty having been trained in software only were less likely to understand concepts related to isolation, communication frequency, faculty participation, accessing course content, curriculum design and student/student and student/faculty communication. Faculty having received training that included both design and delivery were more likely to indicate knowledge or understanding of these concepts. Additionally, these latter two groups were more likely to indicate confidence in, or ability to deliver an online class and faculty having been trained in

software only were more likely to indicate a lack of confidence or ability to deliver an online class than if they had received training that addressed design and delivery of an online class as well. Faculty that acknowledged training only in the software used to deliver an online class were less likely to indicate confidence or ability in delivering an online class.

In each training response group, faculty were less likely to indicate knowledge of a specific best practice relating to introducing surprises into the curriculum and how it may impact student motivation.

Chapter Five: Conclusion

How faculty design and deliver an online course may impact a student's decision to complete a course or re-enroll in another online course. Issues such as lack of interaction with instructors and lack of balance or variety with assignments, as well as a 'de-personalized' environment are all cited as reasons for withdrawal. Faculty training in online class design and delivery should address several areas, including presence, interaction, and design elements. The training faculty currently experience may not adequately result in the required knowledge of the best practices to ensure students have a quality online learning experience that promotes the level of student motivation and satisfaction that can lead to degree completion. Further to this, inadequate training can result in faculty negative perception of their own ability and feelings of being unprepared to communicate virtually with their students.

Inadequate training can also lead to faculty failure to successfully adopt the online teaching platform. Universities and colleges are no longer questioning whether online education is a necessity, they are instead asking how they can best meet the needs of their online students and how to manage the higher withdrawal rates seen in online classes versus traditional classes. Faculty training in online delivery can impact student satisfaction, and low satisfaction is cited as one reason for early withdrawal from an online class.

The goal of the research was to determine what training faculty experience in research supported best practices in three areas: Presence, Interaction, and Design; and to examine effects of this training on preparedness for online instruction and its impact on faculty perception of their own ability and confidence in designing and delivering an online class. Eight research questions were examined. Research Questions One and Two described the characteristics of the participants including age, gender, years teaching online, type of institution they teach at (have

taught at), and what type of online training have the participants experienced. Research questions three through seven examined faculty ability to indicate presence, define and indicate interaction in the online environment, and understanding the impact of online course design on student motivation. Finally, research question eight assessed whether faculty felt confident in their ability to deliver an online class and whether they felt prepared to communicate virtually with their online students, as a result of their training in online instruction.

Major Findings

The first two research questions examined the demographic characteristics of the participants including age, gender, years of experience, type of online classes taught (hybrid or 100% online), the type of institution faculty teach online at, and the type of training they experienced. The possibility of confounding variable issues was eliminated by chi-square test for dependence for all demographic variables, additionally a one-way ANOVA was conducted to determine the significance of age on responses to type of training received. No relationship was found between demographic characteristics and responses to type of training experienced with the exception of one statistically significant, but weak relationship between having taught at a two-year institution and the type of training received.

One reason the relationship between type of training received and having taught at a two-year institution may exist is that as of 2015 more than half of all college faculty were adjuncts (Edmonds, 2015) and as of 2014, 58% of community college courses were taught by adjuncts, including online classes (Fain, 2014). As two characteristics of adjunct positions are low pay and low job security, adjuncts typically hold many teaching appointments at a variety of schools (Edmonds, 2015). This could mean exposure to multiple software delivery programs and varying

degrees of training quality. Additionally, access to professional development, and even technical support, may not be adequate.

The last demographic component, the type of training participants experienced, was used to divide responses into five groups, one for each type of training experienced: some type of training, training beyond the software that included delivery of an online class, no training beyond the software, training beyond the software that included design of an online class and whether or not they sought supplemental training. A test for dependency between the type of training experienced and knowledge indicated in best practices as outlined in the remaining research questions that address Presence, Interaction, Design (Motivation), and Ability/Confidence, was conducted. Major findings are below.

A statistically significant relationship was found to exist between the type of training experienced by faculty and their ability to indicate presence, define and indicate interaction, and understanding that design impacts student motivation. Additionally, a statistically significant relationship was found to exist between training type received and faculty's confidence in their ability to deliver an online class and feeling prepared to communicate virtually with their students. Faculty reported having received different types of training, both limited to the software alone (the least amount) and training that addressed design and delivery elements.

Faculty trained in only the software delivery systems were possibly not working with instructional designers that were knowledgeable in online delivery best practices, or even best practices related to the academic discipline overall. Working with software developers as trainers may impact faculty acceptance (causing disenchantment) of the new platform as well causing them to forego training, or tune out of required training, as they may feel their time is better spent preparing for class or working with students directly. Additional reasons faculty may be

missing out on training include lack of compensation, their institutions not creating a sense of urgency or relevance, or their institution not fostering a sense of loyalty to their students.

Faculty that received training beyond the software that included how to design and deliver an online class (70%) were more likely to indicate knowledge of specific, research supported best practices than those that had indicated they had received only training in the software used to deliver an online class (30%). Faculty that received training that extended beyond the software that included how to design and deliver an online class were also more likely to indicate they felt prepared to virtually communicate with their online students, and they felt more confident in their ability to deliver an online class than those who received training in the software only. The four constructs that were examined and the major results for each are below.

Presence. The results of this study show the majority of faculty that experienced training beyond the software that included design and delivery indicated knowledge of issues related to feelings of isolation in the online student, and the majority also indicated they understood the importance of communication frequency and faculty participation. Alternatively, the majority of faculty that experienced training in the software alone did not indicate knowledge of issues relating to feelings of isolation in the online student, and more than half did not understand the importance of communication frequency between faculty and their online students. These results demonstrate training in the software alone, without consideration of design and delivery elements, results in faculty inability to assuage feelings of isolation, or psychological distance, experienced by students in the online environment. Faculty not trained in design and delivery lack the ability to bridge the psychological gap created in the online learning environment. Without understanding that students need to know their instructor is a "real person", or that

instructors dictate the climate for their online class through setting expectations (and following through) on communication frequency, and variety of participation, student motivation and satisfaction may not be achieved.

