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Faculty Knowledge and Use of Best Practices in Online Professional Continuing Education

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COLLEGE OF EDUCATION

This is to certify that the doctoral study by

Gladys Montane

has been found to be complete and satisfactory in all respects,
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M.A.Ed., Seaton Hall University, 1999

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

A recent mandate by the American Registry of Radiologic Technologists requires that U.S. radiologic technologists complete continuous qualification requirements (CQR). This study examined faculty skills and practices at an American university that developed online CQR courses in response to this mandate. It was specifically designed to assess the knowledge and skills of this university's faculty with regard to best practices in an online learning environment, so as to provide the basis for meeting faculty needs in distance education. Dewey's work on constructivism served as the framework guiding this study. A qualitative, intrinsic case study was employed to collect data using semistructured interviews of 11 imaging science faculty. NVivo10 ®™ software was used to help analyze the data through a methodical approach of open and axial coding allowing for categorical creation of nodes. Through successive iterations, the nodes were further collapsed and emerged into 6themes: preparation for the online environment; just-in-time learning; knowledge of pedagogical and best practices; platform preparation/technology; interaction with students; and *in retrospect,* which was defined as the participants' reflections on previous experiences. The results were used to inform a position paper recommending ongoing professional development programs complimented with support services. Implementing the recommendations may position faculty to be more pedagogically appropriate when instructing in the online environment. The study contributes to positive social change by providing faculty with online teaching tools and skills. By positioning faculty with online pedagogical skills that improve instructional currency, practicing radiological technologists and their patients will ultimately benefit through enhanced patient care.

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Dedication

This dissertation is dedicated to the memory of my best friend and mom, Margarita Velazquez. She instilled in me the importance of an education, the love of learning and exploring new adventures. Throughout this journey, she has been with me in spirit watching over me and providing me with the strength I needed to see this journey to fruition. I dedicate my dissertation and degree to her memory.

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Finally, thank you Dear Lord for allowing me to complete this journey and see my dream come through and for giving me the strength to continue when I was discouraged.

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Section 1: The Problem

Introduction

Radiologic professionals in the United States have been required to fulfill continuing educational requirements since 1995. This requirement was expanded by new continuous qualification mandate and became effective in 2014 (American Registry of Radiologic Technologists, 2013a). Rising from this mandate, new requirements now affect U.S. radiologic professionals who have earned post primary certification after January 2005 and those who obtained primary certification after January 2011. In 2015, the first cohort of new radiologist assistants in the United States became subject to these new continuous qualification requirements. These new continuous qualification requirements are due to the advancement in technology and the continual growth in the healthcare field. The idea of "once certified, forever qualified" is no longer applicable in today's healthcare environment (American Registry of Radiologic Technologists, 2013a, para. 5). The premise for continuous qualification requirement is to improve the skills and knowledge, while providing new learning experiences and increasing the quality of the healthcare provided (American Registry of Radiologic Technologists, 2013a). Failure to comply with continuous qualification requirements results in discontinuation of these professionals' certification and registration (American Registry of Radiologic Technologist, n.d.).

This study examined online faculty skills and practices in an online university program offering continuous qualification requirements (CQR) classes for U.S. radiologic professionals. The dean and chair of the Department of Medical Imaging Science at this university, hereafter referred to as State University, have recognized the

need to participate in the development of continuous qualification programs online (Chairperson of Department, personal communication, June 4, 2012). The Medical Imaging Sciences program's medium of choice for the delivery of the continuous qualification requirements for working health care professional is the online environment, because it provides accessibility, flexibility, and efficiency without boundaries (Lehman & Conceição, 2014). However, at the time of this study there was limited documentation or research on faculty knowledge and practices within the online environment at State University.

Best practices are characterized by techniques or procedures used to improve results that are evidenced by actions resulting in positive outcomes (Hamilton, 2011). Educators who are knowledgeable of best practices can better use pedagogy and technology to motivate students and enhance learning. Therefore, the focus of this project study was to perform an environmental scan concerning State University's faculty's then-current knowledge and preparation for teaching online. The resulting data were used to prepare a position paper designed to inform and advise State University's dean concerning faculty members' knowledge and use of best practices in distance learning. The report is significant because it was designed to create an institutional environment that supports faculty in a distance-learning environment while simultaneously meeting the demands of disciplinary licensure entities.

The failure to conduct an environmental scan of the knowledge faculty at State University possessed placed the university at a competitive disadvantage. Without an environmental scan, officials at this university did not know who to train, what type of training to provide, and when to train its faculty. Implementing the recommendations

gleaned from this report is designed to create a faculty who are better able to use technology to motivate and enhance learning, as suggested by Olson, Codde and Maagd (2011). This in turn will help State University train students within the radiological sciences in the latest techniques and knowledge, empowering them to positively influence patient care by providing enhanced clinical performance, patient safety and education. In addition, the report can serve to inform other fields outside my discipline.

Definition of the Problem

The problem addressed by this study was that State University's faculty's knowledge of and preparation for online and distance program development had not been determined. An informed solution cannot be proposed without first developing a comprehensive understanding of the problem (Hancock & Algozzine, 2011). Hence the dean's mandate cannot be carried out with no appreciation of the faculty's current knowledge and practice of best practices in the online environment. Effective suggested solutions must be buoyed by an environmental scan concerning the faculty knowledge of online teaching theory and practices, as this would provide a concrete foundation in which to ground the solutions. Therefore, the integration of best practices in distance education can assist educators in transitioning from traditional classroom pedagogy to a more learner-oriented environment that allows student engagement in content (Olson et al., 2011).

According to Gregory (2012), the pedagogical approach used by faculty in higher education needs to be examined to ensure that their teaching methods are contributing to a positive student learning experience. Ensuring this at the State University required determining gaps in practice associated with knowledge and implementation in light of

best practices. Educators, who are knowledgeable of best practices, can better use technology to motivate students and enhance learning (Olson et al., 2011).

Rationale

Evidence of the Problem at the Local Level

The new continuous quality requirements for radiologic professionals have captured the attention of the dean and the department chairperson at State University. As a senior faculty member of the radiologist assistant program at this university, I am responsible for addressing the immediate needs of developing courses for the radiologist assistant in the online environment. The online environment was selected by the program chair as the medium of choice due to the flexibility it provides learners as well as the ability to reach people outside of the state. However, State University's faculty's knowledge and preparation for the online environment using best practices had not been assessed prior to this study. This assessment was especially important because this program and its faculty had not previously been involved in online continuing educational programs. Failure to use best practices can cause the faculty to become dissatisfied with the online environment and lead to student attrition (Noel-Levitz, 2011; Palloff & Pratt, 2011). Therefore an assessment to determine knowledge of best practices and their usage was both timely and appropriate for this program.

The concern for the development of continuous quality requirement courses based upon best practice stems from State University's mission of promoting excellence in the allied health professions through education, research, and service (School of Health Related Professions [SHRP], 2012). State University is a statewide institution that is specifically committed to promoting quality healthcare for its residents. Its dedication to

improving healthcare is evidenced by "innovative academic programs, relevant research and scholarship, and meaningful community service" (SHRP, 2012, para. 2). Developing continuing Internet-based education courses grounded in the principles of best practices has also been designated as a priority for the department (Chairperson of the Department, personal communication, June 4, 2012). The Chairperson stated to me that the radiologist assistant program and the department were not prepared to deliver continuous quality requirement courses via Internet-based education. However, with the guidance of best practices of Internet-based education the university and the program are positioned to understand best practices of online education.

Learning to teach effectively online requires instructors to be cognizant that learning is a dynamic process that requires a constant reconstruction of experiences (Dewey, 1997). Dewey's (1997) emphasis on learning stressed the student's need for continuity and interaction. Dewey's beliefs are significant to the online educational environment because faculty need to be aware of their teaching philosophies, pedagogical knowledge and ideologies to accommodate their new roles as online educators. Therefore, instructors knowledgeable in online learning pedagogy, technology, and theories associated with distance education are essential to the success of quality courses (Barczyk, Buckenmeyer, & Feldman, 2010). Hence, it is imperative to identify the current reality of faculties' online teaching pool of knowledge as to lay an appropriate path for skills improvement.

No matter of any of these factors relative importance, it is imperative that the faculty be well informed on the issues concerning best practices. Failure to acquire this knowledge can cause the university to become a victim of trends or misconceptions

(McMurty, 2012). In order to learn with certainty the level of knowledge and educational tools faculty possess, as faculty need preparation that instructs them about best practices and their use. In this study, this instruction is provided in part through a position paper (Appendix A) designed to provide stakeholders with an understanding of the knowledge faculty possesses and where their knowledge can be improved.

Evidence of the Problem From the Professional Literature

The implementation of online courses by institutions of higher education has grown at an unprecedented rate (Chaney, Chaney, & Eddy, 2010; Downing & Dyment, 2013; Roman, Kelsey, & Lin, 2010). The Sloan Survey of Online Education reported that in the fall of 2010, students in the United States who were taking online courses had surpassed 6.1 million and online enrollment accounted for one-third of the students in institutions of higher education (The Sloan Consortium, 2011). However, Downing and Dyment's (2013) assessment of United State educators' readiness and preparation revealed that educators in general are not as comfortable as students are in an online education environment. This uneasiness is due to educators' lower confidence in their technological and pedagogical skills (Downing and Dyment, 2013).

The preparation of faculty for the delivery of online courses either pedagogically or technically has received little attention (Terantino & Agbehonou, 2012; UDI Online Project, 2010). Concerns about the instructional quality of online delivery persist among teachers who have been saddled with the responsibility of online instruction (Lewis, Baker, and Britigan, 2011). Following this educators who instructor in an online environment and do not adhere to sound instructional practices or receive appropriate training may not know if their efforts are yielding valuable and reliable results.

Proficiency in pedagogical knowledge of the online environment is essential to effective teaching and requires ongoing training to be sustainable as technology advances (Sutton, White, Mbizo, & Stewart, 2010). It is incumbent upon the State University to determine the faculty current knowledge and practices for the online instruction by performing an environmental scan. The State University will be better prepared to fill in gaps in practice and the success of well-trained faculty will translate into a successful online educational program (Maddix, Estep, & Lowe, 2012). In the absence of use and appreciation of best practices, numerous practices result that are not grounded in research on their efficacy.

Pedagogy associated with the use of online courses differs from that of a traditional classroom and requires modification to the online environment (Greupner, 2010). In a traditional classroom setting, the teacher sets the curriculum and controls the learning environment, whereas in the online environment teaching and learning require a new skill set that incorporates active online pedagogy (Keengwe & Kidd, 2010). It is poor practice to directly transfer PowerPoint slides and lectures notes to the online environment (Lehman & Conceição, 2010) The online requires a more active online engagement with the content as apposed to reading and digesting. Lecture notes many times take the form of videos interactive sessions or group discussions that are designed to initiate and maintain students active engagement and involvement (Conrad & Donaldson 2004; Lehman & Conceição 2010). Saltmarsh and Sutherland-Smith (2010) further substantiated the need for new skills, concluding that distinct approaches are required to support online educators. The transition from traditional to online teaching produces difficulties for instructors about best uses of the technology in a given situation (Ertmer & Ottenbreit-Leftwich, 2010). Therefore, instructors' knowledge of instructional

practices and pedagogical ideologies such as curriculum delivery and content require modification (Ertmer & Ottenbreit-Leftwich, 2010). Because of these factors, educators need support with transitioning from the traditional classroom to the online format, and need to identify what they know so that they can learn what they do not know. To assist faculty best with this transition, educational leaders must first understand their own current awareness of best practices and use of these tools and knowledge.

There is a strong need to prepare teachers to transition from the traditional classroom to the online environment via professional development (Barczyk et al., 2010). Allen and Seaman (2010) found that the most common form of training (65%) for online occurred within their institution. Informal training with mentors was the second most common form of training (59%). However, 19% of intuitions that offered online course were found not to provide their faculty with any type of training (Allen and Seaman, 2010). Participants who have engaged in program development for online teaching report that their knowledge in pedagogical and technical skills increase (Roman et al., 2010). Identifying the gaps in practice will provide the university with an opportunity to transform the pedagogical knowledge of instructional practices as well as pedagogical ideologies. The position paper will create an open door for the university to distinguish itself, learn and stimulate discussions and future initiatives in the use of best practices in online and distance educational programs. It will also establish a basis from which remediation can be supported.

Definitions

American Registry of Radiologic Technologists: "The world's largest credentialing organization for radiologic technologists" (*American Registry of Radiologic Technologist*, 2013b, para.1).

Asynchronous instruction: A communication method that "does not rely upon simultaneous access" (Oztok, Zingaro, Brett, & Hewitt, 2013, p. 88).

Best practice: A multidisciplinary term that characterizes techniques or procedures used to improve results. Hamilton (2011) defined best practices as a "careful collection of relevant evidence, an action resulting in a positive outcome, and the ability to reproduce results" (p. 121).

Constructivism: A theory of how people acquire and construct knowledge based upon previous experiences and newly acquired experiences through a facilitator (Dewey, 1997; Ültanir, 2012).

Distance Education: Internet-based education, teaching, and learning facilitated with the use of tools that takes place in an environment in which students and teachers are geographically removed (Menchaca & Bekele, 2008).

Distance Learning: A form of learning that takes place in an environment where faculty and student and student-to-student interaction occurs virtually. In essence, there is no face-to-face interaction (Andrews & Tynan, 2012).

E-learning: A type of learning that is supported by the use of electronic technologies. However, it goes beyond the use of technology, and is a "way of teaching and learning moving towards a new educational paradigm" (Garrison, 2011; Sangrà, Vlachopoulos, & Cabrera, 2012).

Information and Communication Technology: "A diverse set of technological tools and resources used to transmit, store, create, share or exchange information" (United Nations Educational, Scientific & Cultural Organization, 2002, p.12). These technological tools and resources include computers, the Internet, video streaming and podcast.

Just-in-time learning: A pedagogical system that "applies tried and true principles from the manufacturing field to the development of quality education and provides the methodology to integrate technological tools with strategic instructional design goals" (Hall, n.d, p 914).

Online learning: A pedagogical delivery that "Allows students to remain at home or anywhere they like and still be able to study, nowadays mostly via computers and the Internet" (Abarashi, 2011, p. 56).

Open Distance Learning: "A system that blends student support, curriculum and instruction design, flexibility of learning provisions, removal of barriers to access, credit of prior learning, and other academic activities such as program delivery and assessment" (Msweli, 2012, p. 97).

Registered Radiologist Assistant: An advanced radiological provider who enhances patient care by performing procedures often designated for radiologist physicians (American Registry of Radiologic Technologists, 2013c).

Radiologist Assistant Education Council: A group composed of educators and program directors from each of the recognized radiologist assistant programs that are constituents of the American Registry of Radiologic Technologists.

Social presence: "The ability of learners to project their personal characteristics into the community of inquiry, thereby presenting themselves as 'real people' " (Smith & Flaherty, 2013, p. 1). It can also be defined as the "extent to which a medium is perceived to convey a feeling of human contact, sociability, and sensitivity" (Crutzen, Cyr, Larios, Ruiter, & De Vries, 2013, para 1).

Strategy: An approach use to generate a successful outcome. It is provides "overall direction for an initiative" (Community Tool Box, n.d., para 1).

Synchronous instruction: Synchronous instruction is the use of technology in which the instructor and students meet virtually and interact in real time. The technology used can include but is not limited to video conferencing and instant messaging (Passonneau & Coffey, 2011).

Theme: "a major dimension, major aspect, or constituent of the phenomenon studied; expressed more simply, a partial descriptor of the phenomenon" (Tesch, 1985, p. 231).

Western Cooperative for Educational Telecommunications: An educational organization whose mission is to "accelerate the adoption of effective practices and policies, advancing excellence in technology-enhanced teaching and learning in higher education" (Western Cooperative for Educational Telecommunications, n.d., para. 1).

21st-century Skills: A set of knowledge, skills, and work habits, believed by educators to be essential to the success in academia (Hidden Curriculum, 2014).

Significance of the Problem

This project study offers critical, applicable and current knowledge regarding the use of best practices and pedagogy for faculty in online learning. It is key to State

University's successful development of an online continuing educational program that faculty approaches to online education be grounded in a firm understanding of what they know and do and the gap between these and accepted best practices. Therefore, ascertaining the faculty's knowledge and preparation for the online environment using best practices is essential. If State University fails to enhance the knowledge of online faculty, it runs a potential risk of creating faculty who are dissatisfied with the online environment, as suggested by Palloff and Pratt (2011). Dissatisfaction leads to faculty unwillingness to continue teaching online and student attrition of online courses (Noel-Levitz, 2011; Palloff & Pratt, 2011). Risk avoidance demands prior knowledge of who, where, and why the faculty "are" with regard to best practices.

Middle States Commission on Higher Education accredits the university where the study is conducted. Recognition by the Middle States Commission on Higher Education affirms that the university is meeting high standards associated with a quality education. The university has a reputation for providing quality education (SHRP, 2013). Maintaining high standards and Middle States Accreditation demonstrates the university leader's commitment to its social responsibility this is evidenced by the creation of courses and programs guided by practices that enhance teaching and learning (SHRP, 2011). The school and the department are committed to the development of continuous quality requirements via an Internet-based learning program. Ignoring or not integrating acknowledged best practices would diminish the university as a recognized quality provider of education for health care providers (Chairperson of the Department, personal communication, June 4, 2012).

Several educational organizations have developed or adopted general guidelines for good practice, quality measures, and components relevant to Internet-based education. The groups include the Sloan Consortium's The Five Pillars and the Western Cooperative for Educational Communication's Best Practices for Electronically Offered Academic Degree and Certificate Programs. Both organizations offer suggestions and tools to assist in the guidance of an online program. However, despite the information provided a need exists to ascertain the faculty's current knowledge and the extent of the problem. Therefore, an environmental scan of the faculty's knowledge of best practices is the starting point of this project study.

Guiding Research Question

In this study, I explored the knowledge faculty possess in best practices and pedagogy for the online environment. The position paper provides evidence of the faculty's knowledge and use of best practices in the delivery online professional education. It also serves to provide strategies the university can implement to close the gap in practice discovered in the project study. The implementation of a best practice program at the target institution demands answering the following primary research question:

- With regard to acknowledged best practices, what is the pool of knowledge that imaging science faculty at a major university possess and implement in their practice of online distance education?

Review of the Literature

I conducted a review to discover best practices associated with online and distance education delivery, faculty application and knowledge of best practices. The

literature review represents a theoretical and conceptual foundation in support of best practices in online and distant education. The initial literature review included terms such as continuing professional education, best practices in Internet-based education and continuing professional education of healthcare professionals. In an effort to collect all relevant information an expanded search, include terms such as accrediting agencies, faculty perceptions of online education, and distance education pedagogy.

The strategy for the literature search included the use of CINAHL, MEDLINE, Education Research Complete, Wiley Inter Science, Science Direct, Pro Quest, Scirus, Ovid, Academic Search Complete, Google Scholar, and Ulrichsweb. The terms for the literature search included multiple words that defined the delivery concept: *Internet-based education*, *distance education, distributed education*, *online learning, e-learning*, *online teaching, best practices for online teaching*, *computer assisted learning*, *online instructional design*, *electronic continuing education, standard for online teaching*, *web-based courses*, *and electronically offered certificates*) and the participants (*professional medical education*, *continuing medical education, continuing professional development*, *allied health*, *health professions education*, *interprofessional health education*, *allied health professionals*, *nursing, radiology*, *healthcare professionals*, *pedagogy*, *and adult-centered*).

Extending the literature search beyond the healthcare profession, searches were conducted in educational databases as well thus ensuring saturation of the literature. It was important to continue the literature search beyond healthcare to obtain a broader view of best practices in higher education. The research strategy approach included

words or phrases that reflected current terminology. A broader literature search was also necessary in an effort to discover sources indexed using older terminology.

Transitioning to the Online Environment Best Practices

The popularity of learning via the Internet has been attributed to easy access, flexibility, convenience, practicality, and effectiveness (Barret & Holley, 2009; Lam-Antoniades, Ratnapalan, & Tait, 2009; McCord & McCord, 2010). Lehman and Conceição (2014) attributed the increase in online learning to "the economic downturn, market demands, and the exponential rate of emergence of new technologies" (p. 3). "In the fall of 2010 over 6.1 million people took an online course representing an increase of 560,000 from the previous year" (Allen & Seaman, 2011, p. 4). With this explosion of new learners there would seem to be a need for teacher instruction to catch up with the demand for online learning. Teachers were being moved from the classroom to the online environment with little to no instructional preparation (Lehman & Conceição, 2010; 2014). The use of online learning for continuing professional development for healthcare providers is no exception. Continuing professional development has "risen progressively over the past five decades" (Triola, Huwendiek, Levinson, & Cook, 2012, p. ce15). Workload, changing shifts, the increase in expenses associated with traveling to conferences, and the shrinking funds to support continuing professional education have served to push the growth of online learner more broadly and at a faster pace for healthcare professionals (Harris, Sklar, Amend, & Novalsi-Marine, 2010; Young, Kim, Yeung, Sit, & Tobe, 2011).

Learning on the Internet has positive attributes in terms of accommodating scheduling needs and expenses. However, concerns exist regarding the negative feelings faculty may have about the implementation of online learning and the higher attrition rate of online courses (Juutinen & Saariluoma, 2010; McMahon, 2013). "A study of Master students at a national research university in southeastern United States found that the dropout rate for online courses were between four and six times greater than those in traditional courses" (McMahon, 2013, p. 3). The value and effectiveness of online learning are also a concern. Unease is seen in the definitions of quality criteria with regard to "pedagogical presentation of online material," and how best to implement learning online (Short, Guillemette, Duncan, & Kirby, 2010, p. 246). Few consistent guides are available to guide faculty in the development and use of distance education (Cook,Levinson, Garside, Dupras, Erwin, & Montori, 2010). It is for this reason that the project study focuses on performing an environmental scan to obtain information on faculty knowledge of best practices and their application in higher education.

Best practices are characterized by techniques or procedures used to improve results. In the case of education, best practices are defined as a "serious, thoughtful, informed, responsible, state-of-the-art teaching" (Zemelman, Daniels, & Hyde, 2012, p. 2). It is in the School of Health Related Profession's best interest to produce and deliver an educational program that encompasses best practices. The implementation of best practices will assist the faculty of the university with the knowledge to emulate accepted practices known to work and customizable to local environments. The current evidence on distance education practices is consistent (Al-Salman, 2011; National Science

Teachers Association [NSTA], 2012). Yet, it remains open to adaptability for specific programs pending their instructional needs.-

A common theme associated with best practices in an online environment is active social interaction by educators (UniversityUniversity, 2012; Kemp, 2012; McCord & McCord, 2010). Social interactions serve as an effective means to engage students in learning (Farajollahi et al., 2010; Menchaca et al., 2008; National Science Teacher Association, 2012). Florida State University recognizes this need and has integrated social presence in online courses before courses formerly commence (Moore, 2011). The University of Albany in New York instituted "effective discussion management via modules for reading with critiques, lesson planning, and reflective journals" (Moore, 2011, p. 105) in an effort to integrate social presence and interaction among students and educators. These recommendations made by highly regarded institutions and academic associations are significant to my study.

Established Best Practices

The Western Cooperative for Educational Telecommunications (WCET) was first to identify principles of good practice for electronically delivered programs in higher education (Shelton, 2011). Eight of the nation's regional accrediting commissions adopted common core principles from WCET to form what constitutes Best Practices for Electronically Offered Degree and Certificate Programs (Shelton, 2011). The university's interest in creating an Internet-based education program must take into account; the common core principles. They are essential to this study as well as knowing if faculty know why the use of best practices is important. Without the use of best practices, the university can fall victim to trends such as the continuing increase in online programs and

preconceptions that online programs can increase revenues (McMurty, 2012). The principles of good practice serve as a guide to higher education institutions, such as the university considering the adoption of distance learning. Appendix B provides a compendium of well know organizations established principles of best practices. While such guidance exists, it remains incumbent on the university first to understand "where the faculty are" before initiation of prescriptive solutions.

