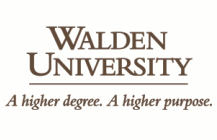

2018

Nursing Faculty Perspectives on Support in Technology, Learning Management Systems, and Self-efficacy

Diane Burling
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This is to certify that the doctoral dissertation by

Diane Burling

has been found to be complete and satisfactory in all respects,
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Walden University
2018

Abstract

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by

Diane Burling

MA, Walden University, 2007

BS, West Chester University, 2004

Proposal Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Past literature has shown that nursing programs reported educators were at the novice or beginner level regarding use of technology and that there was a critical need for faculty development. There was a lack of current information on the perspectives of nurse faculty utilizing learning management systems. Learning management systems are being used within nursing education, faculty should be proficient implementing the technology, if not, students and faculty suffer. The purpose of this study was to understand how nursing faculty perceive the use and support for integrated online Learning Management System (LMS) technology, along with levels of self-efficacy, at the institution in which they work. The Bandura self-efficacy conceptual framework was used to explore nursing faculty perspectives on the use of LMS technology. A case study approach was used for this study to aid in identifying the perspective of nursing educators who have utilized LMS technology. Participants included 8 nursing faculty from 3 Southeastern Pennsylvania nursing program. Data sources consisted of online survey questions and telephone interviews. Survey data results were analyzed by means of central tendency. Transcriptions of interviews were analyzed using NVivo software for coding and identification of themes and patterns. The results revealed that nursing faculty did not seem to like their LMS platform; however, the majority of the faculty did consider the LMSs useful in providing materials to students and for posting grades, although faculty stated a desire for additional training and regular workshops on using LMSs. This research can contribute to positive social change by assisting stakeholders in best implementation of LMSs in student instructional practices.

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Dedication

My work is dedicated to the many family, friends, and faculty that have provided support throughout the years. Thank you.

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Chapter 1: Introduction to the Study

Technology in nursing education was recognized as commonplace as early as 2003 (McNeil, Elfrink, Bickford, Pierce, Beyea, Averill, & Klappenbach, 2003). Technology is implemented throughout the nursing curriculum via learning management systems (LMSs). LMSs are used to facilitate education by offering a virtual means of communication, collaboration, and content delivery (De Smet, Valcke, Schellens, DeWever, & Vanderlinde, 2016; Fathema, Shannon, & Ross, 2015; Findik-Coskuncay & Ozkan, 2013; Lochner, Conrad, & Graham, 2015; Rucker, Edwards, & Frass, 2015; Stein, 2014). Nursing programs reported that educators were at the novice or advanced beginner level regarding use of information technology and that there was a critical need for faculty development (Axley, 2008; Lilly, Fitzpatrick & Madigan, 2015; McNeil et al., 2003). Educators need to be especially skilled in communication and interaction with students online and have a good working knowledge of the technology that is implemented (Lilly et al., 2015; McNeil, et al., 2003; Nguyen, Zierler, & Nguyen, 2011, Porter-Wenzlaffs, 2013; Swenty & Titzer, 2014; Walker, Lindner, Murphrey, & Dooley, 2016). However, research demonstrates the need for an increase in computer literacy for nursing faculty (Hoffman & Dudjak, 2012; Hwang & Park, 2011; Lilly et al., 2015; McNeil, 2003; Nguyen et al., 2011; Rajalahti, Heinonen, & Saranto, 2014; Tacy, Northam, & Wieck, 2016). Sowan and Jenkins (2013) described the student's demand for flexible learning strategies through utilizing LMSs. Additionally, students believe they learn more through a collaborative effort than simply on their own (Naismith, Lee, & Pilkington, 2011). Researchers have documented connections between students'

performance and their level of self-efficacy regarding technology use in education (Alrushiedat & Olfman, 2014; Choi & Zucker, 2013; Hauser, Paul, & Bradley, 2012; Saade & Kira, 2009). Student perspectives on technology use in nursing education have been well documented; however, it is apparent that more current research is needed identifying the faculty support, perspectives, and self-efficacy on the use of LMS technology within nursing education.

Background

The use of technology in nursing education began to evolve in the 1990s with the incorporation of PowerPoint and the use of email (Axley, 2008). Axley (2008) reviewed the "rapid technological changes" (p. 3) over the course of 10 years, stating that student nurses would need to improve and develop the utilization of technological abilities in order to practice as professional nurses. In 1997, the National State Board of Nursing implemented the first nursing licensure exam via computer, when in previous years it was only available as a written exam (Axley, 2008). In the same year, the National Informatics Agenda for Nursing Education Practice made recommendations that nursing curriculum should include nursing informatics as well as core computing courses (Axley, 2008).

The evolution of technology integration led to the need for preparation of the faculty that implemented the concepts suggested (Axley, 2008). Hoffman and Dudjak (2012) noted "the demand for flexibility and innovation in nursing education has increased over the last decade" (p. 255). Academic settings are expanding to include LMSs; however, faculty face some challenges with implementation (Alshammari, Ali, &

Rosli, 2016; Hoffman & Dudjak, 2012; Nguyen et al., 2011; Staggers, Gassert, & Curran, 2001). Several researchers have found that faculty viewed technology in curriculum as a barrier to teaching, (Gray & Rutledge, 2014; Hoffman & Dudjak, 2012; Lilly et al., 2015). Per Travis and Rutherford (2012), some level of online instruction delivery is common in nursing education. Administrative support for faculty is crucial to successful implementation of any new or existing technology; however, faculty seem forced to learn from their own experience rather than through guided training (Kalb, O'Conner-Von, Schipper, Watkins, & Yetter, 2012; Travis & Rutherford, 2012). Although Travis and Rutherford (2012) focused on online interaction between faculty and learner, the purpose of my research was to identify and understand the connection between technology support and self-efficacy levels for nurse faculty utilizing LMSs.

The literature I reviewed indicates a theme for faculty development in general when considering online technology use and implementation. For this research, the initial literature review began with a search for studies on the use of LMS technology, self-efficacy, and faculty perceptions. I also conducted a broader search for literature on faculty development in education. Findings in other areas of education, regarding technology implementation, increased levels of self-efficacy for faculty, and faculty development, provided insight into what can be implemented in nursing education. My hope in conducting this research was that the findings will support social change in nursing education in terms of how faculty find support to improve their ability to use LMS technology and additionally improve levels of self-efficacy so that they can ultimately better serve the patient populations via the new professional nurses they teach.

Problem Statement

Nursing programs have incorporated the use of LMS technologies, which provide online collaboration with students. There was a gap in the literature regarding self-efficacy, technology support using LMSs, and faculty perceptions specific to nursing education. The purpose of this study was to provide a better understanding of how nursing faculty perceive the use of and support for integrated online LMSs, along with levels of self-efficacy, at the institution in which they work. There was a need to identify factors affecting the implementation, use, and limitations of technology in the classroom from the voice of the nurse educators (Petit dit Dariel, Wharrad, & Windle, 2010). Axley (2008) detailed the inevitable incorporation of technology into nursing education and what was expected from faculty:

> Integrating technology into nursing education requires an educator who is prepared to facilitate an effective learning experience. Nursing educators are now recognizing that they must step up and join in this revolution or risk becoming obsolete. Nursing education administrators continue to endorse ongoing faculty development and involvement in distance education and the use of technology in the teaching-learning processes. (p. 4)

LMSs are considered one of the most popular educational technology systems in use in educational genres (Almarashdeh, 2016; Davis & Surajballi, 2014; Hampel, 2014; McKinney, & Whitaker, 2013; Prior, Mazanov, Meacheam, Heaslip, & Hanson, 2016; Thurber, Pope, & Meshkaty, 2012). Faculty satisfaction in using LMSs is "considered as very important for the course involvement and increasing the student's interactions with

the course content" (Almarashdeh, 2016, p. 249). There is a great deal of pressure for nurse educators to adopt and implement technology such as LMSs (Stott & Mozer, 2016). Additionally, nurse educators continue to have difficulty in meeting the expectations of their institutions to keep up with the advances in technology (Posey, 2013; Stott & Mozer, 2016). It has been questioned whether faculty are prepared to incorporate technology into teaching (Axley, 2008; Blake, 2009; Chesney & Benson, 2012; Gokoglu, Ozturk, & Cakiroglu, 2015; Lee et al., 2010; Merillat & Scheibmeir, 2016; Stott & Mozer, 2016). Few researchers have examined technology use and faculty satisfaction (Almarashdeh, 2016). Blake (2009) detailed results of a study of staff/faculty perceptions for teaching delivery in healthcare, showing persistent barriers to incorporating e-learning included lack of self-confidence and lack of support. However, many of the studies in nursing education are dated, so a closer examination of current nurse faculty perspectives is warranted.

To compound the problem, there is a shortage of faculty educators, and the shortage is expected to worsen as aging faculty retire (Crocetti, 2014; Kirkham, 2016; Rock, 2014). Rock, 2014, detailed "Nursing faculty development programs are critical to cultivate new faculty into skilled educators, provide veteran faculty with opportunities to develop and strengthen skills, and initiate needed changes in nursing education" (p. 679). Per Rock (2014), the number of nurse educator candidates is shrinking. The use of online educational practice is important in the development of competent, practicing nurses (Rock, 2014).

Increased time and skill demands are placed on nurse educators to acclimate to the current use of technologies such as LMSs (Button, Harrington, & Belan, 2013). In 2008, the College of Nursing at the University of Tennessee, Knoxville prepared to move two graduate nursing programs completely online, creating the need for an assessment of faculty skills with the online environment (Lee et al., 2010). The assessment revealed a need for a faculty development program to increase knowledge, skills, and use of the online platform (Lee et al., 2010). A series of faculty development workshops were designed, implemented, and evaluated. The results showed that not all faculty members participated in the workshops, and those that did participate had varying and contrasting needs in terms of continued support in providing the online programs to students (Lee et al., 2010). A more detailed assessment of faculty needs concerning online platform modalities, along with a more in-depth assessment in andragogy is needed. "There is limited research on the faculty experience of adopting innovative technologies" (Fiedler, Giddens, & North, 2014, p. 387). In this study, I wanted to find out nursing faculty comfort levels regarding LMSs, whether there was enough support and faculty development in implementing the LMSs, and the perspectives of the nursing faculty concerning levels of self-efficacy.

