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STAGES OF FACULTY CONCERN ABOUT TEACHING ONLINE: RELATIONSHIPS BETWEEN FACULTY TEACHING METHODS AND TECHNOLOGY USE IN TEACHING

A dissertation submitted in partial satisfaction

of the requirements for the degree of

Doctor of Education in Learning Technologies

by

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July, 2016

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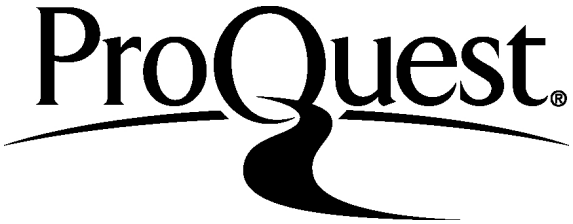

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ABSTRACT

As more online courses and programs are created, it is imperative institutions understand the concern of their faculty toward teaching online, the types of technology they use, and the methods they use to instruct students in order to provide appropriate resources to support them. This quantitative study measures these concerns, using the Stages of Concern Questionnaire, of full-time faculty at a small Christian liberal arts university in Southern California relative to teaching online, technology use, and teaching methods. The majority of faculty reported being unconcerned about teaching online.

The correlations conducted between faculty's concerns about teaching online and their teaching methods showed that while some relationships exist, the strength of the relationships are weak. The same was true for the relationships between faculty's technology use and their concern about teaching online. Additionally, analysis of variance revealed faculty who practice more student-centered teaching methods are more likely to focus on coordinating and cooperating with others regarding teaching online.

It can be concluded that the majority of faculty at the institution are not concerned about teaching online and that overall, their technology use and specific teaching methods do not contribute to their concerns about teaching online. However, it was found that faculty who are more student-centered are more likely to cooperate and coordinate with others in regards to teaching online. These findings have implications for the institution where this research was conducted. The administration can be more confident knowing that many of their faculty are not highly concerned about teaching online, therefore, may be less likely to resist teaching these types of classes. The administration now has information that shows faculty who are more student-centered are more likely to cooperate with others in regards to teaching online. These

faculty may be more inclined to promote online teaching and ultimately help fulfill the strategic plans of the University.

Chapter One: Introduction

Institutions of higher education in the United States of America have been steadily increasing the number of online courses and programs offered to students. Online learning at institutions is seen by some as a way to increase profits, by others as a way to survive in an increasingly competitive market, and yet by others as a way to provide a genuine quality education to a wider range of students who, for a variety of reasons, cannot or choose not to attend a traditional brick and mortar college or university. These students have an ever-increasing opportunity to access online education at public, private, and for-profit institutions of higher education. Many face-to-face courses at these traditional institutions are utilizing online learning tools such as learning management systems to house course documents, lectures that have been recorded previously, provide areas for students to submit assignments, and have them evaluated (Bacow, Bowen, Guthrie, Lack, & Long, 2012).

Elite institutions such as Harvard, Massachusetts Institute of Technology (MIT), and Princeton that record many of their traditional face-to-face courses and offer them online for anyone to view free of charge. Carnegie Mellon University's Open Learning Initiative (OLI, n.d.) is funded by grants and offers "innovative online courses to anyone who wants to learn or teach" and they strive to "create high-quality courses and contribute original research to improve learning and transform higher education" (para. 1). Massive Open Online Courses (MOOCs) are another variation of online courses offered at no cost by some universities to a large number of students at one time (Skiba, 2012). Students live in an increasingly connected online environment today that provides them with options with regard to how they can participate in their education.

Faculty at many traditional higher education institutions are the primary drivers of curriculum, policy, and governance. Without the support of faculty, administration will not be able to successfully implement, sustain, and expand initiatives to incorporate online education into their institution's mission. As colleges and universities expand online offerings, faculty will be increasingly called upon to teach these online and hybrid courses. In order to meet this need, it is imperative to understand what stages of concern faculty fall into in regards to this delivery format in order to provide a high quality educational experience for students. The percentage of full-time faculty teaching exclusively online across public, private, and religious higher education institutions is on the rise (Eagan et al., 2014). Figure 1 depicts the results from the Higher Education Research Institute (HERI) at the University of California Los Angeles (UCLA) 2014 study of more than 16,100 full-time faculty employed in 269 colleges and universities who taught exclusively online.

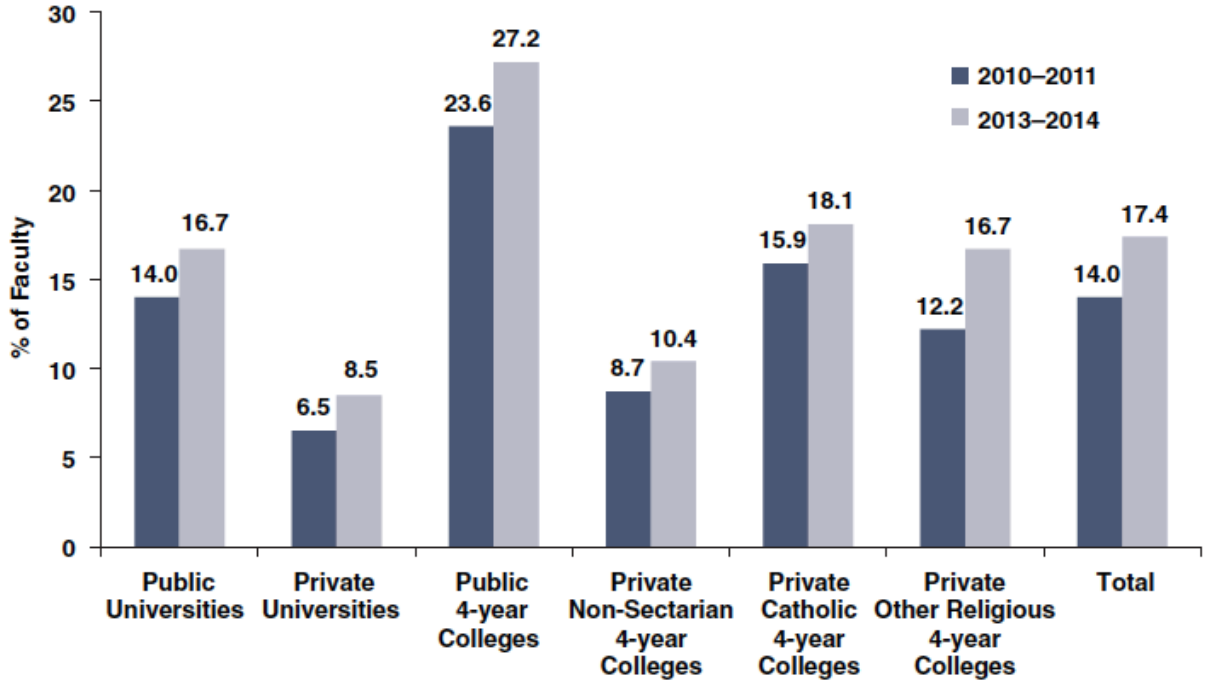

Figure 1. Changes in having taught a course exclusively online between 2011 and 2014. Reprinted from "*Undergraduate teaching faculty: The 2013–2014 HERI faculty survey,"* by K. Eagan, E. B. Stolzenberg,, J. B. Lozano, M. C. Aragon, M. R. Suchard, and S. Hurtado, 2014. Copyright 2014 by the Regents of the University of California. Reprinted with permission.

Online Learning in Higher Education

A 2014 survey of 2,800 colleges and universities in the United States conducted by the Babson Survey Research Group about online higher education found only 9.7% of colleges and universities stated that online education is not critical to their long-term strategies (Allen & Seaman, 2014). As of 2013, 33.5% of students in higher education institutions were enrolled in at least one online course and 90% of academic leaders believe that in the five years following 2014, the majority of higher education students will "Likely" or "Very Likely" (Allen & Seaman, 2014, p. 9) be enrolled in at least one course offered in an online format.

There has been a steady upward trend among academic leaders who rated their learning outcomes in online education as the same or higher to those in traditional face-to-face instruction. In 2003, according to Allen and Seaman (2014), 57% of academic leaders rated online learning as the same or better as face-to-face instruction as compared to 74% in 2014. The Babson survey found that higher education institutions that offer baccalaureate degrees have historically held the most negative views about online education, yet most do have online offerings. Associate institutions were among earliest adopters of the online format and hold the most favorable view of this model.

Some institutions of higher education have begun to explore another type of online learning format identified as Massive Open Online Courses (MOOCs) and in most offerings is free to students. Some MOOCs have course enrollments exceeding 100,000 students (Fischer, 2014). This type of online course is relatively new and has not been widely adopted. The Babson survey conduct by Allen and Seaman (2014) found that 53% of higher education institutions in the United States are undecided about the value of MOOCs and 33% of these institutions reported that it is not in their plans to offer MOOCs at all.

21st Century Students

College students in the 21st-century have many various technologies ingrained in their everyday life. They have access to desktop computers, laptops, tablets, smart phones, and other computing devices on a daily basis. Many of these students have no memory of what it was like without the Internet (Stillar, 2012). Their devices connect them to information in seconds and to each other through integrated social networks. Many colleges and universities now offer courses and programs in a fully online format to help meet the needs of the 21st century student. The number of faculty teaching fully online is increasing (Eagan et al., 2014). Figure 2 from the 2014 HERI report depicts the increasing number of full-time faculty across all ranks who have taught at least one course in a completely online format in the 2010-2011 school year compared to 2013-2014.

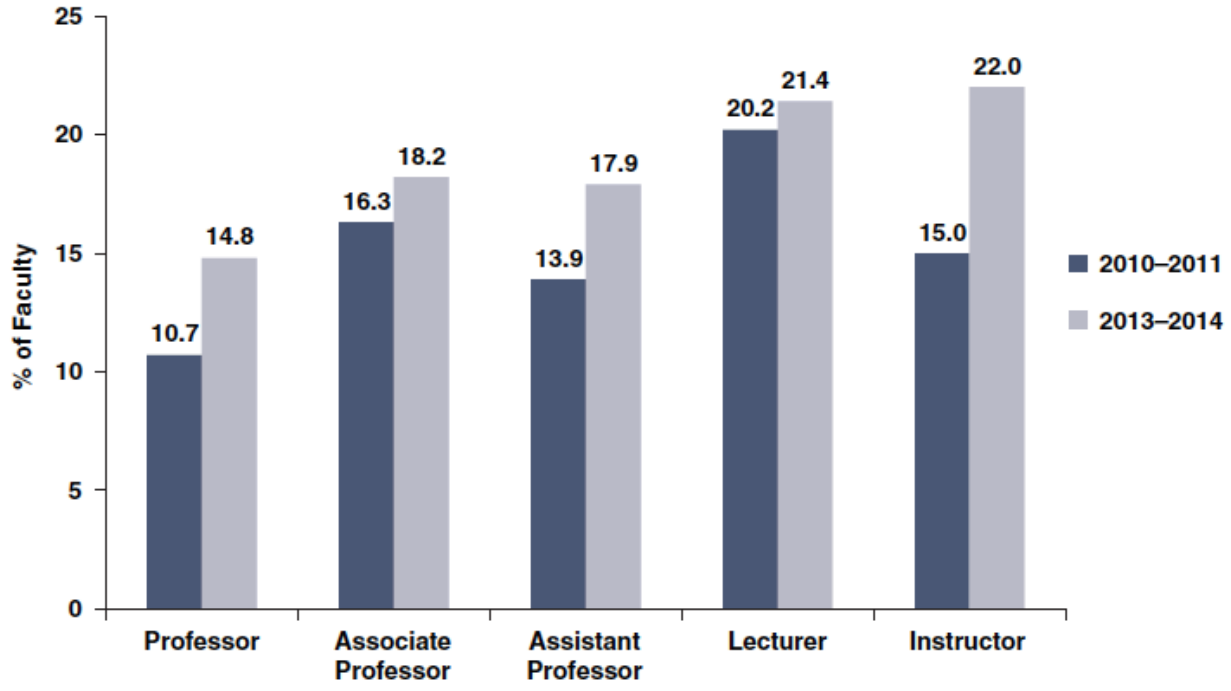

Figure 2. Changes in faculty having taught a course exclusively online. Reprinted from "*Undergraduate teaching faculty: The 2013–2014 HERI faculty survey,"* by K. Eagan, E. B. Stolzenberg,, J. B. Lozano, M. C. Aragon, M. R. Suchard, and S. Hurtado, 2014. Copyright 2014 by the Regents of the University of California. Reprinted with permission.

Need for the Study

Online education is becoming increasingly important to the mission of many colleges and universities (Allen & Seaman, 2014). This will result in increased resource allocation in areas such as staff, faculty, and infrastructure. In the summer of 2013, the administration of Christian Liberal Arts University (CLAU) hired for a new position at the Provost level titled Assistant Provost of Adult, Graduate, and Online Learning. This position is responsible for the adult degree programs, graduate level programs, and all online course offerings. The adult degree programs are taught in a hybrid format consisting of a full weekend of traditional face-to-face meetings with the remaining part of the course delivered online through the university's learning management system. Two graduate programs were offered in a fully online format and several undergraduate general education courses across several of the university's schools were delivered online.

The Assistant Provost for Adult, Graduate, and Online Learning position was created by the Provost's office in an attempt to fulfill the directive from the governing board to expand the number of programs offered online. This information was shared with the faculty at CLAU in plenary and by way of email. This new position indicates the administration of the university is acting intentionally about moving forward with offering more courses and programs in an online format which is consistent with more than 90% of higher education institutions in the United States (Allen & Seaman, 2014). Since many colleges and universities cannot execute these online expansion plans without faculty to vote positively for these programs and to teach these online courses, this study is needed to discover their stages of concern in regards to teaching online in order to provide appropriate support.

Statement of the Problem

Many institutions of higher education offer courses and even entire programs online (Allen & Seaman, 2014). The governing board at CLAU has mandated that the administration of CLAU bring more programs to market. One specific instruction from the board has been to create more programs in an online or hybrid delivery format. This online direction is consistent with Allen and Seaman's (2014) findings of other institutions of higher education. This directive has been shared with CLAU faculty. However, no attempts have been made to discover the stages of concern of the faculty in regards to teaching in this online environment, the types of technology they use, and the teaching methods they employ. The institutional directive may be met with faculty resistance, which in turn can hinder progress towards fulfilling the institution's mission. This study is needed to understand the stages of concern of faculty who teach or may be asked to teach using this delivery model in order to provide them with the support they need and to accomplish the institution's online expansion goals. The information derived from this study may be used by colleges and universities for faculty development purposes, for future hiring, and for strategic planning of new online programs.

Statement of the Purpose

The purpose of this study is to investigate the extent to which faculty teaching methods and their use of technology in teaching correlate with the stages of concern about teaching online courses at a small Christian liberal arts university in Southern California. The data can be used to identify potential barriers by the faculty for teaching in an online format. It can also be used to provide insight into potential resistance in expanding existing online programs and creating new ones. This information can be utilized by the administration of higher education institutions for strategic planning purposes as it relates to the professional development of current faculty and the hiring of new faculty to teach in these online programs.

Methodological Overview

A quantitative study utilizing descriptive statistics, correlations, and analysis of variance to explore the relationship among the educational teaching methods of the full-time faculty at CLAU, their use of technology in teaching, and their stages of concern in regards to teaching online. The primary tool for data collection was a survey instrument, the Stages of Concern Questionnaire, which was distributed by the researcher using the University's email system. The resulting data was examined using Pearson bivariate statistical analysis to discover if a relationship exists among faculty teaching methods and the stages of faculty concern about teaching online. The same statistical analysis was employed to discover if a relationship exists between the use of technology by faculty in their teaching and the stages of faculty concern about teaching online. An analysis of variance (ANOVA) was also applied to the collected data to determine if there are different stages of concern about teaching online between those faculty who are more teacher-centered versus those who are more student-centered in their teaching.

Research Questions

The following research questions were explored and measured using a modified version of the Stages of Concern Questionnaire (SoCQ):

1. What are the stages of faculty concern about teaching online?
2. What relationship exists between the technology used by faculty as self-reported in their teaching and their stages of concern about teaching online?
3. What relationship exists between faculty teaching methods as self-reported and their stages of concern about teaching online?
4. To what degree does the concern about teaching online differ between faculty who are more teacher-centered versus those who are more student-centered in their teaching?

Key Definitions

Asynchronous: in the context of communication in modern distance and online education, it provides the learner and teacher the opportunity to communicate at a convenient time and location. This can be accomplished by many electronic means such as discussion boards and email, but has roots in non-electronic means of communication as far back as 1840 using traditional mail (Kiryakova, 2009).

Blended or Hybrid: a delivery format for courses which have between 30 and 79 percent of content presented online (Allen & Seaman, 2014).

Blog: a website, sometimes referred to as a weblog, which allows for frequent addition of content about any subject. They are interactive in that many blogs allow for the owner to receive messages directly on the webpage from visitors to the blog. Visitors cannot change the original content posted by the owner of the blog (Byington, 2011).

Distance Education: "Distance education is a form of education in which the participants in the educational process – teacher and learners are physically separated and communicate by different means and at different times" (Kiryakova, 2009, p. 29).

Face-to-Face Instruction: includes both traditional and web facilitated courses. Up to 29% of instruction can be delivered online (Allen & Seaman, 2014).

Learning Management System (LMS): "…an interactive learning environment assisted by mediating tools that support, for example, inter/intra-action, collaboration, training, communication and sharing information amongst the LMS users" (Dias & Diniz, 2014, p. 308).

Massive Open Online Courses (MOOC): "A course of study made available over the Internet without charge to a very large number of people" ("MOOC," n.d., para. 1).

Online Course: a course which has at least 80% of its content delivered online (Allen & Seaman, 2014).

Social Network Sites:

Web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. (Boyd & Ellison, 2007, para. 4)

Traditional Couse: a course that does not use any online technology. The content is presented in writing and or orally (Allen & Seaman, 2014).

Synchronous Learning: also referred to as *live* or real-time instruction (Chen, Ko, Lin, & Lin, 2005).

Web Facilitated: a course that incorporates web-based technology to help deliver some of the content of a traditional face-to-face course. 1 to 29 percent of the course can be delivered online (Allen & Seaman, 2014). An example would be a course that uses a learning management system or web pages to deliver course materials.

Wiki: a website produced by one or more authors. Each author has the ability to change other authors' content. Many times it is project based with specific objectives (Byington, 2011). An example of a large public wiki is Wikipedia defined as "the free encyclopedia that anyone can edit" ("Wikipedia," 2015, para. 1).

Limitations

The intended participants of this study were aware of the researcher's identity and an undetermined number were aware of the researcher's dissertation subject. This may or may not have influenced the survey responses of the participants. Every reasonable precaution was taken to insure the anonymity of the participants. No information that could be used to identify the participants such as their name, university identification number, address, or phone number was collected in the survey.

The targeted population was full-time faculty who could have busy schedules which may reduce their willingess to respond to the survey in a timely manner or even to respond at all. The survey was intentionally deployed no earlier than two weeks into the semester and no later than two weeks before finals were given. The intention was to provide a time frame that may have contained fewer distractions related to course preparation and again during the end of a semester when the number of course related tasks may have increased due to student assignments and test deadlines as well as other university commitments. To provide some extrinsic motivation for participating, a fifty-dollar gift card was offered as part of a random drawing executed by the Information Technology Services department.

Delimitations

This study examined the concerns of full-time faculty towards teaching online at a single Christian liberal arts university in Southern California. Adjunct faculty were excluded because only full-time faculty have the right to vote at the university, which can directly impact the planning practices of the university. The attitudes of full-time faculty will likely influence their voting on initiatives for the creation and expansion of online programs as well as their willingness to teach these online courses. The attitudes of other populations such as students, staff, alumni, and governing boards were outside the scope of this study. Given that only one institution participated in this study, it is unlikely the results generated can be generalized to other universities.

Summary

Online education is steadily increasing in institutions of higher education across the nation (Allen & Seaman, 2014). The majority of chief academic officers and leaders believe online education to be a critical part of their institution's mission. More than a third of students in higher education have taken at least one online class as of 2013 (Allen & Seaman, 2014) and

more than 17% of faculty have taught a fully online course as of 2014 which is up more than 3% from 2011 (Eagan et al., 2014). As this upward trend continues, there is an increasing need to discover the concern experienced by faculty who are expected to teach in this environment as well as gain an understanding of their teaching methods and technology use in teaching. Only then can institutions of higher education begin to meet the needs of these faculty who are a critical component of the mission of their institutions and are needed to support the directives from administration to expand the availability of online education. In an effort to address this gap, this study will utilize a quantitative correlational methodology through the use of the Stages of Concern Questionnaire (SoCQ) to discover the stages of concern that faculty have in regards to teaching online and to discover if there is a relationship to their teaching methods and to their use of technology in teaching.

Chapter Two: Literature Review

The literature reviewed for this study addresses a historical perspective of online education, Concerns Theory, technology used by faculty in their teaching, and two categories of teaching methods. The section on the historical prospective of online education examines literature reflecting the first recorded attempts at distance education to present-day use of the World Wide Web. The professional organizations that have developed to support this type of teaching and learning are also examined. The theoretical framework for this study is grounded in Concerns Theory. This chapter will examine the foundational leaders of Concerns Theory as well as the Stages of Concern Questionnaire (SoCQ) that is used to collect data for this study. The Literature relating to faculty's use of technology in their teaching revealed data about social networking tools, presentation software, student response systems, podcasting, and the use of online testing. This literature review concludes with an examination of teacher-centered and student-centered teaching methods.