The Sloan Consortium (Sloan-C) is an association of colleges, universities, and organizations dedicated to incorporating online education into higher education (The Sloan Consortium, n.d., a). A product of this effort, the Five Pillars for Quality Online Teaching and Learning is detailed in Appendix C. The Five Pillars were developed and offered to assist educators and institutions in improving "the quality, scale, and breadth of online education" (The Sloan Consortium, n.d.b., p. 1). These pillars as ideal architectures support quality throughout distance learning efforts. Each pillar is associated with goals that can be used as guidance for an institution interested in offering online educational programs and measuring quality (The Sloan Consortium, n.d.b., p. 1). The pillars are significant to this study as they aided in providing a guide to meet quality goals that can be used to set benchmarks for the construction and continuous evaluation of an Internet-based distance-learning program.

The Council for Higher Education Association is another organization considered a national advocate for quality distance learning practices and has adopted the principles of best practices from WCET. The Council for Higher Education Association advocates for the awareness of faculty and use of best practices as key components to the distance educational process. According to Boling, Hough, Krinsky, Saleem, and Stevens (2012),

educators need to implement sound instructional designs; doing so will "provide students with experiences that challenge their higher order cognitive skills" (p. 118) and create educators who are facilitators of knowledge rather than dispenser of knowledge (Boling et al., 2012). Distance education fuses pedagogy, technology, and instructional design to connect with students virtually. This physical separation of space and time can threaten the quality of instruction and content (Roe, 2011). Roe (2011) suggested that to maintain quality in the delivery online and distance programs the incorporation of "rich multimedia, asynchronous communication, and mentoring of faculty who teach these courses" (p. 72) are essential in order to allow teachers and students to transcend time and space. Brown University (2012), Kemp (2012), and McCord and McCord (2010) associate best practices with the ability to create a socially active environment among students and educators. Therefore, failure to implement sound design based on accepted best practices can lead to student dissatisfaction and its precipitant, attrition (McMahon, 2013).

The National Science Teachers Association (NSTA) in an effort to provide quality and sound instructional design for the online environment has adopted Internet learning essentials. The Internet learning essentials when adapted can create an optimal learning experience for both students and teachers. The NSTA makes two recommendations for online courses. First, the design of online courses is thorough with specific achievable goals and measurable outcomes (NSTA, 2012). This recommendation is in keeping with program planning models and is necessary for creating learning experiences (Caffarella, 2010a). Second, knowledgeable educators skilled in teaching, content, and aligned with the constructivist principles are crucial (NSTA, 2012).

These recommendations are noteworthy. However, before any amelioration can take place, we need to be firmly based on what faculty already know and practice, because knowledge of a particular subject matter and teaching experience do not automatically ensure success in the online environment. Faculty must possess an understanding of the various technologies available and their capabilities to make the content comprehensible to all students while adhering to constructivist principles (Al-Salman, 2011). These recommendations are not foreign to the institution of higher education learning nor are the learning essentials for online learning new characteristics or principles. The guidelines or best practices represent the principles used in courses taught by traditional brick and mortar institutions. Therefore, learning online must have similar expectations as those of the traditional schools concerning learning and teaching, and the quality should be comparable (Council for Higher Education Accreditation (CHEA), 2011).

In 1987, Chickering and Gamson authored the Seven Principles of Good Practice for undergraduate education (as cited in D'Agustino, 2012). The Seven Principles of Good Practice in Undergraduate Education incorporate several elements. Student to teacher and student-to-student interaction, collaboration among students, active learning, and prompt feedback, each of these are central component of the social constructive theory (Chen, Lambert, & Guidry, 2010). The incorporation of such elements into the distant learning environment ensures a virtual presence that provides learners with a sense of connecting with others and a student's commitment to the course. Additional principles emphasized, "Time on task, communicates high expectations and respects diverse talents and ways of learning" (Harris & Kaplan, 2011, p. 114). The components

are significant to best practices because they remain relevant to the online learning environment and are in alignment with the theory of constructivism and this project's framework.

While the implementation of best practices in traditional educational settings is not a new phenomenon, best practices are still and may always be in an evolutionary stage. It is through discovery and exploration that the university will benefit from their use. The Alliance for Higher Education Competitiveness published a report written by Abel, *Achieving Success in Internet-Supported Learning in Higher Education* (2005). The report studied 21 educational institutions of higher education looking for common factors associated with effective Internet-supported learning. They hypothesize several factors associated with the success of Internet based learning. They include:

- Motivation, to offer courses online, must be aligned with the mission of the school and the ability to provide services to the students,
- The buy-in for online courses must include the entire organization and priorities must be clearly set from the top of the organization in terms of leadership and resources,
- Quality measures set for the success in learning should be developed with the understanding that as time progresses the criteria for quality should be revised,
- Measures of success should concentrate on student and faculty support services,
- Internet-supported learning should be based on the program's objectives to support student and faculty,
- The implementation of best practices needs to take into account the needs of the program, students and faculty.

It is important to note that the factors associated with the success in the online environment are comparable to the standards of good practice related to traditional education (Abel, 2005). The differences are that the norms have changed so that they are more applicable to the online environment making the learning expectations of an online learner similar to those of in a traditional course.

It is evident that the report is still valid as learning resources in best practices for distance education as it is referenced in the Alliance for Higher Education Competitiveness "What's next in learning technology in higher education?" published in 2007. The study is significant to my research; it incorporates institutions of higher education associated with medicine and the allied health sciences similar to the university that the study takes place. The report also notes that the techniques implemented by the institutions were as varied and unique as the institutions (Abel, 2005). It evidences that the incorporation of best practices is independent of the field.

Lackey (2011) echoes that the professional development of pedagogy and technology associated with online teaching varied from institution to institution from a highly structured program to unstructured programs were learning resources were suggestions. Roman, Kelsey, and Lin (2010) point out "instructor expertise and dedication have been cited as the most important factors contributing to quality online courses" (p. 1). Yet, educators have expressed that they are not adequately equipped to teach online (Roman et al., 2010).

Support and training for educators is an essential component to transition successfully into the online environment (Roman et al., 2010). Findings from the literature indicated that the effectiveness of teaching online is varied and complex. The

Western Cooperative for Educational Telecommunications (WCET) made explicit references to the faculty's ability to be adequately trained, qualified, and supported (WECT, 2001). The previously mentioned organizations were significant to my project study. They assisted in establishing a foundation before performing an environmental scan concerning the faculty level of knowledge and needs.

The Implementation of Best Practices

A survey by Lion and Stark (2010) surveyed the design and development of distance education courses of 364 institutions of higher education. The report demonstrated that "while a vast majority of institutions indicated they provided some level of instructional support for faculty teaching web-based courses, how they go about accomplishing that could vary considerably" (Lion & Stark, 2010, p. 9). The study by Lackey (2011) reflected similar findings to Lion and Stark (2010) they reasoned that the institutional support for online teaching varies from institution to institution. Lackey's (2011) study is distinctive because it points out that gaps still exist in the training and quality of training faculty receive. Lackey's findings are important because it justifies the project study need to determine the faculty's level of knowledge of the development of distance education and the need to establish a mechanism for formal training. The implementation and the support of best practices are unique to the institution. For this reason, the institution's strengths and resources as it pertains to both the educator and students should be acknowledged. For example, Buckenmyer, Hixon, Barczyk, and Feldman (2011) conducted a study that supported the implementation of mentoring programs to certify the faculty in teaching online. Survey results of the program yielded distance educational courses of high quality. The results are significant in that it

demonstrates that the type of training that is implemented is dependent upon the needs of the faculty.

Brown University (2012) advocated the use of instructional designers to "bring a focus on learning theory to the course development process" (para. 3). The commitment by Brown University, to incorporate instructional designers with faculty who possess expertise in his or her profession, offers numerous advantages. The collaborative effort fuses course content and activities to the learning objectives and outcomes while supporting faculty needs. The collaborative efforts benefitted the institution by creating an engaged faculty take took ownership of course offering. Lion and Stark (2010) advocated the use of job aids to help faculty simplify the content development process. Job aids can assist faculty with uploading content within the course management system, creating tools to map the progression of the course, and adding voice to enhance presentations (Lion & Stark, 2010). The standards and principles of best practice are unique onto each institution, and acknowledgement of this fact will avoid a cookie cutter or one-size fits all approach to the best practices (Abel, 2005; Lion & Stark, 2010). The State University faculty need to answer the "tough questions about how, when and with whom" (p. 2) before implementing best practices or standards (Bakia, Anderson, Heying, Keating, & Mislevy, 2011). Their answers should be customized to local situations.

Additional studies on best practices demonstrate that the use of best practices enhance distance education courses (Baghdadi, 2011; Crawford & Persaud, 2013; Hanover Research Council 2009; Lewis et al., 2011). Middle States Commission on Higher Education, which accredits the university, recognizes that higher education has evolved and so has Middle States Commission on Higher Education to meet the

challenges (Moncure, 2009). The agency repurposed its common standards to reflect best practices in the delivery of online education. The common standards were linked to statements meant to assist institutions of higher education in the adoption of the standards. Michael Middaugh, who served as the chair of Middle States Commission on Higher Education, believes that the success of an Internet-based program is not merely judged by the school declaring its success. Therefore, the university should be able to provide definite proof of it online success. The ability of the university to determine the faculty knowledge will aid in yielding support. The current evidence of distance education maintains consistent, transitioning to the online environment requires support. How the support is achieved remains open to adaptability for specific programs pending their instructional needs (Buckenmyer et al., 2011; Lion & Stark, 2010; Roman et al., 2010). The actual measure of success will be the institution's ability to establish a reputation for excellence in online teaching (Konetes, 2010).

Conceptual Framework for Qualitative Research

This study's conceptual framework is based on the views of an educational environment as espoused by John Dewey. Dewey's beliefs are critical to this study's framework. Dewey's (1997) theory of progressive education with his emphasis on "experience, experiment, purposeful learning, freedom..." on the learning process has influenced educators and the educational process (p. 9).

The theory of progressive education grew from two powerful educational tenants: continuity and interaction. Dewey postulated that continuity represents, "every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after" (Dewey, 1997, p. 35). For example,

educators most often align their teaching approach with that of a professor who they consider effective (Baran, Correia, & Thompson, 2011). This stored experience influences future experiences. However, the online environment requires educators to examine their beliefs and pedagogical practices of the traditional teaching environment and to reconceive them in order to be instrumental in the online environment (Gold, 2001). This is significant to the project study because educators in the online environment must be reflective of their teaching philosophy, pedagogical knowledge and ideologies to accommodate their new role of teaching online.

Dewey's (1997) second tenet, interaction, "expresses the second chief principle for interpreting an experience in its educational function and force" (p. 42). The principle of interaction builds upon the Dewey's principle of continuity. It does so by explaining how experiences can influence a present condition in order to help facilitate the development of a new experience. Together these principles can influence the capacity of imaging science faculty to learn. According to Dewey (1997), these two principles "are inseparable from each other" (p. 43). Therefore, continuity and interaction provide a significance and value to the educational process. In so stating, I recognize the need to determine the pool of knowledge that imaging science faculty at the university possess and implement in their practice of online distance education.

Dewey (1997) believes that learning requires educators to "view teaching and learning as a continuous process of reconstruction of experience" (p. 87). His constructivist theory is one of the most cited theoretical frameworks applied to Internet-based education (Anderson & Dron, 2011; Chitanana, 2012; Farajollahi, Zare, Hormozi, Sarmadi, & Zarifsanaee, 2010; Hamat & Embi, 2010). Constructivism is a theory that

focuses on how we learn and think (Liu & Chen, 2010). Constructivists view learning as an active process through which learning is not acquired by listening but rather from experiential engagement through which the learner co-constructs knowledge and meaning while participating in the collective activity (Liu & Chen, 2010; Vygotsky, 1978). The constructivist approach facilitates learning by engendering the ability to problem solve and increase skills.

Scaffolding is a concept associated with the constructivist theory. It describes the process by which a learner receives guidance and support based on need and then reduced as the student becomes more self-sufficient in the topic at hand (DeLeón, 2012). DeLeón (2012) posits, "scaffolding has the potential for yielding learning success" (p. 155). The focus of constructivism is to ensure that the learning environment is centered on the student, and support is available. Instructional strategies used to achieve a constructivist teaching and learning environment includes collaboration, contextualized learning, and active participation by the student (Ruey, 2010). To accomplish this goal, educators must provide students with the opportunity to create individual meaning to the learning process (Anderson et al., 2011). Social constructivists place a high value on communication and its necessity as a mechanism to engage students and drive learning. The practice of social interaction provides learners the opportunity to reconstruct meaning based upon shared interest and experiences (Dewey, 1916; Liu & Chen, 2010). Therefore, the role of the teacher changes from a driving force in learning or imparting knowledge to a guide for learning and places the onus on the learner (Anderson et al., 2011). The implementation of constructivist theories is aligned with the principles of best practices. Constructivist theories are centered on the experience of a student to achieve success in learning.

Knowles's andragogical assumptions like the constructive theories focus on the needs of the learners and how their interactions with the environment create a synthesis of knowledge. In Andragogy in Action, Knowles (1984) considered his assumptions to be a "system of concepts" (p. 8) rather than a theory. According to Knowles, his focus on the self-directed learning, the learner's experiences, and problem-centered learning resonate with the constructivist theory. Similar to the constructivist theory "the andragogical model assumes that there are many resources other than the teacher, including peers, individuals…" (Knowles, 1984, p. 14). Learners experience in the constructivist theory is evident in scaffolding, collaboration, and active learning; whereas in Knowles system of concepts, the techniques incorporated "group discussions, simulation exercises, laboratory experience, field experience, problem solving projects …." (Knowles, 1984, p. 10). Knowles's assumption on problem-centered learning focuses on making learning of some particular knowledge relevant for the learner. Problem-centered learning is similar to constructivism whereas the focus is on the learner applying meaning to knowledge. Both constructivist and the andragogical principles embrace the concepts associated with best practices. The learner is the central focus and providing learning experiences that are collaborative and interactive.

Constructivist theory aligns itself well with the healthcare providers, such as the radiologist assistants (Thomas, Menon, Boruff, Rodriguez, & Ahmed, 2014). Radiologist Assistants are "clinicians that act upon new knowledge by transforming the information based on pre-existing experiences and understandings, by relating it to existing knowledge, imposing meaning to it and, in many cases, monitoring their understanding throughout the process" (Thomas et al., 2014, p. 4). Radiologist assistants work in a

variety of healthcare settings and are accustomed to interacting with patients and a variety other healthcare team members (Bureau of Labor Statistics, United States Department of Labor, 2012-2013). As healthcare professionals, they exercise independent professional judgment and incorporate "evidence-based practice for optimal patient care" (ASRT, 2014, p. RA3). The social constructivist takes into consideration that students are not empty vessels and that students possess previous knowledge from which new knowledge is constructed (Walcutt, Gebrim, Bowers, Carper, & Nicholson, 2011). Such is the case of the radiologist assistant where continuing professional educational programs build on their knowledge. The constructivist learning environment, with the use of information and communication technologies, increases the opportunities for learning at a distance (Andrews & Tynan, 2012). The application of information and communication technologies in Internet-based education transformed education into a more modern era that aids in implementing a more social interaction and meaningful real-life experiences (Andrews et al., 2012).

The application of information and communication technology in an Internet-based educational program that uses best practices can place the learner in the primary role as a self-directed learner. A self-directed learner is a student who is independent, flexible, cooperative, and able to work mutually with others. Information and communication technology can help with reinforcing past knowledge with new concepts or ideas (Farajollah et al., 2010). According to Andrews et al. (2012), the infusion of information and communication technology "has promised increased and enhanced communication and interaction for distance and online learners" (p. 566). The social constructivist theory is viewed as a fundamental ingredient for the success of online

courses (Chitanana, 2012). Teachers who adhere to constructivist principle use technology to achieve student centered learning (Overbay, Patterson, Vasu, & Grable, 2012).

Literature related to best practices or principles in Internet-based education suggest the requirements of best practices demand interactivity in a dynamic setting (Hamat et al., 2010; Harris et al., 2011; Liu & Chen, 2010). Chickering and Gamson authored seven principals of good practice for use by educators, students, and administrators. Their seven principles are "based from research on good teaching and learning in colleges and universities" (Chickering & Gamson, 1987, para.11). The first of Chickering and Gamson's seven principles explicitly stated that interaction between the instructors and students "is the most important factor in student motivation and involvement" (Chickering & Gamson, 1987 para.12). The principle of student motivation and involvement are essential to the online environment and is echoed in a recent publication of Best Practices for Technology Enhanced Teaching and Learning: Connecting to Psychology and the Social Sciences (2011). The *Pillar Reference Manual* also reflects this value of interaction in its statement that "interaction is key: with instructors, classmates, the interface, and via vicarious interaction" (Moore, 2011, p. 97).

The National Science Teachers Association (n.d.) also considered the value of interaction of learning online as a vehicle for providing "active or constructive learning experiences" (p. 5). In a more recent publication, Paechter, Maier, and Macher (2010) also posited, "Interaction between student and instructor supports knowledge construction, motivation, and the establishment of a social relationship. The exchange of information regarding educational content as well, as the socio-emotional information, is

important for learning" (p. 223). Best practices developed by the eight regional accrediting commissions also stressed the necessity of interaction between educators, students, and peer interaction. Commonalities existed on the principles and best practices in distance education.

However, the challenge of this project study was to determine which best practices and principles would best meet the university, faculty, and student's needs in the development and implementation of a continuing Internet-based education program. The answer to which practices and principles are able to meet the needs of the faculty is dependent upon the following question being answered: With regard to acknowledged best practices, what is the pool of knowledge that imaging science faculty at a major university possess and implement in their practice of online distance education? Without this knowledge a solution to the problem cannot be proposed.

Implications

The ability to construct an online continuing education program based upon best practices is a vital instrument in educating future healthcare professionals. An essential skill for faculty is the integration of technology to engage people in the pursuit of life-long learning (Ertmer & Ottenbreit-Leftwich, 2010). The growth rate in the past ten years was significant in Internet-based education (Al-Salman, 2011). However, the success of Internet-based education courses and programs is dependent upon many factors that affect students. The factors include student- teacher interaction, active learning techniques, self-direction, and the ability of learning institutions and faculty to accommodate diverse learning styles (Chaney et al., 2010).

Organizations have developed strategies, guidelines, principles, and best practices for the delivery of online courses and programs. However, a universal concept of what constitutes best practices in the delivery of Internet-based education has not emerged. The lack of a definitive concept of best practices creates a gray area for faculty and is evident by the various best practices and principles presented thus far. For this reason the project study focuses on performing an environmental scan to obtain information on the faculty knowledge of best practices. The implementation and the support of best practices are unique to the institution and unless we know where the gaps in practice exist amelioration will not be possible (Lackey, 2011).

The principles and best practices presented center upon the institution, program, course, student support, and faculty support. Appendix B offers four categories that represent best practices in online education. The categories are listed on the vertical axis on the left-hand side, and the organizations are on the horizontal axis. Upon comparison, the two categories, organizational commitment and faculty support, are not represented by the Seven Principles of Good Practice. It is important to note that essential to the success of Internet teaching and learning is the commitment and the active involvement by the administration (Konetes, 2010; McMurtry, 2012). The information provided in Table 1 (Appendix B) represents known best practices standards and principles. This table illustrates variations in best practices across a number of respected educational organizations. What may be regarded as important to one organization could differ from what another believes. Hence, the university establishment of best practices may be a composite of several organizations best practices. However, before best practices can be

implemented there is a need to know what faculties know about best practices and how well they are prepared for, the development of online and distance education program.

The university, service providers and patients have a stake in best practices, standards-based quality program. Current students, former graduates, and the community uphold the university as a leader in the implementation and development of healthcare workers and provider's needs. It is expected that through this project study, research and analysis of strategies, guidelines, principles, and best practices, a consensus of what constitutes best practices may emerge that meet faculty and student needs. Failure by the university to provide a solution to the gaps in practice can diminish the university's role as an established leader in the community. It can further impact the healthcare of the people in the community it serves. The data collected were instrumental in writing the position paper. The information served to apprise the dean and the chairperson of faculty member's knowledge and use of best practices in distance learning. The report also serves as a stimulus for action and positive social change. The ability of the university to meet the needs of its faculty will enhance student's skills and knowledge, enabling students to serve better their patients and to enhance further critical thinking, therefore, creating life-long learners.

Summary

In order to develop a continuing educational program based upon best practices, I must conduct an environmental scan that will help shed light on the faculty's current practices of online education. Before arriving at any solution(s), I must first be fully aware of the problem. A comprehension of the gaps in faculty knowledge and application of best practices will drive ameliorative efforts. The development of an Internet-based

educational program using best practices is in full compliance with university's mission of providing advanced education for healthcare providers (SHRP, 2011). Section two focuses on the rationale for and methodologies in order to provide insight into the existing problem. This section will examine strategies, guidelines, principles of best practices in distance education, and the barriers that may be present.

Section 2: The Methodology

Introduction

A qualitative study offers a voice to the participants of the study and brings to light their unique perspective on the phenomenon (Lodico et al., 2010). The methodology used in the project study was a qualitative case study (Stake, 1995; Yin, 2003, 2014). The qualitative case study explored faculty comprehension of best practices with regard to acknowledged best practices, and the pool of knowledge that imaging science faculty at the university possess and implement in their practice of online distance education? The case study method was chosen because it is a "good approach when the inquirer has clearly identifiable cases with boundaries and seeks to provide an in-depth understanding of the cases or a comparison of several cases" (Creswell 2007, p. 74). The boundaries for this study are the instructors who teach imaging science students online with an in depth understanding of a single case that is exploring teachers preparedness for online instruction.

Research Design, Approach, and Rationale

Design

The research design for this study used a qualitative case study. The intent of this study was to identify the concepts not yet known by teachers transferring to the online environment. Qualitative research allows for an inductive process to find answers located in real life contextual problems (Creswell, 2009; Merriam 2009). Disciplines such as education, health and administration recognized the value of qualitative research in their field (Merriam, 2009). According to Leedy and Ormrod (2010), "when little information exist on a topic, when variables are unknown, when a relevant theory base is inadequate

or missing, a qualitative study can help define what is important that is, what needs to be studied" (p. 135). In the case of this study, there was limited extant documentation regarding current faculty knowledge and practices associated with the online environment. Therefore, a qualitative approach was logical for use to conduct a preliminary study of the faculty's current knowledge and current preparation for teaching online. It was also appropriate because Creswell (2012) and Merriam (2009) have endorsed its use as a valid methodology for having a positive effect on social change, which was one of the secondary goals of this study.

Approach

There are several features that characterize qualitative research and aligned with the problem under study. The collection of data is based on words, rather than numbers, in qualitative research. The voices of the participants in a qualitative study add to a distinctive perspective on the phenomenon; this exploration occurs in the phenomenon's natural setting (Cousin, 2009; Creswell, 2007; Lodico et al., 2010; Stake, 1995; Yin, 2003, 2014). Communication surrounding the findings associated with the phenomenon occurs in a narrative format (Lodico et al., 2010). The researcher is the primary instrument for the collection of data that facilitates the development of a concept, hypothesis, or theories (Hancock & Algozzine, 2011; Merriam, 2009). As the researcher, I used inductive reasoning while conveying the "feeling and voice of the participants" (Lodico et al., 2010, p. 264). These characteristics were important because they provided insightful information based upon the participants' personal perspectives. Based upon the participants' comments on the phenomenon, I was provided an opportunity in the interview to explore questions further. These features assisted me in emphasizing the

context that has led to a thick description of the faculty's level of knowledge and preparation of the online environment.