There was very little information or current research on the nursing faculty perspectives and levels of self-efficacy in utilizing tools such as LMSs, which left a meaningful gap in the literature. There is a need for advancement of nursing faculty from novice or beginner in regards to the use of online technology implementation (Lilly et al., 2015; Mancuso-Murphy, 2007). My proposed study was an attempt to understand how

nursing faculty perceive the use and support of integrated online LMSs technology, along with levels of self-efficacy, at the institution in which they work.

Purpose of the Study

The purpose of this study was to discover how nursing faculty perceive the use and support of integrated online LMSs technology, along with levels of self-efficacy, at the institution in which they work. Additionally, the purpose of the proposed study was to address the gap in literature regarding nurse faculty perspectives on support and self-efficacy levels regarding the utilization of LMSs technology.

I used a case study approach for this study to aid in identifying the perspective of nursing educators who have utilized LMSs technology. The intent of this study was to describe nurse faculty perspectives on support and self-efficacy levels regarding the utilization of LMSs technology.

Research Questions

The following research questions were informed by the study purpose, the research method and design.

1. How do nursing faculty perceive the use and support of integrated online LMS technology?
2. How do nurse faculty rate themselves, based on Bandura's self-efficacy model, regarding the utilization of LMS technology?

Conceptual Framework

The conceptual framework or system of concepts explains the key factors that support the research, and uncover what is going on and why (Miles & Huberman, 1994). To

explore nurse faculty perspectives on the use of LMSs technology, I used the self-efficacy conceptual framework of Bandura (1994). The framework offered insight on how nurse faculty feel about utilizing LMSs, levels of support and faculty development within their institution, and how their levels of self-efficacy.

The self-efficacy conceptual framework was supported by Bandura's (1994) perceived self-efficacy theory. Bandura (1995) stated that self-efficacy denotes an individual's ability to believe in the capability of attaining success in the task or skill required. In addition, the achieved belief in performing the task or skill can influence "how people think, feel, motivate themselves, and act" (p. 2). In this case study, I revealed the nursing faculty perspectives related to support in technology, specifically the use of LMSs, and gauged the level of self-efficacy among faculty in the implementation and utilization of LMSs technology. *Perceived self-efficacy* is defined as "people's beliefs about their capabilities to produce designated levels of performance" (Bandura, 1994, p. 1).

Bandura's theory is used extensively in all areas of education. Perceived self-efficacy is important to human functioning, influencing behavior directly along with goals, aspirations, and outcome expectations. The self-efficacy conceptual framework has been used in previous research to explore nursing education, in faculty development, and in research in the areas of nursing education, faculty development and technology. For nursing education, high self-efficacy aids in the transition from nursing student to nurse professional (George, Locasto, Pyo, & Cline, 2017). Oh, Yange, Lim, and Sung (2016) measured self-efficacy for nurse faculty in the integration of evidenced-based practice

education, finding moderate levels of self-efficacy on the part of faculty overall, yet low implementation of the evidenced-based practice. Development of effective instructional methods improve student performance, learning outcomes, and self-efficacy within nursing education (Al-Busaidi, 2013; Alrushiedat & Olfman, 2014; Hauser, Paul, & Bradley, 2012; Lee, Lee, Lee, & Bae, 2016; Miller, Russell, Cheng, & Skarbek, 2015; Saade & Kira, 2009).

Researchers have also used the self-efficacy conceptual framework to explore educators' use of technology and the need for faculty development. Issues with self-confidence, performance, inexperience and lack of preparation have been identified in relation to implementation and use of technology in education (Duprez, Van Hooft, Dwarswaard, Van Sta, Hecke, & Strating, 2016; Efe, 2015; He, 2014; Kowalezyk, 2014; Willis, 2015).

For my study, the survey acted as a qualitative measurement of self-efficacy levels of the nurse educator in regards to the use of LMSs and perceived support of such technology. In this case, nursing faculty members identified their individual perceptions pertaining to the available support in the use of LMS technology within their current work setting to address a need, if any. Data collection included a survey of nurse faculty, interviews of a random sample of participants, and member checking.

Nature of the Study

This was a qualitative study using a case study approach. First, data was collected through a Likert-style survey designed to elicit stated levels of self-efficacy. I then connected the survey data to data I collected from participants in follow-up interviews.

The interviews served to clarify survey responses through deeper discussion of the topics of technology support using LMSs and stated levels of self-efficacy. Finally, member-checking served as a final data source. The data collection and interpretation was guided by Bandura's (1994) self-efficacy theory. The case study design was consistent with understanding nurse educator perspectives regarding support in utilizing LMSs and self-efficacy.

Definitions

Course management system (CMS): A collection of software tools providing an online environment for course interactions. A CMS typically includes a variety of online tools and environments (Vanderbilt, 2016).

Learning management system (LMS): A software application or web-based technology used to plan, implement, and assess a specific learning process (Techtarget, 2016).

Educational technology: Technological resources used to facilitate education and learning (Richey, 2008).

Practice technology: Application of technological resources in the educational setting. (National League for Nursing [NLN], 2008).

Assumptions

This study was based on several assumptions. I assumed that the participants answered the survey questions openly and honestly. I assumed the participants shared openly when selected for postsurvey interviews. These assumptions were vital to uncovering the levels of self-efficacy and stated levels of support felt on the part of nursing faculty in connection to LMS technology use.

Scope and Delimitations

This study was limited to a set of nursing educators who currently use LMSs in their teaching and to a designated region of one state in the eastern United States. I chose nursing educators that utilize LMSs for this study because there was not enough literature or research published that revealed the faculty perspectives on utilizing the LMSs. The population included nurse educators from three Southeastern Pennsylvania nursing programs, with a final total of eight participants. In this study, I sought to discover how comfortable the faculty were with the use of the LMSs, whether there was enough support and faculty development in implementing the LMSs to its fullest, and the perspectives of the nursing faculty concerning levels of self-efficacy. I did not include faculty from areas of education outside of nursing because there are already numerous publications available in which researchers have measured the self-efficacy of the staff.

Limitations

This study was exploratory in nature, thus only an initial sample of schools/faculty were chosen to participate, limiting the larger sample seen in a broader study. This study was also limited by my time and financial constraints. Another limitation was sample size because of the small number of faculty who chose to complete and return the survey. However, I sent invitations multiple times to the schools, as well as persistent reminders in order to get as many participants as possible to complete the survey. The directors of two of the schools stated that faculty were on summer break until the end of August. The survey opened on August 1 and was initially only going to be

open for two weeks. When responses were limited, I added an additional two weeks to allow for more responses.

Significance

This case study provided valuable insight into professional development and necessary levels of support based on the perceptions of a sample of nursing faculty who use LMSs within their teaching. Survey questions posed to the participants included baseline demographic information such as age, gender, and length of time working in the field of nursing education. I asked faculty about their perceived level of support in regards to the use of LMS technology. I also asked faculty to rate themselves on self-efficacy in the utilization of LMSs, based on Bandura's self-efficacy theory. Applying Bandura's theory to the information gathered provides educational institutions a baseline knowledge of the level of support faculty feel is necessary. The institutions can perform additional inquiry to uncover implementations that can improve the levels of self-efficacy for the nursing educator, if warranted. In addition, performing a deeper inquiry can aid in uncovering what is working as far as the level of support provided, what is not, and what can be done to make levels of support even higher for the faculty.

Summary and Conclusions

In this study, I raised a question regarding the need for recommendations for professional development in nursing education to increase the level of support provided to faculty in utilizing LMSs. The implications for social change involved improving care to patient populations through quality nursing education delivered by confident nursing faculty who can use LMSs effectively to prepare our future nurses.

The following chapter contains a review of the literature on faculty development, use of technology and self-efficacy, nursing informatics, technology, and support, technology and faculty development in nursing education, perceptions of technologies.

Chapter 2: Literature Review

Introduction

The purpose of this study was to explore and understand the connection between LMS technology support and self-efficacy levels from the faculty perspective in nursing education. Much of the literature has been in relation to the topic of support in nursing education for the student, not the faculty. Additionally, the perspectives revealed in previous studies have also belonged to the student, not the faculty. I did not find much research on the topic of faculty self-efficacy, specifically pertaining to utilization of technology within nursing programs. The literature on nursing education is dated due to the limited number of current studies on the topic. Although not related directly to nursing education, research findings from other disciplines in which online education through LMSs is implemented can be applied to the topic of self-efficacy and perceptions in nursing education programs that use LMS technology. A broader search for general faculty development in general education will examine what is current in terms of the need for faculty development within nursing education.

Literature Search Strategy

This literature review resulted from both current and earlier research published in peer-reviewed journals on nursing faculty's use of technology, collaboration tools, LMSs, self-efficacy, perceptions, support, and faculty development. I obtained peer-reviewed articles for this literature review from the EBSCOhost, Academic Search Premier, and CINAHL databases. In addition, I consulted the research librarian at Walden University for assistance in performing a more in-depth search of the literature. The expanded search

included the databases Expanded Academic ASAP, ProQuest Central, Sage Premier, Thoreau, and Web of Science. Search text included combinations of words including *nurse, nurses, nursing; faculty, faculties; technology and (support, supported, supports, supporting); learning management systems, collaboration, collaborating, collaborated; tool, tools; method, methods;* and *self-efficacy*. I searched only for full-text, peer-reviewed articles, as well as current publication dates ranging from 2011 through 2016.