Interaction. The results of this study indicate the majority of faculty that experienced training beyond the software, that included design and delivery, could define interaction and the majority indicated they understood the concepts related to interaction. They also indicated that they understood interaction occurs beyond discussion posts and grading, that there are different types of interaction, and that understanding a balance in frequency of interaction is important.

More than half of faculty that experienced training in the software alone did not indicate they could define interaction, nor did they indicate they understood the concept of virtual interaction with their online students. More than half did not know that interaction should occur beyond discussions posts, and grading and that frequency of communication is important, and nearly half did not know that different types of interaction could occur.

These results demonstrate training in the software alone, without consideration of design and delivery elements, results in less knowledge of Interaction and concepts related to virtual interaction. Without the necessary knowledge of concepts related to Interaction, instructors often will rely too heavily upon the use of writing assignments and discussion posts or low-level busy work, to fulfill their teaching obligation. Lack of Interaction know-how in turn is indicated in low levels of student satisfaction. It is also noted as a primary reason busy students withdraw from online classes as a high level of interaction with both faculty and other students is key to

student satisfaction and subsequently, student satisfaction is a key indicator in the student's decision to persist or dropout of a distance class.

Design (impact on motivation). In this study, the majority of faculty that experienced training beyond the software that included how to design and deliver an online class were able to indicate an understanding that variety and ease of access to course content could impact student motivation. The majority also indicated they understood the importance of ease of student-to-student communication and student-to-instructor communication and the impact of this communication on student motivation.

It would appear that the training faculty received that included how to design and deliver an online class adequately addressed how course design can impact student motivation. Managing frustration levels through ease of locating and accessing course content, as well as introducing a variety of content and methods of communication, the instructor is creating a more interesting environment and acknowledging they do play a significant role in the student's satisfaction by creating an environment where intrinsic motivation is fostered. Faculty trained in these practices know that lack of student motivation cannot, alone, be faulted for student failure to succeed in the online environment.

Despite understanding the core concepts of good design of an online class, nearly two-thirds of those trained in elements that included design and delivery of an online class did not indicate knowledge of the importance of introducing surprises into the curriculum or how this could impact student motivation. The element of surprise may increase engagement and anticipation and ultimately lead to better retention and more successful learning outcomes which

can then lead to more student satisfaction. However, beyond a variety of assignments and different communication methods through a variety of tools, recreating the traditional class experience of not knowing what to expect when walking in is difficult in the online environment. Considering the rigidity of the delivery platform, this may not be easy to do, thus, it appears training, even training that addresses design and delivery elements, does not include this practice.

More than half of the faculty that experienced training in the software alone indicated they did not know the importance of varying the curriculum and the majority did not understand the importance of introducing surprises. More than half did not indicate knowledge of varying the communication methods and more than half did not indicate they understood the ease of student to instructor communication could impact student motivation and did not know that ease of student to student communication could impact student motivation.

These results demonstrate training in the software alone, without consideration of design and delivery elements, results in less knowledge that course design, including variety and ease of communication between students, and between students and instructors, can impact student motivation. Training that includes how to design and deliver an online class does seem to address these concepts with some room for improvement. It seems that neither training in the software only, or training that includes design and delivery elements, sufficiently addresses the concept of variety regarding introducing surprises to the curriculum.

Student-centered course design is critical to successful learning outcomes of the distance student and design extends beyond repackaging a traditional class and uploading it to a delivery system. Ensuring the class offers variety, elements of surprise, different pacing, and varying levels of task difficulty, will promote student motivation. Lack of instructor knowledge in how to

design an online class can lead to student frustration, lack of motivation, and eventually, higher dropout rates than those seen in traditional classes.

Ability/confidence. In this study, nearly all of the faculty that experienced training beyond the software that included design and delivery elements indicated they felt both able to deliver an online class and more prepared to communicate virtually with their online students. Of faculty that experienced training in the software alone without consideration of design and delivery elements, about two-thirds felt they were able to deliver an online class as a result of their training, and a little more than half felt they were prepared to virtually communicate with their students.

These results demonstrate that training that extends beyond the software that includes both design and delivery elements can result in more faculty confidence in their ability to deliver an online class and feelings of being more prepared to communicate virtually with online students. Faculty trained in the software alone were less likely to feel confident in their ability to deliver an online class and were less likely to feel prepared to communication virtually with their online students. Faculty perception may dictate how seamlessly technology is integrated into the learning environment and may impact the degree and speed of adoption of distance education. Additionally, faculty that deliver distance courses despite limited training or ability may fail to successfully deliver their course resulting in negative perceptions of distance course quality and student dissatisfaction that ultimately leads to higher dropout rates and lower re-enrollment rates. Finally, lack of training in online delivery that results in lack of confidence may lead to overall resistance in adopting a new teaching platform; alternatively, training can increase faculty confidence in online delivery ability.

Impact to Online Education

Colleges and universities recognize the importance of online education. The financial and time investment required for designing and developing infrastructure to support quality online programming is considerable, and an integral component of this infrastructure is faculty training. Furthermore, offering online programming provides an additional revenue stream for the institution, provides brand strength for the institution, and in some cases, is a required element for accreditation. Additionally, to receive some government funding, some public universities are required to make courses and degree programs more accessible to students. It is no longer a matter of whether to offer online education, but is now a matter of how to best meet the needs of their online students and to do so with qualified faculty.

The cost of a college education is rising. Offering online programming may be a more cost-effective way for students to achieve their education goals. As geography is not a factor, if one school does not offer online courses, and another does, the student could choose to spend their limited education funds elsewhere. It is important to understand if the training faculty experiences could be a factor in a student's decision to complete their online classes, and possibly their education. To increase retention rates, gaining this understanding may be necessary. This study takes the first step in acquiring that knowledge by determining if faculty is experiencing training that includes research supported best practices in online delivery. Additionally, it asks whether the training they do experience leaves faculty feeling confident or prepared to deliver an online class.