Rationale

I chose the case study method because it allowed me to focus on the critical key issues concerning the level of knowledge faculty possess in development of online/distance learning program based upon best practices. The intrinsic case study design facilitated the researcher's objective of collecting information regarding the level of knowledge and preparation possessed by faculty. The intension of this case study was not to develop a general theory or generalize the findings. Rather it sought to determine faculty awareness and practice (Hancock et al., 2011; Merriam, 2009). Yin (2014) posited, "The case study is preferred when examining contemporary events, but when the relevant behavior cannot be manipulated" (p. 12). According to Merriam (2009), "case study has proven particularly useful in studying educational innovations, evaluating programs, and informing policy" (p. 51). This approach was successfully used in this study to obtain the data needed to prepare faculty to meet the challenges associated with online teaching.

A research method commonly used for educational research is descriptive survey research (Lodico et al., 2010). This quantitative approach is associated with a survey developed to yield numeric descriptions (Creswell, 2009). The purpose of a survey is to capture the views, beliefs, or perceptions of people. At first glance, this methodology appears suitable for the proposed study. However, descriptive survey research relies on selecting a sample of participants from a broader population. The findings from a descriptive survey are generalized to a larger populace. The focus is concerned with the

larger population or generalization. For this reason, it was not selected as a methodology since it is not well suited for learning about the level of knowledge that faculty, who teach imaging science students possess in Internet-based education.

The implementation of the case study method allowed for the exploration and understanding of the participants experience as it relates to their knowledge of best practices. The phenomenological approach was also considered as a possible research methodology. Phenomenology attempts to capture the essence of the participant's experience (Lodico et al., 2010); however, the phenomenological method of data collection is extensive, requiring a longer period than the selected case study method to complete data collection. A phenomenological method was not considered a viable option because collection of data would have required several interviews and would have taken a longer window to conduct. The case study method is best suited to provide the researcher with an understanding of the knowledge base and the issues associated with the faculty who teach the imaging science students. The goal of this project study was to understand the faculty knowledge of best practices in distance education. The qualitative research method lent itself to studying the faculty in their natural setting in order to make sense and bring meaning to the observations.

Research Site and Participants

Research Site

The site for the research study was a public university in the northeastern United States, hereafter referred to as State University. State University offers more than 40 programs, ranging from postsecondary through postdoctoral education throughout the state. It provides training for entry-level allied health professionals and advanced

training. This local setting has experienced shift to online course instruction with no formal professional development for affected faculty.

Participants

The study's participants consisted of 11 faculty members from State University. The sample consisted of imaging science faculty who had been mandated by the department to develop distance education courses for practicing professionals. Only faculty members who specifically taught imaging science students were included. This provided critical sampling of individuals from the research site where the phenomenon under study occurred, as suggested by Creswell (2012). All of these faculty members were subject to an internal mandate requiring that they develope an Internet-based education program founded upon nationally recognized best practices. The faculty members provided comprehensive details and in-depth descriptions of the knowledge they possessed on best practices associated with distance education. It was important to maintain an optimum size of participants in order to obtain responses from the participants that were rich in data. Literature concerning data saturation in qualitative studies demonstrates that most often saturation is achieved by the twelfth interview (Guest, Bunce, and Johnson, 2006).

Permission and Participant Protection

Approvals to conduct the project study were obtained from two Institutional Review Boards. Approval from the study site's IRB was Pro #2014004065 and expires on April 8, 2015. Approval #03-28-14-0140810 was obtained from Walden University and expired on March 27, 2015 (Appendix D). After receiving permission both Institutional Review Boards, I proceeded to ask faculty who teach imaging science

students to participate in the study. I had concerns that potential participants could view their involvement in the study as a risk of exposing his or her limitations of their knowledge of best practices. Another concern was that the potential participants would shy away from the study due to time constraints. As a faculty member who teaches in the imaging sciences, I interact with the potential participants on a continuous basis. For this reason, I initially asked the potential participants to become involved in the study via email. I then followed up on the invitations by telephone to inform them of the study's intent, the assurance of protecting their confidentiality and the amount of time that would be required to participate.

The initial email contact provided written statements that include the following:

- The objectives of the research
- That participation was voluntary
- That there were no repercussions for withdrawing from the study
- That confidentiality and anonymity would be protected
- That interviews and any other method of data collection will use an alias or alpha-numeric code
- That the results would be available to each participant and would have no bearing, real or perceived, on the value of the institution and evaluations.

In addition to the oral and verbal explanations, each participant received a written consent form, which they were required to sign and return. Upon the receipt of the signed consent form, I then considered the individual to be a participant in the qualitative research.

Role of the Researcher

In qualitative research data collection interpretation is the sole responsibility of the researcher. Therefore, the principle role of the researcher is to understand the meaning of the participants' experiences and analyze the data to substantiate the findings reported (Merriam, 2009). Glesne (2011) suggested that the researcher's role is to become a learner alongside the participants and as a learner listens attentively. The act of listening involves capturing the mood and understanding the content as intended by the participant (Yin, 2014).

The perspectives presented above are integral to a qualitative study. However, a significant factor associated with case study research is a holistic focus. A holistic focus encompasses descriptions of events and explanations to gain an entire picture of the phenomenon of study in its natural setting (Merriam, 2009). As a novice in conducting research, I was conscious of the need to reflect and mindful to maintain personal integrity and disavow possible biases or prejudices (Creswell, 2012).

As a teacher, colleague, and researcher, I must be prepared to reassure potential participants that their participation in the research project is voluntary. At the study's onset, participants were made aware that their confidentiality was a priority in the study. I also informed the participants of the significance of the study to the university. To help increase credibility and trustworthiness, I maintained a continuous self-evaluation to mitigate any preconceive notions or biases that could influence the research. A colleague, whom I have known for approximately 10 years, was privy to details surrounding the project study and was instrumental in the self-evaluation process.

Protection of participants' rights and welfare are central principals of a researcher's responsibility. The Belmont report outlines three general basic ethical principles: (a) respect for the person, (b) beneficence, and (c) justice (Department of Health and Human Services, 1979). As a researcher, I protected participants by fully disclosing the purpose of the research, risks involved and the benefits the research would yield. Consent for participation was secured and all pertinent documents. Consistent with the Belmont Report, I respected the participant's privacy and maintained confidentiality. The risk associated with participation is the study was no greater than the daily risk one assumes in their everyday life. In addition to ensuring, the protection of the participants and adherence to national standards I received approval from Walden's Institutional Review Board and the university's Institutional Review. The purpose or number one priority of Institutional Review Boards is to protect human subjects from harm (Office for Human Research Protection, 1993).

Data Collection Process

I commenced data collection once both institutions' IRB's approved my proposal. I contacted potential participants via telephone and emails to establish mutually convenient times and locations for the interview. The data collection for a case study most often involves more than one approach (Cousin, 2009; Creswell, 2007; Green & Thorogood, 2009). However, Merriam posits (2009), a "case study does not claim any particular methods for data collection or data analysis" (p. 42). Several forms of interviewing methods are possible. These may include structured, semistructured, and unstructured surveys or interview questions.

My data collection method of choice, interviewing was selected as it lead the researcher to rich sources of in-depth data. Interviews allow the researcher to ask specific questions pertinent to the issue. It is the best technique "when conducting an intensive case study of a few selected individuals" (Merriam, 2009, p. 88). For the purpose of this case study, the semistructured interview method appears to be most advantageous. In a semistructured interview, the opportunity exists for the researcher to develop further questions. The questions asked depended upon participant's responses and their relevancy to the study.

The interview consisted of open-ended questions. The survey was informed by the work of Dr. Tracie O. Lewis. Lewis granted written permission to modify or use the questions as they appeared in her study (Appendix E). One-on-one interviews were scheduled and conducted within a two-week period. While time-consuming, the individual interview is a popular approach to educational research (Creswell, 2012). A combination of both the open-ended questions and the individual aspect allowed participants the opportunity to express their views and experiences in a confidential setting. This format also allowed for flexibility. I was able to ask questions in a random order while still asking specific questions of the participants, dealing with their responses and asking probing questions (Lodico et al., 2010; Merriam, 2009). On average, each interview lasted approximately 40 minutes. Participants had the opportunity to select their interview location. The location of the interview was important in order to ensure the participants were in the environment where they felt comfortable and able to speak freely.

Accuracy and Credibility

There are many words used to describe accuracy and credibility of a qualitative research trustworthiness, conformability, validity, reliability, transferability, and data dependability (Merriam, 2009; Yin, 2014). Qualitative researchers, unlike quantitative researchers, may disagree on the assessment as well as what is measured (Creswell, 1994; Merriam, 2009). Therefore, the technique selected to help ensure accuracy, credibility, and validity of the data interpretation was triangulation and members checking. Member checking is a method that incorporates the participants in assessing the accuracy of the data by providing feedback on the themes and the researcher's findings (Creswell, 2009). According to Maxwell (2005),

> This is the single most important way of ruling out the possibility of misinterpreting the meaning of what participants say and do and the perspective they have on what is going on, as well as being an important way of identifying your own biases and misunderstanding of what you observed. (p. 111)

Participants voiced no concern with the use of themes as a construct. The themes were reflective of their experiences. Triangulation aided in verifying the validity and credibility of the data. Interviews, participant's confirmation of the accuracy of the transcription and notes taken at the interview were instrumental in this process.

Data Collection Method

Data collection began on June 5, 2014, and concluded on June 14, 2014. Consent was received from each participant via a formal consent form and repeated verbally before the commencement each interview. Each participant was provided with a copy of his or her signed consent form. The participants were aware of their ability to stop the

interview process without any repercussions. At the conclusion of each interview, the digital audio recording was stored in a password-protected computer for future analysis. Transcription of the digital recording occurred approximately one week from the date the interview to place. The data transcription was verbatim with the exception of names or any personal identifiers. Numerical codes replaced personal identifiers. According to Lodico, Spaulding, and Voegtle (2010), "the exact words of participants are recorded, along with some aspects of nonverbal communication such as pauses, laughter, interruptions, changes in vocal tone or emotion, and places where the tape in inaudible or not understandable" (p. 302). I made every effort to note laughter, pauses, and other nuances. Such nonverbal communication finds use in building a relationship with the participant and the interviewer.

When all the interviews were completed and transcribed, I listened attentively to each digital file once again. I then compared the audio to the transcribed document to ensure accuracy. I then emailed each participant a transcribed copy of his or her interview. This helped to verify that the data collected. Every participant confirmed the accuracy of the transcription. Upon confirmation, I began to read the transcripts for the fourth time writing notes, ideas, concepts, and questions in the side margins to assist in the process of comprehending the data (Creswell, 2012). I also used notes taken during the interview process to aid in the interpretation of the data. The method used to validate internal validity and credibility of the study was triangulation. The use of multiple sources such as the interviews, participant's confirmation of the accuracy of the transcription and notes taken at the interview were instrumental to this process.

Data Analysis

In qualitative research, the analysis of data requires the researcher to construct meaning from the text (Creswell, 2009). The construction of meaning requires a continuous reflection of the data and through this process; a deeper understanding of the data can emerge (Creswell, 2009). There are several steps outlined by Creswell (2012) in the analysis and interpretation of qualitative data: (a) collection of data is organized, transcribed, and ready for analysis; (b) data is read for content and general idea; (c) data is coded to build descriptions and theme; and (d) The themes and descriptions are used to create a report. "Qualitative research is "interpretative" research in which you make a personal assessment as to a description that fits the situation or themes that captured the major categories of information" (Creswell, 2012, p. 238). Based on this knowledge, I began the process of coding.

NVivo10 ®™ qualitative research software was employed in order to facilitate data management. Tools associated with the NVivo10 ®™ software aided in classifying, sorting, and arranging information. It also provided a workspace that enables the researcher to write notes and reflections (Creswell, 2012). My initial attempt, to work with NVivo 10®™, required the importation of the transcribed interviews and digital recordings (QSR International, 2013b). Once the interviews were imported into NVivo 10®™, the transcripts were re-read for the fourth time. As I read the transcripts the participant's views, ideas and experiences lead to the creation of the nodes. The creation of the nodes allowed data associated with a particular question to be imported (QSR, 2013a). I incorporated the use of case nodes to assign characteristics such as gender and years of teaching experience to organize the data. The reorganization and collapsing of

nodes led to the development of themes. “Themes are a major dimension, major aspect, or constituent of the phenomenon studied” (Tesch, 1985, p. 231). Themes allow for the comparison, association, and investigation of connections that suggest connections within the themes (QSR, 2013c). NVivo®™ has the capability to create a word clouds, cluster analyses, and treemaps. These tools enabled the researcher to view words that repeatedly appeared in the data collection. I used the word cloud to uncover possible issues, generate new ideas, and discover connections or meanings (QSR International, 2013b). The software was helpful in maintaining an organized study to address the following research question: With regard to acknowledged best practices, what is the pool of knowledge that imaging science faculty at a major university possess and implement in their practice of online distance education? The software provided ease in classifying, sorting and arranging of information into nodes that contributed to the development themes. Themes that would serve to identify the gaps in practices associated with best practices.

Interview Questions

In an effort to secure a rich source of data the semi structured interview was employed because of its ability to ask impromptu questions due a participants responses. The interview provided the opportunity to explore the participant’s perception of their level of knowledge and preparation to teach online using best practices. The participants were educators responsible for teaching imaging science students. The interview questions were broken down into various parts. Part A included the demographic of the study participant (Table 1), Part B Preparation for Teaching Online, Part C Additional Assistance, and Part D Other Comments. The semistructured interview questions posed to the participants are available in Appendix E.

Interview Questions, Part A: Demographics of Study Participants

Table 1 described the participants' year of teaching experience in the online environment and the last time they received any type of training or assistance. Table 1a depicts the number of course and types taught throughout the year. The questions addressed in Part A sought information about the participant's currency with best practices and prior professional development related to teaching in the online environment. Demographic information concerning the age, gender or faculty rank was intentionally omitted since this information was not relevant to the study.

Table 1

Participants Years of Experience Teaching Online and Training

Number of Participants	Years of Experience Teaching Online
<3	1 (9%)
Between 3 and 6	4 (36%)
Between 6 and 10	2 (18%)
Between 10 and 16	4 (36%)
> 16	0

Number of Participants	Last time Training/Assistance was Received for the Online Environment
Ongoing	3 (27%)
1 year ago	3 (27%)
2 years ago	2 (18%)
> 3 years	2 (18%)
Never	1 (9%)

Table 1a

Number of Courses and Types Taught per Year Online

Number of Courses Taught Online per Year	
Between 2 and 3	5 (45%)
Between 4 and 5	1 (9%)
Between 6 and 12	5 (45%)
Types of Course Taught Online	
Acoustic Physics, Physics for Imaging, Advanced Patient Care & Pharmacology, Application of Computers in Health Care, Clinical Pathway I & II, CT Physics & Imaging Equipment, CT Protocols & Procedures, Cultural Diversity & Ethics, Cultural Issues in Health Care, Ethics of Health Care, Fundamentals of Pathophysiology, Gynecological Ultra Sonography I & II, Health Care Organizations, Health Care Policy & Planning, Health Care Data Techniques for Research, Human Resource Management in Health Care, Magnet Resonance Physics & Imaging, Magnet Resonance Protocols & Procedures, Neuro Sonography, Obstetrical Sonography I & II, Pathophysiology for Radiologist Assistant, Patient Assessment & Management, Physics Ultrasound, Principles of Scientific Inquiry, Principles of Transcultural Health Care, Quality Leadership in Health Care, Quality Management, Roles and Responsibilities in Radiology Procedures, Radiobiology Radiation Physics & Health Physics, Research for the Imaging Professional, and Vascular Anatomy & Pathophysiology	

Interview Questions, Part B: Preparation for Teaching Online

Issues in this section were informed by a series of questions on the manner that faculty were prepared to teach online. The first question asked: how were you prepared to teach online? If the answer was a colleague question B1.1.1 through B1.1.1.7 were asked. If the response was formal training through a faculty development program, questions B1.2.1 through B1.2.1.9. If informal training occurred through one-to-one assistance from university support organization questions B1.3.1.1 through B1.3.1.9. The final response category was no preparation. The questions in this response category included the following questions and sub-questions: B1.4.1 What do you know about opportunities for training or assistance that may have been available at your institution? B1.4.1.1 What

reasons can you share for why you chose not to take advantage of the available training opportunities. 2. Prior to teaching online, how many years did you teach in a traditional setting? 2.1 What challenges if any, did you face in the transition to the online environment? 2.2 What components of a traditional environment do you feel should be modified for the transition to the online environment? 2.3 Did you participate in training that prepared you to make the transition to the online environment? 3. Did you receive any other assistance that I have not asked you about? 4. Overall, what types of assistance have been most beneficial in preparing you to teach online? Why? 5. Based on your experience teaching online, what areas do you feel you need further development for teaching online? Why?

The goal of question one was to gather information on how faculty was prepared to teach online. The participants had the opportunity to share specifics of their training. For example, what they had learned about technology and pedagogy as it pertained to best practice. The sample also had the chance to discuss logistical issues and knowledge of university policies and procedures. Responses provided insight as to which method of training predominated. The predominant method of training or assistance was by a colleague, followed by formal training, no training or training, self-taught, and informal training

Interview Questions, Part C: Additional Assistance

In this section participants were asked about their earlier experiences teaching online. Issues in this section were informed by answers to three questions:

- Now that you have some experience teaching online, is there anything that you would have done differently as far as preparation?

- What areas of support do you feel would have enhanced your online teaching experience and knowledge of best practices?
- Are there any recommendations you could make to help someone prepare for the online experience and knowledge of best practices?

The questions in Part C provided the participants the opportunity to reflect upon their experience in the online teaching environment are captured in Table 2. Comments centered on the desire to have learned more about the pedagogy and technology before attempting to teach online. This reflects Keengwe and Kidd (2010) suggestion that a balance be created that would support the pedagogical and technical needs of instructors in order to support course design, delivery and content. A similar sentiment is offered by Ertmer and Ottenbreit-Leftwich (2010) they espoused the need for teachers to learn about technology in order to adapt technology into their teaching methodology and provide students with meaningful learning experiences others expressed that they wished they had the opportunity to participate in an online course as a teaching assistant. The focus of the participants' comments emphasized the need for being better prepared for the online experience.

Table 2

Participants Response to Part C Additional Assistance

Participant	Comments
1	"I think what I would do different is maybe I took some class online before I started to teach online."
9	"There are many things I would do differently. So, If it is within my power I would definitely like to have more time to learn to more about best practices, to learn more about the technical applications, to learn more about how to manipulate the various software packages prior to having to implement the course. And so there is a learning curve that I would really consider that as a disadvantage of doing this because everything happened so quickly. Um I would change the focus. The focus is too much emphasis technical and not enough emphasis on learning experience. There must be a way we can tie in more interactivity with the student and make it less focused on drill and practice."
4	"I think I would have practiced more instead of just jumping into it. When I say practice I mean going into the system and working with it more. I was really just one step ahead of the students back in the beginning, and now you know I feel a whole lot more comfortable… I think I would practice more."
7	"There is a lot of stuff. I just again, I would just ask someone. If I was starting out and never done online before I would sit down with somebody who actually has been teaching for a while or I take their course as a basic structure and add my personal touches to it."
8	"Well, I think again, I probably would have come into a course lets say as a TA initially. If I had to do it again, I would not come in first, forefront, hit the ground running as a professor. You know rather than a professor faculty for that course. It would have been better to have come in as a TA and kind of observe the interaction with in the course and maybe even you know have practiced appropriate discussion responses and those kinds of things. So that's, that's one thing I would do differently."

Interview Questions, Part D: Other Comments

This set of questions offered the participants the opportunity to share other perspectives about their preparation to teach online. Table 3 reflects the participants' varied comments. One comment shed light on the need for a backup plan regardless on

how prepared you believe yourself to be. Other spoke of the need to make the course more visually appealing to the students.

Table 3

Participants Response to Part D Other Comments

Participant	Comments
8	" I think, I think if anything you are going to have to get a mind set that as much as you might prepare you are in the hands of technology. Meaning you know that, that is the level of tolerance, and not panicking and not just spazzing totally out because you can do all you can do and it may be something that a certain link will just not open for students or that your computers shuts down or that Adobe doesn't you know. You just got to be able to have plan B and plan C in place and go with the flow because as awesome and dynamic as online teaching can be you are still at the mercy of technology."
7	"I think again the key thing is trying to make something visually interesting and engaging. And so the question that comes to me is do you prepare people to do it themselves or do you give them a resource to do that. And I think it is better to give them the resource to do that and make it a collaborative project rather than having the faculty person doing the whole course because most faculty just don't have any style. And so, I think for the faculty person you know use; find, ask what the best courses are and take a look at those. Use a master template for developing the course just to get a started and see if you could find somebody who can add some visually interesting things to it if the template you are using doesn't have it."
4	"Well, I think that online teaching… I was not prepared regarding the difference between traditional and online teaching, what I would encounter or what I would face. I knew that online was going to be more flexible. But I didn't realize how much I would miss the face to face interaction, and I didn't realize how demanding."
9	"Well, I would just say to repeat what I said earlier that it is a specialty, and it should be accorded a certain amount of respect as a specialty. Not every traditionalists going to be great online and visa versa. It requires its own level of training, its own level of preparation and its own level of a philosophy. So, that is what I would recommend or say about the online system. It has to be given separately and apart from the traditional its own sense of value and delivery."

Students involved in courses that are more interactive and incorporate the use of multimedia find that online learning is more meaningful and a feel a sense of connection with classmates and the instructor (Boiling et al., 2012). Online participants expressed the demands of online teaching. The requirements are similar to those found in the literature.

The need to alter their teaching style, learn new skills and the ability to maintain meaning full communication (Keengwe & Kidd, 2010). Other participants expressed the uniqueness of the online environment and the need for the educational institution to recognize that online learning is different from in situ learning. The questions in Part D concluded the interview and allowed the participants to express any ideas or opinions they had not previously expressed. In essence, it provided closure or their final thought to the interview.

Themes

I performed the data analysis process manually with the assistance of NVivo10®™ software. I incorporated the use of both methods in order to ensure thoroughness. Word cloud, cluster analysis, and tree mapping were tools used to assist in uncovering and generating connections or meaning to assist in the creation of themes. Upon the completion of the themes, I presented them to the participants in an effort to ensure that the themes were an accurate representation of their experiences. No concerns for the themes were voiced. Five predominant themes emerged throughout the interviews, triangulation, and member checking.

Theme 1: Initial Preparation for the Online Environment

The theme emerged from the participant's response to Part B: *"How were you prepared to teach online?"* and sub-questions B1.1.1 through B1.1.1.7, B1.2.1 through B1.2.1.9, and B1.3.1.1 through B1.3.1.9. Three of the 11 participants (27%) mentioned that their initial preparation in the online learning environment was through informal training by a colleague. Another three of the 11 participants (27%) reported receiving their training from information technology (IT) department. Participants 005 and 006

received some informal training through IT and a vendor. Participant 003 reported having received books and manuals about teaching online. Another reported their training for the online environment was a combination of IT and colleagues. During the interview, two participants expressed never receiving any type of training for the online environment. The training received by the faculty varied considerably. Table 4 provides a breakdown of how the participants were prepared to teach online. Table 5 depicts the comments made by the participants on how they learned to teach on the Internet.

Table 4

Word Query on the Manner in Which Faculty Were Prepared to Teach Online

Participants	IT/Faculty Development	Colleague Informal	IT/Colleague Combination	IT/ Vendor	Books/ Manuals	No Training
1	X					
2						X
3					X	
4	X					
5				X		
6				X		
7		X				
8		X				
9	X					
10		X				
11						X

Table 5

Participants Comments on How They Learned to Teach Online

Participant	Comments
1	I received training from the medical school through their online development course.
4	"Well like I said we were the first to embark on a journey at the school and um it wasn't formal training it was more I would consider it to be informal training because everyone was learning as we were doing. Um, so they had the IST people present to us. There were only three of us. And IST they were learning the program as we were. When I say the program, they were learning course management system. And so that was the orientation."
3	"The school had sent me some books and some manuals to um about teaching online and best practices and things. Other than that um I really didn't have any formal training."
9	"It really was a combination. There was formal training I would say in the case of a team of person who works with the university who offer training in this particular case Moodle um they actually um available on various times throughout the day. I also work closely with my colleagues and so if someone knows something about the software they, usually, share that because we are all within one department. So we will interact with each other at various times, and we share information and if someone knows something that I don't know then they will teach me and vise versa."
2	"I started using an online, teaching platform or learning platform. There was no one to provide assistance because we were all learning together, so I was more or less self-taught struggling through the various online instructions that were not very good and administration people who were administering the courses at the university level knew nothing about the platforms so they left us dangling in the wind."
11	"I got most of my ideas about online training that was with Nova Southeastern in Florida. Um and a that is really where I kind of was introduced into online teaching you know, as a student but I kind of like you know um found it very interesting and found it um intriguing how the class was delivered you know. I saw the things that worked and the things that didn't work. Um you know so, that is really where I got my training."