Articles I used for this study came from several journals, including *Online Journal of Issues in Nursing, Nursing Education Perspectives, Journal of Nursing Education, International Journal of Technology, Journal of Asynchronous Learning Networks, Distance Education,* and *Research in Learning Technology.* The study also includes references on the theory of self-efficacy from Bandura (1995).

The bulk of the literature review in Chapter 2 is separated into five parts: (a) faculty development, (b) use of technology and self-efficacy, (c) nursing informatics, technology, and support, (d) technology and faculty development in nursing education, and (e) perceptions of technologies.

In the first part, I review articles on faculty development in general education, detailing a theme for faculty development when technology is involved. The literature reviewed lends support to the area of focus for this study: the need for development, support, and self-efficacy for nursing faculty utilizing LMSs.

In the second part, I review the use of technology and self-efficacy of faculty in general education. The literature allows for comparisons of what other facilities and programs are implementing to support faculty and raise self-efficacy levels.

Understanding what successful programs do to provide support and raise levels of self-efficacy for faculty may have an impact on what can be provided for nursing faculty.

In the third and fourth parts, I exhibit literature that is specific to nursing faculty, technology, support, and faculty development in nursing education.

In the fifth part, I reveal the perceptions of both nursing and non-nursing faculty. The articles found specific to nursing educators were limited and often dated beyond five years. The limited findings imply the need for additional research in the area specific to faculty perceptions of support using LMSs and levels of self-efficacy.

Theoretical Foundation

The theoretical foundation for this study was Bandura's (1994) Perceived Self-Efficacy Theory. Bandura (1995) stated that self-efficacy denotes an individual's ability to believe in the capability of attaining success in the task or skill required. In addition, the achieved belief in performing the task or skill can influence "how people think, feel, motivate themselves, and act" (p. 2) This research study revealed the nursing faculty perspectives related to support in technology, specifically the use of LMSs, and allowed me to gauge the level of self-efficacy among faculty in implementation and utilization of LMSs technology. Perceived self-efficacy is defined as "people's beliefs about their capabilities to produce designated levels of performance" (Bandura, 1994, p. 1). Bandura's theory is used extensively in all areas of education. Perceived self-efficacy is important to human functioning, influencing behavior directly along with goals, aspirations, and outcome expectations.

Literature Review Related to Key Variables and Concepts

Faculty Development

Faculty development programs give faculty the support and training needed to be successful, regardless of the time and place in which the content is learned (Chiasson, Terras, & Smart, 2015; Collins & Liang, 2014; Cook & Steinert, 2013; McCord & Franetovic, 2014; Sharif & Cho, 2015). Important factors to consider in faculty development include faculty views on the value of the material presented, time, and workload (Cook & Steinert, 2013). Travis and Rutherford (2012) reviewed several studies regarding faculty preparation and interactivity in online teaching. It was argued that faculty development in online technology use and implementation has not been a priority for colleges and universities (Travis & Rutherford, 2012). Factors that impeded the progression of successful implementation in technology use included faculty learning by experience instead of through professional development. It was reported that up to 40% of institutions do not provide training for their online faculty (Travis & Rutherford, 2012). A survey of 230 community college faculty in Texas revealed that 25% stated they did not receive professional development before implementing online instruction. Additionally, 25% stated they received help from other experienced faculty, while the remainder received preparation from instructional designers (Travis & Rutherford, 2012). Comparatively, Herman (2012) stated that there is inadequate faculty support in regards to professional faculty development in online technologies, specifically, the "types and frequency of faculty development programs for online instruction" (p. 87). Herman evaluated 25 faculty development programs found that 20% of institutions that deliver

online technologies do not provide training to faculty. At the 80% of institutions that do provide training, the faculty mentioned a lack of support in the utilization of the technology (Herman, 2012). Faculty reported their perceptions about support in teaching using online modalities and the general conclusion was that faculty felt a need for more support in the way of faculty development (Herman, 2012).

Online course development and delivery was the focus of Wickersham and McElhany's (2010) study in which they examined college administrators' concerns specifically related to the successful implementation of online instruction. The methodology used was a case study design to help understand a deeper insight of the administrators' concerns related to online instruction implementation and the possibility of implementing a standard of practice for faculty development. Data from interviews of 24 academic department heads and surveys returned by 118 faculty revealed the need for support in the transition to online teaching. In addition, per Wickersham and McElhany, a level of preparedness for faculty was a consideration in the success or failure of online learning, and faculty concerns and suggestions for development should be a priority in the implementation of online instruction. Concerns that emerged when considering the implementation of online programs included barriers, preparedness of students/faculty/institution, quality, and communication.

At the Penn State University-Harrisburg, McQuiggan (2012) used an action research model to explore faculty responses to implementation of a staff development program to incorporate online technology and course design. The program included cycles of planning, acting, observing and reflecting (McQuiggan, 2012). Six faculty

members participated in a 6-week program to prepare for the transition to online technology use. McQuiggan concluded that most faculty members appreciated the development program, stating the time used for planning, practice, and reflection was helpful in the learning process, whereas other faculty perceived barriers to learning that included time management and workload. Ragan, Bigatel, Kennan, & Dillon (2012) noted that teaching effectively in the online setting required a specific set of skills and competencies that can be obtained through quality faculty development programs. Staff members that have knowledge of their competencies are more likely to be successful in the workplace (Siadaty et al., 2012). The studies on staff development and using online technology support my study uncovering faculty perceptions and levels of self-efficacy utilizing LMS technologies.

At Bay Path College, a faculty development program was created to implement orientation, mentoring and support for faculty utilizing online LMSs (Vaill & Testori, 2012). Faculty members were instructed on the use of tools within the LMSs and given support by an instructional designer (Vaill & Testori, 2012). In addition, faculty members were assigned a faculty mentor experienced in using the technology. After the required 4-week orientation, faculty reported an increase in ease of use and comfort with the technology. Faculty perceptions were gathered in the data and the results were positive, indicating that faculty felt more prepared to use the technology (Vaill & Testori, 2012). Faculty also reported a feeling of support from having the mentor and instructional designer assistance throughout orientation (Vaill & Testori, 2012). Like the Penn State University-Harrisburg study by McQuiggan (2012), both institutions implemented a

faculty development program and found faculty to have been satisfied with the support needed to implement the learning management system. These studies are valuable to my study and proved to be examples of other educational venues that have successfully supported faculty in their implementation of technology in their teaching.

Benson, Brack, and Samarwickrema (2012) used action research to identify the needs of faculty development to assist faculty in uncovering the usefulness of the Wiki to perform student group work and assessments. A faculty development workshop using Wikis for collaboration was created for teachers and later reflections were evaluated (Benson et al., 2012). Thirteen faculty volunteers were divided into two groups and asked to actively participate in two Wiki workshop groups over a two-week period. Groups were asked to comment on, reflect, and evaluate each other's group progress related to collaboration efforts within the Wikis. Results showed the Wiki 1 Group was more advanced in the creation of three Wiki pages, while Wiki 2 Group only created one page. Benson et al. (2012) summarized the outcomes as "collaborative engagement between participants was inhibited by their previous level of technology adoption, unfamiliarity with the wiki environment, lack of time and technical issues, indicating a need for more orientation and support" (p. 6). Although this article discussed the collaboration tool Wiki, the information was useful in identifying the need for additional research and support for nursing faculty in utilizing LMS.

In a study performed by Holmes (2013), a focused, purposeful learning activity for faculty was initiated to support development in online technology implementation in classrooms. The participants of the event were followed in a case study through action

research while registered in eTwinning, an initiative to "encourage school teachers to work together informally across Europe in joint pedagogical projects using the Internet" (Holmes, 2013, p. 99). The eTwinning portal started in Europe in 2004 with a steady climb of 184,000 users registered. Regional support was offered to users through the National Support Service and central support is provided though the Central Support Service. These networks offer multi-lingual support helpdesk, organize periodic events, and were maintained by public procurement contract by European Schoolnet (Holmes, 2013). An eTwinning event was created to "explore and exploit different Web 2.0 tools and applications and evaluate their applicability in eTwinning projects with a special focus on collaboration" (p.100). The eTwinning portal "provides a helpdesk for school teachers" focuses on collaboration to promote change (Holmes, 2013, p. 100). A pool of 156 teachers participated with 82 percent responding to a final online questionnaire covering the usefulness of collaboration, social contact, and overall use of the tools in practice (Holmes, 2013). Results concluded a perceived higher level of satisfaction and skillset in utilization of Web 2.0 tools such as wikis, blogs, discussion forums, documents, and presentations (Holmes, 2013). Participants also expressed more experience is needed in using the collaboration tools and stated not having full confidence in "managing online groups of students" (p.101). Per Parker, Maor, and Herrington (2013), there is a gap between "preferred online teaching approaches and actual practice" (p. 227). Building an online environment that engages students, while reinforcing faculty development is ideal for success (Parker et al., 2013).

The set of faculty development studies were relevant to the purpose of my study of support and self-efficacy for nursing faculty members utilizing LMSs, because information that has been found in these studies act as a guide for the professional development of nurse faculty in their use of LMSs technology in their teaching.

Use of Technology and Self-efficacy

In the following discussion of studies, areas in education other than nursing are explored for levels of confidence, self-efficacy, and overall satisfaction in the utilization of LMSs technology in the teaching setting. The information found within these studies contributed to the need for uncovering the levels of confidence, self-efficacy and satisfaction of nursing faculty while utilizing LMSs technology.