If faculty training in online delivery could be impacting dropout rates for online classes, it is then also possible it is impacting attrition for the colleges that employ them. Tuition is used to support a college's operating costs. In 2013, the average loss due to attrition was more than

$8.3 million for public colleges and universities and more than $7.9 million for for-profit schools (Raisman, 2103). As online students are twice as likely to drop out as traditional students and nearly every college and university has invested in online programming development, including training faculty, decreasing the dropout rate of online students, increasing re-enrollment, and increasing retention rates would be financially prudent.

Limitations

There were a few limitations that impacted the results of this study. First, this study only sampled from those faculty that were members of a professional organization that served the purpose of furthering understanding of online class design and delivery. This may limit the generalizability of the results. Replication of this study across all colleges and universities may serve to significantly increase the external validity of the findings presented.

After the survey had been administered, further research revealed a difference in dropout and growth rates between non-profit colleges and universities and for-profit schools. For-profit schools have experienced a 10% drop in growth in online enrollment whereas not for profit colleges and universities have seen a 26% growth (Smith, 2016). As the instrument could not be modified once launched, a recommendation is made for further research in this area.

Recommendation for Future Research

Recommendations for future research are threefold: isolating faculty by type of training they experience and examining their individual reported student dropout rates in addition to a qualitative student interview to examine specific faculty and course feedback to determine if a relationship exists between students' identified reasons for dropping the class and the type of training experienced by faculty.

Also, the research has revealed some differences in online enrollment growth patterns between not for profit colleges and universities and for-profit schools. Online enrollment has seen consecutive growth through 2009 (Allen & Seaman, 2009) but forecasted growth was on the decline through 2013 and for-profit schools have seen a 10% drop in growth. Examining the training faculty experience in both profit and not for profit may be a necessary first step in understanding why the difference exists in enrollment growth between the two types of institutions.

It is recommended to take a closer look at the training experienced by adjunct faculty and/or faculty that are employed by two-year institutions as there may be some differences in how adjuncts receive their training. Finally, this training may not be as good as the training received by full-time professors. Also, an examination of the quantity of training received as adjuncts tend to hold multiple teaching assignments, they may receive more training than their full-time counterparts.

Chapter Summary

There are three distinct areas faculty need to be trained in how to successfully deliver an online class. These include Presence, Interaction and Design. Academic leadership points to the students and their lack of motivation as the primary reason for high dropout rates and low re-enrollment rates in online classes. As the research supports that faculty ability to deliver an online course impacts student motivation, this study was necessary to determine just what training faculty experiences in the described best practices. No uniform approach is taken by institutions to train their faculty, and faculty experience a variety of training approaches that result in differing levels of ability and not all training is created equal. Training that addresses the software alone does not teach faculty the importance of communication frequency nor does it

teach faculty that variety is an important element of successful online instruction, and as much as adult learners enjoy autonomy, some structure and management of communication type and frequency are also needed in online delivery.

The results also showed that training that included both design and delivery elements lead to faculty understanding of the importance of communication frequency, interaction, ease of accessing course content, and variety of communication methods.

No matter the type of training faculty experience, they are more likely to indicate some knowledge of the research supported best practices in online instruction than those that receive no training at all. However, the percentage of faculty not able to indicate specific knowledge as a result of having been trained in online delivery software alone is much higher than that of faculty that had experienced training that extended beyond the software that also included how to design and deliver an online class. In other words, faculty trained in the software alone were less knowledgeable than those trained in how to design and deliver an online class.

Additionally, an important component of designing an online class is variety. Faculty can provide variety by introducing surprises to, or varying elements of the curriculum of their online courses. Faculty were not more likely to indicate knowledge of this particular best practice as a result of any type of training. In other words, it would appear that no matter what type of training, faculty did not indicate understanding or knowledge that introducing surprises into the curriculum could impact student motivation (a key factor in a student's decision to drop out of a class).

Finally, faculty that had experienced training that extended beyond the software that included both design and delivery training were more likely to indicate they felt prepared to

communicate virtually with their online students and felt more confident that they were able to deliver an online class than those who had experienced training in the software alone.

Online student retention is critical to the success of colleges and universities. Online student retention rates are impacted by many factors. One that can be mitigated by the school itself is faculty ability to deliver an online class.

Online student retention is the responsibility of academic leadership, faculty, and online technology designers. For successful retention, student satisfaction should first be addressed. Faculty are on the frontlines and arguably have the most interaction with students. The quality of this interaction does impact student satisfaction. Improving how this interaction occurs starts with good online training that addresses research supported best practices. Additionally, better training in online delivery best practices can lead to faculty confidence in their ability, seamless adoption of a new teaching platform, thus, improved student satisfaction. Improved student satisfaction will result in lower dropout rates, a higher re-enrollment rate and reduced attrition rates for the school.

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APPENDIX A

Faculty Survey

SQ1 How old are you?
SQ2 How many years have you been teaching online?
SQ3 Have you taught at least one online class, or at least one hybrid class that is taught more than 30% online. (If no, stop here)
SQ4 The online class you have taught (currently teaching) are at which type of secondary institution (select all that apply): (Choices are 2 yr/4 yr/Grad/Vocational/Other)
SQ5 The online classes you have taught (currently teaching) are: 100 % or Online/Hybrid
SQ6 You have received some type of training from your institution in online class delivery (software or other training). (Y/N)
SQ7 Have you received training from your institution only in how to use the software to deliver an online class? (Y/N)
SQ8 Have you attended workshops outside of your institution (in person or online) that address how to teach online classes. (Y/N)
SQ9 Have you joined an online learning community (Sloan/Online Learning Consortium/Educause) for one or more of the following reasons (select all that apply): (Networking/Recruiting/Job Seeking/Improve Skills/Other)
SQ10 The training received at your institution extended beyond the software and also addressed HOW to teach an online class. (Y/N)
SQ11 Additional training received through learning communities like SLOAN/OLC supplemented your institution provided training, or provided training your institution did not provide (Y/N)

The balance of the survey requires responses measured on a Likert Scale: Strongly Agree- Strongly Disagree

SQ12 My training helped me to understand it is important to participate in discussion posts, or respond to student work (beyond assessment, grading, or other evaluation)
SQ13 My training addressed the importance of varying the curriculum and introducing surprises.
SQ14 The online training I have received helped me understand issues of isolation for the distance student
SQ15 The online training I have received prepared me to communicate virtually with my online students
SQ16 My training prepared me for communication frequency necessary for the online student
SQ17 My training in online instruction defined interaction for the online class environment.
SQ18 My training in online instruction offered methods and ideas for ways to create a virtual classroom where interaction can easily take place.
SQ19 My training in online instruction addressed frequency of interaction.
SQ20 My training in online instruction clarified the different types of interaction in the online classroom.
SQ21 My training in online instruction prepared me for interaction with my online students (beyond discussion posts and grading).