Theme 2: Just-in-Time Learning

The theme of just-in-time learning refers to tried and true principles in manufacturing. The principles have been adapted to quality education and provide a method to integrate technology with strategic instructional goals (Hall, n.d). The just-in-time theme emerged from five (45%) of the participant's need to understand the course management system, best practices and other topics associated with the online environment (see Table 6). The participants are self-directed learners and seek out resources, when, where, and as needed to meet their needs for the online environment. Just-in-time learning provides self-directed learner with the opportunity to learn on demand. Knowles principles of andragogy are related to the principles just-in-time learning. Both are guided by the belief that learning is self-directed and the learner will seek resources to meet his or her intellectual demands.

As posited by Knowles (1975),

> In its broadest meaning, 'self-directed learning' describes a process by which individuals take the initiative, with our without the assistance of others, in diagnosing their learning needs, formulating learning goals, identify human and material resources for learning, choosing and implement appropriate learning strategies, and evaluating learning outcomes. (p. 18).

Table 6 depicts participant's comments concerning their needs to learn just-in-time. Forty-five percent of the participants display the characteristics of self-directed learners as described by Knowles.

Table 6

Participants' Comments Concerning the Needs to Learn on Demand.

Participant	Comments	Circumstances that Lead to Learning on Demand
4	"I went online and did some research, and I found some very good information and tools"	The participant was concerned about engaging students due to the large increase in class size.
5	"There are actually a number of articles that I had read on the university website that was put there by the master educators."	The participant had no knowledge of pedagogy and best practices and conducted an online search
7	"I'm always Googling. A large part of my resources for teaching online is just to Google and see what I can find Googling."	
9	"You need to keep abreast of information you have to keep current, so there is an ongoing process of self-learning or teaching yourself. My method is to go on to YouTube."	
11	"I took a course offered by the University of Michigan it was free …I was just interested in the pure learning ...I'm Interested in the knowledge."	The first resource the participants seeks for learning is open courses that are not credit bearing

Theme 3: Knowledge of Pedagogical & Best Practice

Regardless of their stated preparation with online learning, each respondent was asked, "*What did you learn specifically about pedagogy and best practices?*" The question was used to determine the level of knowledge faculty possessed in pedagogy and best practices. Eighty-one percent of the participants were not aware of best practices when they began teaching online.

Nine respondents spoke of two major issues leading to this self-perceived lack of sophistication in the online learning and its associated best practices. The first reason was

that when they began teaching on the Internet, best practices were not available, and the second reason was that they were not aware of best practices existing. The statements made by the participants demonstrate that the knowledge possessed about online teaching pedagogy and best practices were nonexistent or minimal. During the interview, a participant suggested that the institution should provide online faculty with professional development activities related to best practice and pedagogy on a continual basis. The comments of the participants are shown in Table 7.

Table 7

Participants' Knowledge of Pedagogical & Best Practice

Participant	Comments
1	"Let the students participate and collaborate in online teaching."
2	"No I haven't. Maybe it was available but I just made aware of it."
3	"No, no I know there wasn't that."
4	"Not that I recall. So um you know it didn't come up until later on."
5	"No."
6	"No, I think I did not learn anything specifically about that. I think I more or less learned it as I went."
7	"No, not at the beginning. Again when I started it was I don't think any best practices had been developed."
8	Alluded to the fact that it was not covered
9	Not really, no, not in these sessions. Most of the sessions were concentrated on the learning management system."
10	"One of the things that we discussed and worked hard on was being clear and direct and concise with information that was being provided and what was expected from the students as well as the teachers."
11	"I have just been looking for courses that are about you know how to teach well online."

Theme 4: Platform Preparation/Technology

The theme platform preparation/technology emerged from responses received from the participants, "*What did you learn specifically about technology and best practices during this preparation?"* This was the principal question of this theme. Other questions that were as asked included:

- *Describe the specifics of the training?*
- *What was the format?*

- *Did your colleague share with you any documents or handouts?*
- *Can you recall the general topics that were covered?*
- *Describe what was learned?*
- *What was beneficial about the training in preparing you to teach online?*
- *What was not relevant to preparing you to teach online?*
- *Did you participate in training that prepared you to make the transition to the online environment*?"

The set of questions probed for responses concerning how the participants were prepared for the online environment and the incorporation technology and best practices. Two (18%) of the participants were self-learners. Therefore, their knowledge of technology *and best practices* were derivative of their personal efforts. Three (27%) of the participants stated that their training was online. The training was related to the latest's course management system Moodle. It incorporated topics such as uploading files, posting discussions, quiz formats, editing, setting up a profile, how to insert links or embed videos. The majority of the participants (54%) were trained to use the course management system in the university's computer lab with colleagues. Their level of knowledge associated with technology and best practices incorporated the same topics as those that were taught online. However, the difference between these participants who trained in person and individuals who were trained online is that they received their training on course managements systems such a WebCT and Angel several years ago. The university no longer uses these systems. For this reason, curriculum or knowledge taught to nine of the participants dealt with how the course management system worked.

The training was technical. It had no bearing on best practices associated with the technology. Table 8 depicts the varied comments made by the participants related to the platform and the technology.

Table 8

Platform Preparation/Technology Comments Made by Participants

Participant	Comments
1	"Everything" was relevant to him in with regards to learning about the platform and the technology.
3	"It was something I had to do in order to maneuver around the system better."
4	"Well it gave me an idea of what to expect and maneuver in the course before I taught it."

Theme 5: Interaction with Students

Interaction with students and communication was a theme that emerged with regularity. The participants expressed that a live class provides the opportunity to get to know the students. The classroom environment provided the participants the ability to be in tune with their students' needs by cueing into their body language, eye contact, and verbal tone. For the participants, the lack of direct contact with the students was a concern and the lack of direct feedback to help them gauge their understanding of the material. Literature concerning best practices clearly emphasizes the importance of maintaining interaction amongst teachers and students and it significance in engaging students (Brown University, 2012; Farajollahi et al., 2010; Kemp, 2012, McCord & McCord, 2010; National Science Teacher Association, 2012). Table 9 captures the comments made by the participants. Overall, 10 (91%) of the participants voiced the

importance of interaction between not only the teacher and the student but also student-to-student interaction.

Table 9

Participants' Comments on Interaction With Students

Participant	Comments
2	Meets with his online class three times per semester in order to interact with them. The participant believes that interaction is necessary based upon his experience.
4	The participant believes that interaction is necessary based upon his experience and feel that the relationships with the students is "different and suffers a little bit on the online environment."
5	"The visual feedback and the nonverbal feedback is what I feel that I am losing when I do online teaching."
7	Expresses the challenge of the online environment in making students feel part of the university.
8	An observation is made from the participants experience in teaching online "that students like to have those classes that are through Adobe or that they are talking live."
9	"There must be a way we can tie in more interactivity with the student and make it less focused on drill and practice." The focus should not be on the technical aspects of teaching online rather than the learning experience."

Theme 6: In Retrospect

The final theme emerged from the analysis of the responses to the interview questions in Part C:

- *Think about your earlier experiences teaching online. Now that you have some experience teaching online, is there anything that you would have done differently as far as preparation?*

- *What areas of support do you feel would have enhanced your online teaching experience and knowledge of best practices?*
- *Are there any recommendations you could make to help someone prepare for the online experience and knowledge of best practices?*

This set of questions probed for responses concerning what the participants would have done differently to prepare for the online teaching based upon what they now know.

Participants' responses were varied. Participants made reference to the need to have learned more about the online environment before committing to teach as a sole instructor. Two of the participants identified themselves as having limited computer knowledge that may have hindered their teaching in the online since classroom teaching technology involved a blackboard and chalk. For one participant, time was not a luxury. The participant's preparation time was one week before the commencement of the course. The participant's was taking over another instructor's course with no training in the online pedagogy or best practices. The participant suggested that all graduate students should have a course on what the expectation of teaching are because almost all graduates become teachers at one point in time. The participants were mostly concerned about the ability to have had more practice in the learning management system and interested in knowing why certain things are done as it related to best practices. The participants expressed the relevance and the value of having the ability to create and deliver a course while receiving feedback on their progress. Participant 009 provided an opinion of the significance of faculty online teaching knowledge and time to prepare:

> So in my opinion teaching online is a specialty, and it should be given the respect that is due. So, it is not everyone who can just walk in ...any faculty member can

just walk in and within a short period of time makes the adjustment and do it effectively.

In essence, online teaching requires a different set of skills than the traditional classroom setting, and it is those skills that instructors must hone to be just as be effective online as in the classroom.

The intent of this study was to explore the knowledge faculty possessed in best practices and pedagogy for the online environment. The statements made by the participants validate the need to have performed this project study. The position paper will provide evidence of the gaps in practice and offer recommendations that the university can implement to close the gap in practice. Table 10 represents the comments of the participants.

Table 10

Retrospective Comments Made by Participants

Participant	Comments
1	"I think I would do differently is maybe take some classes online before I start to teach online." "I think my computer skills um were very very low. And my knowledge in computer was very low compared to other people who maybe have a minor in computer science."
3	"I really didn't have enough time to prepare in my first course. I had a week before the course started." "I would have liked to have more time to you know prepare the course from the beginning. Um but really I should have done more research on my end on the assessment side."
4	"I think I would have practiced more instead of just jumping into it. When I say practice I mean going into the system and working with it." "How the information ties into best practices and would have sought out someone with experience in teaching online for mentorship."
7	"If I was starting out and never done online before I sit down with somebody who actually or I would take their course as a basic structure and add my personal touches."
8	"I probably would have come into a course let's say as a TA initially." "I would also have designed a course and had peers critique it for clarity."
9	"I would definitely like to have more time to learn about best practices, to learn more about the technical applications, to learn more about how to manipulate the various software packages prior to having to implement the course."

Summary

Faculty who are versed in best practices can implement pedagogically sound practices that will benefit both them and their students; while also satisfying requirements of the American Registry of Radiologic Technologists for continuing qualification. The problem is the institution's lack of knowledge as it pertains to pedagogical theories and practices associated with best practices in the preparation and conduct of distance

education. Faculty's knowledge and preparation associated with online and distance program development was explored. Qualitative case study method aided in examining the faculty's knowledge and preparation for teaching online. Data culminated in a position paper that serves to inform the dean of the current reality regarding faculties' online distance education pedagogical instructional practices. The report is significant because it serves to create an institutional environment that supports faculty development in a distance-learning environment while simultaneously meeting the demands of disciplinary licensure entities. Implementation of recommendations gleaned from this report can result in a faculty who are better able grasp and use sound pedagogical practices when teaching online (Olson et al., 2011). Students within the radiological sciences trained in the latest techniques and knowledge will positively influence patient care. In addition, the report can serve to inform other fields outside my discipline.

Conclusion

A need exists to establish an Internet-based education program founded upon nationally recognized best practices as identified through research. The university's dean and department chair's mandate required an in-depth investigation of current faculty knowledge and preparation for online distance program. Through this project study, I have employed a case study approach. The information derived from the project study will culminate in a report. It is anticipated that the report will stimulate discussions to fill any gaps in practice. An institutional environment that supports faculty training in distance learning environment will result in educators well versed in tools and strategies to stimulate student learning and participation.

The report will stimulate positive social change by providing pedagogically sound teaching skills to the institution's faculty. While they and other university stakeholders are the primary intended beneficiaries; the institution's ability to implement the recommendations will enhance skills and knowledge through which the practitioner community will be better able to serve patients. Further, the study will ultimately assist the radiological technologists attending State University in meeting the continuous qualification requirements mandated by the American Registry of Radiologic Technologists.

Section 3: The Project

Introduction

This project was prompted by my supervising dean at State University need to understand faculty knowledge, skills, and practices for online education. This dean had a clear appreciation of the constructivist approach, and understood the need to assess current faculty prior to ameliorative skills development. The dean understood the need to assess the faculty's knowledge of online of pedagogical practices for teaching online (Dean, personal communication June, 2012). The focus of this project study was therefore to determine my departmental faculty's current knowledge and current preparation for teaching online. The resulting position paper was designed to inform stakeholders of the facts and offer recommendations to fill the gap of not knowing the teachers' currencies with regard to best practices. I conducted this study at the dean's direction to investigate and address this gap in institutional knowledge.

This project was designed to include an environmental scan of my department's faculty members who taught online classes, so as to ensure that follow-up training is correctly designed. My dean and departmental chairperson will share this information with State University's manager of instructional technologies and e-learning solutions at the central level, and with the dean of information technology. The report offers solutions and addresses faculty gaps in knowledge and skills; without this, skill building cannot be ensured for reliability and sufficiency. The position paper provides the background regarding the department's problem, and recommendation strategies to address the key issues. The position paper provides three major content elements: (a) the mandate issued by the dean of the university, (b) up-to-date literature associated with the project study's

outcome, and (c) recommendations to the administration attending to lay a strong base for integrating best practices in the institutions curricula.

Goals of the Proposed Project

This doctoral study assessed the faculty's levels of knowledge, preparation, and current applications of distance education in the online environment. This report details faculties' training needs and proposes informed recommendations. The recommendations specifically target faculties' current knowledge, skills and competencies with regard to online program development and instruction. A policy paper with recommendations was selected as the route for dissemination.

I previously established a working relationship and familiarity with my dean and departmental chairperson, as suggested by Creswell (2012), Hancock and Algozzine (2011), and Stake (1995) when working to support others' efforts through research. This study's findings informed them of State University's faculty's current online course development and teaching knowledge and skills. Moreover, this study served to direct their course of action regarding current faculty knowledge and skills related to online course development and teaching. This study was designed to guide their decisions regarding faculty needs and subsequent training.

Rationale for the Project Genre

After considering the project findings, my doctoral study committee decided that a position paper would best serve the needs for communicating the project study findings. A position paper, also known as a white paper, is a report often employed as a means of providing reliable and informative reporting to defend a standpoint as well as making recommendations grounded in this study's findings (Powell, 2012; Purdue Owl, 2010;

Stelzner, 2010). Stelzner (2010) argued that "a white paper must quickly identify problems or concerns faced by its readers and lead them down the path to a solution …" (p. 2). According to Stelzner (2010), creating an "instant affinity is key" (2010, p. 2). Because my research was specifically designed to address a local problem and gap in practice, as recommended by Powell (2012) and Stelzner (2010), a position paper was the most appropriate genre for the dissemination of the findings and solutions.

The position paper resulted from my qualitative case study and is a self-contained document that serves to apprise stakeholders of information obtained through the study (The Mayfield Handbook of Technical & Scientific Writing, n.d.). The position paper was designed to inform stakeholders of the intent of the report, presents facts, background, and proposes appropriate and specific recommendations, as recommended by Purdue OWL (2010) and *The Mayfield Handbook of Technical & Scientific Writing* (n.d.). The information should be relevant to the matter at hand, and appropriate advice or recommendations should follow. The position paper was selected due to its ability to:

- Maintain the attention of the stakeholders initially with a summary
- Provide stakeholders with general background information on the issue in order to assist the stakeholders in understanding the facts
- Add to the body of knowledge associated with the training needs of online educators
- Provide stakeholders with report that offers solutions to the problems while bridging gaps in practice (Purdue Owl, 2010).

The position paper coincides with the project study. It serves to address the problem and presents the participants perspective. For example, participants articulated

the methods in which they were initially introduced to online teaching and pedagogy. The methods used to train the faculty, or the lack of training technically or pedagogically was diverse. According to Macdonald and Poniatowska (2011), "there is a pressing need for provisions of appropriate professional development in an appropriate form, at an appropriate time" (p. 119). Therefore, a need exists for structured educational program that provides initial technical and pedagogical content with ongoing professional development support.

The use of position papers in healthcare and education is common throughout literature. For example, the American Society of Radiologic Technologists often produces position papers on new and emerging trends associated with the medical imaging. Herrmann et al. (2012) wrote a position paper titled "Best Practices in Digital Radiography." The development of the position paper rose from a need to address new technology in the field of radiology, digital imaging. Like most technologies that are forever evolving the position paper brought attention to the varying skill levels of radiographers (Herrmann et al., 2012). The position paper served to provide a solution for radiographers by the implementation of a single course that would encompass background information, best practices, optimization of imaging and the reduction of radiation exposure. Another well-established organization in the imaging sciences is the American College of Radiology (ACR). American College of Radiology (2014) has also published position statements on new technologies used for screening for breast cancer.

Based upon the examples provided, I was confident that a position paper was the best platform to present the finding of my case study research. The position paper was succinct and devoid of unnecessary information. This allowed me the opportunity to

capture the attention of the dean and department chairperson. The position paper allowed me to present the themes that emerged from the data collected, and answer the guiding research question:

> With regard to acknowledged best practices, what is the pool of knowledge that imaging science faculty at a major university possess and implement in their practice of online distance education?

The position paper outlined the problem, summarized the findings and made recommendations based upon both a survey and appropriate literature. Supported with skills and knowledge, faculty will impact positive social change through better prepared radiological practitioners.

Review of the Literature Related to Genre

Addressing the Problem through a Position Paper

The position paper was informed by a literature search using the following keywords: *professional development*, *online teaching*, *online faculty competencies*, *barriers to online learning*, *online teachers' roles and competencies*, *institutional support*, *teacher education*, *faculty learning*, *lean thinking*, *lean production*, *just-in-time*, and *quality assurance*. Electronic databases used for this review included Google Scholar, ProQuest, Distance Education Hub, Educational Resources Information Center, CINAHL, MEDLINE, Education Research Complete, Wiley Inter Science, Science Direct, Scopus and Academic Search Complete. The literature search provided a firm base leading to the identification of themes that emerged from the study. The strategies offered recommendations to the university to ameliorate faculty gaps in knowledge and

skills. Positive social change will be evident from the quality patient care received by the community from radiological practitioners.

Strategy 1: Online Self-Assessment Initial Preparation for the Online Environment

This first strategy presented is titled Initial Preparation for the Online Environment. Initial preparation received by the participants varied. However, a common thread was evident throughout the interviews; participants needed more skills in online teaching before committing to do so. The participants' beliefs on this matter align with previous literature. For example, Smith (2005) posited, "teaching online requires a specific set of skills and competencies" (as cited in Schmidt, Hodge & Tschida, 2013, p. 132), and Pasadena City Community College (2012) noted that, "teaching online does require familiarity and experience with some basic technology" (para 1). The theme captures the perspectives of the faculty. The strategy that follows is an attempt to provide a starting point for faculty as it relates to the theme.

As given in the policy paper the self-assessment tool is recommended for all faculty current and new to online teaching. The self-assessment tool is used to "identify and promote growth" of an individual (National Center for Cultural Competence, n.d.). The Pasadena City College has created an online self-assessment to provide faculty with an understanding of the basic pedagogical and technical skills required to teach in the online environment (Pasadena City College, 2012). At the completion of the self-assessment, the participant receives prescriptive recommendations upon the answer provided by the user. The feedback noted that while I possessed basis skills for online instruction, it recommended that I would benefit from participating as a student in an online course in order to become familiar with the online environment.

Further research in this area of self-assessment uncovered a Faculty Self Assessment for Online Teaching Tools. The self-assessment tool was a collaborative effort between the University of Central Florida and Online Learning Consortium (Online Learning Consortium, 2013). Institutions such as Pennsylvania State University have had the ability to adopt this self-assessment tool through a common licensing agreement.

This instrument provides faculty interested in teaching in the online environment with pedagogical, technical and organizational skill sets needed to be successful in the online environment. The self-assessment is composed of three categories that include: 1) technical competencies; 2) administrative competencies; and 3) pedagogical competencies (Penn State University, n.d). The categories incorporate a series of 22 competencies associated with online teaching. At the conclusion of the self-assessment tool, faculty receive personal guidance. The feedback provides the faculty member with gaps related to their online skills. The feedback is comprehensive and offers appropriate resources, guidelines, opportunities for workshops, and best practices (Online Learning Consortium, 2013).

Strategy demonstrated by Palloff and Pratt (2001) argued that, "faculty cannot be expected to know intuitively how to design and deliver an effective online course" (as cited by Schmidt et al., 2013, p. 132). Distance educators lack a model for teaching online and their experience, as former students most likely did not afford them the experience of learning online (Schmidt et al., 2013). Therefore, the university cannot assume that faculty can teach in any situation.

Strategy 2: Lean Learning

A follow-on strategy, just-in-time learning, relates to "lean learning". The project study demonstrates that faculty value learning and collaborating with colleagues. However, the method for learning and the content are areas of concern. Faculty expressed their desire to learn based upon their intellectual need. According to Baran and Correia (2014), "the way faculty members adapt to online teaching and their new roles and skills define their successful transition to online teaching" (p. 97). The one-size-fits-all model of training for the online environment is not practical to the needs of the faculty.

The concept of lean is not a new development. The work of Henry Ford, Edwards Deming and the Toyota Production System are examples of know lean implementation in the manufacturing and corporate environment (Cardiff University, n.d.; Jadish, Mantha, & Rane, 2014; Lean Enterprise Institute n.d.). The concept of lean production has been "transformed into applications loosely called of lean thinking" (Alagaraja, 2010, p. 51). Although lean thinking is often associated with manufacturing and corporate environments health care, higher education, and service industries have also implemented this process (Alagaraja, 2010; Cardiff University, n.d.; University of St Andrews, 2012). The philosophy of lean encompasses the idea of the elimination of non-value activities with the replacement of value added activities while reinforcing the need for individualized learning experiences (University of St Andrews, 2012).-

Faculty participants expressed the need for individualized learning opportunities that reflect their current knowledge and is accessible on demand. Individualized learning opportunities that faculty could be accessed when, where, and as needed. The University of St. Andrews approach towards "lean" incorporates two fundamental doctrines, these

are continuous improvement and respect for people. The first principle seeks to evaluate the work progress actively and make improvements by initiating the Plan-Do-Check–Act improvement cycle Figure 1 (University of St Andrews, 2012). The second recognizes that the greatest asset in any organization is its people. According to St. Andrews University (2012), "It is, after all, the staff of an organization who, in our experience, know what works well and what needs to be improved, and who have the ability to suggest and make necessary improvements" (p. 5).