As fast as online learning technology is growing, many teachers do not feel prepared to teach online (Almeida, Jameson, Riesen, & McDonnell, 2016; Doherty, 2014; He, 2014; Lilly et al., 2015; McNeil et al., 2003; Nguyen et al., 2011; Swenty & Titzer, 2014). Students have been deemed the "digital Natives' while the teachers are still considered the "digital immigrants" (Conde, García-Peñalvo, Rodríguez-Conde, Alier, Casany, & Piguillem, 2014). It is noted that teachers report a lack of self-efficacy and confidence is due to deficiency in their own online experiences with technology (Duprez, Van Hooft, Dwarswaard, Van Sta, Hecke, & Strating, 2016; He, 2014;). Faculty development that includes improving levels of self-efficacy builds faculty skills and motivation in utilizing technology (Willis, 2015). Willis (2015) surveyed 424 preservice teachers using a Technology and Teaching Efficacy Scale both before and after an instructional technology course. The course was designed to improve teacher confidence

and student success while implementing technology in the classroom (Willis, 2015). The results demonstrated that the course improved teacher self-efficacy and confidence (Willis, 2015). Additionally, Efe (2015) reviewed the use of Web 2.0 technologies by science student teachers. A total of 146 participants were surveyed on a self-efficacy perception scale in regards to computer use, along with an additional scale that measured Web 2.0 technology usage (Efe, 2015). The results indicated that self-efficacy is related to the development of computer skills. In addition, the teachers that had an Internet connection at home were more likely to implement Web 2.0 technology in the classroom (Efe, 2015). Efe (2015) concluded that the teachers with increased use of the technologies were more likely to provide more student-centered learning activities. Like Efe (2015), improving faculty development through understanding faculty perceptions was the focus of a study in Iran. Ghaemi (2011) completed a study of 482 faculty members of English language departments via questionnaires and suggested a need for creating faculty profiles that identify behavioral and psychological constructs. Faculty members were placed in two predictor independent variable categories; use of technology (non-use/preparation, focus on use, focus on improvement) and stages of concern (self, task, impact). Eight dependent variables included 1) dissatisfaction with status quo, 2) knowledge and skills, 3) resources, 4) time, 5) incentives and rewards, 6) participation 7) leadership, and 8) commitment (Ghaemi, 2011, p.57). Participants' responses were assessed utilizing descriptive statistics determining the perception mean responses and standard deviation for the eight dependent variables. Time, knowledge, and skills were ranked the most important conditions for faculty in regards to faculty development.

Ghaemi (2011) suggested creating faculty profiles based on perceptions can assist in the development of an experiential model to be utilized by universities in building faculty development programs that best serve the specific needs of faculty (Ghaemi, 2011).

Self-confidence can play an important role in use of technology (Afzal, Maqbool, Ambreen, and Nasser, 2011; He, 2014; Kowalczyk, 2014). In Pakistan, a study of 114 prospective teachers focused on self-concept and self-confidence in utilizing technology in teaching (Afzal et al., 2011). A one-month long training session for over 4,000 prospective teachers was created to assist with the integration of computers successfully into classroom teaching. Measurement of self-concept and self-confidence was measured using an instrument developed by the researchers. The instrument included demographic information of participants, 16 statements measuring self-concept, and 17 statements measuring self-confidence. Per Afzal et al. (2011), teachers with positive self-concept along with increased levels of confidence are "more likely to engage themselves in difficult teaching tasks" (p. 150) The researchers identified the use of faculty development and training as crucial to building skills and providing support for faculty (Afzal et al., 2011). Similarly, Bursal and Yigit (2012) depicted the importance of evaluating pre-service science faculty members regarding self-efficacy beliefs pertaining to use of Information and Communication Technologies (ICT). The purposive sample for the study included 310 pre-service teachers at the Faith College of Education of Karadeniz Technical University in Turkey. The researchers developed the ICT Usage and Material Design Efficacy scale to measure the efficacy beliefs in relation to the use of ICT. Factors such as gender and income showed to be of little significance to the results,

however the variables labeled Short, Medium, and Long in terms of home computer use, those in the long-term group had significantly higher ICT skills (Bursal & Yigit, 2012). Additionally, participants were labeled in groups of experience titled less, medium, and more experienced, with the results concluding those in the more experienced group showed higher levels of self-efficacy. It was concluded that faculty development and support of faculty enhanced the positive attitudes and skills of the participants (Bursal & Yigit, 2012).

A radiologic science audience was sought for the survey of top three identifiable barriers to implementing online education. The respondents included radiography educators from a two-year community college, a 4-year university, and a hospital-based program (Kowalczyk, 2014). In total, Kowalczyk (2014) surveyed 373 radiologic science educators and identified their perceived barriers to online education. Perceived barriers to online course delivery included lack of self-confidence, lack of troubleshooting support, along with peer resistance in adapting to online educational formats (2014). Equally, a study by He, (2014), identified that less than one third of teachers felt prepared to teach online or implement a technology, stating the reason being a "lack of self-efficacy and confidence" (p 283). Twenty-four teacher candidates participated in an online course using Universal Design for Learning (UDL), a set of principles that originated as a framework for theory and practice in education (He, 2014). An instrument was developed targeting self-efficacy and confidence, as well as preassessment and postassessment surveys of participants (He, 2014). Results did uncover the faculty felt an overall increase

in confidence after participating in the online course provided to students, stating that they felt more comfortable with some online experience (He, 2014).

This discussion of self-concept and confidence helped in identifying the need for such research of nursing faculty and their perceptions regarding technology use and therefore relevant to my proposed study. Additionally, the research found on faculty outside of nursing education supported the need for additional research, to uncover the needs of nursing faculty.

Nursing Informatics, Technology, and Support

There was a problem with the lack of current research as it applies to nursing faculty perspectives and level of self-efficacy in utilizing LMSs. Literature was outdated, beyond 5 years, and lacked the faculty perspectives on levels of support provided. This gap in the literature reinforced the need for my study. Uncovering the actual perspectives of faculty gained insight into what the faculty need in regards to support and development.

In a study by Christianson, Tiene, and Luft (2002), information on faculty perceptions regarding online teaching experiences were collected through survey responses from 54 percent of those polled totaling 171 respondents. Overall, findings concluded most participants utilized both synchronous and asynchronous computer tools for teaching (Christianson, et al., 2002). Furthermore, most the participants in this study preferred teaching in the online environment rather than face-to-face instruction, stating more flexibility and collaboration with students (Christianson, et al, 2002). The author failed to elaborate on what technology support measures are in place for the participants.

This was relevant to my proposed study because the study shows the limited and dated research on nurse faculty perspectives of using technology. Alternatively, a study done by Salyers, Carter, Barrett, and Williams (2010), on nursing student and faculty satisfaction was explored while implementing a pedagogical framework titled Introduction, Connect, Apply, Reflect, and Extend (ICARE) courses within e-learning formats such as Blackboard, Moodle, Design2Learn. Salyers, et al. (2010) described barriers to implementing such technologies, including "lack of instructional design support, inconsistent, inadequate or unreliable infrastructure support, as well as varying degrees of faculty and student experience with online learning environments" (p. 1). By utilizing ICARE, course modules are structured, organized, and applied, to provide superior student and faculty experience while using the e-learning formats described (Salyers et al., 2010). Results of the study showed some benefit in utilizing ICARE in the nursing curriculum within the e-learning format as it reflected the "general thinking and learning processes of the discipline" (p. 11). The results of this study can be applied as a guide in furthering support for nurse faculty.

In Michigan, 15 nurse educators participated in a research study using a 32-item instrument designed to measure self-efficacy online teaching efficacy (Robina & Anderson, 2010). Findings of the study showed increased levels of self-efficacy after implementation of three online courses. The researchers indicated additional data is needed to "reveal factors that contribute to new faculty developing online teaching efficacy or assisting seasoned faculty to reevaluate their current teaching efficacy beliefs" (p.169). Similarly, an investigation of nurse faculty experiences in the planning and

teaching of a blended course design found that online learning was a challenge for the teachers (Jokinen & Mikkonen, 2013). A university in Finland introduced a blended learning course into the nursing curriculum. Participants were separated into three focus groups of four to six teachers in each group for interviews. "Nine themes emerged: collaborative planning; integration; student group; face-to-face teaching; online learning; learning activities; teaching and learning methods; learning in and about; and confirming competencies" (p.526). One of the most valuable findings found that teachers merely used the online format as a place to deposit materials (Jokinen & Mikkonen, 2013). These findings were valuable to my study because it supported the need for better understanding of support in LMSs use, additional inquiry about self-efficacy, and faculty development in nursing education.

Technology and Faculty Development in Nursing Education

In 2006, the NLN conducted a survey of faculty and nursing administrative leaders. With over 2000 respondents, the findings revealed the following:

> The most disturbing findings of this survey were found in comments made by respondents. Faculty and administrators fail to distinguish between educational technology and practice technology, as evidenced by responses like "all courses are web-enhanced." It was clear that many equated taking online courses with computer and information literacy from informatics. Since more than 80 percent of faculty said that they were self-taught, this is not surprising. (p. 4)

For this research, faculty were asked to state the level of support felt from the institution's where they work. This helped gain an understanding of what further faculty development

could be implemented within nursing education systems that would increase self-efficacy among faculty, if needed.

Email surveys were sent to gather input on the preparation of nursing students regarding technology use. The results revealed 60 percent of nursing programs required computer literacy as part of the curricula and 40 percent required information literacy (NLN, 2008). More than half of the respondents stated the curriculum included some informatics, with results showing that informatics was more likely integrated within baccalaureate and advanced degree programs (NLN, 2008). Results of my study provided insight into the area of technology use, support for faculty in nursing education, and the perspectives of faculty.