Historical Perspective of Online Education

Prior to the advent of the online environment in the latter part of the 20th century, people were still capable of formal learning at locations other than at traditional brick and mortar institutions. This type of learning is commonly referred to as distance education. The literature is rich with research and definitions of this type of education. Depending on the historical timeframe and the technology available, most definitions of distance education have a common theme of the learner being separated by a physical distance from the institution or instructor delivering the instruction (Moore, 2013; Schlosser, Simonson, & Hudgins, 2010; Simonson, Schlosser, & Orellana, 2011; Simonson, Smaldino, Albright, & Zvacek, 2003; Tomei, 2010; Zawacki-Richter, 2009). Holmberg (2003) offers the following:

> Distance education means learning without learners and teachers meeting face-to-face or only meeting occasionally to supplement the teaching and learning that takes place non contiguously. It can be and usually is wholly individual, students meeting other students either not at all or only occasionally at supplementary face-to-face sessions and each student working at his/her own pace. (p. 10)

The four components that the Association for Educational Communications and Technology include institutionally based instruction, the separation of student and teacher, interactive communication, and shared learning experiences (Schlosser et al., 2010). The first component of institutionally based education is meant to distinguish formal distance education from self-study. However, there are many businesses and corporations, rather than exclusively institutions of higher education, that now offer distance education to their employees. The second component not only refers to the physical separation between the instructor and student, but also to the possible separation of the two because of time differences (Simonson et al., 2003). The third component involves not only the instructor, but also the students, interacting with each other using technology. This can be either done synchronously or asynchronously (Simonson et al., 2003). Simonson et al. (2003) stated that the fourth component involves teachers interacting with students and that "resources are available that permit learning to occur. Resources should be subjected to instructional design procedures that organize them into learning experiences that promote learning, including resources that can be observed, felt, heard, or completed" (p. 33).

Early years. One of the earliest types of distance education came in the form of written correspondence education via the postal service. In 1728 a teacher by the name of Caleb Phillips advertised in the Boston Gazette offering lessons in shorthand to prospective students via the mail service (Bower & Hardy, 2004). In 1833 a university in Sweden is credited with being the

first institution of higher education to offer a correspondence course, a composition class, via the postal system (Holmberg, 2002). In the mid-1800s, Issac Pitman from England began using postcards to write his shorthand lessons that were then mailed to students who would translate Bible verses and then return them to Pitman for correction (Bower & Hardy, 2004). Pitman later was involved in the creation of the Phonographic Correspondence Society, which was later named the Sir Isaac Pitman Correspondence Colleges (Bower & Hardy, 2004).

Mathieson (1971) identifies Anna Elliott Tichnor as the "mother" of American correspondence study (p. 8). Anna was the daughter of a Harvard University professor and in 1873 founded the Society to Encourage Study at Home. The "idea of exchanging letters between teacher and student originated with her and monthly correspondence with guided reading and frequent test formed a vital part of the organizations personalized instruction" (Mathieson, 1971, p. 8). Many identify the "father" of American correspondence instruction as William Harper who was a Baptist Theological Seminary teacher (Bower & Hardy, 2004; Mathieson, 1971). In 1881, Harper began offering language correspondence courses out of frustration caused by lack of physical classroom space. Success with these classes led to a position of Professor of Semetic Languages at Yale University and eventually to the presidency of the University of Chicago in 1890 (Mathieson, 1971).

In 1874, the first American religious institution, Illinois Wesleyan University began offering students correspondence courses designed to help prepare for the university's examinations. Until 1910 this type of instruction could be used at the university to attain a Bachelors, Masters and even a PhD (Mathieson, 1971). In the latter part of the 19th century, Thomas Foster, who worked in the newspaper industry, recognized the need for adults in the workplace to advance their education in a convenient manner. Foster's first correspondence

offering targeted coal miners seeking promotions but who needed additional occupational skills (Bower & Hardy, 2004). Foster was instrumental in the creation of the International Correspondence School, later named Education Direct, in Pennsylvania (Bower & Hardy, 2004). Mathieson's (1971) research discovered many state universities that offered correspondence courses in early part of the 20th century. Some of these state universities included: Wisconsin in 1906, Oregon in 1907, Kansas in 1909, Minnesota in 1909, Nebraska in 1909, Texas in 1909, Missouri in 1910, and North Dakota in 1910. By 1933 there were 39 universities that offered correspondence study (Mathieson, 1971).

Later years. The 1920s saw the beginning of radio broadcasts and audio recordings for use in distance education (Bower & Hardy, 2004; Simonson et al., 2003). This technology increased the reliability and extended the distance that education courses could be delivered. During the 1930s, several universities and colleges including Kansas State College, Purdue University, and the University of Iowa experimented with television teaching programs (Simonson et al., 2003). The 1950s saw the beginning of college credit for courses delivered via television. Western Reserve University and New York University were two of the first such institutions. Simonson et al.'s (2003) research found that New York University offered televised college credit courses for more than 24 years starting in 1957 via the major broadcasting company CBS.

The latter part of the 1960s in Great Britain marked a significant step toward the modern format of distance education that more fully utilized technology and instructional strategies. One of the most influential persons in modern distance education is Charles Wedemeyer who founded the British Open University in 1969 (Bower & Hardy, 2004). The Open University utilized a "mixture of instructional techniques including (a) television and radio programming; (b)

correspondence and home study programs and kits; (c) face-to-face meetings with other students and with tutors in specially provided local study centers; and (d) short residential courses" (Mathieson, 1971, p. 88). Other nations including Canada, Japan, West Germany, Sri Lanka, and Pakistan soon followed by establishing similar institutions (Simonson et al., 2003). The Open University of Hong Kong, which opened in 1989, accepts all applicants and enrolls over 100,000 students (Zhang, Perris, & Yeung, 2005).

The Internet and more specifically, the World Wide Web protocol has transformed many aspects of the world including distance education. Online instruction uses the World Wide Web as the delivery method replacing mail, radio, and television broadcasts in distance education. Modern Internet networks are engineered with high speed, high bandwidth fiber-optics (Schlosser et al., 2010). Connected to these networks are personal computers and computing devices used by students and faculty. This underlying infrastructure allows for real-time bidirectional audio and video communication for an enhanced learning environments (Bower & Hardy, 2004). Allen and Seaman (2014) define what percentage of time a course must use the World Wide Web in order to be considered an online course in Table 1.

Professional organizations. As distance education matured, nations around the world began creating professional organizations devoted to supporting this delivery method. Moore (2013) identifies two of the earliest professional organizations founded in the United States as the National Home Study Council (NHSC) and National University Extension Association (NUEA), which were established in 1915. The NUEA was created to represent universities that offered correspondence study while the National Home Study Council was created to represent for-profit home study schools. In 1980 the NHSC became the National University Continuing Education Association (NUCEA) and in 1996 the name was changed to the University

Continuing Education Association (UCEA). As changes were made to the various programs offered, the name was changed in 2010 to the University Professional and Continuing Education Association (UPCEA; Moore, 2013). In 1987, the United States Distance Learning Association (USDLA) was founded with the mission "To serve the distance learning community by providing advocacy, information, networking and opportunity" (Flores, 2009, p. 3).

Table 1

Comparison of Course Delivery Methods

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 – 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.

Note. Comparison of Course Delivery Methods. Adapted from "Grade change tracking online education in the United States," by I. Allen and J. Seaman, 2014, p. 6. Copyright 2014 by Babson Survey Research Group and Quahog Research Group, LLC. Adapted with permission.

International organizations devoted to distance education were also established in many parts of the world. Moore (2013) identifies one of the most pivotal international organizations as the International Council of Correspondence Education (ICCE), later changed to the International Council for Open and Distance Learning (ICDE), which was established in 1938 by educators from both the United States and Canada. Feasley and Bunker (2007) refer to the ICDE

as the International Linking Organization. Other important distance education organization include the Observatory of Borderless Higher Education (OBHE), European Distance Education Network (EDEN), Canadian Distance Learning Association (CADE), Brazil Distance Learning Association (BDLA), Global Development Learning Network (GDLN), African Distance Learning Association (ADLA), and the International Association for Distance Learning (IADL) (Flores, 2009). Moore (2013) identifies additional distance education related associations such as the United Kingdom Council of Educational Technology (CET), the European Council for Education by Correspondence (CEC), the European Home Study Council (EHSC), and the International Council of Correspondence Education (ICCE).

Online education at a Christian liberal arts university. CLAU began offering face-to-face classes in the mid-1970s. Less than 25 years later, the university implemented Blackboard, a learning management system (LMS) capable of hosting online classes. The first program to adopt the use of the LMS in the late 1990s was the School of Education in collaboration with a sister University in the Northwest. The online nature of the LMS allowed for both universities to develop courses that were to be used in each of the university's education programs. Due to conflicts in clear ownership, division of labor and revenue, the joint online course development ceased after just a few courses were fully developed. CLAU's School of Education Masters program continued using Blackboard to deliver courses fully online.

Within a year of the university's purchase of Blackboard, the information technology services department acquired WebCT, another learning management system. This acquisition was part of a bundled purchase of their student information system (SiS) and did not cost the university additional money. The Adult Degree Completion program began using WebCT soon after the acquisition. This program was taught in a blended format in which students met face-to-

face on some weekends and the remainder of the course time was delivered using WebCT. The Adult Degree Completion program used this LMS for approximately eight years until Blackboard acquired WebCT and announced it was going to discontinue support of that system. CLAU recreated all the Adult Degree Completion WebCT courses in Blackboard and the program continues to utilize Blackboard in a blended format as of this writing. In 2008 the second fully online program was launched at the Masters level in the School of Arts and Sciences. This program had been taught in the traditional face-to-face format for several years and then converted to a fully online format in order to reach students who were not in the geographic area.

Since the original implementation of an LMS at the university, all professors have had access to the system, however, only some have chosen to supplement their face-to-face courses with specific tools of the LMS such as document storage for student access and online access to graded assignments. A few schools at the university have converted some highly impacted face-to-face undergraduate courses to an online format in recent years. In 2012 the university intentionally adopted a strategic plan that would bring more programs to market in an online format and have since created one undergraduate and one graduate program in a fully online format. This recent accelerated adoption rate supports Nichols (2008) and Hall and Hord's (2001) position that online education and long-term change must be part of the institution's high level strategic plan in order for it to be widely adopted.

Theoretical Framework

The theoretical framework for the study is grounded in Concerns Theory that emerged from Francis Fuller's educational research with teachers in the 1960s. The premise of the theory is that teachers experience different types of concerns depending on their teaching experience and must move through these before entering other stages of teaching. There are many theorists

and researchers who have identified that teachers go through developmental changes or stages throughout their teaching career (Berliner, 1988; Burden, 1981; Fuller, 1969; Fuller & Bown, 1975; Fuller, Parsons, & Watkins, 1974; George, 1978; Katz, 1972). Fuller (1969) originally identified two stages of teacher concerns: early teachers concerns about self and later teacher concerns about pupils. In later studies, Fuller et al. (1974) suggested the analysis of data indicates "one survival dimension (concern about adequacy vs. teaching performance) for preservice teachers and two dimensions for in-service teachers. These two are 1) concern about self-adequacy vs. concern about pupil benefit, and 2) concerned about teaching performance" (p. 48).

Fuller proposed this developmental sequence as a continuum from one specific phase to another. These phases are identified as: Preteaching Phase: Nonconcern, Early Teaching Phase: Concern with Self, and Late Teaching Phase: Concern with Pupils. In the Preteaching Phase, there are very few concerns about teaching since the preservice student-teacher does not have any professional experience in teaching and therefore does not know what to actually be concerned about. Fuller (1969) found these preservice teachers did express some concerns, however they were more about the anticipation and apprehension of teaching.

The Early Teaching Phase includes beginner teachers and also student teachers with little exposure to teaching. Teachers in this phase demonstrated concerns that were expressed by questions they asked such as:

> (1) Where do I stand? and (2) How adequate am I? When asking, where do I stand?, teachers are trying to gauge how much support they will have from their supervising teachers and principals and the limits of their acceptance as professionals within the school. By asking, how adequate am I?, Teachers are expressing concerns about their

ability to deal with class control, their general adequacy, and their preparedness to handle the classroom situation. (George, Hall, & Stiegelbauer, 2013, p. 3)

The Late Teaching Phase includes characteristics expected to be found in more experienced or superior teachers. These teachers' concerns revolved more around the learning of their students and their own professional development. Teachers in this phase asked questions such as "Are pupils learning what I am teaching? Are pupils learning what they need? And how can I improve myself as a teacher?" (George et al., 2013, p. 3).

The Teacher Concerns Statement (TCS) instrument was developed by Francis Fuller and Carol Case (1972) as a way of collecting data about teachers' concerns about teaching. The TCS was comprised of an open-ended question asking pre-service and in-service teachers about their concerns. The purpose of the TCS was to investigate the concerns of teachers at different points in their careers. Fuller and Case devised a system for classifying the responses of teachers into seven categories. These categories were coded numerically from 0 to 7. A 0 indicated there were no concerns about teaching found in the teacher's response. A code of one or two indicated self–oriented concerns. A code three was transitional meaning that the teacher was beginning to focus more on the students. A code number of four through six indicated that the teacher was focused primarily on the students.

Fuller and Case (1972) provide the following overview of the concern codes used in scoring the Teacher Concerns Statements:

1. Concerns about Self

- Code 0 - Non-teaching Concerns

- Statement contains information or concerns which are unrelated to teaching. Codes 1 through 6 are always concerns with teaching. All other statements are Coded 0.

2. Concerns about Self as Teacher

- Code 1 - Where Do I Stand?
  - Concerns with orienting oneself to a teaching situation, i.e., psychological, social, and physical environment of the classroom, school and/or community. Concerns about supervisors, cooperating teachers, principal, parents. Concerns about evaluation, rules, or administrative policy, i.e., concern about authority figures and/or acceptance by them.
- Code 2 - How Adequate Am I?
  - Concern about one's adequacy as a person and as a teacher. Concern about discipline and subject matter adequacy.
- Code 3 - How Do Pupils Feel About Me? What Are Pupils Like?
  - Concern about personal, social, and emotional relationships with pupils. Concern about one's own feelings toward pupils and about pupils' feelings toward the teacher.

3. Concern about Pupils

- Code 4 - Are Pupils Learning What I'm Teaching?
  - Concern about whether pupils are learning material selected by the teacher. Concern about teaching methods which help pupils learn what is planned for them. Concern about evaluating pupil learning.

- Code 5 - Are Pupils Learning What They Need?
    - Concern about pupils' learning what they need as persons. Concern about teaching methods (and other factors) which influence that kind of learning.
- Code 6 - How Can I Improve Myself As A Teacher? (And Improve All That Influences Pupils?)
    - Concern with anything and everything which can contribute to the development not only of the pupils in the class, but of children generally. Concern, with personal and professional development, ethics, educational issues, resources, community problems, and other events in or outside the classroom which influence pupil gain. (p. 3)

In an effort to ease coding and reliability concerns associated with the TCS, Fuller and Case constructed the Teacher Concerns Checklist (TCCL) using the TCS as a framework (Parsons & Fuller, 1974). The Teacher Concerns Checklist was similar to the TCS in that Parsons and Fuller (1974) also employed the question "When you think about your teaching, what are you concerned about?" (p. 7). Unlike the TCS instrument that allowed participants to write an open-ended answer, the TCCL followed this question with a list of 56 items. Each of these items prompted the participant to respond in a Likert scale format consisting of: "Not concerned at all," "Slightly concerned," "Moderately concerned," "Very concerned," and "Extremely concerned" (Parsons & Fuller, 1974, p. 8). Fuller and many other researchers have successfully used the Teacher Concerns Checklist to identify the various concerns of teachers (Adams, 1982; Adams, Hutchinson, & Martray, 1980; Dadlez, 1998; Fuller & Case, 1972; Fuller et al., 1974; George, 1978; Kazelskis & Reeves, 1987; Reeves & Kazelskis, 1985).

In the 1970s, researchers at the Research and Development Center for Teacher Education of the University of Texas at Austin began documenting various concerns expressed by faculty and teachers who were adopting innovations in education. The researchers found these concerns were similar to the ones Francis Fuller observed (George et al., 2013). As more documentation was accumulated, it was "hypothesized that (a) they were definite categories of concern among innovation adopters and (b) the concerns changed in what seemed to be a logical progression as users became increasingly confident in using innovations" (George et al., 2013, p. 4). Table 2 illustrates the seven stages of concern that were eventually identified from the research.

Table 2

Typical Expressions of Concern about Innovation

Stages of Concern		Expressions of Concern
"Impact"	6	I have some ideas about something that would work even better.
	5	I would like to coordinate my effort with others, to maximize the innovations effect.
	4	How is my use affecting my students?
"Task"	3	I seem to be spending all my time getting materials ready.
"Self"	2	How will using it affect me?
	1	I would like to know more about it.
"Unconcerned"	0	I am not concerned about.

Note. Typical expressions of concern about innovation. Adapted from *Measuring implementation in schools: The Stages of Concern Questionnaire* (p. 4), by A. A. George, G. E. Hall, and S. M. Stiegelbauer, 2013, Austin, TX: SEDL. Copyright 2006 by SEDL. Adapted with permission.

What are concerns? Everyone, including faculty, is inundated from moment to moment with more stimuli than can be processed. There are many things that occur that are not noticed at all. Of the things that are perceived, each does not receive equal attention. George et al. (2013) posit that depending on the individual, different levels of interest or priorities are assigned to the stimuli perceived, however the majority are usually discarded. Each individual has experienced different things at different times that are unique to them that affect how experiences are perceived. This is in part due to "our personal history, personality dynamics, motivations, needs,

feelings, education, rolls, and status – shaped how we perceive, feel about, and cope with our environments. Whenever something heightens our feelings and thoughts, we are registering concern about it" (George et al., 2013, p. 7). Fuller (1969) describes concerns as simply problems that are perceived by teachers. Reeves and Kaselskis (1985) describe concerns as something the teacher thinks about frequently and would like to personally do something about. As it relates specifically to the Stages of Concern Questionnaire used in this study, Hall, George, and Rutherford (1977) define concern as "the composite representation of the feelings, preoccupation, thought, and consideration given to a particular issue or task" (p. 5).

The types of concerns individuals experience are numerous and the intensity of the experiences varies greatly. A person's individual perceptions of an event form the type and degree of concern. George et al. (2013) point out that facts about an individual's physical surroundings do not change, such as the temperature of a classroom, however how that temperature is perceived can vary greatly from person to person. People tend to experience more intense concerns if they are personally involved (George et al., 2013). This involvement can place an enormous cognitive load on a faculty member who is asked to teach an online course for the first time because they may not have a schema to support this new information. Kirshner (2002) refers to this as an extraneous cognitive load (CL) that is counterproductive to preferred germane CL that in turn is required to move the new information into long-term memory. This can generate a perceived concern because working memory is limited and the number of items required to teach an online class for the first time can easily exceed that capacity (Barrouillet, Portrat, & Camos, 2011).

In regards to concerns research, the word innovation is used as the placeholder name for the event, object, or situation that is the focus of the perceived concern (George et al., 2013).

How the innovation is used provides researchers with a point of reference for how to describe the perceived concerns. The innovation itself does not have to be something new such as the latest software application to help faculty teach in an online environment. An individual's personal experience with the innovation determines the type and level of concern (George et al., 2013). A person with little or no experience with an innovation will likely perceive it differently than someone who has spent a large amount of time with the innovation.

Measuring concern. This research study utilizes the Stages of Concern Questionnaire (SoCQ). The SoCQ was produced to represent one of three diagnostic tools of the Concerns-Based Adoption Model (CBAM), which is used as a framework for measuring the implementation of new innovations and facilitating change in institutions. George et al., (2013) state that the SOCQ:

> provides a way for researchers, program evaluators, administrators, and change facilitators to assess teacher concerns about strategies, programs, or materials introduced in school. Only by understanding concerns and addressing those concerns can they assess the extent of implementation and/or guide teachers successfully through the change process (p. xi).

The Concerns-Based Model along with the supporting SoCQ instrument were developed by the Research and Development Center for Teacher Education at the University of Texas in the 1970s (George et al., 2013). The SoCQ survey instrument has been used in many research studies and doctoral dissertations since its original development in order to investigate an array of innovations in education and has been translated into several foreign languages. It has also been employed outside of educational settings such as industrial environments. As with any survey instrument that has endured a long period of time, there have been some who question its

effectiveness in measuring what it claims to measure in real world environments (Cheung, Hattie, & Ng, 2001). Others have offered alternative stage models to the SOCQ such as the 35 item, five stage questionnaire by Bailey and Palsha (1992), Bailey and Palsha's abbreviated 15 item, five-stage questionnaire, and the 27 item, five stage model by Shotsberger and Crawford (1996). There have been "independent investigations of the reliability and validity of the stages of concern scores and other developmental theory predicting a sequence of concerns generally have concluded that the fundamental model is valid" (George et al., 2013, p. xi).

The Concerns-Based Adoption Model (CBAM) was developed in response to the method in which changes were made in the education system in the 1960s and 1970s. The best practices at the time offered specific programs or innovations to teachers and schools as turnkey solutions. It was thought that teachers or schools only needed to adopt the program or innovation to achieve the targeted outcomes. In many cases the desired outcomes were not achieved or at least not in the same way outlined by the program or innovation (George et al., 2013). These repeated implementation failures led to many studies examining change and adoption. These failures support Hall and Hord's (2001) position that change is a process, not a specific event and that organizations cannot change until the individuals within change.

The research on the subject of change and adoption at the Research and Development Center for Teacher Education (R&DCTE) at the University of Texas at Austin led to CBAM (Figure 3), which eventually led to the development of the Stages of Concern Questionnaire as one of the primary dimensions of the system. The team of researchers at R&DCTE believed that change began with the individual and therefore concentrated its efforts on understanding the process that happens to teachers and faculty when change is introduced (George et al., 2013).