SQ22 My training in online instruction prepared me for my role in diminishing the feelings of isolation my online students may experience.

SQ23 My training in online instruction helped me understand the importance of including different communication methods in my course design, such as: live chat, live meetings, discussion posts, and email:

SQ24 My training in online instruction introduced the idea that designing a course that allows for ease of student interaction with course content may impact student motivation

SQ25 My training in online instruction introduced the idea that designing a course that allows for ease of student interaction with other students may impact student motivation

SQ26 My training in online instruction introduced the idea that designing an online course that allows for ease of student interaction with me (the educator) may impact student motivation

SQ27 After my training in online instruction I felt I was able to deliver an online course

APPENDIX B

Expert Panel Invitation, Instructions, and Questions

Post-secondary faculty preparedness for online instruction; training in best practices for online course design and delivery.

Dear_____, _____,2015

I am a Doctoral Student at Pepperdine's Graduate School of Education and Psychology where I am completing my dissertation research on faculty preparedness for online instruction specifically, faculty awareness and ability in the areas of interaction and presence, and their understanding of the impact online course design can have on student motivation. Dr. Nancy Harding is my dissertation chair.

Participants in the study will be invited through my professional membership at the Online Learning Consortium (formerly the Sloan Consortium) and through First through Third Generation LinkedIn connections where I have access to a 6000-member community. Survey participants will have taught at least one online class and have received some degree of training in how to deliver an online course.

Prior to launching the study, it is important to ensure the survey is valid and reliable. To achieve this, I am seeking input from an expert panel regarding the survey items and will revise the instrument as necessary based on your expert input. Your participation is voluntary. Should you agree to participate, your name and position will be included in the Appendix of my completed dissertation. Please indicate below by checking the appropriate box that you agree to participate in the expert panel and have your information published in the completed dissertation:
Expert Name: _____

☐ I agree ☐ I do not agree

Expert Signature: _____(Digital/Email is acceptable) Date:_____

Thank you for your support,

Latania Wood
Doctoral Student

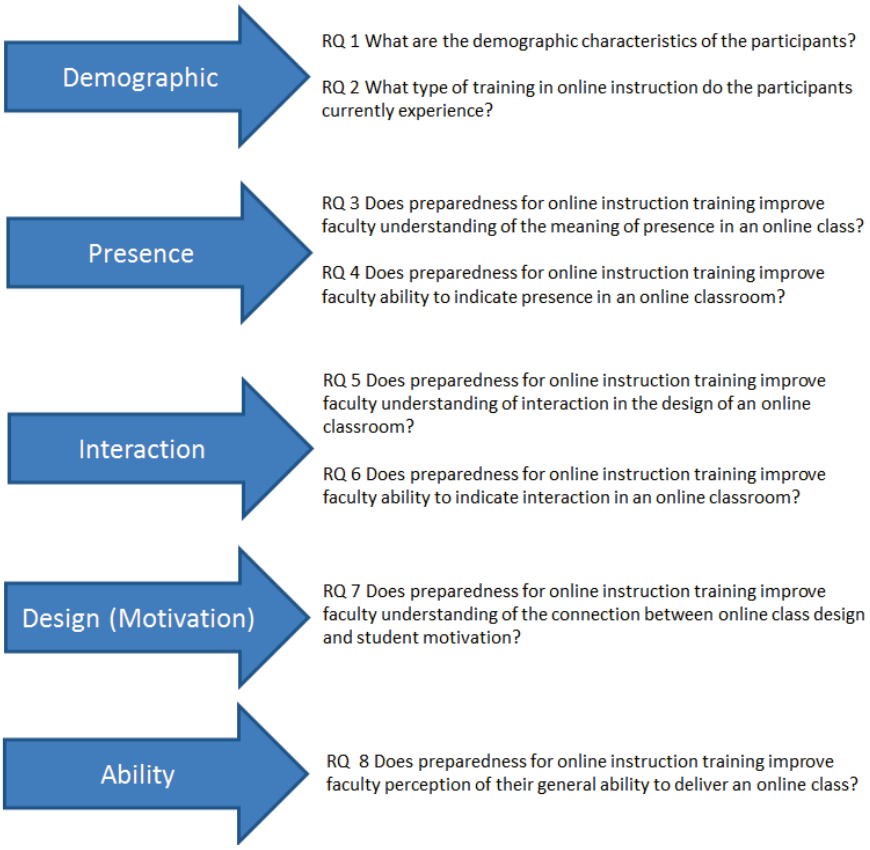
APPENDIX B

Expert Panel Invitation, Instructions, and Questions

Please see below a link to the survey as well as a printable copy attached. This survey instrument was developed for the research study on post-secondary faculty preparedness for online instruction. Each survey question, or item, is categorized by one of the following: Demographics, Presence, Interaction, Design (impact on Motivation), and Ability (self-perception of). However, how the survey questions are assigned to one of these categories is not revealed to the expert panel. The research questions for each category assigned are detailed below.

Your task, as a selected subject-matter expert, is to select which category you feel best fits the survey question. You can do this in the form attached and email the completed form back to the researcher or you may use the electronic link to the Survey and submit your responses electronically. A blank form (or space if doing submitting electronically) is provided for specific comments and feedback. Please return a PDF of the completed form by email, or submit the survey online, within one week from receipt.