The National Nursing Informatics Work Group of deans and directors in nursing education, along with 19 US experts, served as advisors on informatics priorities in education. Nursing programs reported educators are at the novice or advanced beginner level regarding use of information technology and that there is a critical need for faculty development (McNeil, Elfrink, Bickford, Pierce, Beyea, Averill, & Klappenbach, 2003). The recommendations generated the National Informatics Agenda for Nursing Education and Practice that included core concepts needed in nursing curricula (McNeil, et al., 2006). Per McNeil, et al. (2006), the American Nurses Association standards on informatics practice and application included the beginning and experienced nurse practitioners as well as informatics nurse specialists, however, the nurse faculty was not mentioned, involving a need for further research. This was relevant to my study due to

the dated research on nurse faculty as it relates to use of technology in the practice of teaching.

In more recent findings, a revision of the American Nurses Association's (ANA) Nursing Professional Development: Scope and Standards of Practice was published in the summer of 2010. This document serves as a guide for the professional nurse in the application of practice (ANA, 2010). Per Benedict and Bradley (2010), the revision detailed the advances in technology, the need for core values including knowledge management, which "incorporates hi-tech learning media, emerging technologies, innovations, and rapid transitions such as point-of-care learning with iPods, laptops, and other electronic formats into clinical practice and advanced practice environments" (p. 196). This set of competencies was relevant to this proposal to validate the need nursing professional development as it applies to the nurse educator.

Pollacia and McCallister (2009) offered a solution to online course development within learning institutions by implementation of a set of standards established by Quality Matters (QM). "QM is a set of competencies designed to provide the best practices in instructional design for courses that are delivered fully online or with a significant portion delivered online, i.e. hybrid courses" (p. 155). This information was relevant to this proposal because it offers the type of competencies that could be implemented within nursing programs for faculty to obtain necessary staff development in the utilization of online collaboration and LMSs. Quality Matters was also utilized as the internal standard at the University of South Carolina. The standards were used to develop LMSs course

design (Rucker, et al., 2015). The QM standards proved to be successful for establishing a guideline for building a foundation for development (Rucker, et al., 2015).

Universities and colleges offer online degree programs for many reasons, including increasing enrollment, improving student access to programs, ability to reach non-traditional students, and reduced cost of education delivery (Jones & Wolf, 2010). For faculty, there are many positives for teaching online. Freedom to work from anywhere, automatic grading applications, electronic submissions of essays, and control over online content were cited as major reasons for the interest in online teaching (Jones & Wolf, 2010). Jones and Wolf (2010) discussed the role of faculty in distance education as one that must possess leadership, provide support, and act as a resource to students. In addition, the faculty would effectively manage time within the online education delivery system and master communication among students and encourage critical thinking (Jones & Wolf, 2010). Per Jones and Wolf (2010) collaboration is encouraged between faculty and students via the use of WIKIS and blogs, and this technology should be "embraced", yet there is no mention of how the faculty were supported in utilizing such tools (p.46). Other than a required faculty certification program for online instructors, Jones and Wolf (2010) failed to mention the level of support available to nursing faculty. This was relevant to my study because it is more current research in nursing education, connects the use of collaboration tools and its usefulness, yet fails to find the perceptions and self-efficacy of the faculty.

Examples of technology implemented in nursing education include computer – assisted learning, course management software, and clinical simulation. A review of two

educational information systems included computer-assisted learning and course management software (Nelson, Myers, Rizzolo, Rutar, Proto, & Newbold, 2006). Per Nelson, et al. (2006), computer-assisted teaching originated in nursing education in the 1960's, with exam software development progressing in the 1980's, and has advanced with clinical simulation that involves life-like patient simulators. Although patient simulators are not the same technology as LMSs, the point of this article is what the authors note as the importance of the role faculty and what role they should play in the use of the technological systems. In fact, the authors suggested the idea that faculty be included in the "selection, design, and implementation of the information systems", along with what development is necessary, (Nelson, et al., 2006, p. 252).

Faculty support is critical to success of online and web-enhanced education (Benjamin, 2008). Benjamin (2008) discussed the use of informational technology (IT) department at the West Virginia University Health Sciences Center. The IT professionals provided faculty with user training, computing services support, as well as help desk support. Similarly, the IT department at Old Dominion University supports faculty through the designation of an instructional designer assigned to the School of Nursing to provide support in design, training, and implementation of online and web-enhanced instruction programs offered to students (Benjamin, 2008). The research directly addressed the actual support of nursing faculty at these two universities in utilizing the online and web-enhanced applications. This offers an example of the support universities and colleges can provide to nursing faculty. Surveys performed in 2002 of faculty regarding the support in distance education was referenced within Benjamin's research,

however, more recent faculty perspectives are needed to gain further insight on perceived level of support in technology and level of self-efficacy. This dated literature showed the need for more current research on faculty perspectives, levels of self-efficacy and LMS technology support.

In 2008, the College of Nursing at the University of Tennessee, Knoxville prepared to move two graduate nursing programs completely online, creating the need for an assessment of faculty skills with the online environment (Lee, Paulus, Loboda, Phipps, Wyatt, Myers & Mixer, 2010). The assessment revealed a need for a faculty development program to increase knowledge, skills, and use of the online platform (Lee et al., 2010). A series of faculty development workshops were designed, implemented, and evaluated. Over the course of three-months, five synchronous workshops along with three asynchronous discussion forums in Blackboard, and technology training sessions were held for faculty within the university (Lee et al., 2010). The program was reviewed using formative and summative evaluations, assessing faculty needs throughout the course (Lee et al., 2010). The results showed that not all faculty members participated in the workshops, and those that did participate had varying and contrasting needs in terms of continued support in providing the online programs to students (Lee et al., 2010). A more detailed assessment of faculty needs concerning online platform modalities, along with a more in-depth assessment in andragogy is needed (Lee et al., 2010).

Filer (2010) performed a study on the use of "clickers", an audience response system tool, for its ability to increase knowledge, motivation, and participation in class. Although the technology of audience response systems is not like LMSs, the connection

to faculty development or lack thereof, is important to identify. The study was relevant for the student population, however, Filer failed to mention how the faculty learned to implement the clicker technology and if any support was provided. Additionally, the author did not reveal the perspectives of the faculty regarding the use of the technology. In a similar study by Berry (2009), clickers were implemented to determine the level of understanding in regards to content information given during lecture to the nursing student body. Identical to Filer, Berry failed to mention the nursing faculty perspectives on use of the technology, the level of support that was provided to faculty, if any, and if training was provided to faculty. Finally, Grady (2012) tracked a Virtual Clinical Practicum (VCP). The study focused on identifying the perceptions and experiences of the student that utilized a virtual experience in a nursing education program. The application was put in place to supplement existing curriculum. Overall, student perceptions of the VCP were positive (Grady, 2012). Again, no evidence of faculty perceptions was documented within the research. Although this literature was not connected specifically to the use of LMSs technology, it exposes the necessity for studying the identified gap within nursing education.

Fear of technology is a major barrier to technology implementation (Griffin-Sobel et al., 2010). In a New York City nursing program, the researchers took an interdisciplinary team approach to technology implementation by constructing a support team. The support team consisted of experts in technology, library services, and laboratory. The nursing program employed 27 full-time faculty and 60 adjunct faculty, with only two faculty members considered to be experienced in the use of technological

learning strategies (Griffin-Sobel et al., 2010). Like the research done by Lee et al. (2010), Griffin-Sobel's research proved the use of a support team allowed for faculty to be open and receptive to the integration and learning of the new technology (2010). Interaction among faculty and experts were noted as a major benefit in the acceptance of the new technology (Griffin-Sobel et al., 2010).

In Canada, mobile technology was evaluated in a study involving nursing faculty and students in two separate nursing programs. The focus of the study was to assess self-efficacy of the participants while utilizing mobile technology in teaching and learning (Kenny, VanNeste-Kenny, Burton, Park & Qayyum, 2012). Participants included 189 students and 27 faculty members across two programs, Practical Nursing, and Baccalaureate Nursing surveys were utilized gathering demographic information along with mobile use data (Kenny et al., 2012). The researchers concluded high confidence levels for both faculty and student participants. This was relevant to my study as it demonstrates positive self-efficacy research has been performed in nursing education yet it is not focused on self-efficacy, support, and faculty development in implementing LMSs technology to its fullest. In addition, overall perspectives of the nursing faculty in regards to level of support, self-efficacy, and ability in nursing education had yet to be established.

Moreover, Sword (2012), identified the perceptions of nursing faculty transitions to online teaching. Interviews of 20 educators from seven separate colleges and universities shared the following results: time as a factor in preparation, exploration, and implementation. Challenges were identified as learning the technology and feeling

intimidated by the technology as well as a lack of resources, "such as mentors, information technology staff, software support and peer faculty support" were mentioned (p. 270). Sword's research demonstrated the usefulness of the efforts made by few nursing programs to consider faculty perceptions, however more research is needed to gain a clear understanding of additional nurse faculty perceptions.

The literature gap demonstrated there was not enough current research in nursing education to gather an accurate measure of self-efficacy and support for nursing faculty in the use of LMSs.

Perceptions on Technologies in Non-nursing disciplines

There is a real need to understand the perceptions of faculty concerning the use of technologies in the classroom (Greener & Wakefield, 2015). Per Greener and Wakefield (2015), "there is disconnect between student expectations and staff capabilities and motives" (p. 266). An in-depth study by Gonzalez (2012) investigated the perceptions of faculty regarding the use of e-learning within the face-to-face environment. The participants included 18-university faculty across two campuses that ranged from having 5-20 years of teaching experience in varying disciplines, but not including nursing within the disciplines. All participants were teaching in an undergraduate setting, in an on-campus setting, utilizing e-learning elements. The selected sample targeted a variety of experiences in gender, years teaching, discipline, and academic position. Participants were interviewed for approximately 45-60 minutes, and follow-up questions were later asked to reflect on previous answers and explored open-ended questions (Gonzalez, 2012). The results of the study concluded the following:

> …results suggested that university teachers would be more likely to incorporate e-learning meaningfully if: they have adequate control of what they teach, allowing them space for experimenting with new ways of using e-learning; there is a clear and agreed institutional strategy that supports and promotes the uptake of e-learning; there is proper technical support; there is proper pedagogical support; there is enough time allocated for teaching using e-learning or there are proper strategies for dealing with the increasing time pressures; they perceive they have good skills; and they perceive their students as having the appropriate skills and/or pressing for greater use of e-learning. (p. 992)

The findings by Gonzalez (2012) was relevant to my study and can act as a guide for what needed to be investigated in nursing education.