The SoCQ instrument provided a way to understand the personal dimension of the process of change.

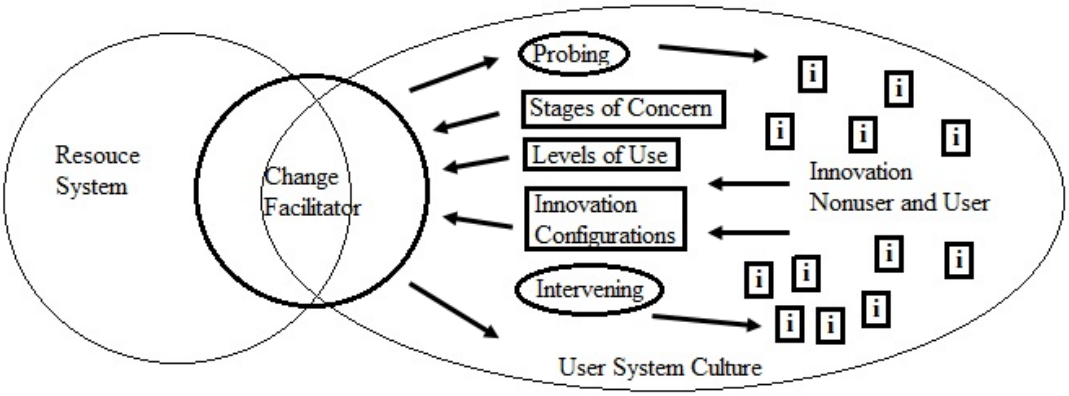

Figure 3. Typical Expressions of Concern about Innovation. Adapted from *Measuring implementation in schools: The Stages of Concern Questionnaire* (p. 4), by A. A. George, G. E. Hall, and S. M. Stiegelbauer, 2013, Austin, TX: SEDL. Copyright 2006 by SEDL. Adapted with permission.

The creation of the SoCQ took several years beginning in 1973 with a pilot instrument consisting of statements of concern about a specific innovation using open ended formats, Likert scales, an adjective check list, and interviews (George et al., 2013). Through examining the results of several additional pilot studies using intercorrelation matrices, judgments of concern based on interview data, and confirmation of expected group differences, the initial 544 concerns statements were eventually reduced to 35 (Hall et al., 1977).

The items on the Stages of Concern Questionnaire are designed to identify what stages of concern participants are in in regards to an innovation. The researchers originally hypothesized there were only six stages that teachers progressed through. However after extensive exploratory factor analysis it was discovered that a seventh existed and was subsequently labeled Stage 0 (Hall et al., 1977). Stage 0 is titled Unconcerned and indicates that the individual has little concern or involvement with the innovation. Stage 1 is Informational and George, et al. (2013) state:

> The individual indicates a general awareness of the innovation and interest in learning more details about it. Individual does not seem to be worried about himself or herself in relation to the innovation. Any interest is in impersonal, substantive aspects of the innovation, such as its general characteristics, effects, and requirements for use. (p. 8)

Stage 2 is Personal and George, et al. (2013) describes the concern as:

> The individual is uncertain about the demands of the innovation, his or her adequacy to meet those demands, and/or his or her role with the innovation. The individual is analyzing his or her relationship to the reward structure of the organization, determining his or her part in decision-making, and considering potential conflicts with existing structures or personal commitment. Concerns also might involve the financial or status implications of the program for which the individual and his or her colleagues. (p. 8)

Stage 3 of the Stages of Concern is titled Management and is described as "the individual focuses on the processes and task of using the innovation in the best use of information and resources. Issues related to efficiency, organizing, managing, and scheduling dominate" (p. 8). Stage 4 is Consequence and George, et al. (2013) characterize this stage as:

> The individual focuses on the innovation's impact on students in his or her immediate sphere of influence. Considerations include the relevance of the innovation for students; evaluation of student outcomes, including performance and competencies; and the changes needed to improve student outcomes. (p. 8)

Collaboration is stage 5 and can be characterized when "the individual focuses on coordinating and cooperating with others regarding use of the innovation" (George et al., 2013, p. 8). Refocusing is the final stage and can be described as when "the individual focuses on exploring ways to recap more universal benefits from the innovation, including the possibility of

making major changes to it or replacing it with a more powerful alternative" (George et al., 2013, p. 8).

Faculty Use of Technology in Teaching

Technology comes in many forms and can be implemented in many ways in the educational setting. New educational technologies are developed on a continuous basis and can be used in both good and bad ways depending on the instructor using them. Poirier and Feldman (2012) put into perspective the place of technology in teaching:

> Technology represents neither a panacea nor an apocalypse for the teaching enterprise. The same principles that relate to good teaching in any domain (e.g., the importance of challenging students, presenting clear goals, holding high expectations, involving and engaging students) underlie teaching whether or not an instructor uses any technology. In the end, the quality of teaching is more important than the implementation of new technology (p. 49).

The technologies reviewed in this study include social networking tools, presentation software, student response systems, podcasting, and online testing. These have been the focus of many research studies and have shed light on both the faculty as well as the student perspectives of the educational uses (Brown, 2007; DeBord, Aruguete, & Muhlig, 2004; Gunawardena et al., 2009; Heilesen, 2010; Johnson & Kiviniemi, 2009; Kist, 2009; O'Reilly, 2007; Poirier & Feldman, 2012; Rennie & Morrison, 2013; Susskind, 2005, 2008).

Social networking tools. Faculty have a wide variety of technology at their disposal to use in their teaching. Many current web based technologies offer the ability for faculty and students to collaborate in innovative ways. These are commonly referred to as Web 2.0 tools and include an ever-expanding list (Gunawardena et al., 2009). They are an evolution of the first generation of the web or Web 1.0 contrasted by terms such as publishing vs. participation,

content management systems vs. wikis, directories vs. tagging, personal websites vs. blogging (Gunawardena et al., 2009; Kist, 2009; O'Reilly, 2007) Some common Web 2.0 examples include social networking sites, wikis, blogs, and instant messaging (Poirier & Feldman, 2012). Many of these are free to use by both faculty and students. Some can be found directly incorporated into modern learning management systems used by faculty as a supplement to their traditional face-to-face, blended, or completely online courses.

Social networking web services such as Facebook, Google+, Instagram, Twitter, LinkedIn, Pinterest, Tumblr, Ning, YouTube, and VK are part of a growing list of free services designed to easily connect users via their computing devices to create and share information. Gunawardena et al. (2009) define "social networking technology as tools that facilitate collective intelligence through social negotiation when participants are engaged in a common goal or a shared practice" (p. 6). Rennie and Morrison (2013) refer to the nature of Web 2.0 as a "gift culture" (p. 4) where users contribute to the web as much as they take from it.

These Web 2.0 tools are important to many faculty because they support the social aspect of learning. Situated learning theory as posited in the seminal work of Lave and Wenger best describes the nature of social learning. Lave and Wenger (1991) contend that learning is more than a cognitive process and occurs with the social interactions of students. These social interactions occur in Lave and Wenger's described community of practice CoP framework. There are other concepts similar to the CoP that share the idea that social engagement is integral to learning such as the "community of learners, community inquiry, learning community, and community knowledge" (Hsiu-Ting Hung & Yuen, 2010, p. 704). A key feature of these Web 2.0 tools is that they reflect social learning practices such as "user generated content enabling

sharing, co-creating, co-editing, and co-construction of knowledge reflecting the collective intelligence of the users" (Gunawardena et al., 2009, p. 5).

Presentation software. Microsoft PowerPoint, Apple Keynote, Prezi, and Apache OpenOffice Impress are examples of presentation software that are used in both traditional and online educational settings. The advantage of using such software is that information can be delivered with text, graphics, audio, and video. PowerPoint was specifically created for presentations in the business world, however, creative educators have adapted it to meet the needs of educational environments (Brown, 2007).

Students have reported that the use of presentation applications in lectures helped them to stay focused and even increased their interest in the course (Apperson, Laws, & Scepansky, 2008). Mayer and Moreno's (2003) research has produced evidence that presentation software that is used properly can improve a student's learning and the principal challenge to make this happen is reducing the cognitive overload of the students. Some ways to accomplish this include reducing the amount of text on a slide, "eliminate extraneous material (e.g., background music) and provide cues (e.g., headings, arrows) for what is essential content" (Mayer & Moreno, 2003, p. 40).

Research by Bartsch and Cobern (2003) and Susskind (2005, 2008) indicates that students prefer lectures with presentation software over those without. This lecture format was desirable to the students, but "did not have an effect on students' exam performance, attendance, and participation in class discussions" (Susskind, 2008, p. 40). Other research has come to similar conclusions about the use of such presentation software having little effect on student learning outcomes (DeBord et al., 2004; Hardin, 2007; Szabo & Hastings, 2000). Much of the literature finds that presentation software does not have a direct effect on learning, however

some research has found that it does have some small positive effects (Axtell, Maddux, & Aberasturi, 2008; Hove & Corcoran, 2008a). Hove and Corcoran (2008a) divided students into two groups: those in a traditional lecture-only class and those that were supplemented with software presentations. Both groups were then tested on the class material using a multiple-choice test. Those in the presentation style lecture did better than those in the traditional lecture. Susskind's (2005) research found that students believed that lectures supplemented with presentation software were better organized, which in turn made it easier for them to study for tests.

There has also been research conducted about the appropriate time for faculty to make their presentations available to students and whether it affects class attendance. The research indicates that students who had access to the faculty's presentations before class were no less likely to miss class than those who did not have access to the presentations prior to class (Babb & Ross, 2009; Bowman, 2009; Hove & Corcoran, 2008b). Hove and Corcoran (2008b) found this to be true in their research as well, however, they also found a slight increase in exam scores for students who had access to the presentation slides before, during, and after the face-to-face class session. The amount of information on the presentation slides may have an effect as well on exam scores. One study indicates that students who received an outline of information rather than a complete set of notes did better on the final exam for the course (Cornelius & Owen-DeSchryver, 2008).

Student response systems. Student response systems generally consist of a receiving device such as a computer that communicates with transmitting hardware devices or applications commonly referred to as *clickers* (Poirier & Feldman, 2012). There are several commercial manufactures of student response systems including Turning Technologies, iClicker, iRespond,

Poll Everywhere, and eInstruction. The hardware versions of these systems include a receiver that plugs into a presenter's computer and handheld transmitting devices, usually with a keypad, for the audience to input responses. The software only versions of these response systems usually work by installing an application or *app* on a presenter's computing device such as a computer, tablet, or phone and a corresponding *clicker* application installed on the audience member's computing device. These applications communicate with each other by way of a wireless connection such as WiFi or Bluetooth. The software programs that come with these systems allow the presenter to create questions that the audience responds to using their clickers. Depending on the specific software, the results can be shown in aggregate or individually to the presenter alone or to the entire audience (Poirier & Feldman, 2012).

In an educational environment, the audience members are students and the presenter is the faculty member. It can be argued that many faculty value student participation in the classroom and the research indicates this type of response system increases student participation (Burnstein & Lederman, 2001; Poirier & Feldman, 2007; Stowell & Nelson, 2007; Trees & Jackson, 2007). From the student's perspective, research has shown that students generally have favorable attitudes towards this type of personal response technology (Hunsinger, Poirier, & Feldman, 2008; Patry, 2009; Pemberton, Borrego, & Cohen, 2006). This is in part due to the students' responses being anonymous to the other students in the class in most situations and therefore they do not feel judged (Draper & Brown, 2004; Stowell & Bennett, 2010).

This type of personal response system allows faculty to receive immediate feedback during class about how well the students understand the concepts being taught. This feedback can be used by the faculty member to possibly adjust the course and pace of their presentation in order to better meet the needs of the students (Abrahamson & Brady, 2014; Hake, 1998).

Students have reported that they are more likely to pay attention during a lecture in which faculty incorporate this type of personal response system (Hoekstra, 2008; Hunsinger et al., 2008) even though some students with limited technological experience reported feeling anxious when the system was first introduced (Hoekstra, 2008). Arguably, many faculty are favorable towards this type of technology because research has shown it increases student learning (Crouch & Mazur, 2001; Kennedy & Cutts, 2005; Morling, McAuliffe, Cohen, & DiLorenzo, 2008). This information is tempered by some studies that have found no significant increases in student learning as reflected by quiz and exam scores. However, these studies were conducted on courses that did not use the response systems the entire semester, rather they were employed in just a few lectures (Pemberton et al., 2006; Stowell & Nelson, 2007).

Podcasts. "Podcasting is a particular form of ICT [information and communications technology] and its use in HE [higher education] refers to the production of digital audio or video files that are made available to students via an intra- or internet" (Hill, Nelson, France, & Woodland, 2012, p. 437). Some podcasting software allows for the synchronization of the faculty's audio and or video with presentation software such as Microsoft PowerPoint or Apple Keynote (Griffin, Mitchell, & Thompson, 2009). Podcasts can be produced by faculty using a microphone, webcam or camcorder (if video is desired), recording software, and providing a method of distributing the resulting podcast files to students. These faculty produced podcast files can be downloaded to students' computing devices or streamed directly from the Internet from popular services such as Apple's iTunes University.

The use of podcasts by faculty to record their lectures has been generally well received by students who consider them to be a beneficial tool for their learning (Evans, 2008; Fernandez, Simo, & Sallan, 2009; Parson, Reddy, Wood, & Senior, 2009). Many students have indicated

they prefer traditional lectures supplemented with podcasts (Griffin et al., 2009). These educational podcasts have also been identified as a way to promote autonomous student learning (France & Fletcher, 2007; Heilesen, 2010). The answer to the question of whether the use of podcasts by faculty actually improves student learning is mixed. A study by McKinney, Dyck, & Luber (2009) of two groups of students, one with only a PowerPoint of the class lecture and one with both the PowerPoint and podcast of the lecture, found that those who received the podcast did better on the associated exam. Hill et al. (2012) conducted a two year study of undergraduate college students who showed no significant difference in grades between the students who had access to podcasts and those who did not.

Online testing. The use of testing in general is widely accepted as one method that attempts to assess the knowledge of students in a subject area. The use of online testing by faculty has several benefits for both the faculty member and the students. Administering tests online can free up class time if the faculty member allows students to complete them outside of the face-to-face class period and depending on the type of test questions used, i.e. multiple choice, true false, multiple answer; the time spent on grading can be significantly less than with traditional pencil and paper tests (Daniel & Broida, 2004). Stowell and Bennett (2010) found that testing online versus the tradition in-class testing can reduce the anxiety felt by some students identified with high testing anxiety.

Studies by Johnson and Kiviniemi (2009) and Connor-Greene (2000) have found that the use of online testing increased student grades. Other researchers have posited that online testing does not guarantee that student learning will actually increase (Brothen & Wambach, 2001; Daniel & Broida, 2004). There are several strategies offered based on evidence to help increase the effectiveness of online testing and to discourage cheating. One strategy proposed by Brothen

and Wambach, (2004) is to limit the amount of time allowed by students to take an online test. Knowing there is a time limit encourages students to study as much of the course material before the test and not rely on looking the answers up during the test or contacting a classmate for answers. Daniel and Broida (2004) as well as Johnson and Kiviniemi (2009) recommend that faculty generate a large number of questions, referred to as a pool, for each test so that each student receives a different subset of questions. This strategy helps to reduce the likelihood of students contacting each other for answers. Another method to help students learn the course material is to provide feedback for each completed answer including where in the course materials the answer can be located (Daniel & Broida, 2004; Johnson et al., 2009). To help dissuade students from cheating during online testing, it can be helpful to have them adopt or sign an honor code document (Gurung, Wilhelm, & Filz, 2012; Schwartz, Tatum, & Wells, 2012).

Teaching Methods

The learning environment of the students is primarily chosen by the faculty member teaching the course. Faculty have a wide variety of teaching methods available to them, however, many faculty teach their classes the way they were taught when they were students (McCrea, 2012). Figure 5 depicts the summary results of the same survey administered multiple times about teaching methods administered by the Higher Education Research Institute (HERI) at UCLA to full-time faculty at higher education institutions from 1989 to 2014. The figure represents the percentage of faculty who responded with an “all” or “most” on the surveys in regards to the use of specific teaching methods (Eagan et al., 2014, p. 5).

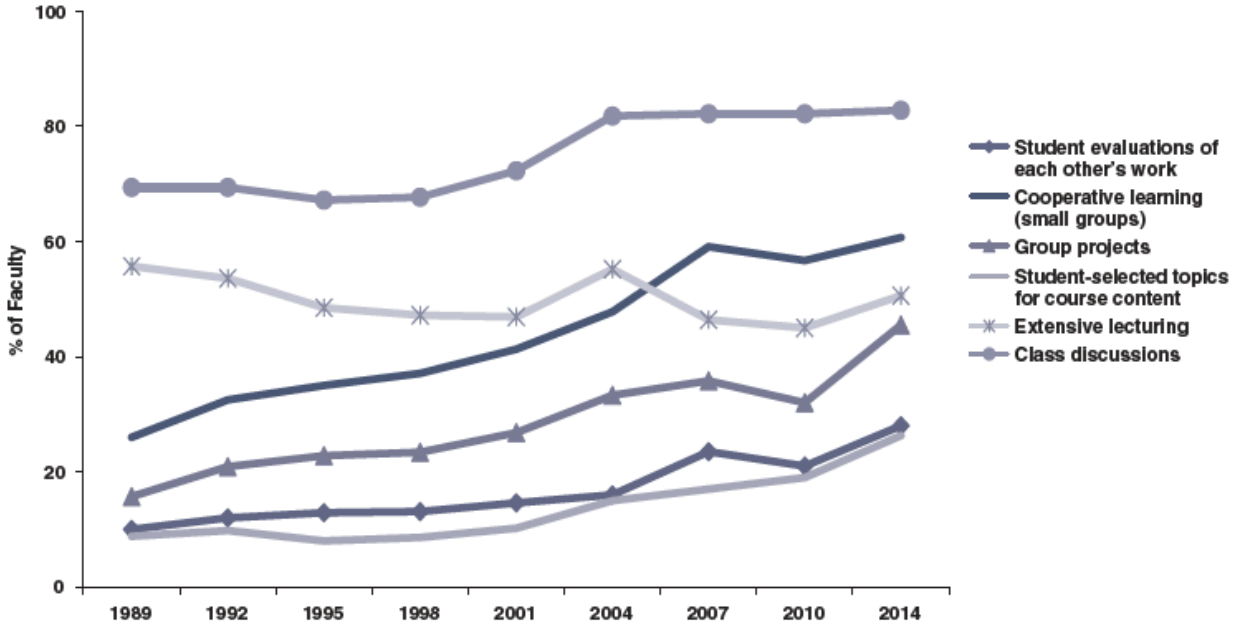

Figure 4. Change in faculty teaching practices, 1989-2014. Reprinted from "*Undergraduate teaching faculty: The 2013–2014 HERI faculty survey,"* by K. Eagan, E. B. Stolzenberg, J. B. Lozano, M. C. Aragon, M. R. Suchard, and S. Hurtado, 2014. Copyright 2014 by the Regents of the University of California. Reprinted with permission.

The dominant teaching method utilized by full-time faculty across all categories; Public, Private, Non-secular, Catholic, and Other Religious universities and 4-year colleges is reported to be Class Discussions (82.8%) during the 2013-2014 survey period as well all other survey periods dating back to 1989 when the survey was first utilized (Eagan et al., 2014). Other frequently used teaching methods reported by faculty were using real life problems (69.8%), cooperative learning or small groups (60.7%), using student inquiry to drive learning (56.4%), student presentations (52.4%), lecturing (50.6%), starting class with a question that engages students (49.5%), group projects (45.5%), experiential learning (31%), student-selected topics for course content (26.3%), and learn before the lecture, or flipping the classroom (21.8%; Eagan et al., 2014). For the purpose of this research study, these and other teaching methods in general will be grouped into two broad categories: instructor-centered and student-centered.

Teacher-centered. The teacher-centered teaching method has been employed for hundreds of years and has changed little in that time (Spence, 2001). At many colleges and universities around the world, "the professor lectures and the students listen and take notes. The professor is the central figure, the "sage on the stage, the one who has the knowledge and transmits that knowledge to the students" and these students "simply memorize the information and later reproduce it on an exam--often without even thinking about it" (King, 1993, para. 1). King (1993) and other educators refer to this as a transmittal model of teaching in which the students are passive and wait for the instructor to pour the knowledge into them as if they were empty containers.

Data from the 2013-2014 HERI survey to faculty about their teaching methods indicate that extensive lecturing is still practiced by slightly more than half (50.6%) of the full-time faculty surveyed. This teacher-centered teaching method is used more at both public (53.7%) and private (52.7%) universities than at private 4-year colleges (43.1%). It is interesting to note that this data also shows private 4-year colleges comparable to their university counterparts with 51.6% of their faculty using lecture extensively in their classes. Those 4-year private colleges classified as Catholic were the next highest in lecturing at 49.3%, the Other Religious category reported 42.1%, and the lowest of all the categories was Non-secular at 40.8% (Eagan et al., 2014). The university that will be surveyed in this research study falls into the Other Religious category.