Research Questions Posed in the study:



APPENDIX B

Expert Panel Invitation, Instructions and Questions

*Note questions are in random order so as not to influence responses of Expert Panel. Experts will select one of the following categories for each question: Demographic, Presence, Interaction, Design, Confidence.

1 My training in online instruction defined interaction for the online class environment.
2 My training in online instruction prepared me for my role in diminishing the feelings of isolation my online students may experience.
3 The online training I have received prepared me to communicate virtually with my online students.
4 Have you received training from your institution only in how to use the software to deliver an online class? (Y/N)
5 My training in online instruction introduced the idea that designing an online course that allows for ease of student interaction with me (the educator) may impact student motivation.
6 Have you attended workshops outside of your institution (in person or online) that address how to teach online classes. (Y/N)
7 My training in online instruction prepared me for interaction with my online students (beyond discussion posts and grading).
8 You have received some type of training from your institution in online class delivery (software or other training). (Y/N)
9 My training in online instruction introduced the idea that designing a course that allows for ease of student interaction with other students may impact student motivation.
10 My training in online instruction clarified the different types of interaction in the online classroom.
11 The online class you have taught (currently teaching) are at which type of secondary institution (select all that apply): (Choices are 2 yr/4 yr/Grad/Vocational/Other)
12 My training prepared me for communication frequency necessary for the online student.
13 My training in online instruction introduced the idea that designing a course that allows for ease of student interaction with course content may impact student motivation.
14 My training helped me to understand it is important to participate in discussion posts, or respond to student work (beyond assessment, grading, or other evaluation).
15 Have you taught at least one online class, or at least one hybrid class that is taught more than 30% online. (If no, stop here)
16 Additional training received through learning communities like SLOAN/OLC supplemented your institution provided training, or provided training your institution did not provide (Y/N).
17 My training in online instruction addressed frequency of interaction.
18 The online training I have received helped me understand issues of isolation for the distance student.
19 The online classes you have taught (currently teaching) are: 100 % or Online/Hybrid
20 How old are you?

21 The training received at your institution extended beyond the software and also addressed HOW to teach an online class. (Y/N)
22 My training in online instruction offered methods and ideas for ways to create a virtual classroom where interaction can easily take place.
23 After my training in online instruction I felt I was able to deliver an online course
24 Have you joined an online learning community (Sloan/Online Learning Consortium/Educause) for one or more of the following reasons (select all that apply): (Networking/Recruiting/Job Seeking/Improve Skills/Other)
25 How many years have you been teaching online?
26 My training in online instruction helped me understand the importance of including different communication methods in my course design, such as: live chat, live meetings, discussion posts, and email:
27 My training addressed the importance of varying the curriculum and introducing surprises.

APPENDIX B

Expert Panel Invitation, Instructions, and Questions

	Questions			Category (Choose Best Fit)			
1	My training in online instruction defined interaction for the online class environment.	Demographic	Presence	Interaction	Design	Confidence (in Ability)
2	My training in online instruction prepared me for my role in diminishing the feelings of isolation my online students may experience.	Demographic	Presence	Interaction	Design	Confidence (in Ability)
3	The online training I have received prepared me to communicate virtually with my online students	Demographic	Presence	Interaction	Design	Confidence (in Ability)
4	Have you received training from your institution only in how to use the software to deliver an online class? (Y/N)	Demographic	Presence	Interaction	Design	Confidence (in Ability)
5	My training in online instruction introduced the idea that designing an online course that allows for ease of student interaction with me (the educator) may impact student motivation	Demographic	Presence	Interaction	Design	Confidence (in Ability)
6	Have you attended workshops outside of your institution (in person or online) that address how to teach online classes. (Y/N)	Demographic	Presence	Interaction	Design	Confidence (in Ability)
7	My training in online instruction prepared me for interaction with my online students (beyond discussion posts and grading).	Demographic	Presence	Interaction	Design	Confidence (in Ability)
8	You have received some type of training from your institution in online class delivery (software or other training). (Y/N)	Demographic	Presence	Interaction	Design	Confidence (in Ability)
9	My training in online instruction introduced the idea that designing a course that allows for ease of student interaction with other students may impact student motivation	Demographic	Presence	Interaction	Design	Confidence (in Ability)
10	My training in online instruction clarified the different types of interaction in the online classroom.	Demographic	Presence	Interaction	Design	Confidence (in Ability)
11	The online class you have taught (currently teaching) are at which type of secondary institution (select all that apply): (Choices are 2 yr\4 yr\GradV\ocational\Other)	Demographic	Presence	Interaction	Design	Confidence (in Ability)
12	My training prepared me for communication frequency necessary for the online student	Demographic	Presence	Interaction	Design	Confidence (in Ability)
13	My training in online instruction introduced the idea that designing a course that allows for ease of student interaction with course content may impact student motivation	Demographic	Presence	Interaction	Design	Confidence (in Ability)
14	My training helped me to understand it is important to participate in discussion posts, or respond to student work (beyond assessment, grading, or other evaluation)	Demographic	Presence	Interaction	Design	Confidence (in Ability)
15	Have you taught at least one online class, or atleast one hybrid class that is taught more than 30% online. (If no, stop here)	Demographic	Presence	Interaction	Design	Confidence (in Ability)
16	Additional training received through learning communities like SLOAN\OLC supplemented your institution provided training, or provided training your institution did not provide (Y/N)	Demographic	Presence	Interaction	Design	Confidence (in Ability)
17	My training in online instruction addressed frequency of interaction.	Demographic	Presence	Interaction	Design	Confidence (in Ability)
18	The online training I have received helped me understand issues of isolation for the distance student	Demographic	Presence	Interaction	Design	Confidence (in Ability)
19	The online classes you have taught (currently teaching) are: 100 % or OnlineHybrid	Demographic	Presence	Interaction	Design	Confidence (in Ability)
20	How old are you?	Demographic	Presence	Interaction	Design	Confidence (in Ability)
21	The training received at your institution extended beyond the software and also addressed HOW to teach an online class. (Y/N)	Demographic	Presence	Interaction	Design	Confidence (in Ability)
22	My training in online instruction offered methods and ideas for ways to create a virtual classroom where interaction can easily take place.	Demographic	Presence	Interaction	Design	Confidence (in Ability)
23	After my training in online instruction I felt I was able to deliver an online course	Demographic	Presence	Interaction	Design	Confidence (in Ability)
24	Have you joined an online learning community (SloanOnline Learning ConsortiumEducause) for one or more of the following reasons (select all that apply): (NetworkingRecruitingJob SeekingImprove	Demographic	Presence	Interaction	Design	Confidence (in Ability)
25	How many years have you been teaching online?	Demographic	Presence	Interaction	Design	Confidence (in Ability)
26	My training in online instruction helped me understand the importance of including different communication methods in my course design, such as: live chat, live meetings, discussion posts, and email:	Demographic	Presence	Interaction	Design	Confidence (in Ability)
27	My training addressed the importance of varying the curriculum and introducing surprises.	Demographic	Presence	Interaction	Design	Confidence (in Ability)