Ginn and Hammond (2012) conducted a survey related to the diffusion of online teaching technology within the Public Affairs discipline. Per Ginn and Hammond (2012), faculty felt a reluctance to participate in online teaching due to a lack of appropriate training and resources. This is comparatively like what Gonzalez (2012) found since participants in both studies revealed certain factors would need to be in place before they would feel comfortable in utilizing the technology. In comparison, Carusetta and Cranton (2005), yielded similar results with faculty perspectives. They discussed faculty development and perspectives of faculty, after an implementation of a change in teaching environment, going from traditional classroom to a collaborative teaching environment.

Eight faculty members at Renaissance College in New Brunswick, Canada were interviewed after an integration of a collaborative learning format was set in place (Carusetta & Cranton, 2005). Their results determined benefits of collaborative environments, including growth and development in teaching, strong relationships with students, and an overall sense of authenticity in faculty's teaching (Carusetta & Cranton, 2005). This research is valuable to my study's purpose, as it shows the positive effects of collaboration in learning and levels of self-efficacy in faculty. However, the research was beyond 5 years old and supports the need for current data.

An examination of faculty perceptions utilizing online course delivery was performed across three Jordanian universities. The participants included 165 faculty members teaching in the engineering program, all having some or no online course delivery experience (Al-Alawneh, 2014). A thirty-six-item survey addressed perceived barriers to online delivery; categories included the institution, instruction, and student (Al-Alawneh, 2014). A Likert scale recorded the responses and results were placed into above-mentioned categories, with 12 items listed in each and ranked by means and standard deviation. Ultimately, the categories were put into order of highest perceived barrier with students ranking as the highest barrier to online course delivery, with faculty ranked second, and the institution ranking third (Al-Alawneh, 2014). Al-Alawneh (2014) points out that not one of the universities in Jordan offer an online degree, only individual courses, which could account for the high perceived barrier rankings. Additionally, the author cited references that were considerably dated beyond 5 years and many were over 10 years. This could have been due to the limited literature on faculty perceptions, which

lends support to my proposed study to add additional research on faculty perspectives in nursing education to the nursing education literature.

A university in Japan, specializing in languages, implemented a professional development program for the faculty to increase working knowledge of the LMS, Moodle (Stanley, 2015). Faculty originally received training one day per year to refresh their knowledge of the CMS. An online survey inquired about faculty perceptions after attending the professional development program. The survey yielded 42 respondents and follow up interviews were scheduled with eight faculty selected (Stanley, 2015). Additionally, the researcher gathered expertise literature on best practices in professional development implementing technology, creating a criterion rubric used to analyze the professional development initiative. The professional development program initiatives were compared to the best practice rubric, with results showing that fifteen of nineteen experts (cited in the rubric) stated that having support with technology implementation is most important (Stanley, 2015). The use of workshops to learn more about the technology, in this case Moodle, was stated to be also of high importance (Stanley, 2015). Other implementations cited in the rubric for best practice included hands-on activities using the technology, how-to manuals, visual systematic examples of technology use, reliable Internet access, and continued professional development using the technology (Stanley, 2015). Although the comparison of the implemented professional development program to the best practice rubric was considered a success, there was no increase in faculty use of the CMS. However, faculty perceived the program helped to reassure their abilities in utilizing the CMS. In a related inquiry, Kim and Kim (2013) investigated the

perceptions of faculty on adoption and intended use of Smart Education. The Smart Education program involves ICT for teaching purposes (Kim & Kim, 2013). In total, 1817 responses were collected regarding the adoption and intent to utilize Smart Education, with results concluding overall use was based of the perceptions and self-efficacy of teachers (Kim & Kim, 2013). The perceived levels of self-efficacy had a direct correlation with adoption and use of the technology (Kim & Kim, 2013). This was relevant in discovering the perceptions of nursing faculty related to LMSs use, support, and self-efficacy.

Another study of faculty perspectives addressed design of online interaction, knowledge, and competencies. Participants included faculty from three countries, United States, Venezuela, and Spain, and included three disciplines, engineering, education, and business (Barbera, Layne, & Gunawardena, 2014). Six faculty members from US, six from Spain, and seven from Venezuela comprised the 19 participants. All participants were interviewed. Results concluded faculty perceived "disciplinary knowledge takes precedence when faculty members select competencies to be developed in online courses for their respective professions" (p.162). There is a low correlation between competencies the faculty would like to implement and what is being designed for online programs (Barbera et al., 2014). Additionally, faculty admitted that critical thinking and problem solving skills were crucial for students to become successful in the workplace. However, the faculty had yet to design and implement these components in the online setting, revealing the need for "faculty development program that would help faculty develop teaching strategies and methods that are student and community centered will

bridge the gap between faculty intention and actual practice" (p. 164). This lent support to collect the perspectives from nursing faculty to provide the best possible education for the future nurses.

Galvis (2012) examined literature on teachers' beliefs affecting computer technology. The teachers' beliefs were reflected in how effectively a technology is used, specifically, comfort levels, and usefulness (Galvis, 2012). Teachers' beliefs determined whether the technology will be used and forcing a technology is not recommended. Rather, implementing a simple technology and gradually allowing the teachers to acclimate offered better results (Galvis, 2012). In fact, Galvis explained the literature revealed forcing a technology can produce reluctance on the part of the teacher. Finally, Galvis discussed the need for further research on teachers' beliefs regarding technology related to workload, time, class size, age of faculty, and culture.

Like Galvis (2012), Cheok & Wong (2015) performed an in-depth literature review of faculty perspectives on LMSs and found that satisfaction depends on a perception that the technology would enhance productivity. According to faculty, additional factors that predict satisfaction included ease of use, organizational support, training, attitude, interaction, and self-efficacy (Cheok & Wong, 2015). Overall, understanding faculty perspectives can greatly influence how effectively a LMS is used (Cheok & Wong, 2015).

Summary and Conclusions

In all, as indicated by the literature, there was a need to investigate the perceptions of self-efficacy and perceptions of support by nursing faculty. The literature specific to

nursing education was dated and did not always focus on self-efficacy as an element of the study. The review of literature required the inclusion of literature outside the area of nursing education to support the need for the proposed study. Other disciplines in education have inquired on the perspectives and levels of self-efficacy for the faculty. This research filled the gap that nursing education has not yet uncovered in measuring the levels of self-efficacy for faculty using the LMSs. This allowed university nursing programs to have a starting point for where faculty development needs begin specific to using LMSs, how the needs can be addressed, and hopefully better utilize the technology for the betterment of student education.

Chapter 3: Research Method

Introduction

The purpose of this study was to understand the connection between LMS technology support and self-efficacy levels for using the technology from the faculty perspectives in nursing education. This chapter identifies the topic researched, the setting of the research, the research design and rationale, along with the role of the researcher. Additionally, this chapter discusses the participant selection plan, methodology, instrumentation, and the data analysis plan for the research.

Research Design and Rationale

For this study, I used a case study approach. Case study research is consistent with understanding nurse educator perspectives regarding self-efficacy and support in utilizing LMSs. A case study involves an in-depth look at a particular group or situation, often indicating the need for further elaboration on the topic and allowing for a more realistic response from participants than simple statistical surveys (Trochim & Donnelly, 2008). An exploratory case study is often a precursor to a larger scale study. I chose the case study design in order to look specifically at nurse faculty perceptions via survey and interviews.

The participants included active nurse faculty that have or currently use LMSs within nursing programs. I selected nursing faculty as the population after noting the limited literature regarding nursing education and what appeared to be a lack of support for nursing faculty utilizing LMS technology. Additionally, current literature in other areas

of education, outside of nursing, suggested a greater level of support was needed for faculty to successfully implement and utilize LMSs.

The following research questions were the focus of this research:

1. How do nursing faculty perceive the use and support of integrated online LMS technology?
2. How do nurse faculty rate themselves, based on Bandura's self-efficacy model, in regard to the utilization of LMS technology?

First, I conducted a survey using questions with Likert-scale responses to explore levels of self-efficacy of nursing faculty in relationship to the use of LMS technology. Next, I conducted follow-up interviews with selected participants. The interviews sought to clarify survey responses through deeper discussion and insight of the topics of technology support using LMSs and stated levels of self-efficacy. Then, I examined the survey data together with the interview data for emerging themes. Guided by Bandura's (1994) self-efficacy theory, the data collection and interpretation process allowed me to uncover perspectives and levels of self-efficacy regarding use of LMSs.

Role of the Researcher

Because of my immersion in the study, there was a potential for researcher bias. Based on Bandura's (1994) self-efficacy theory, my perspective on the issue was that more support and faculty development was needed in the utilization of LMS technology within nursing education. For this study, personal biases included the observation that there may be a lack of support for nursing faculty in their use of LMSs. This bias was acknowledged; however, my intentions during data collection were to remain neutral, to

seek information in a professional manner, and avoid preconceived notions or ideas. I let the research results lead the way in identifying the faculty perspectives. It was possible that nursing faculty felt insecure or not fully comfortable utilizing LMSs and were not aware that they needed additional support. Bandura (1994) stated self-efficacy is a belief in a person's abilities. I have been both a full-time nursing faculty member as well as an adjunct clinical faculty member. Although I may have known some of the participants at one of the universities, I kept a professional position when the study was underway. My position on this issue makes me fully aware of the potential for bias. I am a former adjunct faculty at one of the universities, although I have not had a recent contract nor did I during this research, and ultimately, no faculty from that school participated in the study. All necessary steps were taken to prevent the presence of bias during collection, analysis, and interpretation of the data. I wrote the survey questions without a sense of steering the participants to answer a certain way. I asked each participant the same questions. The postsurvey interview protocol was prepared in advance of implementation to ensure that it would be followed and that there would be no probing questions. All interviews were audio recorded and transcribed for clarity.