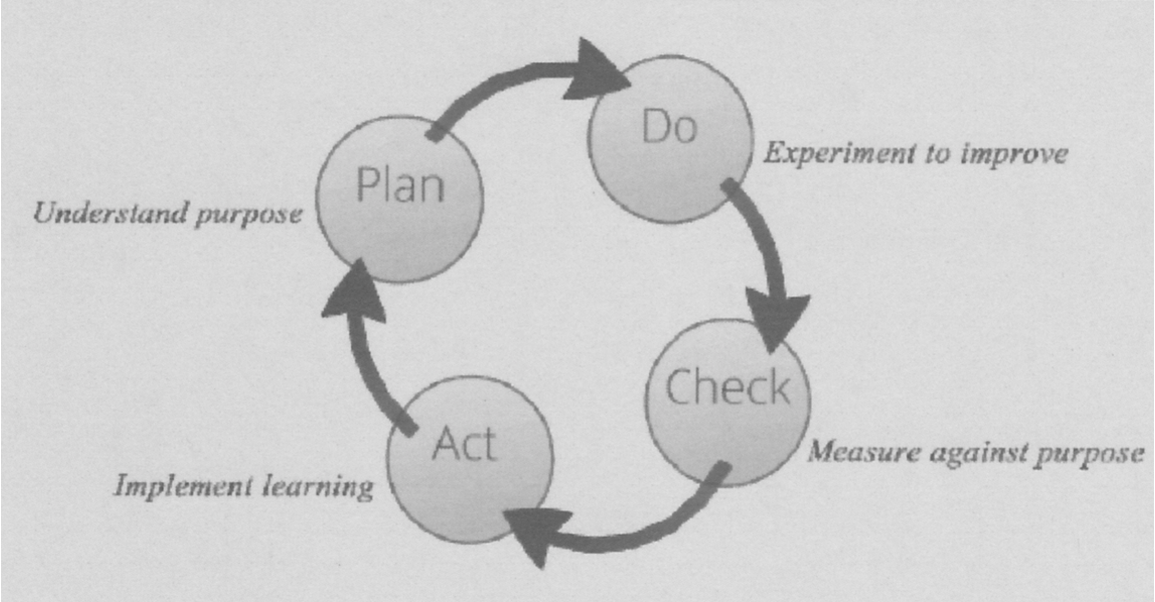

Figure 1. The plan-do-check-act improvement cycle. Adapted from University of St. Andrews (2012). Becoming Lean Pocket Guide. Copyright 2012 by the University of St. Andrews.

The strategy presented is a viable solution that the university can implement to provide the faculty with a more customized solution to meet their faculty diverse learning needs. The preparation of faculty to teach online differs according the skill set and experience the faculty member. Lean learning is a journey, and the process will not be an

expedient solution to the needs of the faculty. It will take time to develop training solutions that are practical to the needs of the faculty and take into account the levels of knowledge faculty possess.

Strategy 3: Anagogical Model and the Teaching Online Pedagogical Repository

Strategy 3 incorporates two themes knowledge of pedagogical & best practice and platform preparation/technology. Caffarella (2010a), Knowles, Holton, and Swanson (2011), and Ruesseler and Obertacke (2011) agree that adult learning theories enhance the transfer of knowledge. Traditionally it has been educators who decide what, when and how the lessons are taught (Chan, 2010). Knowles's andragogical assumptions propose a different scenario. The andragogical model supports a learning environment where the adult learner is self-directed and takes on the responsibility for learning. This parallels best practices for online learning. Best practices require implementation of sound instructional design so that students can challenge their higher order cognitive skills making the instructor a facilitator of knowledge. Knowles's models, as depicted in Figure 2, contain three rings that interact. The rings demonstrate the multifaceted approach associated with the adult learning process.

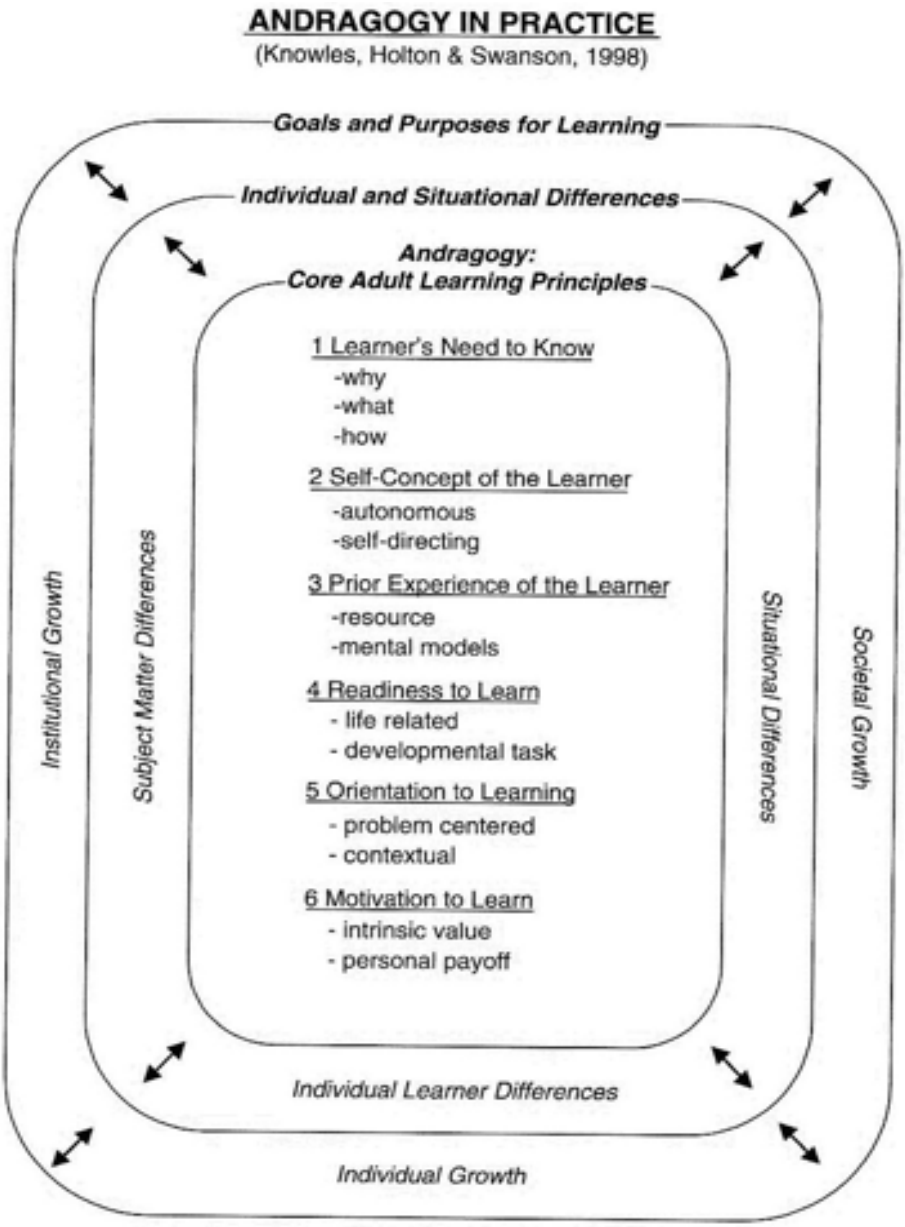

Figure 2. Andragogy in Practice. The Adult Learner 7th ed. Elsevier; Burlington, MA. Copyright 2011 by Elsevier.

According to Knowles et al., (2011) "the goals and purposes of adult learning serve to shape and mold the learning experience" (p.148). In Knowles's model "adult learning events may fit in to three general categories: *individual, institutional, or societal growth*" (Knowles et al., 2011,p.148). In the outer ring, Goals and Purposes for

Learning, represent why the adult seeks out learning. The middle ring "Individual and Situational Differences" (p. 4) is a characterization of variable that can influence the learning of an adult (Knowles et al., 2011). The variable can include subject matter, situational and individual differences (Knowles et al., 2011). The differences are associated with learning strategies. In the inner ring the "Core Adult Learning Principles" (p.4), consist of assumptions about adult learning.

Several important factors about adult learning incorporate several important factors associated with adult learning include the following:

- Adults need to know how and why what they are learning is related to their needs. The significance of this statement refers to an adult's willingness to learn. Adult's needs and interest must be met learning to occur.
- Adults will seek out knowledge. In the case of the participants, this is self-evident by the comments made by the participants demonstrating their desire to learn about best practices and pedagogy for the online learning environment.
- Adults' experiences are a resource for continued learning. Therefore, their experiences cannot be devalued but must be incorporated into new experiences.
- Adults' willingness to learn. Period in an adult's life or career where they are ready to progress and take on more responsibilities.
- Adults approach learning as a way to solve a problem. Readiness to learn occurs when a need is presented to deal with real life situations.
- Adults learn when it has a personal value.

It is important to note that that the three rings apply to all adult learning and must take into consideration other factors that may be present such as learning style and

personal concerns (Knowles et al., 2011; San Diego City College, n.d). Knowles's assumptions were evidenced by the comments of the participants. The participants demonstrated their need to learn about online best practices and pedagogy and, therefore, sought resources such as Google and massive open online courses to meet their intellectual needs. The three circles demonstrate an integration of adult learning situations that allow for variations in learning and the learner. This is important because adult learning situations are not homogeneous.

In essence, the andragogical model is an "explanation of adult's disposition and motivation to learning" (p. 115) and their ability to seek out resources as their learning needs develop (Palis et al., 2014). Closely aligned to Knowles's model of andragogy is the constructivist approach. Jean Piaget first suggested the term "constructivism" (p. 186) when he observed that children learned by formulating ways to cope with and master their environments (Koh, Chai, & Tsai, 2014). Dewey (1997) added to this and his approach to constructivism. He argued, "Genuine education comes about through experience" (p. 25). However, not all experiences are conducive to learning. Therefore, experiences for the learner must be meaningful. Jenkins (2000), posits "constructivist of different persuasions hold a commitment to the idea that the development of understanding requires active engagement on the part of the learner" (as cited in Ültanir, 2012, p. 196). Therefore, taking into account faculty's needs and how they learn are integral to the engagement of the learner.

Faculty learning about pedagogy and best practices includes the initial use of professional development. Unfortunately, professional development efforts most often are directed towards how to use technological tools rather than how the tools can be

integrated in the learning and teaching process (Schmidt et al., 2013). The University of Central Florida addresses professional development by providing faculty with essential training, preparation, and resources necessary for teaching online. Lane (2013) notes a "distinction between 'training" and "preparation"". He argues that training focuses on the technology rather than the pedagogy" (p. 2). The University of Central Florida augments it efforts with a website titled "Teach Online". This offers faculty links to content online such as course design and development and professional development (University of Central Florida, 2015). The University of Central Florida has open labs that enhance the opportunity of faculty to build their online course. The open labs maintain support staff available to assist faculty daily.

Sloan-C developed Five Pillars for quality online teaching and learning. The Teaching Online Pedagogical Repository integrates practices related to the five pillars (Thompson & Chen, 2013). The University of Central Florida maintains an open public resource called Teaching Online Pedagogical Repository (TOPR) to assist faculty with the integration of practices from the Online Learning Consortium. The pillars provide guidance to educational institution interested in achieving particular goals and measuring quality (The Sloan Consortium, n.d.b., p. 1).

Accrediting bodies for institutions of higher education require that faculty have the opportunity to train and the availability of the faculty to receive support in the online environment. However, the accrediting bodies make no recommendations on how institutions of higher education can facilitate the requirements (Herman, 2012). The model presented by the University of Central Florida addresses professional development by providing faculty with essential training, preparation and resources for development

and teaching in the online environment. University of Central Florida's model is instrumental in the university's goal to establish best practice.

Strategy 4: Establishing a Social Presence

The fourth strategy relates to the fifth theme, interaction with students. This theme represents the faculty need to constantly and consistently interact with students. Interviews disclosed that the institution's imaging faculty has implemented discussions and chats to their online courses. However, they still feel that the methods do not appropriately meet what they consider to be social presence. Faculty senses an inadequacy of social presence in their practice of distance learning. Brady, Holcomb, and Smith (2010) concur when they noted, "instructors using CMS may pose a question in an online discussion board and each student posts a response" yet, these student posts are really not interactions at all, but merely question and answer sessions" (p 152). Establishing a social presence is one of the greatest challenges faculty face in the online environment whereby both student and faculty feel a connection (Plante & Asselin, 2014). Faculty accustomed to teaching in a brick and mortar setting rely upon visual clues such as facial expressions, body language and eye contact to discern if the students are deriving meaning from the content being presented (Esani, 2010; Mayne & Wu, 2011). Voice over Internet protocol instruments such as Skype or FaceTime are tools that when/if implemented can enhance social presence and communication (Plante & Asselin, 2014).

Literature on best practices suggest evidence that faculty and student personal propagation encourages collaborative opportunities and a sense of community (Esani, 2010; Mayne & Wu, 2011). Web conferencing tools further facilitateis the. The use of a

web conferencing tool helps facilitate online office hours and collaborative meeting with a student or a group of students (Howard, Raible, Chen, Thompson, 2015). The solutions offered as evidenced by literature can alleviate the faculty need to find ways to interact with students. However, the challenge rests in the effort made by higher education institutions to assist faculty in the integration of tools. Palloff and Pratt (2011) state "excellent online instructor rarely emerge "out of the box" but develop their skills over time" (p. 16). Therefore, implementation of recommendation will require a collaborative effort by stakeholders.

Implementation

Project Description

The project study culminated in the development of a position paper. The position paper can be a powerful tool to assist stakeholders in justifying the implementation of the solutions presented (Young Adult Library Services Association, 2015). This position paper serves to transfer knowledge and understanding of the current needs of the faculty to develop their knowledge in best practices and pedagogy in distance education. The position paper offers strategies to close gaps in practice that exist at the university. Findings from current literature provide a firm basis for the proposed recommendations in this project study. The findings are further developed in the position paper to address potential resources for support, existing resources and potential barriers to implementation.

Potential Resources and Existing Supports

The assistant dean of Information Technology is aware of the project study and has expressed interest in learning about the findings. He supports educational efforts to

help ensure that faculty and student needs who are engaged in online learning are technologically and pedagogically appropriate and available when, where, and as needed (V. Cabalfin, personal communication, November 4, 2014). The university has various layers of support for instructional technologies. The manager of instructional technologies and e-learning solutions at the central level is aware of the project study. He is supportive of the effort and is willing to assist in meeting the educational needs of the faculty (A. Goyal, personal communication, November 3, 2014). The collaboration of other team members under the direction of Mr. Cabalfin and Mr. Goyal will also be instrumental in faculty development.

The School of Health Related Profession's Office of Information & Instructional has an established service for faculty known as TECH 4 Sure (SHRP, 2013). The TECH 4 Sure web site provides faculty and staff with resources related to: (a) education technology and media services, (b) audio-visual conferencing, (c) web and Internet support, and (d) network and desktop support. The expansion of the support services offered by TECH 4 Sure is possible. The strategies outlined in the position paper require minimal financial resources. However, the support required to facilitate the implementation of the strategies will entail human capital.

Recommendation for theme and strategy 1. Availability of resources and implementation. The university has the option of utilizing Pasadena City College's self-assessment tools. Embedded with in Pasadena City College's protocols are modules focusing on technical skills self-assessment, pedagogical self-assessment, and work preference self-assessment. The university also has the option to use the self-assessment tool available from Pennsylvania State University, created through a Creative Commons

licensing agreement (Online Learning Consortium, 2013). The online self-assessment tool includes 22 questions that the university can tailor to meet its online teaching assessment needs.

Potential barrier for theme and strategy 1. The potential barrier that may arise with this strategy is continuing access to the self-assessment tool in the future. Therefore, the university should consider hosting the self-assessment on its TECH 4 Sure website. This is balanced, as Pennsylvania State University self-assessment is part of a Creative Commons licensing agreement meaning the university will not be required to develop its own self-assessment tool.

Recommendations associated with the second and third theme and strategy involved the availability of resources and implementation. The university has existing resources that can be drawn on to promote lean learning. The implementation of lean learning can assist in meeting the faculty need for on demand learning. The development of lean learning modules in conjunction with Knowles's andragogical model, support a learning environment where learners are self-directed. Resources exist at the university to support this learning. For example, the university has a website dedicated to Moodle tools that provide "how-to information," technical assistance. The TECH 4 Sure website is a mixed resource with pedagogical and technical resources. The combination of the two websites can be used to provide on-demand learning for best practices in pedagogical and technical issues.

Potential barrier for recommendation & strategy 2 and 3. Another potential barrier for the second and third recommendation and strategy involves faculty development. This could be a time consuming process. The dean of the School of Health

Related Profession, the assistant dean of Information Technology, and the manager of Instructional Technologies and E-Learning Solutions need to determine a date for the unveiling of a functional website to address the on demand learning needs of the faculty. The faculty can view the failure to do so as an insincere attempt to provide the resources to meet their learning needs.

The fourth and fifth themes and strategy focus on the availability of resources. These impact the vital need for social presence. The TECH 4 Sure website will enable and positively impact social presence between faculty and students. The website can be customized to incorporate information about resources such as Skype, FaceTime and related web conferencing tools. This resource will include the ability to support video and written instructions. The Office of Information Technology and Instruction can support this effort. Under the Tech 4 Sure web page, a tab can be inserted to provide information on the availability of web conferencing resources, along with the opportunity to request one-on-one assistance in web conferencing tools.

The university also offers a faculty development website designed to support instruction and learning. This website supports connectivity of additional literature in the online teaching environment including TECH 4 Sure. Collaboration between of the chair will result in a coordinated and focused set of skill-enhancing tools.

Potential barriers for recommendation and strategy 4 and 5. The strategy requires minimal financial resources. Time availability is always a barrier.

Proposal for Implementation and Timetable

The anticipated date for the paper's presentation to the institution's executive council is spring 2016. The report will be disseminated to all members three days prior to

the meeting. The invitees will include the dean of the School of Health Related Profession, the assistant dean of Information Technology, the manager of Instructional Technologies and E-Learning Solutions and a representative from the Office of Information Technology and Instruction. At the conclusion of the presentation, I will entertain questions from stakeholders. I will also facilitate agreed upon recommendations.

Roles and Responsibilities

The university is comprised of many divisions that work as a whole to meet the educational needs of students and faculty. The assistant dean of Information Technology provides leadership, direction, and coordination of information systems and instructional media services. The assistant dean of Information Technology is also responsible for the coordination of resources, development, and adherence to standards. The manager of Instructional Technologies and E-Learning Solutions at the central level plans, coordinates resources, develops training, adherence to established standards, as well as daily operations. Acting in concert, they ensure necessary and sufficient availability of academic over site and administrative resources. The deans' input is also required for the distribution of required financial and human resources.

A potential source for funding the recommendations and strategies is the ability to apply for grants. The U.S. Department of Education maintains a website in that forecast funding opportunities for grants (2015). Another resource site for grant funding is the Instructional Technology Council. The Instructional Technology Council maintains a searchable glossary of grant opportunities that provide funding for distance learning (2015).

The potential exist to secure grant funding for implementation of the recommendation set forth in the position paper. Therefore, a means must exist to assess the value of the implemented recommendations. As a possible benefactor of grant money the university will be required to demonstrate efficacy.

Project Evaluation

Type of Evaluation

The evaluation tool used to assess the strategies implemented by the university included online surveys. Online survey aid in determining the effectiveness of strategies by measuring change over time in attitude, opinions, behaviors and other characteristics deemed of importance (Creswell, 2012). The survey can also "ensure the consistent collection of data because all respondents receive exactly the same questions in exactly the same way" (Idea, n.d.). The university has an established subscription with Survey Monkey. Therefore, no added expenses will be associated with the data collection. The use of Survey Monkey streamlines process of data collection and analysis. Therefore, allowing for any modifications or suggestions made by the participants.

Outcome Measures of the Project

Recommended strategies presented in this project study represent an outcome derived from data collected. As the implementation of the recommended strategies are set into motion the university needs to be prepared to assess it success. The first recommendation/strategy is interested in providing faculty with a tool to assess their preparation for the online environment. A Likert-type scale evaluation is recommended with a scoring range of one through five. The following values should be assigned:

- Value of five indicates the faculty member strongly agrees,

- Value of four represents agreement
- Value of three indicates neither or not applicable
- Value of two indicates the faculty member disagrees, and
- Value of one represents that the faculty members strongly disagrees.

The range developed should capture the feelings of the participants and offer the university feedback that will inform necessary modifications. Recommendation and strategy two and three will also use a Likert-type scale survey. This survey will seek to learn the participant's perspective on the implementation of lean learning and andragogical methods. The final survey will incorporate the same Likert-type scale proposed in recommendations and strategies one, two and three. However, the survey will assess the faculty perceptions of information provided in using tools to create a social presence and the ability to obtain assistance in using the tools. I will work with the stakeholders and faculty development committee to create a survey and analyze the data. Assessing the recommended strategies is essential. The university can only insure that their efforts are yielding positive outcomes by performing a formal assessment.

Overall Goals of the Study

The goal of this position paper will inform the dean, department chair, and other stakeholders through recommendations and strategies for implementing an optimal learning environment facilitation for online faculty that is grounded in widely accepted best practices. The position paper will establish:

- Self-assessment tool for faculty contemplating teaching online,
- Website that encompasses access to best practices and pedagogy on demand, and

- Website with tools and learning resources about maintain a social presence online with people who can assist in the learning process.

The goals were derived from a comprehensive literature search, the project study problem, the questions asked of the participants during the interviews, data, and the development and analysis of the themes.

Implications Including Social Change

Local Community

The case study examined the perceptions of the faculty regarding their knowledge of and use of best practices in the delivery of online courses. The findings of the study are significant to the university as well as to the external stakeholders medical professionals, paraprofessionals, and patients it serves. The development of educational tools that meet the demands of the online faculty will help to increase their knowledge and provide learning opportunities guided by the andragogical assumption postulated by Knowles. The ability to deliver educational opportunities based upon their intellectual needs that are accessible "just-in-time" will provide the faculty with the capacity to make appropriate modifications to their teaching; hence being better able to prepare their students for the adoption of new knowledge. The improvements in the students' educational process will enable them to be better deliver the health care needs of the local populations they serve.

Far-Reaching

The selected method to communicate with the stakeholders of the university the outcome of the project study is the position paper. The recommendations set forth in the position paper can have a far more reaching effect than at the School of Health Related

Professions. The university is composed of many schools that can benefit from the dissemination of the position paper. Those units, that incorporate online learning in the delivery of their course, may find the recommendations helpful in meeting their faculty needs. The units in turn can collaborate with the School of Health Related Professions and reduce the time to develop instructional material and implement changes. The adaptation of the recommendations can then benefit many faculty members and have a greater social impact due to the variety of disciplines that the school units represent.

Conclusion

In Section 3 of this project study, I describe the genre and its significance to the dissemination of the research. I found detailed information on terms used to conduct a literature review, findings, potential barriers, potential resources, and existing supports. I conclude with implications for social change in both the micro and macro level.

In the subsequent section, I provide a reflection of the journey undertaken to close the university's gap in practice. I detailed strengths and limitation. I also provided supported recommendations while keeping positive social change firmly in focus. Section four will also encompass a self-analysis of how I view myself as a scholar, practitioner, and a developer. The section will conclude with the ability of the project to study to impact social change at both the micro and macro level and future applications and direction for future research.

Section 4: Reflections and Conclusions

Introduction

This study explored university faculty's knowledge of and use of best practices for teaching in an online environment. After analyzing data derived from the project

study and conducting an extensive review of the literature on the genre, I concluded that a position paper would best meet the needs of disseminating the findings. In this section, I discuss my reflections of strengths and limitations and provide my recommendations for addressing the problem based on the work derived from study. I also reflect on my growth as a scholar, practitioner, and project developer, and as a vehicle for leadership. Lastly, and most importantly, I discuss my work's potential impact for social change and how the recommendations made in the position paper will influence future research, the community served by the university and the health care of the patients served.

Project Strengths

This effort was designed to discover whether and where gaps exist in the knowledge and practices among online imaging science faculty. Need was strongly supported by Bigatel, Ragan, Kennan, May, and Redmond (2012) who posited, "in order to deliver quality online instructions, faculty need to be adequately trained to effectively teach online" (p. 63). My literature search and project noted the necessity for faculty to know what best practices are in the delivery of distance education and how to apply them. Once an understanding is obtained the faculty needs in terms of resources, development, and training, the university will have a base upon which it can close gaps in practice.

The strength of this position paper lies in strategies outlined for the stakeholders. I use it to present my recommended strategies to a group of stakeholders including my department chairperson, dean, associate dean, and manager of instructional technology in the deans' conference room at State University. These stakeholders' combined efforts will guide the provision of the necessary services needed from instructional technology at

the local and central levels. A planned follow-up includes forming a faculty development committee charged with assisting in program oversight.

The selected method to address the issues and present the recommended strategies to solve or to alleviate the problem experienced by the faculty is the position paper. The strategies emerged based upon the perspective of the faculty, the data analysis and the literature review. As recommended by Powell (2012) and Stelzner (2010), I used the position paper to provide evidence of strategies, communicate and garnish support to solve the project study problem. The position paper was the correct platform to present to the dean the department chair with the knowledge that faculty possessed in best practices and pedagogy for the online environment. The position paper also served to provide strategies on how to amend the current gap faculty knowledge.