APPENDIX B

Expert Panel Invitation, Instructions, and Questions

Blank Page - Feedback

APPENDIX C

Invitation and Consent for the Online Faculty Survey

Dear Faculty,

My name is Latania Wood, and I am a student at the Graduate School of Education and Psychology, in the Organizational Leadership Program at Pepperdine University, who is currently in the process of recruiting individuals for my descriptive study entitled: Faculty understanding of key differences in educating the distance (online) versus traditional student. The professor supervising my work is Dr. Nancy Harding. The study is designed to assess faculty understanding of best practices in online instruction and to assess self-perception of ability to deliver online classes after having received some type of preparedness for online instruction training. I am inviting individuals who have taught at least one online class to participate in my study. Please understand that your participation in my study is strictly voluntary. The following is a description of what your study participation entails, the terms for participating in the study, and a discussion of your rights as a study participant. Please read this information carefully before deciding whether you wish to participate.

If you should decide to participate in the study, you will be asked to answer 27 survey questions, 11 of which are demographic in nature and 16 of which are specific to your experience with online teaching. As the survey is multiple choice, it should take approximately 20 minutes to complete the survey. Please complete the survey alone in a single setting.

Although minimal, there are potential risks that you should consider before deciding to participate in this study. These risks relate to confidentiality issues and job satisfaction. Every effort will be made to protect the identity of survey participants, including storing participant data (limited to name and email address) independent of survey results. All data will be stored in a locked office on a password protected computer. In the event you do experience job dissatisfaction or negative ruminations about your career, resources are provided at the end of the survey for training and development, job searches, and more information as it relates to a career in online education. For further support or concern, you may contact the researcher directly or my faculty supervisor (contact information contained herein).

Benefits for participation in the study are limited to the opportunity to be entered into a drawing for a $100 American Express Gift Card. Your name and contact information will be entered into a random drawing to be conducted upon close of the survey. This contact information will not be stored beyond the drawing date and will only be used to inform the recipient selected.

If you should decide to participate and find you are not interested in completing the survey in its entirety, you have the right to discontinue at any point without being questioned about your decision. You also do not have to answer any of the questions on the survey that you prefer not to answer just leave such items unanswered.

After two weeks a reminder note will be sent to you to complete the survey. Since this will go out to everyone, I apologize ahead of time for sending you these reminders if you have complied with the deadline.

If the findings of the study are presented to professional audiences or published, no information that identifies you personally will be released. The data will be kept in a secure manner indefinitely.

If you have any questions regarding the information that I have provided above, please do not hesitate to contact me at the phone number provided below. If you have further questions or do not feel I have adequately addressed your concerns, please contact Dr. Nancy Harding at nancy.harding@pepperdine.edu. If you have questions about your rights as a research participant, contact Dr. Thema Bryant-Davis, Chairperson of the Graduate & Professional School Institutional Review Board at Pepperdine University, via email at gpsirb@pepperdine.edu or at 310-568-5753.

By completing the survey and returning it to me, you are acknowledging that you have read and understand what your study participation entails, and are consenting to participate in the study.

Thank you for taking the time to read this information, and I hope you decide to complete the survey. You are welcome to a brief summary of the study findings in about 1 year.

Sincerely,

Latania Wood
Doctoral Candidate
[redacted] (Text messages are also accepted).

Faculty Survey Instructions (For Survey Monkey):

Please click on the link below. After selecting the option that you agree to participate in the survey, the survey will commence. Respond to each of the questions by answering yes or no where indicated, or selecting all responses that apply in the two multiple choice aspects. For the scaled response section, select the option that is most accurate.

Upon completion of the survey, if you wish to participate in the drawing for the gift card, you will be asked for your email address. This information will not be used for any other purpose. No identifying information will be stored with survey results. All identifying information will be destroyed upon completion of gift card drawing.

APPENDIX D

IRB Application for Claim of Exemption

PEPPERDINE IRB
Application for a Claim of Exemption

Date: 8/15/15 IRB Application/Protocol #: **2**

Principal Investigator: Latania Wood

School/Unit: ☐ Faculty ☐ Staff ☐ Student ☐ Other
☐ GSBM ☒ GSEP ☐ Seaver ☐ SOL ☐ SPP
☐ Administration ☐ Other:

Street Address: [redacted]
City: Los Angeles State: Ca Zip Code: 90068
Telephone (work) [redacted] Telephone (home): ( ) -
Email Address: [redacted]

Faculty Supervisor: **Dr. Nancy Harding** *(if applicable)*
School/Unit: ☐ GSBM ☒ GSEP ☐ Seaver ☐ SOL ☐ SPP
☐ Administration ☐ Other:
Telephone (work): [redacted]
Email Address: [redacted]

Project Title: Faculty understanding of key differences in educating the distance (online) versus traditional student

Type of Project (Check all that apply):

☒ Dissertation ☐ Thesis
☐ Undergraduate Research ☐ Independent Study
☐ Classroom Project ☐ Faculty Research
☐ Other:

Is the Faculty Supervisor Review Form attached? ☒ Yes ☐ No ☐ N/A

Has the investigator(s) completed education on research with human subjects? ☒ Yes ☐ No
Please attach certification form(s) to this application.