Student-centered. A student-centered theory of teaching and learning that has emerged as an alternative to the lecture-only method of teaching is constructivism. Constructivist theory provides the framework for many student-centered teaching methodologies including cooperative learning, constructionism, guided instruction, and problem-based learning. Jean

Piaget, John Dewey, Lev Vygotsky, Jerome Burner, and David Ausubel are among the seminal contributors towards these types of student-centered practices. The 2013-14 HERI survey data indicates several implementations of student-centered teaching methods employed by faculty: 82.8% of faculty utilize Class Discussions, 60.7% use Small Groups, 52.4% use Student Presentations, 45.5% Group Projects, and 21.8% Flip the Classroom (faculty presentation outside of class time) using technology (Eagan et al., 2014). Constructivism situates the student in the center of learning process and postulates that:

> knowledge does not come packaged in books, or journals, or computer disks (or professors' and students' heads) to be transmitted intact from one to another. Those vessels contain information, not knowledge. Rather, knowledge is a state of understanding and can only exist in the mind of the individual knower; as such, knowledge must be constructed--or re-constructed--by each individual knower through the process of trying to make sense of new information in terms of what that individual already knows. (King, 1993, para. 2)

Given that faculty are not the students, it is not possible for them to construct knowledge on behalf of their students. It is important to note that if students "do not integrate new knowledge with prior knowledge, they cannot use this knowledge in the future even in situations just slightly different from the one in which they learned it" (Blumberg & Weimer, 2012, p. 12). Weimer (2002, 2013) created five dimensions to describe key components of student-centered teaching methodology through the framework of constructivism. These dimension are: The Function of Content, The Role of the Instructor, The Responsibility of Learning, The Purposes and Processes of Assessment, and The Balance of Power.

Summary

The literature reviewed in this study addressed a historical perspective of online education, Concerns Theory, technology used by faculty in their teaching, and faculty teaching methods. Online education has its historical roots in distance education dating back more than 200 years to correspondence courses offered via the postal system in both Europe and the United States. As technology advanced, educators were able to incorporate tools that offered faster correspondence to a larger number of people. With the advent of the World Wide Web and high-speed data connections, distance education moved from correspondence only, to a real-time interactive experience among the students and instructors. As more universities and colleges offer online courses, faculty teaching in the traditional face-to-face model are having to adapt their teaching to fit this new model of teaching and learning. Francis Fuller is identified as the founding leader of Concerns Theory, which is utilized as the framework for the Stages of Concern Questionnaire (SoC) used in this study to identify the stages of concern of faculty in regards to teaching online. The literature revealed many studies that examined the technologies used by faculty in their teaching such as social networking tools, presentation software, student-response systems, podcasting, and online testing. Faculty teaching methods examined in this study fall into two categories; teacher-centered and student-centered. The teacher-centered method has been utilized for hundreds of years in the traditional classroom and is most identified with lecturing by the instructor. The student-centered approach is more constructivist in nature and situates the student at the center of the learning process.

Chapter Three: Methodology

The purpose of this quantitative study was to discover the stages of concern of faculty in regards to teaching online and the relationship to their teaching methods and their use of technology in teaching. As more traditional institutions of higher education begin offering courses and even entire programs online, the demand for more faculty to teach online courses will increase as well. It is important for the administration and the faculty to understand the stages of concern in regards to teaching online in order to successfully adopt, implement, and grow the number of these online courses and programs. The literature indicates that the change process begins with individual people in an organization and understanding their concerns is paramount in facilitating the diffusion and adoption of an innovation (Fuller, 1970; George et al., 2013; Hall & Hord, 2001; Hall, Wallace, & Dossett, 1973). This chapter includes a restatement of the research questions; description of the methodology and sources of data; details of the survey instrument; the procedures that were used to gather the data; and the statistical analyses applied to that data. The chapter concludes with the procedures that were followed to protect the human subjects in this research.

Research Questions Restated

The following research questions were explored and measured using a modified version of the Stages of Concern Questionnaire (SoCQ):

1. What are the stages of faculty concern about teaching online?
2. What relationship exists between the technology used by faculty as self-reported in their teaching and their stages of concern about teaching online?
3. What relationship exists between faculty teaching methods as self-reported and their stages of concern about teaching online?

4. To what degree does the concern about teaching online differ between faculty who are more teacher-centered versus those who are more student-centered in their teaching?

Research Methodology

The researcher utilized quantitative methods to explore what the relationship was, if any, between the teaching methods of faculty and their stages of concern in regards to teaching online. The study also examined if there was a relationship between faculty's use of technology in teaching and their stages of concern in regards to teaching online. A survey instrument, cross-sectional in nature, was used to collect data from full-time faculty teaching at a small Christian liberal arts university in Southern California. The researcher considered qualitative and mixed methods methodologies as possible approaches to gathering and analyzing the desired data to answer the research questions for the study. These however did not lend themselves as well to the desired analysis of the data using numerical correlational procedures. Future studies may find the resulting data useful as a foundation for qualitative investigations on this topic.

This study employed quantitative research methods because the researcher intended to collect numerical data and apply statistical numerical analysis to that data (Babbie, 2007; Creswell, 2009). Correlational research was utilized to discover if a relationship existed between faculty teaching methods and their stages of concern in regards to teaching online . The same procedures were followed to discover if a correlation exists between faculty's use of technology in teaching and their stages of concern in regards to teaching online. When this correlational relationship is measured numerically, as it was with the survey instrument in this study, Gray (2004) states "we get a correlation coefficient that gives the strength and direction of the relationship between two variables." (p. 485). Levine and Parkinson (2014) describe this relationship as a positive relationship which:

is one in which high scores on one variable are associated with high scores on the other variable, with similar correspondence for low scores, and for moderate scores. A negative relationship is one in which high scores on one variable are associated with low scores on the other. (p. 17)

Subjects

A single research site was surveyed for this study using purposive sampling. The research site was a small Christian liberal arts university in Southern California. This site was chosen because of the researcher's affiliation with the university that allowed access to the data collection and analysis process. The student population consisted of more than 4,000 undergraduate and graduate students. There were over 150 full-time faculty and more than 300 part-time faculty employed at the university. One hundred twelve of these full-time faculty were members of the same church denomination the university is affiliated with and 13 were ordained pastors. There were 42 full-time faculty who were Christian, but are not specifically affiliated with the same church denomination as the university. The researcher intended to make the survey available to all full-time faculty at the university.

Data Gathering Instrument

The researcher utilized an existing self-report survey instrument, the Stages of Concern Questionnaire (See Appendix A), developed by SEDL, formerly named Southwest Educational Development Laboratory, but changed to just SEDL in 2007 to reflect its expanding scope of work. SEDL is "a nonprofit educational research, development, and dissemination organization based in Austin, Texas" that was established in 1966 and its mission is to "strengthen the connections among research, policy, and practice in order to improve outcomes for all learners" ("About SEDL - Overview," n.d.).

The Stages of Concern Questionnaire (SoCQ) survey instrument consists of 35 items related to an innovation. The innovation is generic and is used as a placeholder in the survey to represent the specific innovation being researched; in this study the innovation is online teaching. The researcher obtained written permission from SEDL (See Appendix B) to use the SoCQ survey instrument for this research study. The written permission document states that none of the 35 items may be changed with the exception of the word innovation, which may be substituted with the innovation being studied. SEDL granted this researcher permission to add additional items to the survey instrument in order to gather information about faculty's professional use of technology in their teaching and faculty's teaching methods (See Appendix B). These additional items, along with the original 35, were used to gather information about the research questions in this study.

The 35 items about the innovation on the Stages of Concern Questionnaire are presented in a Likert scale format ranging from 0 to 7; the higher the respondent's number, the higher the perceived concern. A 0 represents a very low perceived concern or is perceived as irrelevant by the participant. There are five items presented for each stage of concern. George, Hall, and Stiegrlbauer (2013) state "the Stages of Concern about an Innovation appear to progress from little or no concern, to personal or self-concerns, to concerns about the task of adopting the innovation, and finally to concerns about the impact of the innovation" (p. 8). Appendix G displays which items are asked to determine each stage of concern.

In addition to the standard 35 items on the SoCQ, the researcher added additional items concerning faculty's use of technology in their teaching and their teaching methods (See Table A1 in Appendix A). These items appeared before the standard 35 items and were in scale form ranging from Never, Rarely, Sometimes, Frequently. The items were derived from several

sources ranging from research studies, university instructional websites, commercial sites, and surveys that focused on teaching methods and technology use of teachers. The researcher recorded the reoccurring teaching methods and technologies used by teachers that appeared in multiple sources and those were the items added to the survey instrument. The Center for Teaching and Learning at the University of North Carolina Charlotte (UNC) offered a comprehensive and detailed list covering 150 teaching methods (University of North Carolina [UNC] Charlotte, Center for Teaching and Learning, n.d.). The majority of teaching methods found in other sources were also on UNC's list either by exact wording or by the same general definition of the items. The University of California Los Angeles' Higher Education Research Institute (HERI) 2014 study of more than 16,100 full-time faculty employed in 269 colleges and universities provided a list of teaching methods that have been surveyed from 1989 to 2014 (Eagan et al., 2014).

Validity and Reliability of the Survey Instrument

The Stages of Concern Questionnaire was originally developed by the Research and Development Center for Teacher Education at the University of Texas over a three-year period from 1973 to 1976 incorporating several pilot studies to determine validity, reliability and has since been used as the primary survey instrument in many research studies (See Appendix F; George et al., 2013). The SoCQ's test/retest reliabilities range from .65 to .86 with alpha-coefficients ranging from .64 to .83 for internal consistency (Hall & Hord, 2001). Other studies that utilized the SoCQ with a similar technology focus or innovation as this research study include Rakes and Casey (2002) with a focus on the use of instructional technology with a sample size of 659 teachers; Hope (1997) with a focus on technology use with a sample of 16 teachers; Howland and Mayer (1999) with a focus on network community for technology use which sampled two school settings; Hawkes, Cambre, and Lewis (1999) with the innovation of

Telecommunity School–Net program adoption; Atkins and Vasu (2000) with a focus on GTECH integrated math, science, and technology use with a sample of 155 teachers; and Gershner and Snider (2001) with a focus on curriculum integration of technology use with a sample of 49 teachers.

In order to establish the validity of the additional survey items added to the original survey for the purpose of collecting information about faculty teaching methods and technology use, the researcher convened a review panel consisting of three experts in the field of education with backgrounds in teaching methods and educational technology. These experts possessed earned doctorate degrees and taught research or statistics courses at the graduate level. Each reviewer was presented the additional items in the same format as they appeared to the participants in the study and then were asked to provide feedback to the researcher as to whether the items adequately measured what they were intended to measure. Creswell (2009) defines this as content validity. The researcher implemented the suggested changes offered by the experts. In the event that any conflicts arouse among the suggestions made among the experts, the researcher would have implemented what the majority suggested. In the event all three experts were in conflict with a suggestion, a fourth expert's advice would have been sought. This situation did not occur.

To further estimate the reliability of these additional items, Cronbach's alpha was applied with a resulting score of 0.67. Cronbach's alpha takes into consideration the number of items utilized in the survey instrument, the average covariance between items that ask for the same information, and the variance of the total score. The resulting alpha score ranges from 0 to 1 with a higher value considered more reliable (Lavrakas, 2008). A score of 0.70 or higher indicates that the proposed items are reliable (Lavrakas, 2008).

Data Gathering Procedures

The researcher worked with the Information Technology Services (ITS) department at CLAU to obtain the work email addresses of all full-time faculty members at the institution. This information resided in the institution's student information system, Banner. The researcher completed the institution's online help desk request form located on the ITS website to formally request a meeting with the Banner Report Specialist, who had direct access to the areas of the employee information system that contained the data for the desired population. The researcher discussed the intended research with the Banner Report Specialist and provided written documentation from the institution's Internal Review Board granting the researcher permission to collect the work e-mail addresses of all full-time faculty for the purpose of surveying the identified population. The researcher requested that the Banner Report Specialist save the extracted data into a comma separated value file format. To help ensure the privacy of the data, the researcher requested the resulting data file be placed on an encrypted storage device.

The survey instrument that was utilized for this study is the Stages of Concern Questionnaire (SoCQ; See Appendix A) managed by SEDL. The SEDL organization offered the survey instrument in an online format hosted on their secure servers. The researcher purchased the rights from the SEDL website to use 154 hosted survey completions, which was the minimum required to survey the intended population of this study. After the purchase, the researcher logged into the secure SoCQ online administration site using a password originally created by SEDL and then was changed by the researcher for added security. This was accomplished using a secure socket layer (SSL) connection from the researcher's computer to SEDL's administration site server for the purpose of preparing the survey for deployment and then again later for collecting the results of the completed surveys.

SEDL referred to the specific survey deployment created by researchers as a *cohort* (George et al., 2013). The first step in preparing the survey was to provide a name for the cohort, which for this research study was titled "The Stages of Faculty Concern about Online Teaching." In keeping with the requirements set forth by SEDL, the only word within the set of 35 items that can be modified is the word "innovation." The researcher changed this word to the phrase "online teaching" in order to align the instrument items to the purpose of this research study. The configuration screen for the survey instrument included an area to provide introductory text that appeared before any questions that were presented to those taking the survey. This area was used to provide a description of this research study as well as an informed consent statement (See Appendix C). Information in the consent statement described the risks of participating in the study, how to remove themselves from the study, and who to contact for additional information. The system configuration option to provide a mandatory consent check box was activated. This setting required participants to check the consent box before proceeding to the survey items.

In order to provide clear directions to all the participants, the option was activated to display sample instructions for the 7-point scale used in the survey. A "thank you" text field was filled in with the following statement: "Thank you for taking your valuable time to participate in this research study." This appeared after the participant submitted the answer to the last question. The option for the researcher to receive a notification when a survey was submitted was selected. This notification did not have any identifiable information about the participant who completed the survey, just a confirmation that a survey had been completed.

As described in the Data Instrument section of this chapter, the Stages of Concern Questionnaire (SoCQ) contains 35 items related to an innovation being studied; in this study, that innovation is online teaching. The authors of SoCQ required that this block of questions remain

intact with the exception of changing the word *innovation* to a word or phrase that matches the specific innovation being studied (George et al., 2013). However, the authors did allow for additional items to be added to the survey as needed to meet the specific needs of the research study. Additional items were added to the survey construction area to seek an answer for the research question related to the teaching methods used by faculty. Additional items were also added to seek an answer to the research question related to the technologies utilized by faculty in their teaching. These items appeared after the participant provided consent to participate in the research study and before the list of fixed 35 items about the innovation. The answer format for these additional items appeared as drop down menus, radio dials, or check boxes, which differed from the format of the 7-point Likert scale used for the fixed 35 items about the innovation. When all the additional items were entered and saved on the configuration page of the administration website, a unique survey uniform resource locator (URL) link was generated specifically for that survey.

The researcher distributed the survey via email (See Appendix D) in the spring of 2015. This was accomplished by creating a blind copy email distribution list in the researcher's work email account using the data file produced by the Banner Report Specialist at CLAU and then emailing the group with an electronic invitation link to participate in the survey. There is research that indicates the best day of the week to begin the distribution of a survey is on a Monday (Zheng, 2011). The participants were first taken to a page with information about the study (See Appendix C). This page appeared before the survey items were displayed to the participants and also included a letter of informed consent. In order to maintain confidentiality and privacy, no identifying information about the participants was collected. This included the participant's name, address, phone number, computer name, network subnet, or their Internet

protocol (IP) address. It was estimated that the average participant would take approximately 15 to 20 minutes to complete the survey.

The intent of the researcher was to receive as many responses from the total survey population of 154 full-time faculty who would self-select to participate in this study. The survey remained open for a period of four weeks to achieve an acceptable return rate. A reminder e-mail (See Appendix E) was sent at the beginning of week three in order to reach an acceptable completion total. In order to provide additional motivation for participation, a $50 gift card was offered in a random drawing at the close of the study for those who were sent the invitation email regardless if they completed the survey. This procedure was followed to ensure the confidentiality of the participants since the researcher had no way of tracking who completed the survey. The researcher worked with the CLAU Banner Report Specialist, who compiled the original list of emails, to randomly select one email address from the list and notify the winner.

Data Analysis

This study utilized quantitative methods that employed a survey instrument to gather the data to be analyzed. The survey instrument described in this chapter, The Stages of Concern Questionnaire (SoCQ), can be scored either by hand or by the use of computer based programs (George et al., 2013). The researcher purchased the online version of the SoCQ through SEDL which came with the ability to run statistical analysis online via the password protected administrative website as well as download the raw data to a personal computer.

The SEDL SoSQ administration website collected the raw scores from each respondent for each of the seven stages of concern, which are dependent variables and then converted these to percentile scores. “The percentiles are based on the responses of 830 individuals who completed the 35 item questionnaire in fall of 1974. The individuals were a carefully selected stratified sample, from both elementary schools and higher education institutions, who had a

range of experience with the innovation of teaming or modules" (George et al., 2013, p. 28). Appendix F is an example of a report of the raw and percentile scores as well as a line graph for sample percentile scores for each stage of concern. This process was run for all participants as a group and then again for each subgroup. The subgroups were comprised of the set of survey items related to faculty teaching methods and faculty's technology use in teaching, which were the dependent variables. In addition to using the SEDL's administrative website, the data were downloaded to the researcher's personal computer and analyzed using Statistical Package for the Social Sciences (SPSS).

Babbie (2007) defines correlation as "an empirical relationship between two variables such that a change in one are associated with changes in the other or particular attributes of one variable are associated with particular attributes of the other" (p. 515). A Pearson-r bivariate correlation was run in SPSS to determine if a relationship existed between faculty teaching methods derived from the teaching methods survey items and their stages of concern about teaching online based on the SoCQ scores. This same analysis was run to determine if a correlation existed between faculty's use of technology, derived from the technology use in teaching survey items, and their stages of concern in regards to teaching online based on the SoCQ scores.

To specifically address research question four in regards to the difference in the stages of concern in regards to teaching online between those faculty who are more teacher-centered versus student-centered, an analysis of variance (ANOVA) was utilized. This type of analysis was created by Sir Ronald Fisher in the 1920s and is commonly used to determine if there is a difference among two or more groups as it relates to an independent variable. In this study, the

independent variable was the teaching methods utilized. Table 3 depicts the type of statistical analysis that was performed on the variables in the research questions.

Table 3

Data Analysis

Research Question	Dependent Variable 1	Independent Variable 2	Analysis
1	Stages of Concern Questionnaire		a) Descriptive Statistics
2	Stages of Concern Questionnaire	Faculty's Use of Technology in Teaching Items	a) Descriptive Statistics b) Pearson-r
3	Stages of Concern Questionnaire	Faculty Teaching Method Items	a) Descriptive Statistics b) Pearson-r
4	Stages of Concern Questionnaire	Faculty Teaching Method Items	a) Descriptive Statistics b) ANOVA

Human Subjects Protection

All research for this study was conducted in accordance with professional, federal, and ethical standards provided by the degree granting institution, the institution where research was conducted, and the U.S. Department of Health and Human Services. Specifically, the ethical principles and guidelines for research involving human subjects as described in the Belmont Report of 1979 were followed.

In accordance with the principles of the Belmont Report of 1976, those who decided to participate in the study did so voluntarily. Before the participants could take the survey, they were required to check a consent box after reading the confidentiality and privacy statement about the study. All participants were made aware of their ability to terminate their participation in the study by not starting the survey or exiting the survey at any time. This information was displayed on the same survey information page as the confidentiality and privacy statements. No identifying participant information was collected such as name, address, phone number,

computer name, network subnet, or their Internet protocol (IP) address. There were no identifiable risks to those who participated in the study.

The data collected from the surveys was only accessible to the researcher of this study. The data was stored in a secure location on the researcher's computer hard drive as well as on SEDL's secure, password protected administrative website. This data will remain accessible only to the researcher for a period of three years from the date of final data collection and then deleted from both the researcher's hard drive as well as from SEDL's administrative website. All procedures from the institution's research board as well as the degree granting intuition's research board were followed.

Summary

This chapter provided descriptions of the methodology that were used in this research study. A modified online version of the Stages of Concern Questionnaire was used to determine what the stages of concern were of the full-time faculty of a small Christian liberal arts university in Southern California toward teaching online, what technologies they used in their teaching, and what teaching methods they employed. These faculty were invited to participate in this anonymous study by way of an email invitation. The quantitative correlational approach of this study utilized a Pearson-r bivariate statistical analysis to determine if a relationship existed between the faculty members' teaching methods and their stages of concern in regards to teaching online. This procedure was also used to determine if there was a relationship between a faculty's use of technology in teaching and their stages of concern in regards to teaching online. The examination of this data may help institutions provide support to faculty who are asked to teach in an online environment as well as help institutions determine if they are capable of offering more programs in an online format based on the support they have from faculty.

Chapter Four: Results

The sample is reviewed first with minimal demographics. The findings are presented in order of the four research questions. Analyses are presented with a findings summary.

The first research question in this quantitative study was posed in order to answer questions about the stages of concern faculty fall into in regards to teaching online. The second research question sought to discover if there was a relationship between faculty's use of technology in their teaching and their stages of concern in regards to teaching online. The third research question was used to determine if there was a relationship between various faculty teaching methods and their stages of concern in regards to teaching online. The last research question was used to determine if the stages of concern about teaching online differs between faculty who are more teacher-centered versus those who are more student-centered in their teaching.

Data Source and Demographics

The participants in this study were full-time faculty who taught at a small Christian liberal arts university in Southern California. The university employs 154 full-time faculty in all of its schools and programs. Out of the 154 faculty, 77 (N =77) participated in the study by completing an online survey that was emailed directly to their university email address. The full-time faculty were identified by working with the employee information system report specialist in the Information Technology Services department. The report specialist provided the email addresses to the researcher who emailed the link to the online survey to all full-time faculty directly in the spring of 2015. The data generated from the survey were analyzed using the statistical software package SPSS and percentile scores were generated by SEDL. Descriptive,

correlational, and inferential statistics were used to analyze the findings for each of the research questions.

Findings for RQ1: What Are the Stages of Faculty Concern about Teaching Online?