It is important to emphasize faculty perceptions and the analysis of data supported by a comprehensive search of relevant literature were instrumental in arriving at strategies that would best close gaps in practice that would concurrently support positive social change. Positive social change will result from a better-informed faculty on how to address specific problems, implement effective educational methods and assist in supporting confidence among students. The position paper will be used to transmit results to all appropriate stakeholders; enabling them to take ameliorative action.

Project Limitations

The limitations associated with this project study were particular to the methodology. A characteristic of the case study is that it is bounded (Creswell, 2012; Hancock, 2011; Lodico et al., 2010; Merriam, 2009). A bounded study is limited in terms of time and location (Creswell, 2012; Lodico et al., 2010). Consistent with

literature, my use of the case study approach was not to develop a generalizable theory or findings related to the general population. Rather it was to determine the imaging science awareness and practices, as recommended. This was the intent of the project study. The pool from which faculty were drawn was 100% of those who met relevant criteria.

If there were no constraints associated with time or resources a much larger study incorporating faculty members from different online radiology programs might have been possible. Although studying other online radiography program may have been useful for some aspects of the study, the scope of this project study was limited by the need to determine the level of knowledge that this university's imaging science faculty possessed in best practices and pedagogy for the online environment. The focus was to gain knowledge pertaining to a particular subset of the faculty at the university and how to address their specific needs. This project did not intend to become a model for other radiology programs since needs and circumstances may vary. Rather the project study addressed learning about the particular faculty knowledge as it pertains to best practices, pedagogy, and implementing strategies.

At the time of this study, State University is currently undergoing a major restructuring effort due to the amalgamation of several state colleges into one state university. Therefore, analyses of the school budgets are ongoing. The current restructuring has not affect the budget of the School of Health Related Professions. However, I have proposed that the School of Health Related Professions apply for grants to supplement the cost of implementation of the recommendations in the event of budgetary constraints.

Alternate Approaches

A different approach to the problem could have incorporated faculty from other radiography programs and their knowledge and implementation of best practices in the online environment. The inclusion of faculty from outside the university broadened my purpose. Therefore, by broadening the scope of the project this may have lead to the emergence of other themes and strategies that would be irreverent to my local program.

Scholarship

I began my journey at Walden University in the fall of 2009. I knew then that I wanted to grow as a scholar. Unbeknownst to me, I was not aware of what it would entail developing into a scholar. I was not sure of where this journey would take me. I just knew it was something that I had to do. I needed to comprehend the principles of adult learning and know how to apply them to my calling. My years as a radiographer in the clinical environment has made me an expert in my field and accomplished in various specialties. However, it had not prepared me for the classroom or online teaching. I was not aware of pedagogical practices or learning styles. I want to be an active educator and learn the tools to help students succeed and implement them in my teaching strategies. As such, and following the Walden twin goals of being a scholar practitioner and promoted of positive social change, I evolved into a practice-oriented scholar.

My journey through Walden University and the development of the project study I developed breadth and depth of scholarly knowledge. I have used the knowledge acquired through the project study to implement strategies and practical approaches to issues presented by the faculty. Walden awakened in me a new level of self-awareness and has given me the confidence to act as an active agent of change.

As I reflect on my experiences in this journey, I realize the turning points in which I became a scholar. My initial feeling that I had become a scholar was when I began reading the transcriptions of the interviews repeatedly in order to decipher and code the data. I was aware of the importance that this process played in representing the perspectives of the participants. As the process continued, from coding to the development of themes I felt a sense of confidence in my abilities as well as accomplishment.

The educational journey has allowed me to share what I have learned with the dean, department chairperson and colleagues. It has given me the tools I need to succeed in a higher education setting, to continue research activities after Walden's Chief Executive Officer approves my project study. The increased knowledge obtained has allowed me to contribute to the university and the community at a much greater capacity by seeking opportunities to become involved in research projects with other disciplines and become a greater force in affecting positive social change. Lastly, the opportunity to develop this project study has enhanced my critical thinking skills and served to elevate my research skills. I now ask questions, consider alternate perspectives and search for additional opportunities as I continue reviewing the literature. According to Brookfield, (1987) "critical thinking is not purely passive. It involves alternating phases of analysis and action" (p. 23). Throughout the development of the prospectus for this study, the project study and position paper I have applying active inquiry and reflective analysis to develop informed actions.

Project Development

I have a newfound respect for project development. Learning about project development through textbooks appeared straightforward and effortless. However, the process is much more complex. As a researcher/scholar practitioner, I had the responsibility of managing, interpreting, and representing data with the utmost level of integrity. The responsibility to accurately represent the participants' perspectives weighed heavy on me. The responsibility of producing recommendations that would be considered valuable by all stakeholders was also a concern. Therefore, a constant need to reflect and contemplate on the interviews, the data and the themes as well as my beliefs and values, and assumption and biases were always in the forefront. To increase credibility and trustworthiness, I maintained a continuous self-evaluation to mitigate any preconceive notions or biases that could influence the research. A colleague, whom I have known for approximately 10 years, was privy to details surrounding the project study and was instrumental in the self-evaluation process.

Participants were also helpful in confirming the accuracy of the transcription. I would like to acknowledge that as a faculty member at my university, I have been involved in many projects. However, this is the first time I have been responsible for the sole development of strategies, for a project, and a position paper. The challenges presented were overcome through a personal commitment and dedication to this project study and the continuous guidance and feedback from the chair and second committee member this project study.

Leadership and Change

The implementation of the strategies presented has the potential to change how online teachers are prepared for the online environment. The type of change required calls for strong leadership that is willing to commit to the implementation strategies and see them through. Knowles principles provide a solid basis from which to proceed. I have identified a problem at the local level and have outlined recommended strategies for implementation that can lead to an environment conducive to meeting the faculties' learning and teaching needs in which the university has traditionally trained faculty. With the body of knowledge gained from course work, I have been able to apply knowledge to a practical research project. The confidence I have gained has provided me with the ability to adapt and modify theory and framework in given situations. Through the research process, project study and position paper I have emerged as an agent for change. As a leader, I have the potential to motivate others, share my vision and listen to others ideas all in an effort to promote societal change.

Analysis of Self as Scholar

Before, I began my doctoral journey at Walden University, my knowledge of adult learning principles and theories were nonexistent. My knowledge was limited to the curriculum that composed my professional career as a radiographer. The prominent figures in my field encompassed scientists, such as Marie Currie, Wilhelm Conrad Röntgen, and Isaac Newton. These scientists were instrumental to my understanding and learning of physics and radiation protection. However, they could not prepare me for my role as a scholar/practitioner in the field of radiology.

My perception of my scholarly capabilities changed as I embarked upon the project study. My skills increased ethical perception, judgment, and reasoning. My growing personal courage guided me through the data collection process, analysis and reflection. I learned that listening to participants in an interview is different that listening to a friend or family member speak. The interview process required additional sensitivity and attentiveness to what participants were saying. It also involved judgment calls such as when to continue probing or being comfortable with what appeared to be a long period of silence. Trusting the process as I lived through guidance from my mentors, I slowly digested the process, allowing the research to guide me. Through this process, my confidence in my work increased as well as my ability to enact social change with the recommendations I posed.

The professors at Walden University have enlightened me on adult learning theories, assumptions, and pedagogy. The most notable of all to me is Malcolm Knowles andragogical assumptions. I have taken Knowles's assumptions and incorporated them into my teaching philosophy. Malcolm Knowles's assumptions had a profound influence upon my growth as a scholar. I have adapted his principles into my recommendations in the position paper for producing a learning environment for the faculty that is self-directed.

Analysis of Self as Practitioner

When I began seeking a program to meet my educational needs, I created a list of what my reasons were for continuing my education. My top goals were to become a more effective educator and health care practitioner and to make a difference. Walden University's mission of social change was dear to my heart. Contributing to the

community and society is important to me. If I am not using my talents to their fullest potential to educate others, I am being selfish. I am not sharing what has been shared with me; encouragement, experiences, and empowerment. My educational journey at Walden University has renewed my spirit to contribute my knowledge and skills and to integrate my experience as a radiographer and educator to better enhance the patients and students I serve. The project study has been a long rough journey at times. However, it has instilled in a greater degree of confidence in my abilities. I now feel empowered to contribute as a practitioner to scholarly works. I look forward to becoming involved in research activities with other healthcare practitioners.

Analysis of Self as Project Developer

As an educator in the radiological sciences, you are not hired solely on your abilities to teach but rather the knowledge you possess in your field. I now have a growing skill set in developing programs from the ground up. I have learned about constructing syllabi, and tests and tools use in teaching. However, best practices were not part of the knowledge I possessed. My experience can best be described as "learn as you go or by trial and error." The project study has sharpened my abilities and confidence to conduct research. I have learned the importance of reviewing scholarly literature and to establish theoretical frameworks. Throughout the project study an advanced level of organizational and planning skills were developing to see this project study and position paper through to conclusion. The development of the project study was challenging. However, the tools needed to succeed were introduced early in my educational journey and as the semesters progressed. The journey was difficult at times with the need to reflect upon the purpose of the project study in order to maintain alignment and meet the

needs of all parties. A continuous process of reviewing and revising of the project was necessary to maintain viability and produce favorable outcomes.

As a scholar-practitioner, I have learned to be opened minded, keep an open line of communication, pull from all available resources to enable the success of future projects. Most importantly, I learned to facilitate positive social change. Knowles's principles of andragogy have better positioned me to respond to my students needs as a self–directed learners. I am more able to respond to students need to understand that what they are learning applies to their immediate needs and structure online learning environment that fosters sharing among participants and facilitator.

The Project's Potential Effect on Social Change

It is known that adult learning needs are different from those of children (Knowles et al., 2011). Knowing how to develop and support adults is essential to continue self-directed and active learning experiences. The following girds the very mission of Walden University (n.d.)

> That knowledge is most valuable when put to use for the greater good. Students, alumni, and faculty are committed to improving the human and social condition by creating and applying ideas to promote the development of individuals, communities, and organizations, as well as society as a whole (para. 6).

Walden is firmly driven by the concept that social change needs to provide for improving the greater good. This section will discuss social change in accordance with the three concepts of:

- Put to use for the greater good,
- Improving the human and social condition, and

- Creating and applying ideas to promote the development of individuals, communities, and organizations, as well as society as a whole.

Put to Use for the Greater Good

Based upon their current grasp of the field, educators understood and voiced their need to learn and implement online best practices and pedagogical practice. My intent in the creation of the position paper was to provide the stakeholders with recommendations on how to facilitate the needs of the university and its faculty. Learning experiences can enable faculty to take charge of their learning needs and further advance student's ability to learn and reduce attrition (Noel-Levitz, 2011; Palloff & Pratt, 2011). When educators are involved in learning opportunities, they can make positive changes that help promote positive student learning outcomes (Northcote et al., 2012).

Improving the Human and Social Condition

Faculty who become more knowledgeable in distance learning are better positioned to prepare radiologist assistants in their ability to serve as competent health care providers. Radiologist assistants will have the opportunity and capacity to enhance the deliver of patient care through their newfound knowledge. Radiologist Assistants will enhance services that are critical to their patients and members of the health care team. A better-served community can lead to an increase in patient care satisfaction leading to positive social change. A secondary yet important benefit is providing practitioners the opportunity to meet the continuing requirements of the American Registry of radiologic Technologist.

Creating and Applying Ideas to Promote the Development of Individuals

I created this position paper to assist in addressing the issues at the local level. The university was interested in knowing what knowledge the faculty possessed in respect to best practices in the online environment. The recommendations presented in the position paper are derived from themes that emerged and are informed by current literature. It is my hopes that other institutions of higher education will use this position paper's recommendations to initiate conversations concerning their online faculty needs. Institutions can use the study to explore, to adapt professional development programs, generate specific institutional needs or develop new solutions.

Implications, Applications, and Future Research

During my extensive reading there were continuous references made regarding the increase in the number of online courses offered by higher education institutions (Al-Salman, 2011; Allen & Seaman, 2011; Konetes 2010; Romam, 2010; Storandt, Dossin & Lacher, 2012). Another common theme that appeared in the literature was online pedagogy differs from the traditional classroom pedagogy (Barczyk, et al., 2010; Crawford-Ferre & West, 2012; Storandt et al., 2012). Practitioners must be able to appreciate and distinguish (as necessary) differences associated in both environments. Failure by the university to provide this knowledge can increase student attrition and faculty dissatisfaction with the online environment (Noel-Levitz, 2011; Palloff & Pratt, 2011).

The implications from this project study may have a positive effect on the manner in which the entire university approaches the continuing educational needs of faculty and staff working in the online educational environment. Lean learning can become a

philosophy is applied throughout the university since lean principles originate in the management of people and production. The implementation of lean learning can benefit the university across the board by reducing cost, increasing efficiency and eliminating waste (University of St Andrews, 2012).

It is important to note that it takes strong leaders who are willing to depart from traditional methods and implement lean learning. It will also require educational developers to provide for faculty learning needs of the faculty by developing on-demand courses that meet different learning needs and styles of the learner. A team approach by administrators, developers and faculty will be required to maintain educational the content knowledge growing to facility the faculty needs (Al-Salman, 2011).

Suggested future research includes a study to determine the impact that training of best practices and pedagogy have had on faculty satisfaction in teaching in the online environment at the university. A follow up study to the previous study would include the perceptions of students on the faculty trained in best practices and pedagogy effectiveness in providing high quality online learning. A future study should be conducted to evaluate what constitutes effective training from the perspective of the faculty.

Conclusion

The project study was prompted by a mandate issued by the dean requesting the establishment of continuing education courses for radiologist assistants and registered radiological technologists based upon best practices. I developed this project study to determine the faculty's level of knowledge of best practices for working in the online environment. Participants were limited to faculty members involved in the online teaching environment that taught imaging science students. The key to studying this

problem and developing a resolution was to determine and close gaps in practice associated with those gaps in knowledge and implementation of best practices. Data from the research pointed to a gap in practice. From the study, I developed strategies for how the university should meet the needs of the online faculty. Roman, Kelsey, and Lin (2010) found, "Many instructors report they are unprepared to teach online" (p. 1). Therefore, the implementation of best practice is essential.

Best practices provide relative evidence of proven techniques; positive results from actions taken and can prevent the university from falling victim to trends. The incorporation of best practices can further increase the university's standing within the community, produce educators with the pedagogical knowledge that can motivate students and enhance learning. Therefore, educating faculty about best practices and pedagogy for the online environment through the implementation of the strategies presented in the position paper is the first step in promoting positive social change at the local level. The study has the potential for the university to help students create a deeper understanding of their knowledge and facilitate the transition of their knowledge into practice to better enhance the healthcare.

The position paper is a direct result of the research conducted in the development of the project study. The position paper can enhance the knowledge and skills of faculty who teach radiological professionals online. A positive social change will follow as the strategies are implemented, and faculty are confident in their knowledge of teaching in an online environment along with their technical skills. Future radiography students taught by the faculty will be more efficient and competent radiological providers increasing the quality of care.

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Appendix A: The Project White Paper

Executive Summary

As a direct result of the mandate by the American Registry of Radiologic Technologists that requires satisfaction of continuous qualification requirements for radiologic technologists, the university has chosen to develop online CQR courses. Knowing that meeting faculty needs in distance education cannot be provided until current faculties' skills and practices have been fully assessed, this study explored the knowledge and skills of faculty with regard to best practices in the online learning environment.

Colleges and universities throughout the United States have implemented an ever increasing number of online educational opportunities for on and off campus students. Nationwide distance education has grown dramatically. "The proportion of higher education students taking at least one online course now stands at 33.5 percent" (Allen & Seaman, 2014, p. 16). In 2002, 1.6 million students were taking at least one online course compared to 7.1 million in 2012 (Allen & Seaman, 2014). Locally, the State University's School of Health Related Professions faculties have been participating in online education practices. However, teaching online requires a new set of skills and competencies to ensure that students are learning. To date there is very little documented regarding current faculty knowledge and practices with the online environment. A solution to the problem could not be carried out without an appreciation of the faculty's current knowledge and preparation in online and distance education. In order to learn with certainty the level of knowledge and educational tools imaging faculty posses, as well as the preparation the faculty will need in terms of knowledge and use of best practices a study was conducted.

The purpose of this paper is to inform stakeholders and present findings and recommendations from a project study I conducted at the express request of the dean and others to determine the of pool of knowledge that imaging science faculty at a major university possess and implement in their practice of online distance education. The methodology used to conduct the study included a case study approach with semistructured interviews of 11 faculty members who taught imaging science students. The conceptual framework is based on Dewey's work and constructivism theory (1997). Dewey has influenced education with his theory of progressivism through two powerful educational tenants continuity and interaction. The tenets are significant to this study. The online environment requires educators to be reflective of their teaching philosophy, pedagogical knowledge and ideologies in the development and delivery to accommodate their new role of teaching online. The white paper will guide the university's actions with regard to closing gaps in practice. The white paper serves to influence positive social change by helping develop a better informed cadre of faculty, providing an enhanced skill set to real world practitioners and by providing opportunity to satisfy continuing educational requirements.

Six themes emerged from the data collection and analysis:

- ***Preparation for the online environment*** varied considerably,
- ***Just-in-time learning*** the need to learn at an individual's pace and intellectual ability;
- ***Pedagogical and best practices- the need to know what*** best practices in pedagogy are and how to implement

- ***Platform preparation/technology*** the need to know how to navigate through the course management system and the use of technological tools the need to know how to navigate through the course management system and the use of technological tools,
- ***Interact with students*** the need and desire to communicate with student, and
- ***In retrospect*** the faculty looks back at what they would do differently teaching in the online environment.

The analysis process in combination with Dewey's two powerful educational tenants relate to progressive education. A comprehensive review of literature has lead to the recommendations in the following areas:

- Professional development program
- Ongoing support services

The Problem

Radiological professionals have been required to fulfill continuing educational requirements since 1995. However, new continuous qualification requirements have been in effect since the beginning of 2015. In addition, radiologic professionals who earned postprimary certification after January 2005 or anyone who obtained primary certification after January 2011 must comply with continuous qualification requirements. Radiologist assistants are also required to complete their continuous qualification requirements by 2015. The dean and chair of the Department of Medical Imaging Science have recognized the need to participate in the development of continuous qualification requirements online (Chairperson of Department, personal communication, June 4,

2012). The medium of choice for the delivery of the continuous qualification requirements for working health care professional is the online environment. The online environment provides accessibility, flexibility, and efficiency without boundaries (Lehman & Conceição, 2014). However, to date there is very little documented regarding the university's current faculty knowledge and practices with the online environment.

Solution could not be proposed without first developing a comprehensive understanding of the problem. The problem is that the faculty's knowledge and preparation associated with online and distance program development has yet to be determined. The ability to provide solutions first requires an environmental scan of the faculty knowledge of online teaching theory and practice. The white paper will address the needs and recommend strategies to amend the current gap of faculty knowledge before efforts commence in the implementation of continuing education courses.

Implementation of online courses by institutions of higher education has experienced unprecedented growth (Chaney, Chaney, & Eddy, 2010; Downing & Dyment, 2013; Roman, Kelsey, & Lin, 2010). However, the readiness and preparation of educators, as reported by Downing and Dyment (2013), reveal that educators are not as comfortable as students in the online environment. The uneasiness is due to educators' lack of confidence in their technological and pedagogical skills. The preparation of faculty for the delivery of online courses both in terms of pedagogy or technology has received little attention (Terantino & Agbehonou, 2012; UDI Online Project, 2010). According to Lewis, Baker, and Britigan (2011), "instructional quality of online delivery is still a common concern" (p. 49). Therefore, educators who do not adhere to sound instructional designs or receive training may not know if their efforts are yielding value

and reliable results. Distance education requires an infusion of new pedagogical practices and merits attention in order to facilitate the transition in to the online environment. Consequently proficiency in the pedagogical knowledge of the online environment is essential (Sutton, White, Mbizo, & Stewart, 2010).

Pedagogy associated with the use of online courses differs from a traditional classroom and requires modification for the online environment (Greupner, 2010). In a traditional classroom setting, the teacher sets the curriculum and controls the learning environment. In the online environment, teachers need to alter the manner in which they teach to maintain necessary active online pedagogies (Keengwe & Kidd, 2010). The approach to the online environment requires a new skill set. Saltmarsh and Sutherland-Smith (2010) further substantiated the need for new skills in a study noting that distinctive approaches are required to support online educators. The transition from traditional to online teaching produces difficulties for instructors about best uses of the technology in a given situation (Ertmer & Ottenbreit-Leftwich, 2010). Therefore, pedagogical knowledge of instructional practices as well as pedagogical ideologies such as curriculum delivery and content, require modification (Ertmer & Ottenbreit-Leftwich, 2010). Faculty need support to transition from the traditional classroom to the online format and to identify what they know so that they can learn what they do not know.

Importance

A key element to the School of Health Related Professions success in the development of an online continuing educational program is the faculty. Therefore, faculty's knowledge of best practices are critical. Without the use of best practices, the university can fall victim to trends such as the continuing increase in online programs or

the misconception that online programs can increase revenue (McMurty, 2012). If the university fails to enhance the knowledge of online faculty, it runs the potential risk of creating faculty who are dissatisfied with the online environment (Palloff & Pratt, 2011). Dissatisfaction can lead to the faculty unwillingness to continue teaching online and student attrition (Noel-Levitz, 2011; Palloff & Pratt, 2011).

Middle States Commission on Higher Education accredits the university. Recognition by the Middle States Commission on Higher Education affirms that the university is meeting high standards associated with a quality education. The university has a reputation for providing quality education (SHRP, 2013). Maintaining high standards and Middle States Accreditation demonstrates the university leader's commitment to its social responsibility in the creation of courses and programs guided by practices that enhance teaching and learning (SHRP, 2011). The school and the Department of Medical Imaging Sciences are committed to the development of continuous quality requirements via an Internet-based learning program. Ignoring or not integrating acknowledged best practices would diminish the university as a recognized quality provider of education for health care providers (Chairperson of the Department, personal communication, June 4, 2012).

Purpose and Design

The purpose of this project study was to learn what imaging science faculty know about best practices and pedagogy and how they implement what they know in their practice of online distance education. A case study approach was used to explore faculty knowledge of best practices in distance education. The method is known as a "good approach when the inquirer has clearly identifiable cases with boundaries and seeks to

provide an in- depth understanding of the cases or a comparison of several cases" (Creswell, 2007, p. 74). The case study offers a voice to the participants and brings to light their unique perspective on the phenomenon (Lodico et al., 2010). The question used to guide the research was as follows:

- With regard to acknowledged best practices, what is the pool of knowledge that imaging science faculty at a major university possess and implement in their practice of online distance education?

The case study employed opened ended semistructured questions. Critical sampling was used to obtain 11 faculty members who currently taught online imaging science students. Demographic information was also obtained from the participants:

- Number of years of experience teaching online
- Number of courses taught online per year
- Types of courses taught online and the last time training or assistance was received for the online environment.

Two Institutional Review Board approvals and consent for participation were secured. The protection of the participant rights and welfare were a main concern. Therefore, I disclosed the purpose of the research, risk involved, and the potential benefit the research would yield. Table 1 depicts the years of experience participants had teaching online and the last time training or assistance was received.