To recruit participants, I contacted the Directors of Nursing in the selected institutions via email with a letter of cooperation. Upon being granted permission to access research participants, a letter of invitation was distributed to potential nursing faculty participants by the Directors of Nursing. The faculty of one of the universities were contacted via email directly, using contact information from the university website. Participants were asked to review the letter of invitation and reply to indicate their

interest. A consent form was then forwarded to each willing participant via email. Participants were asked to send the completed consent form back to me via email to indicate that they agreed to participate. An email including a link to the survey on SurveyMonkey was then sent to consenting participants. I sent a reminder email after one week and again on the fifth day of the second week.

Responses were tallied by Surveymonkey immediately upon participants' completion of the survey. Results were analyzed, recorded, and stored appropriately by me. The intent was to collect data and perform analysis in a fair, honest, neutral manner.

Participants who agreed to additional contact through a follow-up interview were contacted via email. Participants were labeled with numbers and four were chosen randomly to be interviewees. Emails were sent to the randomly selected group of four initially, requesting to schedule a follow-up interview. I sent a reminder email at the end of one week. With no initial responses, the remaining four faculty were sent the same request to interview. At that time, two faculty from the first round of requests responded and scheduled interviews. The second group was also sent a reminder requesting interviews after one week, with two responding the next day. Three of the four interviewed were from the same school of nursing. One was from a different school of nursing. Interview dates and times were set mutually by me and each of the participants. I conducted interviews over the phone on the scheduled dates/times. Interviews were audio recorded for thorough analysis and transcribed using Transcription Hub.

I gathered and interpreted responses without bias. One way to avoid bias was through clarification. Participants were asked clarifying questions regarding their

responses if there was uncertainty in understanding the initial response given during interview. Participants were then allowed to review my interpretation of the interview as a form of member-checking.

Methodology

Participant Selection Log

Purposive sampling targets a specific group or case, and gathering the information to serve the purpose of the study (Patton, 2002). Information gathered from the selected group is intended to shed light on the phenomenon being investigated, in this case, the actual perspectives of the nursing faculty on their level of self-efficacy and perceived level of support received by the institutions in which they teach regarding the use of LMS technology. Critical-case purposive sampling technique can provide a decisive explanation of a phenomenon (Patton, 2002). Nursing faculty in four southeastern Pennsylvania universities were the target population, with a desired minimum of 15-30 survey participants. This study required a small, exploratory sample to gain insights that may foster further study of the issues surrounding nursing faculty's use of technology in their instruction. This group was targeted based on the lack of recent literature found in nursing education and what seemed to be insufficient support in the use of LMS technology. Stebbins (2001) argued that small samples in exploration provide enough data to generalize the case. Surveys were sent to consenting participants at three selected Southeastern Pennsylvania nursing programs where the use of LMSs had been identified. Although a minimum of 15 to 30 survey responses was desired for the critical case sample, ultimately, eight participants completed the survey. Nonetheless, the sample size

allowed for "emergence of important categories and subcategories that inevitably occur during the study" (Stebbins, 2001, p. 27). Survey data were analyzed using measures of central tendency via the Survey Monkey application. The purposive sample survey elicited demographic information including the age of faculty, length of time teaching in nursing education, types of technology used in their teaching career, technology skill level, if they have specifically used LMSs, available resources within the facility they work, and level of support in using the stated technology. For the interview four participants were selected out of the eight participants that completed the survey. According to Stebbins (2001), anything more than one case example is enough to show variation. Additionally, unlike traditional research, exploratory studies are conducted using smaller groups of individuals.

Instrumentation

Data was collected through a survey. A link to a Likert-style survey in Survey monkey was sent via email to participants. The survey was created by the researcher, designed to elicit responses pertaining to the use of LMSs and the levels of self-efficacy of the nursing faculty. Questions included basic demographic information such as age, gender, and length of time teaching nursing. Questions were developed based on Bandura's Self-Efficacy Theory (1994). External validity was established by having an additional methodologist from Walden University review the survey questions. Participants were asked to rate their stated level of self-efficacy in relation to using LMSs. Survey questions also sought the amount of support facilities have provided

faculty as well as the amount of support desired. The research identified technology support and self-efficacy levels for nursing faculty that utilize LMSs.

For additional data collection, there were follow-up interviews. The researcher contacted those participants by email following survey results. Telephone interviews were conducted with four of the eight survey participants. Emails were sent to a randomly selected group of four initially, requesting to schedule a follow up interview. A reminder email was sent at the end of one week. With no initial responses, the remaining four faculty were sent the same request to interview. At that time, two faculty from the first round of requests responded and scheduled interviews. The second group was also sent a reminder requesting to interview after one week, with two responding the next day. Three of the four interviewed were from the same school of nursing. One was from a different school of nursing. Interviews were conducted via the telephone and recorded. The phone interviews built on survey responses by understanding faculty feelings and perspectives in their own words, allowing them to discuss, in more detail, the responses given on the survey. The interviews were approximately 10-15 minutes in length and audio-recorded. Questions in the follow-up interviews sought deeper understanding about nursing faculty perspectives utilizing LMSs, allowing the participant to go into detail. The interview questions sought more detailed information on the type of LMSs technology the faculty has used, which elements of the technology work best, and what support programs are in place within the participant's facility. Survey and Interview protocol are in Appendices A and B.

Procedures for Recruitment, Participation, and Data Collection

The researcher contacted Directors of Nursing from the selected institutions via email asking for permission to conduct the survey of the faculty. Directors were asked to distribute a letter of invitation to faculty. Faculty responded to me via email and were sent a consent. Participants that sent me back a yes to consent were sent the survey link in SurveyMonkey via email. Specifically, the researcher contacted Directors of Nursing in the selected institutions via email with a letter of cooperation. Upon being granted permission to access research participants, a letter of invitation was distributed to potential nursing faculty participants by the Directors of Nursing. Nursing faculty at one University were contacted via email directly, using contact information from the University website. The director of nursing at that university suggested that contacting the faculty directly would avoid having to go through that university's IRB process. Participants responded back to me via email and were sent a letter of informed consent, asked to agree, then the survey link was sent to these consented participants. A reminder email was sent after one week and again on the fifth day of the second week. Responses were tallied immediately by Surveymonkey. Results were analyzed, recorded, and stored appropriately by me. The intent was to take data, perform analysis in a fair, honest, neutral manner. Participants agreed to additional contact through a follow-up interview and were contacted via email to set up interviews. Interview dates and times were set mutually by me and the participant. I conducted interviews over the phone on the scheduled dates/times. Interviews were audio recorded for thorough analysis and transcribed using Transcriptionhub. Transcriptions were read and re-read alongside the

audio recordings for accuracy. Responses were gathered and interpreted without bias. One way to avoid bias is through clarification. Participants were asked clarifying questions regarding their responses if there was uncertainty in understanding the initial response given in the interview. Participants were allowed to review the transcription of the interview as a form of member-checking. The survey and interview questions are in Appendices A and B. Responses were tallied and recorded and stored appropriately. The cooperation letters are in Appendices C and D. The Invitation for faculty is in Appendix E. The reminder form for completing the survey is in Appendix F.

Data Analysis Plan

The survey collected data from the participants. The survey data was analyzed using measures of central tendency, or mode, to identify the frequency of a given response. The collected interview data was analyzed utilizing the NVIVO software system using coding.

The Likert-style survey responses were analyzed through descriptive statistics, using the measures of central tendency. A distribution of survey responses was displayed in a graphic bar chart. For the interview data, responses were analyzed for emerging themes. Common words were flagged for coding. Coding is a form of analysis and used in a qualitative study to assign a summative word to a piece of collected data (Miles & Huberman, 1994). For instance, the researcher used an interview to collect the data, then the responses to the questions asked in the interviews were categorized into sections, and a word was assigned for similar responses from participants. Codes were further grouped into categories, often being refined more than once. The categories were constructed

based on the theoretical framework of Bandura (1994). The categories were then compared to uncover commonalities or themes, conceptual frameworks, and theory (Miles & Huberman, 1994). "The ultimate objective is to match the observation to a theory or set of constructs" (Miles & Huberman, p.58).

Issues of Trustworthiness

Credibility represents the authenticity of the data or the participant views and the explanation and depiction of them by the researcher (Polit & Beck, 2012). "A qualitative study is considered credible if the descriptions of human experience are immediately recognized by individuals that share the same experience. To support credibility when reporting a qualitative study, the researcher should demonstrate engagement, methods of observation, and audit trails" (Pope, 2014, p.89). Audit trails were maintained through journal notes with reflective thoughts, audio of the interviews with transcription, and data analysis information. Member checking collected important feedback from participants to validate the translation of their responses.

Transferability occurs when the same study can be conducted in other settings and situations (Polit & Beck, 2012). Transferability was established through detailing the description of the methodology, participants, and data collection procedures to provide sufficient information for readers to associate the findings with their own experiences.

Confirmability is the researcher's way to prove the data is representative of what the participants revealed. Confirmability was established through reflexivity. Reflexive journals detailed how the findings were established. Conclusions should be results

directly found in the data (Pope, 2014). One way to ensure this is to keep detailed notes and direct statements from participants.

Intercoder reliability is "the extent to which two or more independent coders agree on the coding of the content of interest with an application of the same coding scheme" (Lavrakas, 2008, p. 344).