Investigators are reminded that Exemptions will NOT be granted for research involving prisoners, fetuses, pregnant women, or human in vitro fertilization. Also, the exemption at 45 CFR 46.101(b)(2), for research involving survey or interview procedures or observations of public behavior, does not apply to research with children (Subpart D), except for research involving observations of public behavior when the investigator(s) do not participate in the activities being observed.

1. Briefly summarize your proposed research project, and describe your research goals/objectives. The purpose of this study is to assess faculty attitudes toward type and quality of preparedness for online instruction training received. Also, this study will assess faculty perceptions of confidence and ability in delivering an online class based on awareness of research supported best practices that highlight the differences in educating the distance vs. traditional student. Enrollment in online courses seemingly peaked in

2009 with a lower than predicted annual growth of 21.1%. Much of the research into why growth is slowing or why dropout rates are higher (and re-enrollment rates are lower) in distance courses than those of traditional courses, focuses on faculty satisfaction, compensation, student motivation, student satisfaction, students ease of use of the technology and faculty training in the technology used for delivering the online curriculum . Very little, if any, research is found to support quality of educator training in research supported best practices when delivering a distance course. The research questions (the first two demographic) are as follows: RQ1: What are the demographic characteristics of the participants? RQ2: What type of online training do the participants in the study currently experience? RQ3: Does POI (Preparedness for Online Instruction) training improve faculty understanding of the meaning of presence in an online or distance class? RQ 4: Does POI training improve faculty ability to indicate presence in an online classroom? RQ5: Does POI training improve faculty understanding of the meaning of 'interaction' in the design of an online class? RQ6: Does POI training improve faculty ability to indicate interaction in an online classroom? RQ7: Does the POI training received improve understanding of the role online course design plays in student motivation? RQ8: Does the POI training improve faculty perception of their general ability to deliver an online course? A survey instrument (see appendix) has been designed for this research and will be evaluated for construct validity by an expert panel consisting of five members. The instrument will also be piloted using ten online faculty members to assess question clarity. Revisions to the instrument will be made with input from both the expert panel and the faculty pilot group, as well as input from the researcher's chair, Dr. Harding. Participants will answer survey questions relating to training received, as well as some demographic questions (age, years teaching, gender). Survey participation is anonymous and voluntary (see appendix).The objective is to use results of the research to describe a numeric trend of online faculty's attitude toward both ability to, and confidence in, design and delivery of an online class using research supported best practices, as well as to assess knowledge of best practices given the type of training received.

2. Using the categories found in Appendix B of the Investigator Manual, list the category of research activity that you believe applies to your proposed study. #2, Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation, unless (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

3. Briefly describe the nature of the involvement of the human subjects (observation of student behavior in the classroom, personal interview, mailed questionnaire, telephone questionnaire, observation, chart review, etc): A non-experimental research design is proposed that will be used to collect data from faculty that has taught at least one online class. A convenience sample strategy will be employed and the survey sent to 3762 members of the Online Learning Consortium, a professional organization that supports online learning. More than 900 institutions will be represented by this sample. The

contact information (place of employment) made available at OLC was used to collect publicly available email addresses through simple internet searches. A research assistant was used to gather these email addresses and build a contact database. As the participant database is quite large, results and identifiable data will not be aligned or stored together.

4. Explain why you think this protocol should be considered exempt. Be sure to address all known or potential risks to subjects/participants. In gathering demographical data, or ansering yes/no questions about one's job training would generate little or no risk to participants as this type of reporting is considered to be routine. Additionally, supplying everyday information, is not expected to be distressing. Other risks may include feelings about job satisfaction, questioning perceived job ability, or unhappy rumination about one's career as it relates to teaching online. Feelings of job frustration may be caused. Each of these risks will be highlighted in the consent form (see appendix) along with resources for assistance (see appendix) that will primarily focus on career improvement, classes, and workshops in the area of distance education. Another risk is breach of confidentiality, this is addressed in number 5.

5. Explain how records will be kept. Names and email addresses will not be stored with survey responses. Electronic survey data will be stored on researcher's computer - password protected, in the researcher's home office. The survey tool will be password protected. All paper files and printed data/results will be kept in a locked file in the researcher's home-office.

6. ☐ Yes ☒ No Are the data recorded in such a manner that subjects can be identified by a name or code? If yes:
   - Who has access to this data and how is it being stored? Only researcher will have access to this data and will be stored in a password protected computer in the researcher's home office indefinitely.
   - If you are using a health or mental health assessment tool or procedure, what is your procedure for referring the participant for follow-up if his/her scores or results should significant illness or risk? Please describe. N/A
   - Will the list of names and codes be destroyed at the end of the study? Explain your procedures. The researcher will not be collecting any names or codes.

7. Attach a copy of all data collection tools (e.g., questionnaires, interview questions or scripts, data collection sheets, database formats) to this form. Be sure to include in such forms/scripts the following information:
   - a statement that the project is research being conducted in partial fulfillment of the requirements for a course, master's thesis, dissertation, etc. (if applicable)
   - purpose of study
   - a statement that subjects' responses will be kept anonymous or confidential (explain extent of confidentiality if subjects' names are requested)
   - if audiotaping or videotaping, a statement that subject is being taped (explain how tapes will be stored or disposed of during and after the study)
   - a statement that subjects do not have to answer every question

- a statement that subject's class standing, grades, or job status (or status on an athletic team, if applicable) will not be affected by refusal to participate or by withdrawal from the study (if applicable)
- a statement that participation is voluntary

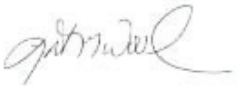
Please note that your IRB may also require you to submit a consent form or an **Application for Waiver or Alteration of Informed Consent Procedures form.** Please contact your IRB Chairperson and/or see the IRB website for more information.