To answer the first research question, descriptive statistics as well as an existing 35 item survey instrument titled The Stages of Concern Questionnaire (SoCQ) were utilized. The survey instrument was designed by the Research and Development Center for Teacher Education at the University of Texas in the 1970s (George et al., 2013). The primary purpose of SoCQ is to determine the stages of concern about a specific innovation. In this study, the innovation was teaching online. Each item was presented in a Likert scale format ranging from the lowest intensity of 0 to the highest intensity of 7. The items are categorized into seven stages: Stage 0: Unconcerned, Stage 1: Informational, Stage 2: Personal, Stage 3: Management, Stage 4: Consequence, Stage 5: Collaboration, and Stage 6: Refocusing. The results are presented first by the greatest number of high percentile scores for faculty for each stage of concern. The raw scores for each item are also presented to provide detail.

The participants in this study responded to all items related to each of the seven Stages of Concern. These raw scores were then converted to percentile scores. George et al (2013) describe the origins of the percentiles used in the scoring of the Stage of Concern Questionnaire, which can be found in Appendix H, by stating:

> The percentiles are based on the responses of 830 individuals who completed the 35-item questionnaire in fall of 1974. The individuals were a carefully selected stratified sample, from both elementary schools and higher-education institutions, who had a range of experience with innovation of teaming or modules (p. 26).

Each participant scored highest in at least one stage of concern. Each of these individual high percentile scores were then counted for each stage to determine which stage of concern had

the most faculty. Figure 5 displays the count and percentage of faculty who scored highest in each of the seven stages of concern. There were a total 77 participants, 31 had their highest percentile scores in Stage 0: Unconcerned. Over 40% of the participants appear not to be concerned or involved with teaching online. With this majority score, it is not surprising the lowest scoring stage of all seven was Stage 4, titled Consequence with only two participants having their highest score in this stage. Stage 4 focuses on the impact the innovation has on students. The participants do not appear to be focused on what impact teaching online has on students at the time this study was conducted.

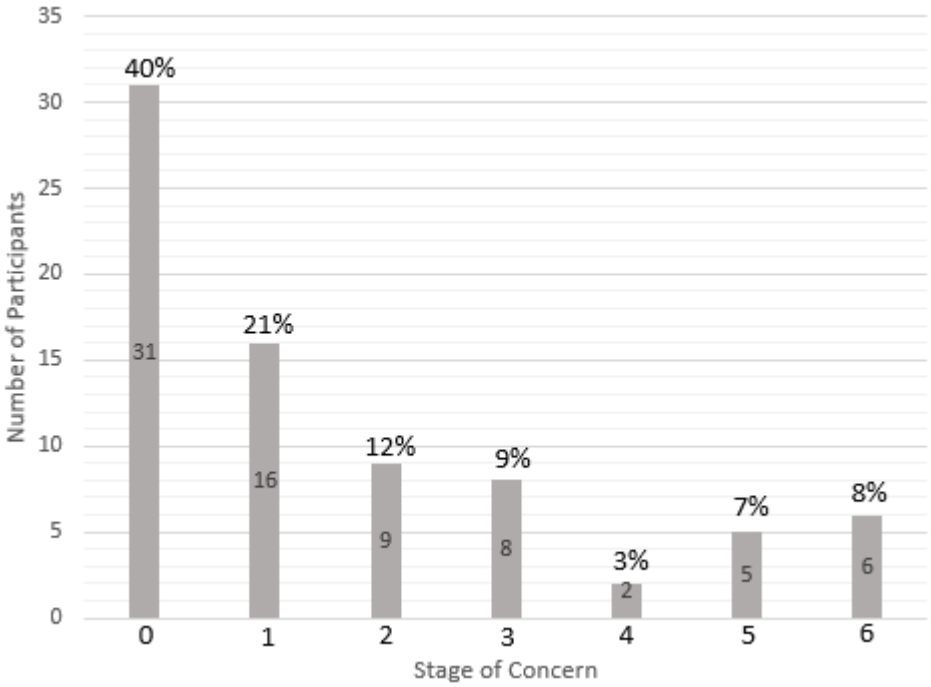

Figure 5. Frequency of stages of concern rankings.

Table 4 matches survey items with each stage of concern. Five questions were asked for each stage of concern. The numbers to the right of the item numbers in each cell in the table were calculated by summing the participant's answers, which were in scale format from 0 to 7. The text of each of the items can be found in Appendix A. The highest score for all the items was 378 for item 15 in the first stage of concern category of items. Item 15 states: "I would like to know

what resources are available if we decide to adopt the innovation [teaching online]." The high score for this question indicates that faculty are concerned about being supported if they begin teaching online. The lowest total, 153, was for item three which states: "I am more concerned about another innovation." This low score indicates there are no other innovations at this site that have caused a high concern among faculty.

Table 4

Question/Response Totals

Stage 0	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Q3: 153	Q6: 177	Q7: 193	Q4: 209	Q1: 256	Q5: 228	Q2: 285
Q12:191	Q14:240	Q13:351	Q8: 207	Q11:372	Q10:256	Q9: 200
Q21:239	Q15:378	Q17:296	Q16:203	Q19:294	Q18:190	Q20:245
Q23:184	Q26:297	Q28:292	Q25:275	Q24:312	Q27:331	Q22:300
Q30:256	Q35:331	Q33:291	Q34:196	Q32:343	Q29:353	Q31:291

While the number of highest percentile scores per stage were used to show which stages of concern the majority of faculty were associated, individual raw score responses to items on the SoCQ can examined for additional nuance. Tables 5 through 12 display the average response of the participants for each item on the SoCQ. Each item was displayed to the participant in a Likert scale format ranging in intensity from 0 to 7. Table 5 displays the average Likert scores for each item related to Stage 0: Unconcerned. The highest average score on a scale of 0 to 7 was 3.32 for item 30. This item focuses on priorities other than teaching online. The lowest average was 1.99 for item 3, which deals with concern about another innovation. When the five individual item averages for this stage are averaged together, a mean score of 2.66 results. On a scale from 0 to 7, this would indicate that the average intensity of concern for this stage is relatively low to moderate.

Table 5

Item Averages for Stage 0: Unconcerned

Question	Average	Question Text
Q3:	1.99	I am more concerned about another innovation.
Q12:	2.48	I am not concerned about teaching online at this time.
Q21:	3.10	I am completely occupied with things other than teaching online.
Q23:	2.39	I spend little time thinking about teaching online.
Q30:	3.32	Currently, other priorities prevent me from focusing my time on teaching online.

Table 6 displays the item averages for Stage 1. The Information stage, Stage 1, showed the highest intensity average of 4.91 for item 15, which deals with faculty wanting to know what resources are available to them if they were to start teaching online. The lowest average, 2.30 was for item 6, which indicates the faculty have limited knowledge about teaching online. When the five individual item averages for this stage are averaged together, a mean score of 3.70 results. On a scale of 0 to 7, this would indicate a modest intensity for this stage of concern. This would indicate that faculty appear to want to know more information about teaching online.

Table 6

Item Averages for Stage 1: Informational

Question	Average	Question Text
Q6:	2.30	I have a very limited knowledge about teaching online.
Q14:	3.12	I would like to discuss the possibility of using teaching online.
Q15:	4.91	I would like to know what resources are available if we decide to adopt teaching online.
Q26:	3.86	I would like to know what the use of teaching online will require in the immediate future.
Q35:	4.30	I would like to know how teaching online is better than what we have now.

Table 7 displays the highest intensity average of 4.56 out of 6 for item 13 in Stage 2: Personal, which deals with questions about who will make decisions about teaching online. The lowest average was 2.51 for item 7, which has do with how teaching online might change the

faculty's professional status. When the five individual item averages for this stage are averaged together, a mean score of 3.70 results. On a scale of 0 to 7, this would indicate a moderate intensity for this stage of concern. Faculty appear to be moderately concerned about how teaching online will affect them personally.

Table 7

Item Averages for Stage 2: Personal

Question	Average	Question Text
Q7:	2.51	I would like to know the effect of reorganization on my professional status.
Q13:	4.56	I would like to know who will make the decisions in the new system.
Q17:	3.84	I would like to know how my teaching or administration is supposed to change.
Q28:	3.79	I would like to have more information on time and energy commitments required by teaching online.
Q33:	3.78	I would like to know how my role will change when I am using teaching online.

Table 8 displays the average scores for each of the items for Stage 3. Stage 3: Management had the highest average of 3.57 out of six for item 25, which is about faculty concerns in regards to the amount of time dealing with non-teaching issue related to teaching online. The lowest average was 2.55 for item 34, which deals concern about the time to coordinate tasks and people as it relates to teaching online. When the five individual item averages for this stage are averaged together, a mean score of 2.83 results. On a scale of 0 to 7, this would indicate a relatively low to moderate intensity for this stage of concern. Faculty do not appear to be too concerned overall about the time and logistical aspects of teaching online.

Table 8

Item Averages for Stage 3: Management

Question	Average	Question Text
Q4:	2.71	I am concerned about not having enough time to organize myself each day (in relation to teaching online).
Q8:	2.69	I am concerned about conflict between my interests and my responsibilities.
Q16:	2.64	I am concerned about my inability to manage all that teaching online requires.
Q25:	3.57	I am concerned about time spent working with nonacademic problems related to teaching online.
Q34:	2.55	Coordination of tasks and people (in relation to teaching online) is taking too much of my time.

Table 9 displays the five item averages for Stage 4. The highest average for Stage 4: Consequence was 4.83 out of 6 for item 11, which is specifically about the faculty's concern about how teaching online affects their students. The lowest average was 3.32 for item 1, which is specifically about the concerns of faculty about students' attitudes toward teaching online. When the five individual item averages for this stage are averaged together, a mean score of 4.09 results. On a scale of 0 to 7, this would indicate a relatively higher intensity for this stage of concern. Faculty do appear to be fairly concerned about how teaching online will impact students.

Table 9

Item Averages for Stage 4: Consequence

Question	Average	Question Text
Q1:	3.32	I am concerned about students' attitudes toward teaching online.
Q11:	4.83	I am concerned about how teaching online affects students.
Q19:	3.82	I am concerned about evaluating my impact on students (in relation to teaching online).
Q24:	4.05	I would like to excite my students about their part in teaching online.
Q32:	4.45	I would like to use feedback from students to change the program.

Table 10 displays the averages for the five items related to the Stage 5 concern. Stage 5: Collaboration showed the highest average of 4.58 out of 6 for item 29, which deals with faculty's desire to know what other faculty are doing in regards to teaching online. The lowest average, 2.47 was for item 18, which deals with faculty's desire to familiarize others about the progress in the area of teaching online. When the five individual item averages for this stage are averaged together, a mean score of 3.53 results. On a scale of 0 to 7, this would indicate a relatively moderate intensity for this stage of concern. Faculty do appear to be moderately concerned about cooperating and coordinating with others in regards to teaching online.

Table 10

Item Averages for Stage 5: Collaboration

Question	Average	Question Text
Q5:	2.96	I would like to help other faculty in their use of teaching online.
Q10:	3.32	I would like to develop working relationships with both our faculty and outside faculty using teaching online.
Q18:	2.47	I would like to familiarize other departments or persons with the progress of this new approach.
Q27:	4.30	I would like to coordinate my efforts with others to maximize the effects of teaching online.
Q29:	4.58	I would like to know what other faculty are doing in this area.

Table 11 displays the averages for the five items related to the Stage 6 concern. This last stage of concern, Refocusing showed the highest average of 3.90 out of 6 for question 22, which deals with faculty's desire to modify their own teaching based on their students' experiences. The lowest average, 2.60 was for item nine, which involves the faculty revising their use of teaching online. When the five individual item averages for this stage are averaged together, a mean score of 3.43 results. On a scale of 0 to 7, this would indicate a relatively moderate intensity for this stage of concern. Faculty do appear to be moderately concerned about finding ways to get the most benefits from teaching online.

Table 11

Item Averages for Stage 6: Refocusing

Question	Average	Question Text
Q2:	3.70	I now know of some other approaches that might work better than teaching online.
Q9:	2.60	I am concerned about revising my use of teaching online.
Q20:	3.18	I would like to revise the teaching online approach.
Q22:	3.90	I would like to modify our use of teaching online based on the experiences of our students.
Q31:	3.78	I would like to determine how to supplement, enhance, or replace teaching online.

Findings for RQ2: What Relationship Exists Between the Technology Used by Faculty as Self-reported in Their Teaching and Their Stages of Concern about Teaching Online?

The second research question in this study was answered using the Pearson product-moment correlation coefficient (*r*) and asking additional questions related to the instructional use of technology by faculty. These additional items were appended to the standard 35 item Stages of Concern Questionnaire. The faculty were given the options of Never (0% of classes), Rarely (1% - 34% of classes), Sometimes (35% - 69% of classes), and Often (70% or more of classes). In order to calculate the data, these options were given numeric values. The option of Never was given a numeric value of 0, Rarely was given the value of 1, Sometimes was 2, and Often was 3. Descriptive statistics are presented first and then the correlation tables.

Table 12 displays the mean, mode, and standard deviation of the results of the additional technology items. The highest mean score of 2.45, on a Likert scale of 0 to 3, is associated with the question "How often do you use presentation applications (ex. PowerPoint, Keynote, Prezi) in class?" which indicates that faculty use this technology somewhere between sometimes and often while teaching. All 77 participants answered this item. The lowest mean score of .47 is associated with the question "How often do you utilize any type of student response system (ex.

clickers - dedicated handheld device or through a software application)?" which indicates faculty very rarely utilize this type of technology. All but one participant answered this item. The mean of all the technology averages was 1.26.

Table 12

Mean, Mode, and Standard Deviation of Technology Used by Faculty

Technology Used	Mean	Mode	Std. Deviation	N Valid	Missing
Social Networking	1.16	0	1.027	77	0
Presentation Applications	2.45	3	0.82	77	0
Student Response Systems	0.47	0	0.84	76	1
Podcasts	1.17	1	1.044	77	0
Online Testing	1.04	0	1.069	77	0

The stages of concern that were significant to technology are listed in Table 13. Out of the seven stages of concern, three showed significance to technology used by faculty. The Unconcerned stage showed significance with Presentation Applications, Student Response Systems, and Online Testing. The Consequence stage of concern showed significance with Social Networking technology. The Collaboration stage of concern had significance with Social Networking, Presentation Applications, Student Response Systems, Podcasts, and Online testing.

To determine if a relationship existed between the use of technology in general by faculty and their stages of concern about teaching online, a Pearson's Bivariate Correlation was performed. Table 14 displays the results of this analysis. Where *p* is less than or equal to 0.01, there were 15 scores that showed a correlation. However, these correlations were not related to the use of technology, but to other stages of concern. These data indicate that overall, there is no correlation between faculty use of technology and their concern about teaching online.

Table 13

Significant p-values for Technology and Stage of Concern

Stage of Concern	Technology Used	*p* Value
Unconcerned	Presentation Applications	.049
Unconcerned	Student Response Systems	.003
Unconcerned	Online Testing	.001
Consequence	Social Networking	.009
Collaboration	Social Networking	.001
Collaboration	Presentation Applications	.010
Collaboration	Student Response Systems	.049
Collaboration	Podcasts	.001
Collaboration	Online Testing	.010

Table 14

Bivariate Correlations between Technology Used and Stages of Concern

Stages	1	2	3	4	5	6	7
1.Technology	-						
2.Unconcerned	-.426**	-					
3.Informational	-0.127	0.063	-				
4.Personal	0.044	0.194	.643**	-			
5.Management	0.011	.294**	0.21	.521**	-		
6.Consequence	0.166	-0.128	.350**	.473**	.418**	-	
7.Collaboration	.536**	-.462**	.346**	.304**	0.057	.444**	-
8.Refocusing	0.047	0.031	.359**	.453**	.585**	.682**	.326**

** $p \leq 0.01$

To determine if a relationship existed between specific technologies and faculty's concerns, a bivariate correlation analysis, as displayed in Table 15, was conducted for each individual technology mean score and the mean of each stage of concern. Where p was equal to or less than 0.05, two scores showed a weak relationship. A negative correlation coefficient *r* of -.23 was calculated for the use of Presentation Applications and the Unconcerned stage of concern. A weak positive correlation coefficient of 0.23 was calculated for the use of Student Response Systems and the Collaboration stage of concern.

Where the significance was less than or equal to 0.01, there were seven scores that showed a weak relationship. Two were for the use of Social Networking and the Consequence stage of concern with an *r* value of 0.30 and 0.38 for Social Networking and the Collaboration stage of concern. The Presentation technology use and the Collaboration stage of concern had an *r* value of 0.29. The use of Student Response Systems and the Unconcerned stage of concern produced a negative *r* value of -0.34. Podcast use by faculty and the Collaboration stage of concern produced an *r* value of 0.36. The final two significant scores were in the use of Online testing. The first *r* value of -0.37 was for the Unconcerned stage of concern and the second was 0.293 for the Collaboration stage of concern. With the exception of the -0.34 *r* value for Student Response Systems and the Unconcerned stage of concern, the majority of the correlation coefficients were in the positive or negative 0.30 range, indicating a weak relationship between the use of these technologies and concerns about teaching online.

Table 15

Bivariate Correlations among Specific Technology Used and Stages of Concern

	1	2	3	4	5	6	7	8	9	10	11
1.Social Networking	-										
2.Presentation Applications	0.04	-									
3.Student Response Systems	.385**	0.097	-								
4.Podcasts	0.208	0.094	0.164	-							
5.Online Testing	0.09	.265*	0.194	.230*	-						
6.Unconcerned	-0.13	-.225*	-.342**	-0.195	-.371**	-					
7.Informational	0.029	-0.099	-0.2	-0.021	-0.111	0.063	-				
8.Personal	0.131	0.071	-0.022	-0.009	-0.038	0.194	.643**	-			
9.Management	0.185	0.05	0.021	-0.119	-0.087	.294**	0.21	.521**	-		
10.Consequence	.296**	0.064	-0.002	-0.053	0.155	-0.128	.350**	.473**	.418**	-	
11.Collaboration	.378**	.292**	.226*	.362**	.293**	-.462**	.346**	.304**	0.057	.444**	-
12.Refocusing	0.161	0.106	-0.115	-0.039	0.016	0.031	.359**	.453**	.585**	.682**	.326**

** $p \leq 0.01$, *$p \leq 0.05$

Table 16 displays the frequency of each response for how often faculty reported using various technologies in their classes. The first item in the frequency table reflects the social networking technologies that faculty reported using in their teaching. The response options were

Never, Rarely, Sometimes, and Often. The highest response was 33.8% in the Never category. The lowest response was in the category of Often at 11.7%. The second item asked faculty about how often they used presentation applications such as PowerPoint, Keynote, and Prezi in their classes. Over 63% reported they used it Often in their classes, which is contrasted by only 2.6% who reported Never using it.

Table 16

Frequency Table for Technology Used

		Frequency	Percent	Valid Percent	Cumulative Percent
Social Networking	Never	26	33.8	33.8	33.8
	Rarely	22	28.6	28.6	62.3
	Sometimes	20	26.0	26.0	88.3
	Often	9	11.7	11.7	100.0
	Total	77	100.0	100.0	
Presentation Applications	Never	2	2.6	2.6	2.6
	Rarely	10	13.0	13.0	15.6
	Sometimes	16	20.8	20.8	36.4
	Often	49	63.6	63.6	100.0
	Total	77	100.0	100.0	
Student Response Systems	Never	53	68.8	69.7	69.7
	Rarely	14	18.2	18.4	88.2
	Sometimes	5	6.5	6.6	94.7
	Often	4	5.2	5.3	100.0
	Total	76	98.7	100.0	
	Missing	1	1.3		
	Total	77	100.0		
Podcasts	Never	24	31.2	31.2	31.2
	Rarely	28	36.4	36.4	67.5
	Sometimes	13	16.9	16.9	84.4
	Often	12	15.6	15.6	100.0
	Total	77	100.0	100.0	
Online Testing	Never	30	39.0	39.0	39.0
	Rarely	26	33.8	33.8	72.7
	Sometimes	9	11.7	11.7	84.4
	Often	12	15.6	15.6	100.0
	Total	77	100.0	100.0	

The third item on the questionnaire asked faculty how often they used student response systems such as handheld clickers in their classes. Over 68% reported never using them, while only 5.2% reported using them often in their classes. The category response of Sometimes received a 6.5% response rate. The fourth item asked faculty how often they utilized podcasts in any manner in their teaching. The top two response categories were Rarely at 36.4% and Never at 31.2%. The categories of Sometimes and Often were within one and a half percentage points of one another at 16.9% and 15.6% respectively. The last item in table 20 for this series of technology questions asked how often faculty incorporated online testing. 39.0% answered Never, 33.8% responded with Rarely, 11.7% answered Sometimes, and 15.6% of faculty responded with Often. Of all the technologies presented, full-time faculty appear to use presentation applications most often in their teaching.

Findings for RQ3: What Relationship Exists Between Faculty Teaching Methods as Self-reported and Their Stages of Concern about Teaching Online?

The third research question in this study was answered using the Pearson product-moment correlation coefficient (*r*) and by asking an additional questions related to the faculty's teaching methods. These additional items were appended to the standard 35 item Stages of Concern Questionnaire and the items related to the faculty's use of technology in teaching. The two types of teaching methods that were contrasted were lecture or teacher-centered versus student-centered. The first item in this series of questions asked how often faculty lectured in their classes. The remaining six items were dedicated to student-centered methods of teaching.

The mean, mode, and standard deviation of the results for each of the teaching method items on the questionnaire is represented in Table 17. The faculty were given the options of Never (0% of classes), Rarely (1% - 34% of classes), Sometimes (35% - 69% of classes), and Often (70% or more of classes). In order to calculate the data, these options were given numeric

values. The option of Never was given a numeric value of 0, Rarely was given the value of 1, Sometimes was 2, and Often was 3.