Table 1

Years of Experience Teaching Online

Number of Participants	Years of Experience Teaching Online
<3	1 (9%)
Between 3 and 6	4 (36%)
Between 6 and 10	2 (18%)
Between 10 and 16	4 (36%)
> 16	0

Number of Participants	Last time Training/Assistance was Received for the Online Environment
Ongoing	3 (27%)
1 year ago	3 (27%)
2 years ago	2 (18%)
> 3 years	2 (18%)
Never	1 (9%)

Table 1a

Number of Course and Types Taught per Year Online

Number of Courses Taught Online per Year	
Between 2 and 3	5 (45%)
Between 4 and 5	1 (9%)
Between 6 and 12	5 (45%)
Types of Course Taught Online	
Acoustic Physics, Physics for Imaging, Advanced Patient Care & Pharmacology, Application of Computers in Health Care, Clinical Pathway I & II, CT Physics & Imaging Equipment, CT Protocols & Procedures, Cultural Diversity & Ethics, Cultural Issues in Health Care, Ethics of Health Care, Fundamentals of Pathophysiology, Gynecological Ultra Sonography I & II, Health Care Organizations, Health care Policy & Planning, Health Care Data Techniques for Research, Human Resource Management in Health Care, Magnet Resonance Physics & Imaging, Magnet Resonance Protocols & Procedures, Neuro Sonography, Obstetrical Sonography I & II, Pathophysiology for Radiologist Assistant, Patient Assessment & Management, Physics Ultrasound, Principles of Scientific Inquiry, Principles of Transcultural Health Care, Quality Leadership in Health Care, Quality Management, Roles and Responsibilities in Radiology Procedures, Radiobiology Radiation Physics & Health Physics, Research for the Imaging Professional, and Vascular Anatomy & Pathophysiology	

Results

The data collection process began on June 5, 2014, and concluded on June 14, 2015. Transcription of the digitally recorded interviews occurred approximately one week from the date the interview took place. Every participant confirmed the accuracy of the transcription. Each transcribed interview was read a minimum of four times for content and general ideas at which time notes were taken and codes emerged. Transcribed interviews were uploaded into NVivo10®™. The NVivo10 tool was used to develop themes a "partial descriptor of the phenomenon" and further aided in classifying, sorting and arranging of information (Tesch, 1985, p. 231). The nodes created in NVivo10 were used to develop themes. Once this step was completed, I proceeded to compare, make associations, and investigate existing connections was found within the themes. I used tools such as word cloud, cluster analysis and tree mapping to uncover possible issues, generate new ideas, and discover connections or meanings. The themes that developed are as follows: (a) preparation for the online environment, (b) just-in-time learning, (c) knowledge of pedagogical and best practices (d) platform preparation/technology, (e) interaction with students, and (f) in retrospect.

Initial Preparation for the Online Environment

A dominant theme to emerge from the participants was the preparation for the online environment. Three of the 11 participants (27%) reported that their initial preparation for the online learning environment was through informal training. Two of the participants' informal training consisted of uploading files, and learning to communicate with students and other stakeholders on instructional and technical issues. Another participant's preparation involved formatting, developing the syllabus and time

lines for covering the material. Three of the 11 participants (27%) reported receiving training from the information technology (IT) staff. Faculty's perspective of the training received from the IT staff varied. The variation is attributed to the period in which the training took place. Participant 004 remembers the training provided by the IT staff to be a learning situation for both the faculty and IT staff. Two participants were self-directed learners. They had not received training from the university until years later. One participant self-directed learning experience relied upon the experience of being an online student and attending massive open online courses (MOOCs). Two other participants recall being trained by both IT and vendors. Their experience like others trained by the IT staff recall the training related to the technology (uploading of files). There was only one participant whose training to the online environment consisted of a manual and books. One participant recollects being hired to take over a course just prior to the start of the term. The information derived from the study demonstrates that there is no clearly delineated pathway established for faculty preparation for the online environment.

Just-In-Time Learning

A second dominant theme was just-in-time learning. Participants expressed the need to learn about different aspects of teaching in the online environment on demand. The participants' interest in learning did not include the "one size fits all" training method that some had experienced with their initial preparation to the online environment. One participant stated that the university provided online learning content through the Master Educators Guild, even though the content was not related to online teaching. Several of the participants expressed interest in resources that were based on their intellectual ability and on demand. Two participants conveyed their lack of technical

ability on the computer. Additionally faculty sought the opportunity to participate in training that was directed toward beginners. Another area of concern was the need for the online preparation to be at the learner's pace. The need for the university to provide online tutorials to assist with the course management system, assessment methods, administrative, communication and logistical issues was also expressed.

Knowledge of Pedagogical & Best Practice

The third theme to emerge was knowledge of pedagogical and best practice. Best practices are characterized by techniques or procedures used to improve results that are evidenced by actions resulting in positive outcomes. Educators, who are knowledgeable of best practices, can better use pedagogy and technology to motivate students and enhance learning. Therefore, regardless of participant's preparation with online learning, each was asked, "*What did you learn specifically about pedagogy and best practices?*" The question was used to determine the level of knowledge faculty possessed in pedagogy and best practices for the online environment. When the majority of the participants (81%) reflected on their initial training few recalled learning about best practices or pedagogy for the online environment. The remaining participants alluded to things that they associate with best practices. Nine respondents spoke of two major issues leading to this self-perceived lack of sophistication in the online learning and its associated best practices. The first reason was that when they began teaching on the Internet, best practices were not available, and the second reason was that they were not aware of the existence of best practices. Participants explained that with time they gained experience. They began to learn about best practices through conversation with colleagues, performing online searches on Google and YouTube.

Platform Preparation/Technology

The theme of platform preparation/technology was the fourth to emerge from data analysis. The principle question of this theme was *"What did you learn specifically about technology and best practices during this preparation".* Two participants were self–learners. Their knowledge of technology was derivative of their personal efforts in learning to navigate through the course management system, Adobe Connect and Elluminate. One reason given for the need to learn the course management system independently was that there was no one to provide assistance. Participant 002 commented that the people in charge of "administering the courses at the university level knew nothing about the platforms. Faculty sensed that they were left "dangling in the wind". Another participant was a self-professed "computer nerd" who had experience in C++, Visual basics, HTML, and Java. The subject saw little value in formally learning the course management system. The focus of training was technical. It included information on how upload videos, PDF, and PowerPoint Presentations. It also involved learning to create quizzes, set up the grade book and discussions. The remaining participants learned about the course management system online. Their learning experience was similar to their colleague who had attended the in-person session. The participants expressed that their training was relevant with regards to the course management system. They agreed that the training was something they needed know to navigate through course management system efficiently. However, none of the participants expressed that the initial preparation they received for the course management system was relevant to best practices associated with technology nor did is assist in enhancing communication with students.

Interaction with Students

The fifth theme to emerge was interaction with students. The theme represents the faculty need to constantly and consistently interact with students. Faculty wanted to learn how to improve engagement, interactivity and communication. Faculty were concerned with capturing and maintaining the student's attention in the online environment. Communication via emails and class forums were a point of concern for faculty. Some students did not always access announcements promptly. Questions from students concerning past announcements were continuously being readdressed. One participant mentioned that if he received a question on a topic he would respond to all the students. The reason he gave for responding to all students was that other students might have the same question or issue. For the participant, this was his way of increasing interaction and communication with the online students. The lack of verbal and visual clues was also a concern. The online environment did not provide the faculty the ability to be in tune with their students' needs by cueing into their body language, eye contact, and verbal tone. Whereas, in the traditional classroom faculty was able to determine if a student was experiencing difficulties. The emotional aspect was also missing in the online environment. Overall, 10 (91%) of the participants voiced the importance of interaction between the teacher and the student and student-to-student interaction. The lack of communication was an issue that participant 004 felt strongly needed to be shared with new comers to the online environment.

In Retrospect

The final theme to emerge from the data analysis was "in retrospect". The participants were asked: a) to think about their earlier experiences in teaching online; b)

what would have enhanced their online teaching abilities; and c) what recommendations would they make? The participants made several recommendations regarding newcomers to the online environment. Participants suggested that faculty first seek out organizations that dealt with online education and other resources about teaching and learning online. Participants suggested that anyone contemplating online teaching should read as much as possible on the topic. Other suggested that faculty take the time to learn about best practices, technical applications and how to manipulate software prior to implementing it in the online course.

Several participants recommended being mentored by an experienced colleague in the online environment and to consider becoming a teaching assistant. The participants suggested that this would mitigate their need to enter the online environment blindly. Others mentioned that faculty ought not be so eager to hit the ground running. One participant had a specific plan. She said she would design an online course, have her peers critique the course before it was offered online. There were several recommendations that the university should have an established formal faculty development process that incorporated learning to teach online and demonstrating best practices in and pedagogy. Several suggestions made by the faculty included having an online teachers experience the online environment as a learner and asking teacher to contemplate on what it means to reach online what it means to teach online.

The themes presented are an amalgamation of the participant's experiences in the online environment. The initial preparation for the online environment clearly demonstrates that no structured efforts were in place to prepare faculty for the online environment. Just-in-time learning reflects on the faculty willingness to learn and their

efforts to increase their knowledge at an individual's intellectual level. The themes knowledge of pedagogical and best practice and platform preparation and technology speaks to the faculty's lack of preparation in these areas. Interaction with students from the perspective of the participants was a concern. Communication was integral to their ability to successfully connect with the students. Lastly in retrospect the participants reminisce about their online experiences and what they would have done differently and recommend for those contemplating teaching online. I base my recommendation on the themes presented.

Recommendations

The project's recommendations are grounded in the themes that emerged from the research conducted, theories of progressivism, and current review of the scholarly literature. Two recommendations include the creation and implementation of a mandatory distance education professional development program that is carried out online with an instructional designer. The second recommendation is ongoing support services. The recommendations are presented in an order of priority.

Professional Development Program

The study's findings suggest a need for a four-topic professional development program for faculty. Creation and implementation of a faculty development program will address four themes: (1) preparation for the online environment, (2) knowledge of pedagogical and best practices (3) platform preparation/technology, and (4) interaction with students. The purpose of faculty development is to improve upon the knowledge and the essential skills needed by online instructors while increasing their confidence. To make faculty development meaningful, instructor skills and current knowledge must be

taken into consideration. Therefore, the university must implement stages tuned to faculty readiness levels (Reilly et al., 2012).

Current literature indicates that the skills and competencies required to teach online are distinct (Barczyk, Buckenmeyer, & Feldman, 2010; Crawford-Ferre & West, 2012; Ertmer & Ottenbreit-Leftwich, 2010; Keengwe & Kidd, 2010; Schmidt, Hodge, & Tschida, 2013; Storandt, Dossin, & Lacher, 2012). Creating an online course requires instructors to possess 21st-century skills in "course design management; working knowledge of digital educational materials; communication and facilitation; evaluation of digital products and interactions; and course workload management" (Lehman and Conceiçao, 2014, p. 95). According to Crawford-Ferre and West (2012) "most instructors new to online teaching begin with little or no training or preparation specific to this delivery model" (p. 13). Often faculties rely upon their traditional face-to-face pedagogical practices or try to imitate the practices of a professor whom they consider effective (Baran, Correia, & Thompson, 2011).

Currently, the School of Health Related Professions does not offer its faculty a coherent approach which allows them to acquire new skills and pedagogies for the teaching in the online environment. Organized faculty development programs are a critical factor in transitioning faculty to the online environment (Vaill & Testori, 2012). A criticism of faculty development programs "is that they do not help participants create meaningful knowledge" (Cho & Rathbun, 2013, p. 144). Therefore, faculty development programs at the study site require a well-developed and designed plan. The university must maintain ongoing effort to keep communication open with faculty in order to provide instruction related to methods of teaching, communicating and working with new

technologies that are meaningful in the online environment (Reilly, Vandenhouten, Gallagher-Lepak, & Ralston-Berg, 2012; Vaill et al., 2012).

Faculty Assessment Tool

To assess the level of readiness, I strongly recommend the university use the Faculty Self-Assessment for Online Teaching Tools. The self-assessment tool was created through collaborative efforts of several universities and the Online Learning Consortium. The self-assessment tool is accessible and available to the university through a Creative Commons licensing agreement. The value of this tool is in assisting interested faculty to assess current skills and knowledge before starting the mandatory professional faculty development program. Faculty self-assessment consists of three categories: 1) Technical Competencies; 2) Administrative Competencies; and 3) Pedagogical Competencies (Penn State University, n.d.). At the conclusion of the self-assessment tool, each faculty receives a report related to their online skills and suggested resources to assist in filling gaps. Once the faculty has completed the self-assessment they can enter into the professional development program designed for the novice, intermediate or advanced level.

Participant 004 recalls attending an initial training session with limited computer knowledge and stating the training session was too advanced. She suggested that training needs should have been based on participant's knowledge and the school have had training sessions at a beginner, intermediate and advanced levels. Participant 001 also expressed frustration as his level of "computer skills were very, very low." The participant reflected on the fact that he would have appreciated being aware of the skills needed to teach online.

Preparation for the Online Instruction

In examining the experiences of the faculty with online teaching and preparation a need exists to "rethink course design and use appropriate technology to facilitate student engagement with content, other students, and the instructor" (Bair & Bair, 2011, p. 12). Understanding the background of the faculty is critical to the recommendations for designing a professional development program. Participant 008 stressed the importance of faculty having an introduction to the online environment and asking faculty who were contemplating teaching online "why do you want to teach online, do you foresee online that is going to be different from a traditional course." Other participants suggested learning from people who have experience with the online environment. Participant 009 expressed that teaching online "requires its own level of training, its own level of preparation and its own level of philosophy." According to McQuiggan (2012) "there is a recognized need for professional development to prepare faculty to teach online, and there are many different faculty development models being implemented with differing foci on technology, pedagogy, and course content" (p. 28).

The recommendation for a creation of a professional development is in response to the needs of the online faculty. The approach taken by the university is "critical in helping online teacher adopt online pedagogical practices and reconstruct their teacher persona in an online environment" (Baran & Correia, 2014, p. 96). Based on the literature and experiences of the faculty the following recommendations concerning the content that must be incorporated in the professional faculty development program.

Faculty Development Content

A well-balanced faculty development program will increase the knowledge of it participants. The recommended content is based upon the faculties needs as identified in the themes. It will be informed by current literature (Orozco, Fowlkes, Jerzak, & Musgrove, 2012; Reilly, Vandenhouten, & Gallagher-Lepak, 2012; Shattuck, Dubins, & Zilberman, 2011). It is suggested that professional development content be continuously assessed to ensure that it is meeting the needs of faculty.

The following recommended professional development curricula are relevant and include pedagogical practices and instructional technologies for teaching in the online environment:

- Orientation and introduction to online learning: What does it mean to teach online
- Effective online instruction
- Online best practices and pedagogy for course design
- Online best practices for technology in course design
- Developing an active learning plan (syllabus and objectives)
- Implementation and use of technological tools
- Tools and techniques for converting a face to face course to an online course
- Learning management system: tools and functions and applications
- Creating communication and interactivity: synchronous and asynchronous activities, discussions, blogging, web conferencing, etc.
- Development of rubrics to assess learning
- Assessment of learning with the appropriate tools to match objectives

Adult Education Framework

Implementing a professional development curriculum requires consideration of adult learning theories. Knowles's andragogical constructs take into account that "adults are self-directed learners, adults learners bring a wealth of experience to the educational setting ready to learn, adults are problem-centered in their learning, and adults are best motivated by internal factors" (Blondy, 2007, p. 116). Faculty expressed the need to have opportunities to learn based upon their current level of knowledge. One participant 004 recall lagging behind everyone else because she was not familiar "with the technical aspect of the computer let alone teaching on a computer." Another expressed that he had no prior experience in teaching online and a beginning course would have been helpful.

Faculty development programs must maintain the perspective of the adult learner. According to McQuiggan (2012) "we need to take into consideration their characteristics, the context in which their learning is occurring, and the process we plan to deliver the education and training" (p. 34). Participant 007 described the need to keep the online learning environment "personal" making sure learning is relevant. Participant 009 recommends faculty ask themselves what do they "expect to accomplish with the online method of delivery realize it is just another method of imparting information." The focus should "be on what get students student learning and excited about learning as a first priority." Participant 009's beliefs are that the educational process is important and how it is developed and presented will enhance students learning needs and desire to learn. Another participant 010 referred to online learning environment as being less personal and required a greater emphasis in ensuring that content was understood and its significance to their professional development. Therefore, it is important that developers

of professional curriculum for online teaching and learning at the university take into account Knowles's construct of andragogy. These will aid in creating a learner-centered environment that allows for flexibility. It will draw from the learner's experiences to enhance learning to teach in the online environment.

Experiences of the participants and their accounts demonstrate various knowledge levels. Taking into account their differences and approaching learning from the perspective of Knowles's adult learning construct will be beneficial. It will help faculty transition from the classroom to the online by making their learning experiences meaningful.

Role of an Online Instructional Designer

The role of faculty development is to offer faculty-learning opportunities that lead to a successful transition to the online environment. Participants expressed the desire to create online courses with style that are technically sound and capture student's attention. Participant 007 stated that perhaps courses "don't work as well technically as they should. Teaching online is one thing but having a course that really catches student imagination is another thing." The participant sees this as a totally separate skill. The participant recognizes the need for the university to have a "style partner" and the need for assistance from an instructional designer. Participant 008 referred to the implementation of online tools to increase student's attention and interactivity. However, "that there are thousands of other things you can do but who can learn it." Another participant 004 mentioned the need to hire someone who could assist faculty bridging the gap between academic and the technical aspect of on line teaching. To aid in the smooth and successful transition requires the adoption of an instructional designer at the

implementation stages of the professional development process (Vaill et al., 2012). Therefore, a strong recommendation is made for the university to hire an instructional designer. According to Vaill and Testori (2012), "the close working relationship between the Instructional Designer and faculty members that begins during Orientation reinforces the fact that support is available when needed" (p. 116). The presence of an instructional designer will aid in assisting faculty based on their previous knowledge and skills.

Instructional designers are skilled in translating pedagogical research and practices into effective learning methods. The initial role of an instructional designer at the university would:

- Help faculty redesign their face-to-face curriculum for the online environment,
- Assess course needs
- Recommend technologies to enhance student learning
- Provide personalized feedback as courses are being constructed
- Serve as an editor to maintain consistency across programs
- Instill best practices
- Ensure quality of online courses

Support Services

Working with instructional designers provide faculty with confidence and knowledge that they are not alone. Institutional support is required and instrumental in the provisioning of online courses. Faculty expressed the importance of learning from others that had experience in the online environment. They valued the ability to have experienced faculty to collaborate with and guide them through the online process.

Participant 006 expressed that on certain occasions would seek experienced co-worker to help with any problem being experienced. One participant 008 expressed that her experience with the online environment felt like she was "thrown in and in hopes that you would make it." The participant recalls having continuous dialogue with colleagues, which helped her learn about teaching online. Participant 004 recalled leaning from a computer savvy colleague the basics and from an IT staff who became like a private tutor on technical aspects of the course management system. It was important to the participant to receive help at the learners pace. Another participant 010 mentioned that other professors were instrumental in her learning of the course management system and development of courses. Mentoring by senior colleagues at the onset of the professional development program and throughout can assist new faculty in the online environment possess a greater knowledge in online instructional design, best practices in pedagogy and technology and other areas. Mentoring is known to help reduce stress and increase satisfaction of faculty new to the online environment (Buckenmyer, Hixon, Barczyk, & Feldman, 2011). The reason for this can be attributed to the ability of senior faculty to share their experiences in what works and what does not work in the online environment. Orr, Williams, and Pennington (2009) have shown that mentoring is beneficial to both the mentor and protégée. The study demonstrates that mentors benefited from mentoring as it provided them with the opportunity to reflect on their previous experiences.

In addition to a mentoring support service, I recommended that the School of Health Related Professions implement a pedagogical repository for teaching online. The repository can be linked to newly developed professional faculty development programs. Faculty or experts in the field of online learning can make contributions to the repository

as well. The repository will be monitored and continually updated through a peer review process. The repository can offer faculty, instructional designer, and staff of e-learning solutions access to material that all can integrate into learning and teaching activities.

The University of Central Florida maintains a Teaching Online Pedagogical Repository. This repository is freely available to anyone under the terms of a creative commons agreement. Therefore, it is highly recommended that the university implement the use of the online repository that has been established or create its own repository to enhance it professional faculty development and increase online learning initiatives of faculty.

Positive Social Change

The report serves as a stimulus for ameliorative action by the university. I have provided supported recommendations while keeping positive social change firmly in focus. Educating faculty about best practices and pedagogy for the online environment through implementation is the first step in promoting positive social change at the local level. Positive social change will be evident with better-informed faculty on how to address specific problems, implement effective educational methods online. Faculty will be better positioned to train radiological practitioners in the latest techniques. Imaging through enhanced clinical perspectives. Patient will directly benefit by actions taken by the university.

Closing Thoughts

The recommendations made are required to make a significant difference in the manner in which online faculties receive effective and sound training for the online environment. Effective online instructional training at the university must incorporate

best practices for pedagogy, technology and principles of adult learning, the establishment of mentoring of a protégée, and an online pedagogical repository. The university's e-learning staff can readily adopt these recommendations with their existing human resources. Implementation of an instructional designer will require a monetary investment from the university. A potential source for funding this recommendation and others is the opportunity to apply for grants. The U.S. Department of Education maintains a website that forecast funding opportunities for grants (2015). Another potential resource site for grant funding is the Instructional Technology Council. The Instructional Technology Council (2015) maintains a searchable glossary of grant opportunities that provide funding for distance learning.

The university's ability to support recommendations will impact positive social change, by creating learning experiences that enable faculty to take charge of their learning needs and advance students' learning. By providing radiological professionals increased knowledge and skills better position them to enhance critical thinking, become life long learners, and enhance service to their community of patients.

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Appendix B: Comparison of Principles and Best Practices in Distance and Online Education

Table 1

Comparison of Principles of Best Practices In Distance/Online Education

	NSTA	Seven Principles of Good Practice	Five Pillars	WCET and CHEA
Institutional Guidelines	•Organizational •Commitment		•Public service and influence	•Institutional commitment •Evaluation
Program Design	• Individual decision making • Accommodate learning styles • Summative evaluation •Formative evaluation	•Diverse ways of learning •Teaching strategies	•Metrics used to evaluate courses	•Performance measures •Course ware
Course Design	•Constructivist learning •Collaborative learning •Interaction teacher and student •Inquiry	•Student cooperation and reciprocity •Active learning •Cooperative learning •Teacher and student interaction •Expectations are communicated	•Continual feedback	• Student faculty interaction • Instructional techniques
Student Support	• Adjustment • Resources	•Prompt feedback	•Learner satisfaction and loyalty •Career opportunity •Satisfaction	•Resources
Faculty Support	•Meaningful learning experiences •Up-to-date content/pedagogy		•Satisfaction	•Training •Resources

Appendix C: Slone C- Quality Framework 5 Pillars

The 5 Pillars

SLOAN-C QUALITY FRAMEWORK

Goal	Process/Practice	Sample Metric	Progress Indices
LEARNING EFFECTIVENESS			
The provider demonstrates that online learning outcomes meet or exceed institutional, industry, and/or community standards	Academic integrity and control reside with faculty in the same way as in traditional programs at the provider institution or organization	Faculty perception surveys or sampled interviews compare learning effectiveness in delivery modes Learner/graduate/employer focus groups or interviews measure learning gains	Faculty report online learning is equivalent or better Direct assessment of student learning is equivalent or better
SCALE (COST EFFECTIVENESS AND COMMITMENT)			
Providers continuously improve services while reducing costs	Providers demonstrate financial and technical commitment to online programs Tuition rates provide a fair return to the provider and best value to learners at the same time Tuition rates are equivalent or less than place-based tuition	Institutional and organizational stakeholders show support for participation in online education Effective practices are identified and implemented	The provider sustains the program, expands and scales upward as desired, strengthens and disseminates its mission and core values through online education
ACCESS			
All learners who wish to learn online can access learning in a wide array of programs & courses	Program entry processes inform learners of opportunities, and ensure that qualified, motivated learners have reliable access Integrated support services are available online to learners	Administrative and technical infrastructure provides access to all prospective and enrolled learners Quality metrics are used for information dissemination; learning resources delivery; and tutoring services	Qualitative indicators show continuous improvement in growth and effectiveness rates
FACULTY SATISFACTION			
Faculty are pleased with teaching online, citing appreciation and happiness	Processes ensure faculty participation in matters particular to online education (e.g. governance, intellectual property, and royalty sharing) Processes ensure adequate support for faculty in course preparation and course delivery	Repeat teaching of online courses by individual faculty indicates approval Addition of new faculty shows growing endorsement	Data from post-course surveys show continuous improvement: At least 90% of faculty believe the overall online teaching/learning experience is positive Willingness/desire to teach additional courses in the program: 80% positive
STUDENT SATISFACTION			
Students are pleased with their experiences in learning online, including interaction with instructors and peers, learning outcomes that match expectations, services, and orientation	Faculty/learner interaction is timely and substantive Adequate and fair systems assess course learning objectives; results are used for improving learning	Metrics show growing satisfaction via: ▪ Surveys and/or interviews ▪ Alumni surveys, referrals, testimonials ▪ Outcomes measures ▪ Focus groups ▪ Faculty/Mentor/Advisor perceptions	Satisfaction measures show continuously increasing improvement Provider surveys, interviews, or other metrics show satisfaction levels are equivalent to or better than those of other delivery modes for the provider

Appendix D: Intuitional Review Board Approvals & Consent Form

State University eIRB

ELECTRONIC INSTITUTIONAL REVIEW BOARD

** This is an auto-generated email. Please do not reply to this email message.

DHHS Federal Wide Assurance Identifier: FWA00003913
IRB Chair Person: Robert Fechtner
IRB Director: Carlotta Rodriguez
Effective Date: 4/14/2014

eIRB Notice of Approval

STUDY PROFILE

Study ID: Pro2014004065
Title: Faculty Knowledge and Use of Best Practices in the Delivery of Online Professional Continuing Education

Principal Investigator:	Gladys Montane		
Sponsor:	Department Funded	**Approval Cycle:**	Twelve Months
Risk Determination:	Minimal Risk		
Review Type:	Expedited	**Expedited Category:**	6 7
Subjects:	12		

CURRENT SUBMISSION STATUS

Submission Type:	Research Protocol/Study	**Submission Status:**	Approved
Approval Date:	4/9/2014	**Expiration Date:**	4/8/2015

Pregnancy Code:	No Pregnant Women as Subjects	**Pediatric Code:**	No Children As Subjects	**Prisoner Code:**	No Prisoners As Subjects

Protocol:	Protocol Jan 15 2014	**Consent:**	Consent Form	**Other Materials:**	Email to potential participants Permission to use Established Interview Questions Questions for research paper

*** Study Performance Sites:**

State University

Walden University

ALL APPROVED INVESTIGATOR(S) MUST COMPLY WITH THE FOLLOWING:

1. Conduct the research in accordance with the protocol, applicable laws and regulations, and the principles of research ethics as set forth in the Belmont Report.