8. Attach a copy of permission forms from individuals and/or organizations that have granted you access to the subjects.

9. ☐Yes ☒No Does your study fall under HIPAA? Explain below.

9.1 If HIPAA applies to your study, attach a copy of the certification that the investigator(s) has completed the HIPAA educational component. Describe your procedures for obtaining Authorization from participants. Attach a copy of the Covered Entity's HIPAA Authorization and Revocation of Authorization forms to be used in your study (see Section XI. of the Investigator Manual for forms to use if the CE does not provide such forms). If you are seeking to use or disclose PHI without Authorization, please attach the **Application for Use or Disclosure of PHI Without Authorization** form (see Section XI). Review the HIPAA procedures in Section X. of the Investigator Manual. N/A

I hereby certify that I am familiar with federal and professional standards for conducting research with human subjects and that I will comply with these standards. The above information is correct to the best of my knowledge, and I shall adhere to the procedure as described. If a change in procedures becomes necessary I shall submit an amended application to the IRB and await approval prior to implementing any new procedures. If any problems involving human subjects occur, I shall immediately notify the IRB Chairperson.



8/15/2015

Principal Investigator's Signature — Date

Dr. Nancy Harding

Faculty Supervisor's Signature (if applicable) — Date

APPENDIX E

IRB Approval

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

October 8, 2015

Latania Wood

Protocol #: E0515D04
Project Title**:** Faculty understanding of key differences in educating the distance (online) versus traditional student

Dear Ms. Wood:

Thank you for submitting your application, *Faculty understanding of key differences in educating the distance (online) versus traditional student,* for exempt review to Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB). The IRB appreciates the work you and your faculty advisor, Dr. Harding, have done on the proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations (45 CFR 46 - http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html) that govern the protections of human subjects. Specifically, section 45 CFR 46.101(b)(2) states:

> (b) Unless otherwise required by Department or Agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:
>
> **Category (2) of 45 CFR 46.101**, research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: a) Information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and b) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit a **Request for Modification Form** to the GPS IRB. Because your study falls under

exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the GPS IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the GPS IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the GPS IRB and the appropriate form to be used to report this information can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* (see link to "policy material" at http://www.pepperdine.edu/irb/graduate/).

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval. Should you have additional questions, please contact Kevin Collins, Manager of the Institutional Review Board (IRB) at gpsirb@peppderdine.edu. On behalf of the GPS IRB, I wish you success in this scholarly pursuit.

Sincerely,

Judy Ho, Ph. D., ABPP, CFMHE
Chair, Graduate and Professional Schools
IRB Pepperdine University

cc: Dr. Lee Kats, Vice Provost for Research and Strategic Initiatives Mr. Brett Leach, Regulatory Affairs Specialist
Dr. Nancy Harding, Faculty Advisor

6100 Center Drive, Los Angeles, California 90045 310-568-5600

APPENDIX F

Faculty Development Opportunities

Online Learning Consortium Provides a Community of Practice for all those involved in online education. Their website http://onlinelearningconsortium.org/ includes:

- Updated terminology
- Live streaming of meetings or conferences on current happenings in online instruction
- Conferences members can attend http://olc.onlinelearningconsortium.org/conference/2014/blended/welcome
- Blogs – peer supported blogs http://onlinelearningconsortium.org/connect/blog/
- Webinars, teaching certificate programs http://onlinelearningconsortium.org/learn/teaching-certificates/
- Professional Membership for Individuals http://onlinelearningconsortium.org/join/professional/
- Membership for institutions http://onlinelearningconsortium.org/join/free/
- Jobline
- Other surveys where the voice of faculty can be heard

General Contact Information
GENERAL ASSISTANCE
Voice: 617.716.1414
Fax: 888.898.6209
info@onlinelearning-c.org

APPENDIX G

Expert Panel Members

Dr. Rhonda Capron
EdD, Pepperdine University Graduate School of Education and Psychology, MA, University of New Mexico, BS, Shippensburg State University

Dr. Rhonda Capron is the Academic Dean at University of Phoenix. She oversees six programs and 300 courses. She manages assessment of programs and other accreditation matters and develops strategies to increase successful student progression and quality faculty performance.

Dr. Chris Mallett
EdD, Pepperdine University Graduate School of Education and Psychology, MPA, University of Utah, BS, Weber State University

Chris Mallett is the Vice President of Online Programs at Northeastern College. He oversees the team that supports Northeastern's growth in online programs and is charged with developing the strategic vision for Northeastern's online and hybrid learning programs. He also played an integral role in building Western Governors University from the ground up. WGU is a 100% online university currently boasting more than 65,000 students.

Dr. Linda Polin, Pepperdine University
PhD, University of California, Los Angeles; MA, University of California, Los Angeles; BA, University of California, Santa Barbara

Dr. Linda Polin is the Davidson Professor of Education and Technology in the Education Division of the Graduate School of Education and Psychology. She has served for many years as program chair of the doctoral program in learning technologies. Currently she teaches courses in innovation and change, qualitative research methods, knowledge creation and collaboration, and the imagining futures capstone course.

Dr. Cheryl Sandoe
PhD, University of South Florida, MA, University of South Florida, BS, University of South Florida

Dr. Cheryl Sandoe is the current owner of Sandoe Education Solutions. She advises corporate leadership, educational boards, or educational investors in all aspects of growing their current learning or training environments. She advises on developing and implementing eLearning initiatives in the areas of regulatory compliance, curriculum development, implementation and technical services.

Dr. Rick Shearer
D.Ed., MBA, Penn State University

Dr. Shearer has worked for both private and public institutions of higher education and has consulted on distance education projects with community colleges, and public school systems. His research interests include systems dynamic modeling of distance education processes, learner control in distance education, content/interaction analysis, and current policy issues surrounding accreditation and copyright law. Dr. Shearer has published several articles and book chapters on the field of distance education and presented at numerous conferences. His current book looks at the theoretical aspects of transactional distance and dialogue in relation to the theory of transactional distance by Michael G. Moore.