Table 17

Mean, Mode, and Standard Deviation for Teaching Methods

Teaching Method	Mean	Mode	Std. Deviation	N Valid	Missing
Lecture	2.24	3	.798	76	0
Class Discussion	2.45	3	.746	73	4
Student Activities	1.78	2	.759	76	1
Small Groups	1.77	1	.944	77	0
Student Presentations	1.55	1	.839	76	1
Group Projects	1.32	1	1.022	74	3
Flip Classroom	.74	0	.755	76	1

The first item asked how often faculty lecture in their classes. Only one of the 77 participants did not answer this question. The mean answer was 2.24, the mode 3, and the standard deviation was 0.80. The second item in this series asked how often faculty incorporated class discussions in their teaching. Four of the 77 participants did not answer this item. The mean answer was 2.45, the mode was 3, and the standard deviation 0.75. Faculty were also asked how often the majority of their class is taken by student activities such as group activities. 76 of the 77 faculty did answer this question. The mean for this item was 1.78, the mode 2, and the standard deviation 0.76. All 77 participants answered the question in regards to how often they incorporated small groups into their teaching. The mean score was 1.77, the mode 1, and the standard deviation 0.94.

Faculty were also asked how often they had their students do presentations. One of the 77 participants did not answer. The mean was 1.55, the mode 1, and the standard deviation 0.84. The second to the last question in this series of questions asked how often faculty assigned group projects in their classes. Three of the 77 participants did not answer. The mean was 1.32, the

mode 1, and a standard deviation of 1.02. The last item asked how often faculty flipped their classroom. All but one of the 77 participants answered this item. The mean was 0.74, the mode 0, and a standard deviation 0.76. Of all the teaching methods presented, full-time faculty reported using Lecture and Class Discussion the most.

Figure 6 displays the frequency faculty reported using each teaching method. The category of Class Discussion had the highest frequency of 54.5% of faculty responding they used this type of teaching method often while 2.6% responded they never used Class Discussion. The second highest teaching method identified was Lecture at 42.9% with only 2.6% of the faculty responding they never lectured. The lowest overall response percentage was in the Flipped Classroom with only 1.3% of the faculty responding they use this teaching method frequently.

The significant *p* values for faculty teaching methods and stages of concern are listed in Table 18. The three stages of concern that showed significance were Informational, Personal, and Collaboration. Class Discussions, Small Groups, Student Activities, Presentations, and Flipped Classrooms were five teaching methods that showed significance.

A bivariate correlation was executed using the results of the mean of all the teaching method items and each stage of concern to determine if a relationship exists among them. Table 19 displays the results of this analysis. Where p is less than or equal to 0.01, there were 16 scores that showed a correlation. However, these correlations were not related to teaching methods, but to other stages of concern. These data indicate that overall, there is no correlation between full-time faculty teaching methods and their concern about teaching online.

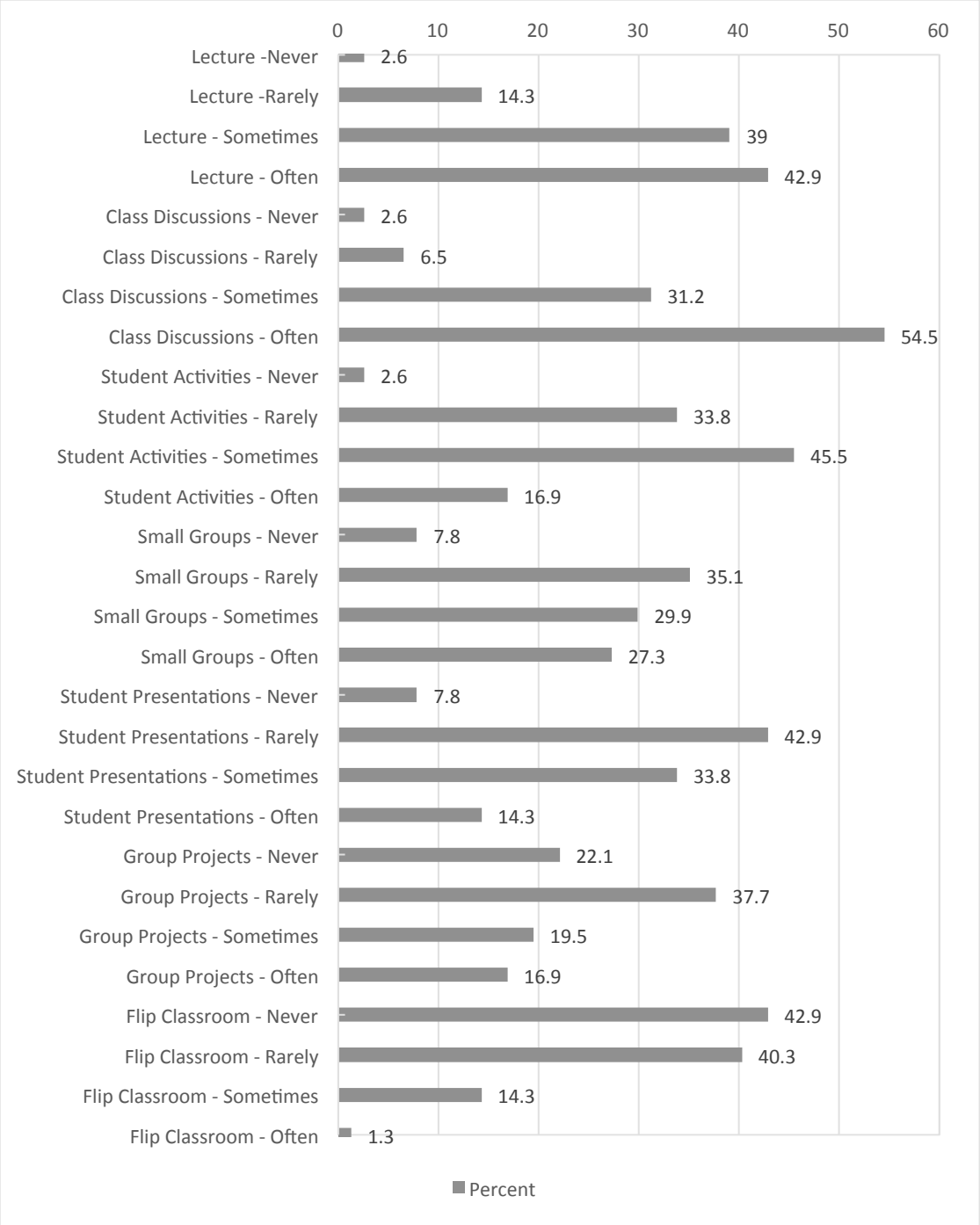

Figure 6. Frequency of faculty teaching methods.

Table 18

Significant p Values for Teaching Methods and Stage of Concern

Stage of Concern	Teaching Method	*p* Value
Informational	Class Discussions	.030
Personal	Class Discussions	.000
Personal	Small Groups	.022
Collaboration	Class Discussion	.009
Collaboration	Student Activities	.032
Collaboration	Small Groups	.030
Collaboration	Presentations	.014
Collaboration	Group Projects	.002
Collaboration	Flip Classroom	.002

Table 19

Correlation Values for each Stage of Concern and Teaching Method

Stages	1	2	3	4	5	6	7
1. Teaching	-						
2. Unconcerned	-0.12	-					
3. Informational	0.128	0.063	-				
4. Personal	0.191	0.194	.643**	-			
5. Management	-0.08	.294**	0.21	.521**	-		
6. Consequence	0.064	-0.128	.350**	.473**	.418**	-	
7. Collaboration	.374**	-.462**	.346**	.304**	0.057	.444**	-
8. Refocusing	-0.012	0.031	.359**	.453**	.585**	.682**	.326**

** $p \leq 0.01$

A bivariate correlation analysis, as displayed in Table 20, was conducted for each teaching method mean score used by faculty and the mean of each stage of concern. Where p was equal to or less than 0.01, there were four scores that showed significance. However, the strength of these relationships were weak. Two of these were significant for the Class Discussion teaching method as they relate to the Personal stage of concern, which produced a correlation coefficient *r* value of 0.40, and the Collaboration stage of concern had an *r* value of 0.30. The Collaboration stage of concern had two significant scores as well as they related to the use of

Group Projects, which had an *r* value of 0.35, and the Flipping your Classroom teaching method, which produced an *r* value of 0.35.

Where *p* was equal to or less than 0.05, there were five significant scores. However, the strength of these relationships were also weak. A correlation coefficient *r* score of 0.26 was found for the Informational stage of concern and the Class Discussions teaching method. An *r* value of 0.25 was found for the Collaboration stage of concern and the use of Student Activities. The use of Small Groups had a correlation coefficient of 0.26 for the Personal stage of concern and 0.25 for the Collaboration stage of concern. The last significant *r* value of 0.28 was found in the relationship between the use of Presentations and the Collaboration stage of concern. These scores show there are relationships that exist between specific teaching methods utilized by full-time faculty and their concerns about teaching online, however, the correlation coefficients indicate the relationship is weak by statistical standards.

Table 20

Bivariate Correlations of Specific Teaching Methods and Stages of Concern

	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Lecture	-												
2.Class Discussion	0.095	-											
3.Student Activities	-.440**	.321**	-										
4.Small Groups	-0.187	.485**	.519**	-									
5.Presentations	0.021	.365**	.301**	.566**	-								
6.Group Projects	-.289*	.313**	.393**	.549**	.570**	-							
7.Flip	-.227*	0.136	.268*	0.207	.254*	0.189	-						
8.Unconcerned	0.129	-0.114	-0.002	-0.045	-0.095	-0.101	-0.195	-					
9.Informational	0.123	.255*	0.067	0.188	0.096	0.054	0.048	0.063	-				
10.Personal	0.097	.404**	0.085	.260*	0.097	0.024	0.045	0.194	.643**	-			
11.Management	0.019	0.129	-0.077	-0.022	-0.044	-0.112	-0.044	.294**	0.21	.521**	-		
12.Consequence	-0.019	0.094	-0.046	0.131	0.106	0.086	0.058	-0.128	.350**	.473**	.418**	-	
13.Collaboration	-0.148	.304**	.246*	.247*	.281*	.352**	.354**	-.462**	.346**	.304**	0.057	.444**	-
14.Refocusing	0.06	0.15	-0.04	0.004	-0.021	-0.015	-0.005	0.031	.359**	.453**	.585**	.682**	.326**

** $p \leq 0.01$, *$p \leq 0.05$

Findings for RQ4: To What Degree Does the Concern about Teaching Online Differ between Faculty Who Are More Teacher-Centered Versus Those Who are More Student-Centered in Their Teaching?

The fourth research question in this study was addressed by first computing the mean scores for each stage of concern and the items relating to student-centered and teacher-centered teaching methods. These results were used to perform a one-way analysis of variance (ANOVA) to discover if there was a significant difference between those full-time faculty who were more teacher-centered versus student-centered and any stage of concern. To determine if the variability between the two groups was not significantly different, a Levene's test of homogeneity of variances was performed for each stage of concern between the student-centered and teacher-centered groups of full-time faculty.

Table 21 displays the calculated means for low student-centered, which would indicate a more teacher-centered teaching approach, and high student-centered faculty. Out of the 77 participants in this study, 72 answered all the items on the survey relating to student-centered versus teacher-centered teaching methods. For purposes of comparison, the results were divided into low and high student-centered groups of faculty. The maximum mean for low student-centered teaching methods was 1.43 and the minimum for high student-centered teaching methods was 1.57. Based on these minimum and maximum scores, the *N* for each group was 36. Out of the total of 72 participants who answered all the items in this set of questions, half fell into student-centered, while the other half fell into more teacher-centered methods of teaching.

Table 21

Means for Low and High Student-Centered Teaching Methods

Group Type		N	Minimum	Maximum	Mean	Std. Deviation
Low Student Centered	CV Instructor Centered	36	.43	1.43	1.0079	.26659
	Valid N	36				
High Student Centered	CV Instructor Centered	36	1.57	2.57	1.9365	.28662
	Valid N	36				

Table 22 displays the mean scores for each stage of concern for both low and high student-centered teaching methods. These means were used to perform a One-way ANOVA for each stage of concern. The low student-centered means ranged from 2.83 to 4.02, while the high student-centered means ranged from 2.54 to 4.09. The comparison of scores between the group types for each stage of concern is described in the narrative for each ANOVA analysis that follows.

Table 22

Means for High and Low Student Centered Groups for Each Stage of Concern

Group Type	Mean	N	Minimum	Maximum	Mean	Std. Deviation
Low Student Centered	Stage 0	36	1.20	4.80	2.8278	1.03885
	Stage 1	36	.80	6.20	3.5611	1.30653
	Stage 2	36	1.00	6.60	3.5889	1.69297
	Stage 3	36	.80	7.00	3.2000	1.70713
	Stage 4	36	1.20	6.60	4.0167	1.36015
	Stage 5	36	.60	5.80	2.9444	1.31507
	Stage 6	36	1.20	7.00	3.5611	1.53050
	Valid N	36				
High Student Centered	Stage 0	36	.80	6.00	2.5778	1.35712
	Stage 1	36	1.20	6.20	3.7722	1.17415
	Stage 2	36	1.00	7.00	3.7333	1.32751
	Stage 3	36	.60	6.20	2.5389	1.38879
	Stage 4	36	1.80	7.00	4.0944	1.27076
	Stage 5	36	1.00	6.60	3.9944	1.46384
	Stage 6	36	1.00	5.40	3.2944	1.20141
	Valid N	36				

Table 23 displays the results of the Test of Homogeneity of Variances for Stage 0: Unconcerned. The significance score was 0.13, which indicates the sample is comparable. The difference between the mean scores for this stage, as displayed in Table 22, was small with a mean score for the low student-centered faculty at 2.83, while the mean score for the high student-centered faculty was 2.58. Table 24 displays the ANOVA results for Stage 0, which produced a non-significant score of 0.38. These data indicate there were no significant differences between full-time faculty who are more teacher-centered versus student-centered and their concern about teaching online.

Table 23

Test of Homogeneity of Variances for Stage 0

Levene Statistic	df1	df2	Sig.
2.407	1	70	.125

Table 24

ANOVA Mean of Stage 0: Unconcerned

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.125	1	1.125	.770	.383
Within Groups	102.234	70	1.460		
Total	103.359	71			

Table 25 displays the results of the Test of Homogeneity of Variances for Stage 1: Informational. The significance score was 0.40, which indicates the sample is comparable. The difference between the mean scores for this stage, as displayed in Table 22, was small with the mean score for the low student-centered group of faculty at 3.56, while the mean score for the high student-centered faculty was 3.77. Table 26 displays the ANOVA results for Stage 1, which produced a non-significant score of 0.47. These data indicate there were no significant

differences between full-time faculty who are more teacher-centered versus student-centered and their concern about teaching online.

Table 25

Test of Homogeneity of Variances for Stage 1

Levene Statistic	df1	df2	Sig.
.713	1	70	.401

Table 26

ANOVA Mean Stage 1: Informational

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.802	1	.802	.520	.473
Within Groups	107.998	70	1.543		
Total	108.800	71			

Table 27 displays the results of the Test of Homogeneity of Variances for Stage 2: Personal. The significance score was 0.36, which indicates the sample is comparable. The difference between the mean scores for this stage, as displayed in Table 22, was small with the mean score for the low student-centered group of faculty at 3.59, while the mean score for the high student-centered faculty was 3.73. Table 28 displays the ANOVA results for Stage 2, which produced a non-significant score of 0.69. These data indicate there were no significant differences between full-time faculty who are more teacher-centered versus student-centered and their concern about teaching online.

Table 27

Test of Homogeneity of Variances for Stage 2

Levene Statistic	df1	df2	Sig.
4.563	1	70	.036

Table 28

ANOVA Mean Stage 2: Personal

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.376	1	.376	.162	.688
Within Groups	161.996	70	2.314		
Total	162.371	71			

Table 29 displays the results of the Test of Homogeneity of Variances for Stage 3: Management. The significance score was 0.19, which indicates the sample is comparable. The difference between the mean scores for this stage, as displayed in Table 22, was moderate with the mean score for the low student-centered group of faculty at 3.20, while the mean score for the high student-centered faculty was 2.54. Table 30 displays the ANOVA results for Stage 3, which produced a non-significant score of 0.08. These data indicate there were no significant differences between full-time faculty who are more teacher-centered versus student-centered and their concern about teaching online.

Table 29

Test of Homogeneity of Variances for Stage 3

Levene Statistic	df1	df2	Sig.
1.747	1	70	.191

Table 30

ANOVA Mean Stage 3: Management

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.867	1	7.867	3.249	.076
Within Groups	169.506	70	2.422		
Total	177.373	71			

Table 31 displays the results of the Test of Homogeneity of Variances for Stage 4: Consequence. The significance score was 0.47, which indicates the sample is comparable. The

difference between the mean scores for this stage, as displayed in Table 22, was small with the mean score for the low student-centered group of faculty at 4.02, while the mean score for the high student-centered faculty was 4.09. Table 32 displays the ANOVA results for Stage 4, which produced a non-significant score of 0.80. These data indicate there were no significant differences between full-time faculty who are more teacher-centered versus student-centered and their concern about teaching online.

Table 31

Test of Homogeneity of Variances for Stage 4

Levene Statistic	df1	df2	Sig.
.522	1	70	.473

Table 32

ANOVA Mean Stage 4: Consequence

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.109	1	.109	.063	.803
Within Groups	121.269	70	1.732		
Total	121.378	71			

Table 33 displays the results of the Test of Homogeneity of Variances for Stage 5: Collaboration. The significance score was 0.31, which indicates the sample is comparable. The difference between the mean scores for this stage, as displayed in Table 22, was large with the mean score for the low student-centered group of faculty at 2.94, while the mean score for the high student-centered faculty was significantly higher at 3.99. Table 34 displays the ANOVA results for Stage 5, which produced a significance score of 0.002. These data indicate significant differences between groups with the higher student-centered group scoring significantly higher than the low student-centered group. Based on the ANOVA results and the characteristics of the Stage 5 concern, these results suggest that those full-time faculty who practice more student-

centered teaching methods are more likely to focus on coordinating and cooperating with others regarding teaching online.

Table 33

Test of Homogeneity of Variances for Stage 5

Levene Statistic	df1	df2	Sig.
1.039	1	70	.311

Table 34

ANOVA Mean Stage 5: Collaboration

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	19.845	1	19.845	10.250	.002
Within Groups	135.528	70	1.936		
Total	155.373	71			

Table 35 displays the results of the Test of Homogeneity of Variances for Stage 6: Refocusing. The significance score was 0.16, which indicates the sample is comparable. The difference between the mean scores for this stage, as displayed in Table 22, was small with the mean score for the low student-centered group of faculty at 3.56, while the mean score for the high student-centered faculty was 3.29. Table 36 displays the ANOVA results for Stage 6, which produced a non-significant score of 0.41. These data indicate there were no significant differences between full-time faculty who are more teacher-centered versus student-centered and their concern about teaching online.

Table 35

Test of Homogeneity of Variances for Stage 6

Levene Statistic	df1	df2	Sig.
1.991	1	70	.163

Table 36

ANOVA Mean Stage 6: Refocusing

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.280	1	1.280	.676	.414
Within Groups	132.504	70	1.893		
Total	133.784	71			

Summary of Findings

Through the use of statistical analysis and descriptive statistics, the four research questions in this study were addressed. There were 77 out of a possible 154 full-time faculty who participated in the study that used a purposive sample. A modified Stages of Concern Questionnaire was used to capture the responses of the participants as it related to concerns about teaching online, technology used in teaching, and faculty teaching methods employed. The analysis of the participants' responses for the first research question: "What are the stages of faculty concern about teaching online?" indicate the highest number faculty are in the Unconcerned stage. These results indicate that teaching online is not a concern for many of the full-time faculty at the research institution.

The second research question was "What relationship exists between the technology used by faculty as self-reported in their teaching and their stages of concern about teaching online?" There were five categories of technology presented to faculty in the survey: Social Networking, Presentation Applications, Student Response Systems, Podcasts, and Online Testing. Presentation Applications had the highest mean score at 2.45, on a scale of 0 to 3, and the lowest was in the use of Student Response Systems at 0.47. When the mean for each technology category was calculated and each was used in a bivariate correlation for the individual stages of concern, there were two scores that showed a weak relationship. The first was an *r* value of -.23 for the use of Presentation Applications and Stage 0, Unconcerned. The second was an *r* value of

0.23 for the use of Student Response Systems and Stage 5, Collaboration. The mean was also calculated for all the technology scores and used in a bivariate correlation for each stage of concern. There were no significant relationships between the overall mean technology use score and any of the stages of concern. It does not appear that faculty's use of technology is related to their concerns about teaching online.

The third research question in this study: "What relationship exists between faculty teaching methods as self-reported and their stages of concern about teaching online? was answered using the Pearson product-moment correlation coefficient (r) and by asking additional questions related to the faculty's teaching methods. These additional items were appended to the standard 35 item Stages of Concern Questionnaire. Of the teaching methods presented, faculty reported using Lecture and Class Discussion the most. There were several individual teaching methods that showed a correlation to several stages of concern. However, with the exception of one relationship, the coefficients ranged from 0.25 to 0.35, which is weak by statistical standards. The relationship with the highest correlation coefficient of 0.40, which is also weak by statistical standards, was between the Class Discussion teaching method and Stage 2, which is the Personal stage of concern.