2. **Continuing Review:** Approval is valid until the protocol expiration date shown above. To avoid lapses in approval, submit a continuation application at least eight weeks before the study expiration date.

3. **Expiration of IRB Approval:** If IRB approval expires, effective the date of expiration and until the continuing review approval is issued: **All research activities must stop unless the IRB finds that it is in the best interest of individual subjects to continue. (This determination shall be based on a separate written request from the PI to the IRB.) No new subjects may be enrolled and no samples/charts/surveys may be collected, reviewed, and/or analyzed.**

4. **Amendments/Modifications/Revisions** : If you wish to change any aspect of this study, including but not limited to, study procedures, consent form(s), investigators, advertisements, the protocol document, investigator drug brochure, or accrual goals, you are required to obtain IRB review and approval prior to implementation of these changes unless necessary to eliminate apparent immediate hazards to subjects.

5. **Unanticipated Problems**: Unanticipated problems involving risk to subjects or others must be reported to the IRB Office (45 CFR 46, 21 CFR 312, 812) as required, in the appropriate time as specified in the attachment online at:

6. **Protocol Deviations and Violations** : Deviations from/violations of the approved study protocol must be reported to the IRB Office (45 CFR 46, 21 CFR 312, 812) as required, in the appropriate time as specified in the attachment online at:

State University

eIRB
ELECTRONIC INSTITUTIONAL REVIEW BOARD

DHHS Federal Wide Assurance Identifier: FWA00003913
IRB Chair Person: Robert Fechtner
IRB Director: Carlotta Rodriguez
Effective Date: 4/20/2015

eIRB Notice of Approval for 2015 Review for Pro2014004065

STUDY PROFILE

Study ID: Pro2014004065
Title: Faculty Knowledge and Use of Best Practices in the Delivery of Online Professional Continuing Education

Principal Investigator:	Gladys Montane		
Sponsor:	Department Funded	**Approval Cycle:**	Twelve Months
Risk Determination:	Minimal Risk		

Review Type:	Expedited	**Expedited Category:**	6 7
Subjects:	12		

CURRENT SUBMISSION STATUS

Submission Type:	Continuation(CR00002369)	**Submission Status:**	Approved
Report type:	Continuing Report	**Study Status:**	Active - Closed to Enrollment: Data analysis only (data analysis being performed by or on behalf of Rutgers Investigators)
Review Type:	Expedited	**Review Category:**	6 7
Approval Date:	3/24/2015	**Expiration Date:**	3/23/2016

Pregnancy Code:	No Pregnant Women as Subjects	**Pediatric Code:**	No Children As Subjects	**Prisoner Code:**	No Prisoners As Subjects

*** Study Performance Sites:**

State University
Walden University

ALL APPROVED INVESTIGATOR(S) MUST COMPLY WITH THE FOLLOWING:

1. Conduct the research in accordance with the protocol, applicable laws and regulations, and the principles of research ethics as set forth in the Belmont Report.

2. **Continuing Review:** Approval is valid until the protocol expiration date shown above. To avoid lapses in approval, submit a continuation application at least eight weeks before the study expiration date.

3. **Expiration of IRB Approval:** If IRB approval expires, effective the date of expiration and until the continuing review approval is issued: **All research activities must stop unless the IRB finds that it is in the best interest of individual subjects to continue. (This determination shall be based on a separate written request from the PI to the IRB.) No new subjects may be enrolled and no samples/charts/surveys may be collected, reviewed, and/or analyzed.**

4. **Amendments/Modifications/Revisions** : If you wish to change any aspect of this study, including but not limited to, study procedures, consent form(s), investigators, advertisements, the protocol document, investigator drug brochure, or accrual goals, you are required to obtain IRB review and approval prior to implementation of these changes unless necessary to eliminate apparent immediate hazards to subjects.

5. **Unanticipated Problems**: Unanticipated problems involving risk to subjects or others must be reported to the IRB Office (45 CFR 46, 21 CFR 312, 812) as required, in the appropriate time as specified

6. **Protocol Deviations and Violations** : Deviations from/violations of the approved study protocol must be reported to the IRB Office (45 CFR 46, 21 CFR 312, 812) as required, in the appropriate time as specified

7. **Consent**: Closed to Enrollment: Data analysis only (data analysis being performed by or on behalf of Rutgers Investigators)

8. **Completion of Study:** Notify the IRB when your study has been stopped for any reason. Neither study closure by the sponsor or the investigator removes the obligation for submission of timely continuing review application or final report.

9. The Investigator(s) did not participate in the review, discussion, or vote of this protocol.

Gmail by Google

Gladys Montane <gladys.montane@waldenu.edu>

Notification of Approval to Conduct Research-Gladys Montane

5 messages

IRB <IRB@waldenu.edu> Tue, Apr 22, 2014 at 2:22 PM
To: "Gladys Montane (gladys.montane@waldenu.edu)" <gladys.montane@waldenu.edu>
Cc: Harvey Stone <Harvey.Stone@waldenu.edu>, Doctoral Study <DoctoralStudy@waldenu.edu>

Dear Ms. Montane,

This email confirms receipt of the IRB approval for the community research partner and also serves as your notification that Walden University has approved BOTH your doctoral study proposal and your application to the Institutional Review Board. As such, you are approved by Walden University to conduct research.

Please contact the Office of Student Research Administration at doctoralstudy@waldenu.edu if you have any questions.

Congratulations!

Jenny Sherer

Associate Director, Office of Research Ethics and Compliance

Leilani Endicott

IRB Chair, Walden University

7. **Consent/Assent**: The IRB has reviewed and approved the consent and/or assent process, waiver and/or alteration described in this protocol as required by 45 CFR 46 and 21 CFR 50, 56, (if FDA regulated research). Only the versions of the documents included in the approved process may be used to document informed consent and/or assent of study subjects; each subject must receive a copy of the approved form(s); and a copy of each signed form must be filed in a secure place in the subject's medical/patient/research record.

8. **Completion of Study:** Notify the IRB when your study has been stopped for any reason. Neither study closure by the sponsor or the investigator removes the obligation for submission of timely continuing review application or final report.

9. The Investigator(s) did not participate in the review, discussion, or vote of this protocol.

Conditional IRB Approval-Gladys Montane Inbox

IRB<IRB@waldenu.edu> Fri, Mar 28, 2014 at 2:30 PM
To: "Gladys Montane (gladys.montane@waldenu.edu)" <gladys.montane@waldenu.edu>
Cc: Harvey Stone <Harvey.Stone@waldenu.edu>, Doctoral Study <DoctoralStudy@waldenu.edu>

Reply | Reply to all | Forward | Print | Delete | Show original

Dear Ms. Montane,

This email is to notify you that the Institutional Review Board (IRB) has approved your application for the study entitled, "Faculty Knowledge and Use of Best Practices in the Delivery of Online Continuing Education." conditional upon the approval of the community research partner, as documented in the IRB notification of approval or exemption (depending on their policies). Walden's IRB approval only goes into effect once the Walden IRB confirms receipt of that IRB notification.

Your approval # is 03-28-14-0140810. You will need to reference this number in your doctoral study and in any future funding or publication submissions.

Your IRB approval expires on March 27, 2015. One month before this expiration date, you will be sent a Continuing Review Form, which must be submitted if you wish to collect data beyond the approval expiration date.

Please note that this letter indicates that the IRB has approved your research. You may NOT begin the research phase of your doctoral study, however, until you have received the **Notification of Approval to Conduct Research** e-mail. Once you have received this notification by email, you may begin your data collection. Your IRB approval is contingent upon your adherence to the exact procedures described in the final version of the IRB application materials that have been submitted as of this date. This includes maintaining your current status with the university. Your IRB approval is only valid while you are an actively enrolled student at Walden University. If you need to take a leave of absence or are otherwise unable to remain actively enrolled, your IRB approval is suspended. Absolutely NO participant recruitment or data collection may occur while a student is not actively enrolled.

Your IRB approval is contingent upon your adherence to the exact procedures described in the final version of the IRB application materials that have been submitted as of this date. If you need to make any changes to your research staff or procedures, you must obtain IRB approval by submitting the IRB Request for Change in Procedures Form. You will receive confirmation with a status update of the request within 1 week of submitting the change request form and are not permitted to implement changes prior to receiving approval. Please note that Walden University does not accept responsibility or liability for research activities conducted without the IRB's approval, and the University will not accept or grant credit for student work that fails to comply with the policies and procedures related to ethical standards in research.

When you submitted your IRB application, you a made commitment to communicate both discrete adverse events and general problems to the IRB within 1 week of their occurrence/realization. Failure to do so may result in invalidation of data, loss of academic credit, and/or loss of legal protections otherwise available to the researcher.

Both the Adverse Event Reporting form and Request for Change in Procedures form can be obtained at the IRB section of the Walden web site or by emailing irb@waldenu.edu: http://inside.waldenu.edu/c/Student_Faculty/StudentFaculty_4274.htm

Researchers are expected to keep detailed records of their research activities (i.e., participant log sheets, completed consent forms, etc.) for the same period of time they retain the original data. If, in the future, you require copies of the originally submitted IRB materials, you may request them from Institutional Review Board.

Both students and faculty are invited to provide feedback on this IRB experience at the link below:

http://www.surveymonkey.com/s.aspx?sm=qHBJzkJMUx43pZegKlmdiQ_3d_3d

Sincerely,

Jenny Sherer, M.Ed., CIP

Associate Director

Office of Research Ethics and Compliance

irb@waldenu.edu

Phone: 612-312-1341

Fax: 626-605-0472

Office address for Walden University:

100 Washington Avenue South

Suite 900

Minneapolis, MN 55401

CONSENT TO PARTICIPATE IN RESEARCH

Title: Faculty Knowledge and Use of Best Practices in the Delivery of Online Professional Continuing Education
PI: Gladys Montane

You are invited to take part in a research study conducted by Gladys Montane, a student in the Ed.D Adult Education Program at Walden University. The study is being conducted at State University as part of the graduate student project study. You may already know the researcher as a faculty member and program director, but this study is separate from that role. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

Voluntary Nature of the Study:

If you agree to participate in this study your participation is entirely voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one at the School of Health Related Professions will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. You may withdraw from the study at any time for any reason without any need to worry about consequences.

Purpose of the Study:

The purpose of this study is to examine faculty knowledge and use of best practices in the delivery of online professional continuing education. You have been asked to participate in this study because you are involved in online teaching of imaging science students.

Approximate Number of Subjects in Study:

The study will be conducted with approximately 7 to 10 faculty members from State University who teach imaging science students.

Procedures:

If you volunteer to participate in this study, I will conduct an interview with you via Adobe Connect at a time of your choice. The interview will involve questions about your knowledge of online teaching and best practices. It should last approximately one to one and a half hours. With your permission, I will take notes during the interview. If at any time during the interview you feel uncomfortable or no longer wish to continue, you can stop the interview at any time.

I expect to conduct only one interview; however, I may contact you for added clarification. If so, I will contact you by e-mail or telephone.

Here are some sample questions:

- How long have you been teaching online?
- How many courses have you taught online?
- What courses have you taught online?

- Can you describe the online courses you are currently teaching?
- When did you last receive any kind of training or assistance for teaching online?

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as being told the ending of a movie that you wanted to see at the theater. There will be no physical risks to you for participating.

Potential Benefits:

There is no direct benefit for being part of this research at this time. However, there could be benefits to you and other individuals may decide to teach online. However, your participation will contribute to a greater awareness of faculty knowledge and use of best practices of online education.

Payment:

You will not be paid for taking part in this study.

Privacy:

Any information you provide will be kept confidential from co- workers' superiors and anyone else not associated with the project study. I will ensure that no clues to your identity appear in the project study.

Any extracts from what you say that are quoted in the project study will use a alias or alpha numeric code. The data will be stored in a computers located at the residence of the researcher. The computer is password protected. The data will be stored for a maximum of five years and will be destroyed by file deletion.

Contacts and Questions:

If you need any further information or have any questions that may arise later, you can contact me: Gladys Montane at 954-589-1514 or at my email address gladys.montane@waldenu.edu. If you want to talk privately about your rights as a participant, you can call the State University IRB Director at 973-972-3608 or Dr. Leilani

Endicott a Walden University representative at 612-312-1210. The State University's approval number for this study is **Pro2014004065** and it expires on **April 8, 2015**. Please print or save this consent form for your records.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. I understand that I am not giving up any of legal rights by volunteering for this research study or by signing this consent form.

I give permission for my interview with Gladys Montane. I understand that I can withdraw from the study, without repercussions, at any time, whether before it starts or while I am participating. "I consent" I understand that I am agreeing to the terms described above.

Printed Name of Participant: _____

Date of Consent: _____

Participant's Signature: _____

Researcher's Signature: _____

Please return signed consent form via email to gladys.montane@waldenu.edu and keep original for your records.

STATE UNIVERSITY OF NEW JERSEY IRB
AUDIO/VIDEOTAPE ADDENDUM TO CONSENT FORM

You have already agreed to participate in a research study conducted by Gladys Montane. I am also asking for your permission to allow me to ***audiotape and videotape*** as part of that research study. You do not have to agree to be audio or video taped in order to participate in the study.

The purpose of the recordings is to ensure an accurate account of your statements for analysis and transcription. If at anytime during the interview you feel uncomfortable being digitally recorded I can turn off the digital recorder. Or if you don't wish to continue, you can stop the interview at any time.

The recording (s) will include the subject's name and full facial features. However, the names of the subjects will not be used in the report, only alias or alphanumeric codes will be used. The interview will be audio and videotaped to include full facial features as part of the research study.

The recording(s) and data will be stored in a computers located at the residence of the researcher. The computer is password protected. The recording and data will be stored for a maximum of five years. The recordings will be destroyed by file deletion.

Your signature on this form grants the investigator named above permission to record you as described above during participation in the above-referenced study. The investigator will not use the recording(s) for any other reason than that/those stated in the consent form without your written permission.

Printed Name of Participant: _____

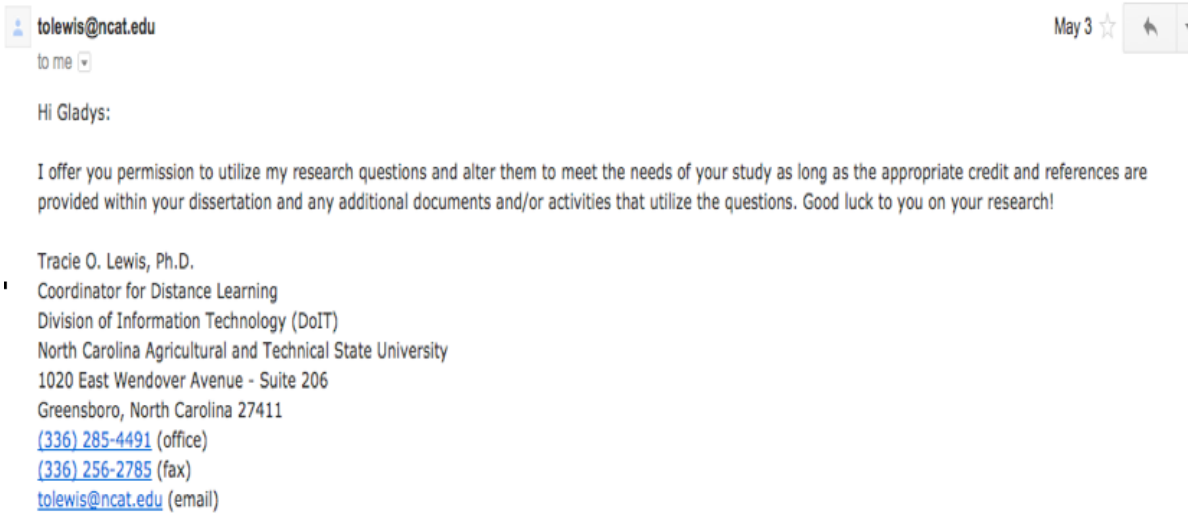
Date of Consent: _____

Participant's Signature: _____

Researcher's Signature: _____ Date: _____

Please return signed consent form via email to gladys.montane@waldenu.edu and keep original for your records.

Appendix E: Permission by Dr. Tracie O. Lewis



tolewis@ncat.edu May 3

to me

Hi Gladys:

I offer you permission to utilize my research questions and alter them to meet the needs of your study as long as the appropriate credit and references are provided within your dissertation and any additional documents and/or activities that utilize the questions. Good luck to you on your research!

Tracie O. Lewis, Ph.D.
Coordinator for Distance Learning
Division of Information Technology (DoIT)
North Carolina Agricultural and Technical State University
1020 East Wendover Avenue - Suite 206
Greensboro, North Carolina 27411
(336) 285-4491 (office)
(336) 256-2785 (fax)
tolewis@ncat.edu (email)

Appendix F: Interview Questions

Research Question: With regard to acknowledged best practices, what is the pool of knowledge that imaging science faculty at a major university possess and implement in their practice of online distance education?

Part A. Background Information

1. How long have you been teaching online?
2. How many courses have you taught online?
3. What courses have you taught online?
4. When did you last receive any kind of training or assistance for teaching online?

Part B. Preparation for Teaching Online

1. How were you prepared to teach online?

B1.1 If response is "colleague":

B1.1.1 What was taught or shared with you by your colleague?

B1.1.1.1 Describe the specifics of the training. What was the format? Did your colleague share with you any documents or handouts? Can you recall the general topics that were covered?

B1.1.1.2 Describe the aspects of the "training."

B1.1.1.3 What did you learn specifically about technology and best practices during this preparation? Please describe.

B1.1.1.4 What did you learn specifically about pedagogy and best practices during this preparation? Please describe.

B1.1.1.5 Were there any logistical issues (course management strategies such as communication issues, course procedures, etc.) discussed during this preparation that stand out? Was there anything pressing that you'd like to share? If so, please describe.

B1.1.1.6 Was the incorporation of University policies and procedures for online learning (i.e. enrollment, course drop/add, etc.) discussed during this preparation? If so, please describe.

B1.1.1.7 Are there any other topics that I haven't mentioned that you were prepared for during this training? If so, please describe.

B1.2 If response is "formal training through a faculty development program":

B1.2.1 What was the curriculum of the program? What topics were covered? Were you provided with any handouts from the session that you'd like to share?

B1.2.1.1 Describe the specifics of the program. What was the format?

B1.2.1.2 Describe what was learned.

B1.2.1.3 What was beneficial about the training (in preparing you to teach online)?

B1.2.1.4 What was not relevant to preparing you to teach online?

B1.2.1.5 What did you learn specifically about technology and best practices during this training? Please describe.

B1.2.1.6 What did you learn specifically about pedagogy and best practices during this preparation? Please describe.
B1.2.1.7 Were there any logistical issues (course management strategies such as communication issues, course procedures, etc.) discussed during this preparation that stand out? Was there anything pressing that you'd like to share? If so, please describe.
B1.2.1.8 Was the incorporation of University policies and procedures for online learning (i.e. enrollment, course drop/add, etc.) discussed during this preparation? If so, please describe.
B1.2.1.9 Are there any other topics that I haven't mentioned that you were prepared for during this training? If so, please describe.

B1.3 If response is "informal training through one-to-one assistance from a University support organization":

1.3.1 What topics were covered? Were you provided with any handouts from the session that you would like to share?
B1.3.1.1 Describe the specifics of the program. What was the format?
B1.3.1.2 Describe what was learned.
B1.3.1.3 What was beneficial about the training (in preparing you to teach online)?
B1.3.1.4 What was not relevant to preparing you to teach online?
B1.3.1.5 What did you learn specifically about technology and best practices during this preparation? Please describe.
B1.3.1.6 What did you learn or discuss specifically about pedagogy and best practices during this training? Please describe.
B1.3.1.7 Were there any logistical issues (course management strategies such as communication issues, course procedures, etc.) discussed during this training that stand out? Was there anything pressing that you'd like to share? If so, please describe.
B1.3.1.8 Was the incorporation of University policies and procedures for online learning (i.e. enrollment, course drop/add, etc.) discussed during this training? If so, please describe.
B1.3.1.9 Are there any other topics that I haven't mentioned that you were prepared for during this training? If so, please describe.

B1.4 If response is "no preparation":

B1.4.1 What do you know about opportunities for training or assistance that may have been available at your institution?
B1.4.1.1 What reasons can you share for why you chose not to take advantage of the available training opportunities?
2. Prior to teaching online, how many years did you teach in a traditional setting?
2.1 What challenges, if any, did you face in the transition to the online environment?
2.2 What components of a traditional environment do you feel should be modified for the transition to the online environment?

2.3 Did you participate in training that prepared you to make the transition to the online environment? If so, please describe.
3. Did you receive any other assistance that I haven't asked you about? If so, please describe. (*Prompt if necessary)*

Now, I'd like to talk with you about an overall assessment of the training and assistance that you have received.

4. Overall, what types of assistance have been most beneficial in preparing you to teach online? Why?
5. Based on your experience teaching online, what areas do you feel you need further development for teaching online? Why?

Part C. Additional Assistance

1. Think about your earlier experiences teaching online. Now that you have some experience teaching online, is there anything that you would have done differently as far as preparation?
2. What areas of support do you feel would have enhanced your online teaching experience and knowledge of best practices?
3. Are there any recommendations you could make to help someone prepare for the online experience and knowledge of best practices?

Part D. Other Comments

1. Do you have anything else you would like to share about your preparation to teach online?

Spoken Closing: *Thank you very much for your time. We appreciate your feedback and participation.*