The fourth research question in this study: "To what degree does the concern about teaching online differ between faculty who are more teacher-centered versus those who are more student-centered in their teaching?" was addressed by computing the mean scores for each stage of concern and the items relating to student-centered and teacher-centered teaching methods. These results were used to perform a one-way ANOVA to discover if there was a significant difference between full-time faculty who were more teacher-centered versus student-centered and any stage of concern. There was a large difference between the mean scores for the low

student-centered faculty and the high student-centered faculty with the high student-centered group scoring significantly higher for Stage 5: Collaboration. The ANOVA results for Stage 5 verify there was a significant difference between the two groups. These data indicate there is a significant relationship between full-time faculty who are more student-centered and their concern about teaching online. These results indicated that those full-time faculty who practice more student-centered teaching methods are more likely to focus on coordinating and cooperating with others regarding teaching online. This was the only stage of concern that showed a significant difference between the two groups.

Chapter Five: Discussion

Overview

This study sought to understand the stages of concern of full-time faculty about teaching online and if relationships exist between their concerns about teaching online and their use of technology and teaching methods. This is important because faculty at higher education institutions in the United States of America have increasingly been teaching more online courses and teaching in entire programs that are offered online (Eagan et al., 2014). This method of teaching at these institutions can be viewed by some as a way to provide a genuine quality education to a wider range of students who, for a variety of reasons, cannot or choose not to attend a traditional campus based college or university. Others may view it as a way to increase profits or as a way to survive in an increasingly competitive market. Regardless of the reasons, the growth in online education is increasing. The use of technology in teaching by faculty is permeating even traditional face-to-face courses with faculty utilizing technology previously associated with just online environments such as learning management systems (LMS) that house course documents, lectures that have been recorded, and areas for students to submit assignments (Bacow et al., 2012).

In many traditional higher education institutions, faculty are the primary drivers of curriculum, policy, and governance. Without the support of this population, administration will not be able to successfully implement, sustain, or expand initiatives to incorporate online education into their institution's mission. Faculty will be increasingly called upon to teach these online and hybrid courses as colleges and universities continue to expand in the online environment. The research reflects the percentage of full-time faculty teaching exclusively online across public, private, and religious higher education institutions is on the rise (Eagan et al., 2014). In order to meet this need, it is imperative to understand the stages of concern faculty fall

into in regards to this delivery format in order to provide a high quality educational experience for students and to provide the necessary support for faculty.

Research suggests that teachers go through developmental changes or stages throughout their teaching career (Berliner, 1988; Burden, 1981; Fuller, 1969; Fuller & Bown, 1975; Fuller, Parsons, & Watkins, 1974; George, 1978; Katz, 1972). Understanding the concerns of faculty members when attempting something new can greatly impact training strategies and their willingness to move forward with the plans of an institution. Concerns Theory explains that teachers experience different types of concerns depending on their teaching experience and must move through these before entering other stages of teaching (Fulller, 1969). One of the tools that was eventually developed from Fuller's research was the Stages of Concern Questionnaire (SoCQ), which was used as the data collection tool in this study.

This research study utilized the SoCQ to determine the stages of faculty concern about teaching online. In addition, correlations with teaching strategy and technology use were also examined. Seventy-seven full-time faculty at a single Christian liberal arts university in Southern California participated by completing a modified version of the Stages of Concern Questionnaire in order to answer the four research questions in this study.

The following research questions were explored and measured using a modified version of the Stages of Concern Questionnaire (SoCQ):

1. What are the stages of faculty concern about teaching online?
2. What relationship exists between the technology used by faculty as self-reported in their teaching and their stages of concern about teaching online?
3. What relationship exists between faculty teaching methods as self-reported and their stages of concern about teaching online?

4. To what degree does the concern about teaching online differ between faculty who are more teacher-centered versus those who are more student-centered in their teaching?

Summary of Findings

The four research questions in this study investigated faculty's concerns about teaching online. The first question specifically addressed the stages of concern faculty were grouped into in regards to teaching online. The resulting data indicates the majority of faculty at the institution where the study was conducted were at the lowest stage of concern as defined by the Stages of Concern Questionnaire. The second question sought to identify if there were any relationships between concerns about teaching online and faculty's use of technology. These results indicate there were a few weak relationships between how concerned faculty were about teaching online and their use of specific technologies in teaching, however, when all technologies were averaged, no significant relationships emerged. The third question sought to discover any relationships between faculty teaching methods and their concern about teaching online. The data indicates there were a few relationships; however, they were weak by statistical standards. The final research question sought to discover if differences existed between faculty who were more teacher-centered versus student-centered in their teaching and their stages of concern about teaching online. The data analysis indicates a significant relationship does exist between faculty who are more student-centered in their teaching and their stages of concern in regards to teaching online.

Stages of faculty concern in regards to teaching online. This first research question was answered by utilizing the original 35 items on the Stages of Concern Questionnaire in order to gather data from the participating full-time faculty. The faculty in this study rated items on the SoCQ in a Likert format such as "I am more concerned about another innovation," "I am completely occupied with things other than teaching online," "I spend little time thinking about

teaching online," "I am not concerned about teaching online at this time," and "Currently, other priorities prevent me from focusing my time on teaching online" (George et al., 2013, p. 27). The responses to these specific items produced the highest percentile scores by the participating faculty. The lowest scores by the faculty were seen in SoCQ items such as "I am concerned about students' attitudes toward teaching online," "I am concerned about how teaching online affects students," "I am concerned about evaluating my impact on students (in relation to teaching online)," and "I would like to excite my students about their part in teaching online" (George et al., 2013, p. 27). This indicates there are other matters that are of more concern to faculty than teaching online.

The results of the first research question strongly indicate that full-time faculty at the institution researched have little concern about teaching online. This indicates there may be other tasks, activities, or initiatives that are of more concern at this time. However, there is the possibility the responses were skewed because many of the participants could have already successfully been teaching online courses, felt comfortable in that environment, and therefore were not concerned about it. The opposite could be true as well in that a large number of the participants might not have any plans to teach online in the near future and therefore did not feel threatened by what might only be a distant possibility in their mind.

The research in this study did not seek to find the reasons behind the concerns of faculty, nor did this study identify what the concerns were for teaching online. However, there is much research in the literature that has identified many common concerns of faculty about teaching online, which may be helpful to the administration at the institution where this study was conducted. Shea (2007) collected data from over 380 professors who taught online and identified concerns such as not being able to teach effectively in an online environment, not being trained

adequately before teaching online, the lack of interaction that occurs in a face-to-face course, and the quality of online teaching. Others such as Liu, Kim, Bonk, and Magjuka (2007) identified concerns revolving around the perceived heavier workload of teaching online and the possible impersonal nature of online courses. Thornton (2013) found concerns from professors about the lack of personal connections among students, limitations of not seeing non-verbal communication, the possibility of increased class sizes that might limit feedback and increase demand on their time, and a concern about their role as a teacher may change.

Relationship between the technology used and stages of concern about teaching online. The second research question in this study was answered by asking additional questions on the SoCQ relating to the instructional use of technology by faculty. The results were examined using a statistical calculation identified as a Pearson product-moment correlation coefficient (r) which is used to determine the strength of a relationship. In this study it was used to determine if there was a relationship between faculty's concerns about teaching online and various technologies they utilized in their teaching. These technologies ranged from social networking tools, presentation applications, student response systems, podcasts, and online testing. Of the technologies presented, faculty reported using presentation applications the most in their teaching and student response systems the least.

The results of the data analysis in regards to a relationship between faculty's use of technology and their stages of concern in regards to teaching online is mixed. When all the technology scores were averaged and used in a correlation calculation, no significant relationships existed with any stage of concern. However, when each individual technology used by faculty were included in correlation calculations, there were several weak relationships with specific stages of concern that emerged. One of these appeared for the faculty's use of Social

Networking and Stage 4, the Collaboration stage of concern. It is interesting to note another of these relationships was a negative one between the use of Online Testing and stage 0, the Unconcerned stage of concern.

The research concludes that overall, there does not appear to be a relationship between the faculty's use of technology and their concern about teaching online. There does, however, seem to be a few weak relationships between specific technologies and certain stages of concern about teaching online. The survey instrument only collected information regarding how often faculty utilized these various technologies in their teaching. There were no other items in the instrument designed to investigate why there might be a relationship between these technologies and faculty's stages of concern in regards to teaching online. Without this type of data, there is no way to determine causation of these relationships. With this in mind, it is only the researcher's personal conclusion that faculty who are accustomed to using social networking types of technology with their students may inherently be more likely to engage in social networking practices themselves, such as collaborating with others about teaching online as is the underlying characteristic of Stage 5: Collaboration. The negative correlation between Online Testing and Stage 0: Unconcerned, may be due to the fact that faculty who are unconcerned about teaching online, may not themselves teach online, and therefore do not use assessment tools that may be associated with teaching in an online environment.

The literature is rich with studies about the use the various technologies presented in the survey such as the use of presentation software and online testing by faculty. There is research that indicates when faculty lecture, students prefer the lecture to be accompanied with presentation software (Bartsch & Cobern, 2003; Susskind, 2005, 2008). It is interesting to note that while students may prefer faculty to use presentation software when lecturing, the research

does not show that it actually improves the desired learning outcomes (DeBord et al., 2004; Hardin, 2007; Szabo & Hastings, 2000). While the use of online testing by faculty may be used with the desire to assess student knowledge about specific topics or subject areas, there is research that indicates it may not actually help with student learning (Brothen & Wambach, 2001; Daniel & Broida, 2004). Perhaps many of the faculty at the research institution believe this as well and fear teaching online limits their assessment options to such tools as online testing. This could explain the negative relationship about not having much involvement with teaching online and the faculty's perceived limited access to quality student assessment tools.

Relationship between teaching methods and stages of concern about teaching online. The third research question in this study was answered by asking additional questions on the SoCQ relating to faculty's teaching methods. The results were examined using a statistical calculation identified as a Pearson product-moment correlation coefficient (r) which is used to determine the strength of a relationship. In this study, it was used to determine if there was a relationship between faculty's concerns about teaching online and various teaching methods. The participants were asked about how often they utilized various teaching methods in their teaching such as lecture, class discussion, student activities, small groups, student presentations, group projects, and flipping their classroom. Faculty reported using class discussions and lecture the most often in their teaching. The least used teaching method that was reported was flipping the classroom.

These findings appear to be in line with current research from other higher education institutions. The Higher Education Research Institute (HERI) at UCLA has been administering a yearly teaching methods survey to full-time faculty at higher education institutions since 1989. As with the full-time faculty that participated in this study, the faculty at other public, private,

non-secular, catholic, and other religious universities and 4-year colleges reported using class discussions in their teaching (Eagan et al., 2014). Data from the 2013-2014 HERI study show that over 82% of faculty utilize class discussion as opposed to just over 50% who report lecturing extensively. Eagan et al. (2014) found the lowest reported teaching method to be flipping the classroom, with only 21.8% of faculty using this method.

When the results of the use of faculty's teaching methods were examined using correlation calculations, there were several weak relationships with specific stages of concern that emerged. One of these, with a correlation coefficient of 0.4, appeared for the faculty's use of Class Discussions and Stage 2, the Personal stage of concern. Other weaker relationships emerged, with coefficients ranging from 0.25 to 0.28, between the Informational stage of concern and Class Discussions, between the Collaboration stage of concern and the use of Student Activities, the use of Small Groups and the Personal stage of concern as well as the Collaboration stage of concern, and finally between the use of Presentations and the Collaboration stage of concern.

The survey instrument only collected information regarding how often faculty utilized these specific teaching methods, technology used, and faculty's concern about teaching online. There were no other items in the instrument designed to investigate why there might be a relationship between these teaching methods and faculty's stages of concern in regards to teaching online . Without this type of data, there is no way to determine causation of these relationships. As cited earlier, there is literature that examines the use of these types of teaching methods by faculty, but none that compares it to stages of faculty concern about teaching online. With this in mind, it is only the researcher's personal conclusion that those faculty who scored highest in the Personal stage may simply assume their preferred face-to-face teaching method of

class discussions will also work well in an online environment. These findings could also mean that many of the faculty who participated in this study are seasoned online instructors and have successfully used class discussions in the online environment. Poirier and Feldman (2012) emphasize "the quality of teaching is more important than the implementation of new technology" (p. 49). This researcher agrees with this position and also thinks those faculty who excel at teaching in general no matter their preferred teaching method, are able to do so in an online environment as well provided they receive proper training and support.

Stages of concern about teaching online and teacher vs. student-centered teaching. The fourth research question in this study was addressed by first computing the mean scores of faculty for each stage of concern and then using that data to perform a statistical calculation identified as a one-way ANOVA, which is used to discover if there are differences between groups. In this study, the two groups were teacher-centered and student-centered faculty. Lecturing was used as the identifying item on the SoCQ to represent the teacher-centered teaching method. Class Discussions, Student Activities, Small Groups, Student Presentations, Group Projects, and the Flipped Classroom were all items used to determine student-centered teaching methods.

The research in this study found that 43% of full-time faculty at the research institution lectured frequently in their teaching. These results are similar to over half of full-time faculty across many different types of universities and colleges who also report using lecture extensively in their teaching (Eagan et al., 2014). The teacher-centered teaching method, specifically lecturing, has been employed for hundreds of years and has changed little in that time (Spence, 2001). Weimer (2002, 2013) contrasted this passive teacher-centered model to a student-centered model by shifting the instructor's focus to provide "increasing opportunities for students to

assume responsibility for their own learning, leading to achievement of stated learning objectives" (p. 43). The results of the research at the university where the study was conducted show that full-time faculty use class discussions, a student-centered teaching method, about 55% of the time.

The one-way ANOVA results indicate significant differences between the high and low student-centered groups and Stage 5, the Collaboration stage of concern. The higher student-centered group scored significantly higher than the teacher-centered group. Based on the ANOVA results and the characteristics of Stage 5, these results suggest that those full-time faculty who practice more student-centered teaching methods are more likely to focus on coordinating and cooperating with others regarding teaching online. The data simply shows that this relationship exists, but does not offer explanations as to why this relationships exists. The literature does provide insights into the concerns teachers have about teaching online, but not as it relates to being more student-centered versus teacher-centered. Perhaps those faculty who tend to be more focused on student interactions for the learning process also tend to look to others or other systems to help themselves improve the way they teach.

Implications

The findings of this study have implications at the institution where this research was conducted. The administration has communicated to the faculty the strategic plan of the university that includes a plan to continue to increase the number of programs offered in an online format. The full-time faculty must approve these programs and it is likely that many of these same faculty will need to teach in these programs. The data from this study indicates the majority of full-time faculty at this institution who participated in the study are in the Unconcerned stage of concern at the time this study was conducted. This may suggest that these faculty may not be opposed to teaching online. The administration may be more confident with

their ability to move forward with the institution's plans to expand their online offerings. This should be approached with caution as the data could also simply mean that many of those faculty who participated in study do not currently have any involvement in teaching online. This does not eliminate the possibility of concerns arising if they were ever asked to teach online.

This study also investigated relationships between faculty's use of technology in their teaching and their stages of concern in regards to teaching online . Although there were a few weak relationships found with the use of specific technologies, overall there was not a relationship to faculty's concern about teaching online. This may suggest that faculty do not necessarily have to be very proficient in their use of technology in teaching in order to have a low concern about teaching online. This could expand the number of potential full-time faculty that administration could approach about teaching online since they do not have to limit their search to only technology savvy faculty.

The remaining two research questions focused on full-time faculty's teaching methods and their concern about teaching online. As was found in the technology focused research question, there were a few correlations between specific teaching methods and faculty's concern about teaching online, however, they were weak by statistical standards. When analyzing the data using a different analysis, an interesting piece of data emerged when comparing those faculty who were more teacher-centered versus student-centered in their teaching methods. The data shows a significant difference between the two groups, with the student-centered faculty group scoring higher than the teacher-centered group in regards to Stage 5, which is the Collaboration stage of concern. This could provide the administration of the university an indication of the type of faculty to pursue first for teaching online. These faculty could be more

likely to collaborate with other faculty about teaching online and could possible provide momentum for the university's endeavors to expand the number of online courses offered.

Recommendations and Next Steps

The research for this study was conducted at a single Christian liberal arts university in Southern California. While the resulting information from the study may be useful to this specific institution for strategic planning and training purposes, it is not generalizable. Future iterations of this type of study could include a larger number of higher education institutions throughout the United States and possibly other countries. This study focused on a small Christian liberal arts university under 4,500 total students. Since online education is becoming more prevalent (Allen & Seaman, 2014), future research could be conducted at larger institutions and ones that may not necessarily have a religious affiliation.

This study intentionally excluded demographic information about the full-time faculty at the research institution due to the small size of the population, which could have increased the possibility of the researcher being able to identify specific participants. Including demographic information such as gender, age, years of teaching online and/or in traditional environments, and background about having been taught themselves in a hybrid or online format might prove beneficial. These data could be used by the institution to identify those types of faculty who are more amenable to teaching in an online environment.

The results of the survey strongly indicate that the majority of faculty are not concerned about teaching online. The Stages of Concern Questionnaire was not designed to explore what other matters might be present that would distract participants of a study from a specific innovation such as teaching online. A follow-up study using an instrument created specifically to explore these other areas might be useful to administration in order to identify distractions that

might prevent or slow the implementation of the strategic plan regarding online education at the university.

The statistical analysis in this study is correlational in nature, and therefore cannot be used by itself to determine causation. Perhaps future research can build on the results of this study to use methodologies that can go deeper into understanding why there are some relationships that exist between specific technologies used by faculty and certain stages of concern about teaching online. This new research could also explore the reasons behind the relationships between faculty teaching methods and specific stages of concern. A future qualitative study might employ direct observations of faculty teaching in an online environment followed by interviews with those faculty. This type of methodology could allow for a deeper exploration of the relationships that have already been identified in this study.

The Stages of Concern Questionnaire was created in the 1970s and has been used in many studies to measure the stages of concern participants have about an innovation. The items on this instrument have not been revised in some time and the generic innovation placeholder may be too broad to measure specific innovations accurately. Future researchers might consider working with SEDL to update the items on the survey. Another possibility could be to create a new instrument designed specifically to measure the level of concern faculty have about teaching online. These changes could possibly allow for more accurate gathering of data specific to teaching online.

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APPENDIX A

Stages of Concern Questionnaire (SoCQ)

SoCQ 075

Stages of Concern Questionnaire

The purpose of this questionnaire is to determine what people who are using or thinking about using various programs are concerned about at various times during the adoption process.

The items were developed from typical responses of school and college teachers who ranged from no knowledge at all about various programs to many years' experience using them. Therefore, **many of the items on this questionnaire may appear to be of little relevance or irrelevant to you at this time.** For the completely irrelevant items, please circle "0" on the scale. Other items will represent those concerns you do have, in varying degrees of intensity, and should be marked higher on the scale.

For example:

This statement is very true of me at this time.	0 1 2 3 4 5 6 (7)
This statement is somewhat true of me now.	0 1 2 3 (4) 5 6 7
This statement is not at all true of me at this time.	0 (1) 2 3 4 5 6 7
This statement seems irrelevant to me.	(0) 1 2 3 4 5 6 7

Please respond to the items in terms of **your present concerns,** or how you feel about your involvement with **this** innovation. We do not hold to any one definition of the innovation so please think of it in terms of your own perception of what it involves. Phrases such as "this approach" and "the new system" all refer to the same innovation. Remember to respond to each item in terms of your present concerns about your involvement or potential involvement with the innovation.

Thank you for taking time to complete this task.

(continued)

0	1 2	3 4 5	6 7
Irrelevant	Not true of me now	Somewhat true of me now	Very true of me now

Circle one number for each item.

1. I am concerned about students' attitudes toward the innovation.	0 1 2 3 4 5 6 7
2. I now know of some other approaches that might work better.	0 1 2 3 4 5 6 7
3. I am more concerned about another innovation.	0 1 2 3 4 5 6 7
4. I am concerned about not having enough time to organize myself each day.	0 1 2 3 4 5 6 7
5. I would like to help other faculty in their use of the innovation.	0 1 2 3 4 5 6 7
6. I have a very limited knowledge of the innovation.	0 1 2 3 4 5 6 7
7. I would like to know the effect of the innovation on my professional status.	0 1 2 3 4 5 6 7
8. I am concerned about conflict between my interests and my responsibilities.	0 1 2 3 4 5 6 7
9. I am concerned about revising my use of the innovation.	0 1 2 3 4 5 6 7
10. I would like to develop working relationships with both our faculty and outside faculty using this innovation.	0 1 2 3 4 5 6 7
11. I am concerned about how the innovation affects students.	0 1 2 3 4 5 6 7
12. I am not concerned about the innovation at this time.	0 1 2 3 4 5 6 7
13. I would like to know who will make the decisions in the new system.	0 1 2 3 4 5 6 7
14. I would like to discuss the possibility of using the innovation.	0 1 2 3 4 5 6 7
15. I would like to know what resources are available if we decide to adopt the innovation.	0 1 2 3 4 5 6 7
16. I am concerned about my inability to manage all that the innovation requires.	0 1 2 3 4 5 6 7
17. I would like to know how my teaching or administration is supposed to change.	0 1 2 3 4 5 6 7
18. I would like to familiarize other departments or persons with the progress of this new approach.	0 1 2 3 4 5 6 7

(continued)

19. I am concerned about evaluating my impact on students.	0 1 2 3 4 5 6 7
20. I would like to revise the innovation's approach.	0 1 2 3 4 5 6 7
21. I am preoccupied with things other than the innovation.	0 1 2 3 4 5 6 7
22. I would like to modify our use of the innovation based on the experiences of our students.	0 1 2 3 4 5 6 7
23. I spend little time thinking about the innovation.	0 1 2 3 4 5 6 7
24. I would like to excite my students about their part in this approach.	0 1 2 3 4 5 6 7
25. I am concerned about time spent working with nonacademic problems related to the innovation.	0 1 2 3 4 5 6 7
26. I would like to know what the use of the innovation will require in the immediate future.	0 1 2 3 4 5 6 7
27. I would like to coordinate my efforts with others to maximize the innovation's effects.	0 1 2 3 4 5 6 7
28. I would like to have more information on time and energy commitments required by the innovation.	0 1 2 3 4 5 6 7
29. I would like to know what other faculty are doing in this area.	0 1 2 3 4 5 6 7
30. Currently, other priorities prevent me from focusing my attention on the innovation.	0 1 2 3 4 5 6 7
31. I would like to determine how to supplement, enhance, or replace the innovation.	0 1 2 3 4 5 6 7
32. I would like to use feedback from students to change the program.	0 1 2 3 4 5 6 7
33. I would like to know how my role will change when I am using the innovation.	0 1 2 3 4 5 6 7
34. Coordination of tasks and people is taking too much of my time.	0 1 2 3 4 5 6 7
35. I would like to know how the innovation is better than what we have now.	0 1 2 3 4 5 6 7

Note. Stages of Concern Questionnaire. Reprinted from *Measuring implementation in schools: The Stages of Concern Questionnaire* (p. 79), by A. A. George, G. E. Hall, and S. M. Stiegelbauer, 2013, Austin, TX: SEDL. Copyright 2006 by SEDL. Reprinted with permission.

Table A1

Question Items for Faculty Teaching Methods and Technology Used In Teaching

Item	Faculty's Use of Technology in Teaching Inventory Questions	Frequency
A1	How often do you use any type of social networking technology in your classes such as Facebook, Google+, Instagram, Twitter, LinkedIn, Pinterest, Tumblr, Ning, YouTube, blogs, wikis, etc.?	Never, Rarely, Sometimes, Often
A2	How often do you use presentation applications (ex. PowerPoint, Keynote, Prezi) in class?	Never, Rarely, Sometimes, Often
A3	How often do you utilize any type of student response system ("clickers")?	Never, Rarely, Sometimes, Often
A4	How often do you utilize podcasts (audio or video) in any capacity in your teaching?	Never, Rarely, Sometimes, Often
A5	How often do incorporate online testing into your classes?	Never, Rarely, Sometimes, Often
A6	What other technologies do you incorporate into your teaching?	Open Text Field
Item	Faculty Teaching Methods Inventory Questions	Frequency
B1	How often do you lecture in your classes?	Never, Rarely, Sometimes, Often
B2	How often to you incorporate class discussions?	Never, Rarely, Sometimes, Often
B3	How often is the majority of your class time taken by student activities/interactions?	Never, Rarely, Sometimes, Often
B4	How often do you incorporate small groups in your teaching?	Never, Rarely, Sometimes, Often
B5	How often to you have students do presentations?	Never, Rarely, Sometimes, Often
B6	How often do you assign group projects?	Never, Rarely, Sometimes, Often
B7	How often do you flip your classroom (make your presentation available before class and then do other activities during class)?	Never, Rarely, Sometimes, Often

APPENDIX B

SEDL License Agreement

ADVANCING RESEARCH
SEDL
IMPROVING EDUCATION

SEDL License Agreement

To: John Randall
Director of the Center for Excellence in Learning and Teaching
[redacted] University [redacted]
[redacted]
[redacted], CA [redacted]

From: Nancy Reynolds, Information Associate
SEDL
Information Resource Center-Copyright Permissions
4700 Mueller Blvd.
Austin, TX 78723

Subject: License Agreement to reprint and distribute SEDL materials

Date: October 3, 2014

Thank you for your interest in using the **Stages of Concern Questionnaire** (SoCQ 075) published by SEDL in *Measuring Implementation in Schools: Stages of Concern Questionnaire* written by Archie A. George, Gene E. Hall, and Suzanne M. Stiegelbauer in 2006, as Appendix A, pages 79-82; it is also available in electronic format as SEDL's *Stages of Concern Questionnaire (SoCQ) Online*, and in the book *Taking Charge of Change*, revised ed., published in 2006 and written by Shirley M. Hord, William L. Rutherford, Leslie Huling, and Gene E. Hall, on pages 48-49.

The SoCQ 075 will be referred to as the "work" in this permission agreement. SEDL is pleased to grant permission for use of the work cited above by the Licensee to survey faculty at Concordia University Irvine about their levels of concern toward online education as it relates to their teaching philosophy and technology use and to gather data for a doctoral dissertation in learning technologies. The following are the terms, conditions, and limitations governing this limited permission to reproduce the work:

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2. No adaptations, deletions, or changes are allowed in the work with the exception of substituting the words "the innovation" with a word or phrase that participants will recognize such as the name of the innovation or initiative. Questions may be added to identify demographic indicators and information about faculty teaching philosophies and their professional use of technology of participants before or after the instrument, but otherwise, the wording and order of the items cannot be changed, No derivative work based on or incorporating the work may be created without the prior written consent of SEDL.

Voice: 800-476-6861
Fax: 512-476-2286
www.sedl.org
4700 MUELLER BLVD., AUSTIN, TX 78723

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I'm e-mailing you a PDF of this agreement. Please print and sign one copy below, indicating that you understand and agree to comply with the above terms, conditions and limitations, and send the original back to me. If you wish to keep a copy with original signatures, please also print, sign, and return a second copy and, after I receive and sign it, I'll return it with both of our signatures to you.

Thank you, again, for your interest in using SEDL's **Stages of Concern Questionnaire** (SoCQ 075). If you have any questions, please contact me at 800-476-6861, ext. 6548 or 512-391-6548, or by e-mail at nancy.reynolds@sedl.org.

Sincerely,

Nancy Reynolds — October 3, 2014

Nancy Reynolds for SEDL — Date signed

Agreed and accepted:

Signature: John Randall — 10-3-14

Date signed

Printed Name: John Randall

APPENDIX C

Information Sheet/Informed Consent

Dear Faculty Member:

My name is John Randall, and I am a student in the doctorate program in Learning Technologies at Pepperdine University, Graduate School of Education and Psychology, who is currently in the process of recruiting individuals for my study entitled, "The Level of Faculty Concern about Teaching Online." The professor supervising my work is Dr. Paul Sparks. The study is designed to investigate the level of concern faculty have about teaching online, the technology they use in teaching, and the teaching methods they use, so I am inviting individuals who are full-time faculty 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 or not you wish to participate.

If you should decide to participate in the study, you will be asked to complete an online survey. It should take approximately 15 to 20 minutes to complete the survey you have been asked to complete. Please complete the survey in a single setting.

Although minimal, there are potential risks that you should consider before deciding to participate in this study. These risks include possible stress related to answering questions about your teaching. In the event you do experience any stress and wish to discuss them, please contact the researcher at [redacted] and or the researcher's chairperson, Paul Sparks at [redacted]

The potential benefit to you for participating in the study is the knowledge that you have contributed to research that may be used to improve support of faculty who teach online.

If you should decide to participate and find you are not interested in completing the survey in its entirely, 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 blank. You will still be included in the random drawing for one $50 Amazon gift card regardless of whether you decide to complete the entire survey or not.

After 2 weeks, a reminder email 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 can be shared since this information will not be collected on the survey or in any other manner. The data will be kept in a secure manner for at least three years at which time the data will be destroyed.

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 Paul Sparks at Paul.Sparks@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. Please remember to send me back the survey whether you decide to participate in the study or not. You are welcome to a brief summary of the study findings in about 1 year.

Sincerely,

John Randall

Doctoral Student at Pepperdine University

[redacted]

APPENDIX D

Faculty Email Requesting Participation in The Study

Subject: Survey on levels of concerns about teaching online

Greetings,

If you are a full-time faculty member (residents included) please continue reading. If not, this email does not pertain to you.

I am a doctoral student at Pepperdine University and an Assistant Professor of Educational Technology. I am working on my dissertation researching how the level of concern of faculty about teaching online. For the purposes of this survey, an online course is considered one where 80% or more of the content is delivered online. This study is a quantitative survey that should take approximately 15-20 minutes of your time. Your institutions IRB as well as Pepperdine's IRB have approved this research and I will be adhering to their requirements. At the conclusion of this study, the findings will be available to you.

By participating in the survey, you will be entered in a random drawing to win a $50 Amazon gift card. One gift card will be awarded. This survey is hosted online and can be accessed here: (PLACE LINK HERE). If you are willing to support my research, please participate in the survey by (LIST DATE HERE). Please contact me with any questions or concerns. Thank you very much for your time and consideration.

Sincerely,

John Randall

APPENDIX E

Follow Up Email to Faculty about Participating

Subject: Survey on levels of concerns about teaching online

Greetings,

You may recall an email from me two weeks ago regarding my research needs for my doctoral dissertation. If you have already completed the survey, thank you! If not, please consider participation in the study since your input is greatly valued and will help contribute to the larger body of research on the subject.

If you are a full-time faculty member (residents included) please continue reading. If not, this email does not pertain to you.

I am a doctoral student at Pepperdine University and an Assistant Professor of Educational Technology. I am working on my dissertation researching how the level of concern of faculty about teaching online. For the purposes of this survey, an online course is considered to be one where 80% or more of the content is delivered online. This study is a quantitative survey that should take no more than 15-20 minutes of your time. Your institutions IRB as well as Pepperdine's IRB have approved this research and I will be adhering to their requirements. At the conclusion of this study, the findings will be available to you.

By participating in the survey, you will be entered in a random drawing to win a $50 Amazon gift card. One gift card will be awarded. This survey is hosted online and can be accessed here: (PLACE LINK HERE). If you are willing to support my research, please participate in the survey by (LIST DATE HERE). Please contact me with any questions or concerns. Thank you very much for your time and consideration.

Sincerely, John Randall

APPENDIX F

Summary of Studies Using SoCQ

Year	Author	Sample	Type of Study	Purpose	Focus/ Innovation	Findings
1987	Marsh (Australia)	14 teachers at one elementary school	Pre-post use of SoCQ over 9–month period	Assess curriculum implemention of social studies program	Primary school innovation	High personal concerns over time period due to lack of explicit guidelines
1992	Van der Vegt & Vandenberghe (Belgium and Netherlands)	25 schools in Netherlands and 52 in Belgium	Longitudinal policy study of implementation	Evaluation, support for implementation	Primary school program	Interventions supporting implementation need to be integrated into ongoing school organizational processes, including addressing local concerns
1993	Van den Berg (Belgium and Netherlands)	Not described	Overview of research on national policy implementation	Evaluation, support for implementation	Support for national program	SoC valuable component of understanding change process
1995	Anderson, Rolheiser, & Bennett (Canada)	172 teachers in 8 school districts	Quantitative data collected at middle and end of year to assess progress and plan supports	Professional development	Design of support strategies for use of cooperative learning	Use of cooperative learning strategies improved when based on concerns data
1997	Bresnitz et al.	4 sites; 84 participants	SoCQ and LoU data in combination with interviews; 1 year	Assessment of implementation	Computer based learning in medical education	The complexity of the medical environment created difficulties for use
1997	Gwele	8 nursing staff	3-year longitudinal study; mixed methods	Assess implementation	Nursing Education – problem based learning	Monitoring of staff concerns provides support and planning but does not mediate the complexity of the environment or innovation
1997	Hope	16 teachers	Pre–post SoCQ plus multiple data sources	Assess implementation; professional development	Technology use	Describes the importance of training to supporting use

(continued)

Year	Author	Sample	Type of Study	Purpose	Focus/ Innovation	Findings
1998	McFarland	25 student teachers	Qualitative, reflective journals over 1 year	Professional development	Student teachers	Use of concerns model to organize learning and approach to change
1998	Burns & Reid	Focus groups of teachers and parents	Qualitative and quantitative (SoCQ)	Evaluation and professional development	Gifted education	Concerns provides way to understand and support the different needs of individuals and focus training plans on needs
1999	Howland & Mayer	Two school settings	Test of online SoCQ in two application settings	Support for technology use	Network community for technology use	Describes two different applications of an online SoCQ and their effects; test of applications
1999	Hawkes, Cambre, & Lewis	23 projects in Ohio SchoolNet	Longitudinal, quantitative, and qualitative data	Evaluation of program	Telecommunity SchoolNet Program adoption	Programs moving through similar stages based on concerns data; concerns can help with support
2000	Atkins & Vasu	155 teachers	Comparative case study; correlates two instruments	Implementation support, professional development	Technology in teaching	Greater school-based support results in student-oriented concerns and outcomes
2000	James & Lamb	830 teachers and professors	Two-year study of concerns, needs, and test of supports	Program assessment and professional development	GTECH integrated math, science, and technology use	Although concerns lowered over 2 years, complexity of innovation meant difficulty with implementation
2001	Dass	24 teachers	Qualitative and quantitative methods	Professional development	Instructional innovations in science as part of Chautauqua Program Model	Concerns framework a way to assess teacher readiness and barriers to implementation

(continued)

Year	Author	Sample	Type of Study	Purpose	Focus/ Innovation	Findings
2001	Cheung, Hattie, & Ng	1,622 teachers	Comparative analysis of 4 alternative SoC models	Reliability and construct validity study	Test of empirical information about concerns construct in questionnaire	Reframes 7-stage SoCQ to 5-stage SoCQ; questions first stage in original model
2001	Gershner & Snider	49 teachers	Electronic use of SoCQ; pre–post test re technology use in classrooms	Test of electronic use of SocQ; program assessment	Curriculum integration of technology use	Need to control setting for electronic input but showed great promise for assessment strategy
2002	Casey & Rakes	659 teachers	Mixed methods including SoCQ	Assess effects of training on use; develop supports for training	Accommodation to technology	Addressing training, providing time and attention to teacher concerns, results in better use of the innovation and more focus on students
2002	Hargreaves et al. (England)	15 teachers	Comparative assessment of groups over 8- month period	Assess implementation	Interactive teaching in literacy	Data showed few differences between focus and comparison groups except in areas of interaction and questioning
2002	Rakes & Casey	659 teachers	Online survey of concerns	Assess implementation and degree of institutionalization	Use of instructional technology	Few users had the outcome-oriented concerns (Consequence) needed for institutionalization
2002	Ward, West, & Isaak	45 mentors and 65 protégés	Pre- and post-assessment	Assess program and developmental needs of teachers; support professional development	Mentoring for Internet use in teaching	Mentors and protégés paired based on concerns data; concerns allowed teachers to see own change process

(continued)

Year	Author	Sample	Type of Study	Purpose	Focus/ Innovation	Findings
2003	Börner (Canada)	105 administrators and 389 teachers in one school district	Survey data based on concerns and CBAM tools	Evaluate the impact of using Instructional Intelligence approaches to teacher practice and student learning; understand how to support teachers in further implementation	Use of Instructional Intelligence curriculum strategies	Data indicate that supporting teachers in their understanding and use of instructional approaches has made a difference in quality of use and student learning
2003	Hargreaves et al. (England)	30 teachers	Focus and comparison groups over 8-month period; SocQ part of quantitative and qualitative assessment	Assess implementation and program outcomes	Interactive Teaching in Literacy	Some change in teacher efficacy but only in certain areas; few differences between groups
2004	Cheung & Yip	812 chemistry and biology teachers	Survey data based on CBAM tools	Determine reliability and validity of questionnaire; determine if teachers' Stages of Concern form developmental progression; determine if concerns related to school-based assessment are related to teachers' experiences with particular assessment program	Teacher Assessment Scheme (TAS)	Experience alone could not motivate teachers to think more about the impact of school-based assessment on student learning, their professional development in instructional assessment, and the possible refinements for their school-based assessment scheme; thus there is a need for professional development to arouse teacher Consequence and Refocusing concerns

(continued)

Year	Author	Sample	Type of Study	Purpose	Focus/ Innovation	Findings
2004	Christou et al. (Cyprus)	655 teachers in 100 elementary schools	Longitudinal study of concerns renew curriculum; comparison of four groups	Assess implementation	Math curriculum and textbook use	Most concerns at task stage; significant differences in concerns data based on years of teaching, not implementation
2004	Dobbs	27 faculty	Quasi-experimental study; classroom, lab, and control groups	Professional development	Implementing distance education strategies	Significant differences in concerns of classroom, lab, and control groups, signifying importance of training
2005	Yuliang & Huang	86 users	Longitudinal, 1 year	Assess implementation	Technology integration	Replicates earlier CBAM findings of user groups: 3 groups, self, consequence, and seeking new applications
2006	Bennett, Fullan, & Rolheiser, eds. (Canada)	1,700 schools in 8 districts in Canada and 2 in Australia	Describes multiple studies supporting systemic change and best practice using CBAM data supports and other methods	Support for implementation and systemic change; support focused on teacher concerns and use	Systemic change efforts in 1,700 schools	Focus on supporting teachers the main way to achieve student outcomes and clarify use related to integrated curriculum

Note. Stages of Concern Questionnaire. Reprinted from *Measuring implementation in schools: The Stages of Concern Questionnaire* (p. 66), by A. A. George, G. E. Hall, and S. M. Stiegelbauer, 2013, Austin, TX: SEDL. Copyright 2006 by SEDL. Reprinted with permission.

APPENDIX G

Statements on The Stages Of Concern Questionnaire Arranged According To Stage

Item	Statement
	Stage 0
3	I am more concerned about another innovation.
12	I am not concerned about this innovation at this time.
21	I am preoccupied with things other than this innovation.
23	I spend a little time thinking about this innovation.
30	Currently, other priorities prevent me from focusing attention on this innovation.
	Stage 1
6	I have a very limited knowledge of the innovation.
14	I would like to discuss the possibility of using the innovation.
15	I would like to know what resources are available if we decide to adopt this innovation.
26	I would like to know what the use of the innovation will require in the immediate future.
35	I would like to know how this innovation is better than what we have now.
	Stage 2
7	I would like to know the effect of reorganization on my professional status.
13	I would like to know who will make the decisions in the new system.
17	I would like to know how my teaching or administration is supposed to change.
28	I would like to have more information on time and energy commitments required by this innovation.
33	I would like to know how my role will change when I am using the innovation.
	Stage 3
4	I am concerned about not having enough time to organize myself each day.
8	I am concerned about conflict between my interests and my responsibilities.
16	I am concerned about my inability to manage all the innovation requires.
25	I am concerned about time spent working with nonacademic problems related to this innovation.
34	Coordination of tasks and people is taking too much of my time.
	Stage 4
1	I am concerned about students' attitudes toward this innovation.
11	Hi am concerned about how the innovation affects students.
19	I am concerned about evaluating my impact on students.
24	I would like to excite my students about their part in this approach.
32	I would like to use feedback from students to change the program.
	Stage 5
5	I would like to help other faculty in their use of the innovation.
10	I would like to develop working relationships with both our faculty and outside faculty using this innovation.
18	I would like to familiarize other departments or people with the progress of this new approach.

(continued)

27	I would like to coordinate my effort with others to maximize the innovation's affect.
29	I would like to know what other faculty are doing in this area.
	Stage 6
2	I now know of some other approaches that might work better.
9	I am concerned about revising my use of the innovation.
20	I would like to revise the innovation's instructional approach.
22	I would like to modify our use of the innovation based on the experiences of our students.
31	I would like to determine how to supplement, enhance, or replace the innovation.

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APPENDIX H

Raw Score to Percentile Conversion Table

Five Item Raw Scale Score Total	Percentiles for stage:						
	0	1	2	3	4	5	6
0	0	5	5	2	1	1	1
1	1	12	12	5	1	2	2
2	2	16	14	7	1	3	3
3	4	19	17	9	2	3	5
4	7	23	21	11	2	4	6
5	14	27	25	15	3	5	9
6	22	30	28	18	3	7	11
7	31	34	31	23	4	9	14
8	40	37	35	27	5	10	17
9	48	40	39	30	5	12	20
10	55	43	41	34	7	14	22
11	61	45	45	39	8	16	26
12	69	48	48	43	9	19	30
13	75	51	52	47	11	22	34
14	81	54	55	52	13	25	38
15	87	57	57	56	16	28	42
16	91	60	59	60	19	31	47
17	94	63	63	65	21	36	52
18	96	66	67	69	24	40	57
19	97	69	70	73	27	44	60

(continued)

Five Item Raw Scale Score Total	Percentiles for stage:						
	0	1	2	3	4	5	6
20	98	72	72	77	30	48	65
21	99	75	76	80	33	52	69
22	99	80	78	83	38	55	73
23	99	84	80	85	43	59	77
24	99	88	83	88	48	64	81
25	99	90	85	90	54	68	84
26	99	91	87	92	59	72	87
27	99	93	89	94	63	76	90
28	99	95	91	95	66	80	92
29	99	96	92	97	71	84	94
30	99	97	94	97	76	88	96
31	99	98	95	98	82	91	97
32	99	99	96	98	86	93	98
33	99	99	96	99	90	95	99
34	99	99	97	99	92	97	99
35	99	99	99	99	96	98	99

Note. Stages of Concern Questionnaire. Reprinted from *Measuring implementation in schools: The Stages of Concern Questionnaire* (p. 66), by A. A. George, G. E. Hall, and S. M. Stiegelbauer, 2013, Austin, TX: SEDL. Copyright 2006 by SEDL. Reprinted with permission.

APPENDIX I

IRB Approval Letter

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

April 1, 2015

John Randall
Protocol #: E0215D04
Project Title: Level of Faculty Concern about Teaching Online

Dear Mr. Randall:

Thank you for submitting your application, *Level of Faculty Concern about Teaching Online,* 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. Sparks, 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.nihtraining.com/ohsrsite/guidelines/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.

In addition, your application to waive documentation of informed consent has been **approved**.

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,

Thema Bryant-Davis, Ph.D.
Chair, Graduate and Professional Schools IRB

cc: Dr. Lee Kats, Vice Provost for Research and Strategic Initiatives
Mr. Brett Leach, Compliance Attorney
Dr. Paul Sparks, Faculty Advisor