Ethical Procedures

The Institutional Review Board (IRB) ensures that "all research complies with the university's ethical standards as well as U.S. federal regulations. The IRB approval is required prior to the collection of any data" (Walden University, 2016). An IRB application was completed prior to beginning the data collection for this study. Ethical concerns that could impede data collection and research process would include the early withdrawal of participants or not enough regional program directors agree to faculty participation. The plan for either of these situations included contacting an additional group of institutions by expanding the region for permission to allow faculty to participate.

Any information participants provided was kept confidential. The researcher did not use personal information for any purposes outside of this research project. Also, the researcher did not include names or any other information that could identify participants in the study reports. Data was kept in a secure location by the researcher, and will remain secured, for a period of 5 years, as required by the university.

Summary

Case study research is consistent with understanding nurse educator perspectives regarding self-efficacy and support in utilizing LMSs. Critical-case purposive sampling technique can provide a decisive explanation of a phenomenon (Patton, 2002). The proposed research study was to document and analyze the perceptions of nursing faculty that utilize LMSs and the perceived level of support from the institutions in which they work. The findings should be of interest to nursing programs that implement LMSs to guide them in understanding the level of support needed by faculty.

Chapter 4: Results

The purpose of this case study was to understand how nursing faculty perceive the use and support of integrated online LMSs technology, along with levels of self-efficacy, at the institution in which they work. The conceptual framework helps explains the key factors that support the research, and uncovers what is going on and why (Miles & Huberman, 1994). In this study, I used the self-efficacy conceptual framework to explore nurse faculty perspectives on the use of LMS technology. The responses offered insight into how nursing faculty feel about utilizing LMSs, levels of support and faculty development within their institution, and how it affected their self-efficacy. The following research questions were informed by the study purpose, the research method and design.

1. How do nursing faculty perceive the use and support of integrated online LMSs technology?
2. How do nurse faculty rate themselves, based on Bandura's self-efficacy model, regarding the utilization of LMSs technology?

Chapter 5 is organized into the following sections: Demographics, Setting, Data Collection, Data Analysis, Evidence of Trustworthiness, Results by Research Question, and Summary of the Data.

Demographics

In the survey, participants were asked to identify their age and gender. All participants identified themselves as female. Ages ranged from 36 to 65 years. One participant listed her age in the 36- to 45-year range. Three faculty listed their ages as 46

to 55 years. Four faculty listed their age as 56 to 65 years. No participants indicated being under age 35 or over age 65. When asked the length of time in years teaching in nursing, the participants responded in a range from less than 5 years to greater than 30 years. One faculty listed less than 5 years teaching. Three faculty selected 5 to 10 years teaching. One faculty selected 10 to 20 years teaching. One faculty selected 20 to 30 years teaching. Two faculty selected greater than 30 years teaching.

Setting

The setting for this study was Southeastern Pennsylvania, with participants from two counties. Both areas are considered urban. Directors at other schools were invited and seemed agreeable to participate; however, faculty did not respond to the request to contact me. The first part of the data collection consisted of an online survey questionnaire using SurveyMonkey, along with four follow-up interviews via telephone. SurveyMonkey is an online tool where surveys are created and results are instantly tallied, saved, and displayed in a bar-chart format. The results can be exported and saved in a PDF file format for analysis. The setting of local nursing programs and use of SurveyMonkey was chosen for quick access to consenting participants by utilizing email for contact. This study was exploratory in nature so a small sample size from nursing programs in South Eastern Pennsylvania were chosen as a representative of nursing faculty. Interviews were conducted via the telephone and recorded.

Data Collection

Data was collected via SurveyMonkey, using a survey that consisted of 19 questions. The survey link was provided only to participants who indicated their consent.

I sent the link to 10 consenting participants, and 8 faculty actually completed the survey. The survey was opened on August 1 and kept open until September 1 to maximize response time. Reminder emails were sent throughout the month. The initial two survey questions covered basic demographic data such as age and gender identity. The third question was about the number of years teaching in nursing. The remaining questions involved perceived self-efficacy, training, and support. The information received in the survey responses is described below.

I conducted interviews via the telephone with four faculty participants. Initially, I labeled the participants with numbers and I randomly selected four of the eight to participate in the interview. No one responded to that request. I sent a reminder email, and two faculty responded and agreed to an interview. The remaining four survey participants were contacted by me via email and I asked to participate in an interview. Of that group, two more faculty then agreed. Interviews lasted from 7 to 16 minutes.

Data Analysis

I collected data from eight consenting participants. In the survey, Questions 1 through 3 asked participants to identify age and gender. All participants identified themselves as female. Ages ranged from 36 to 65 years. Years teaching in nursing ranged from less than 5 years to greater than 30 years.

I wrote the surveys questions to identify levels of self-efficacy based on Bandura's Self-Efficacy Theory (1994). For these questions, a rating scale was used to measure the faculty's self-efficacy assessment, with choices being *very low*, *low*, *somewhat low*, *somewhat high*, *high*, and *very high*. Questions are detailed below:

Question 4 was as follows: When faced with a challenge, you would consider yourself as someone that can master most anything? In response, five faculty selected *somewhat high* and three faculty answered *high*. I asked this question based on Research Question 2: How do nurse faculty rate themselves, based on Bandura's self-efficacy model, regarding the utilization of LMSs technology? Self-efficacy models by Bandura (1994), can be used to measure confidence in performing difficult or new challenges. Self-efficacy beliefs influence a person's thinking, including the desire to take on challenges. I asked this question to gain insight into how the nursing faculty perceive their own ability to take on a challenge, such as using a LMS. In this case, all eight-faculty indicated that they were confident in taking on challenges.

Question 5: The commitment level is strong for projects and activities that interest you. One faculty selected *high*. Seven faculty selected *very high*. Commitment to perform a task is another indicator of self-efficacy. I asked this question to gauge participants' commitment levels to help answer Research Question 2. All eight faculty members indicated that they were highly committed to projects and activities of interest. This may be one indicator of a lack of interest in using the LMS within their institution, based on the type of LMS that is currently being implemented.

Question 6: Rate your overall level of self-efficacy, or your belief in your ability, regarding the use of LMSs. Two faculty selected *somewhat low.* Four faculty selected *somewhat high.* Two faculty selected *high.* Two of the faculty indicated having low self-efficacy when it comes to using the LMSs. The other six faculty have a higher belief in their ability to use the LMSs. This question directly corresponds to Research Question 2.

There are several explanations for these results, based on the interview responses, including ease of use, simplicity, and what elements of the LMS are being utilized. Detailed responses of the interviews are discussed within the interview results section.

The next group of questions identified information on the training and use of LMSs by faculty based on research question one, "How do nursing faculty perceive the use and support of integrated online LMSs technology?"

Question 7: What amount of training would you say you received on utilizing LMSs? Three faculty selected 1-5 hours. Two faculty selected 11-15 hours. One faculty selected 16-20 hours. One faculty selected 21-25 hours. One faculty selected greater than 25 hours. The amount of training varies. The results equate to 38% of faculty with less than 5 hours of training, 50% of the faculty received between 11-25 hours of training, and 12% of faculty received greater than 25 hours of training. The interview results will help to explain some possible reasons for these numbers.

Question 8: How would you correlate your self-efficacy to the amount of the LMSs training you received? One faculty selected *low.* Two faculty selected *somewhat low.* Three faculty selected *somewhat high.* Two faculty selected *high.* This means five out of eight faculty, or 62% of faculty correlated their level of self-efficacy with the amount of LMS training received. This was asked to help in answering research question two, "How do nurse faculty rate themselves, based on Bandura's self-efficacy model, regarding the utilization of LMSs technology?" in order to better understand if the nursing faculty made a connection to the amount of training provided by their institution had any effect on how comfortable they are using the LMS. This could indicate the need

for additional training or faculty development within the nursing department for improving levels of self-efficacy using LMSs.

Question 9: How much more LMSs training would you like? Two faculty selected 1-5 hours. One faculty selected 11-15 hours. Two faculty selected 16-20 hours. One faculty selected 21-25 hours. Two faculty selected greater than 25 hours. The results show that six out of eight faculty, or 75% of faculty would like an additional 11->25 hours of LMS training, preferably. This question was asked in order to establish faculty perspectives on use and support related to research question one, "How do nursing faculty perceive the use and support of integrated online LMSs technology?" Additional training is directly correlated to improvement in self-efficacy using LMSs for the participants of this study.

Question 10: How much of your time is spent productively using the LMSs? One faculty selected "none". Two faculty selected 1-5 hours. Three faculty selected 6-10 hours. One faculty selected 11-15 hours. One faculty selected 16-20 hours. One faculty requested clarification on what to consider as far how much time is spent i.e.; a day, week, month. I clarified that a typical 40-hour work week is the bracket of time I was considering. The results show that six out of eight, or 75% of faculty spend less than 10 hours per week productively using the LMS. This question was asked to seek information to support research question one, "How do nursing faculty perceive the use and support of integrated online LMSs technology?" Based on interview results, some of the nursing faculty commented on the LMSs as "grotesquely inefficient" and "not user-friendly". Other reasons for this could relate to what the LMSs are used for. Some mentioned in the

interviews that the LMS is simply used for grades, so that could mean one only logs on to see or input grades, which would take less time than if the LMS were being utilized for much more.

Question 11: What level of comfort do you have uploading documents to the LMSs? One faculty selected *very low*. Two faculty selected *somewhat low*. One faculty selected *somewhat high*. One faculty selected *high.* Three faculty selected *very high*. The results show that three out of eight faculty, or 38%of faculty are not comfortable uploading documents to the LMS, while 62% of faculty are comfortable. Based on research question one, "How do nursing faculty perceive the use and support of integrated online LMSs technology?" I wanted to understand comfort levels of the nursing faculty and to understand if the technology itself impedes use. The interview results confirm a medium comfort level for the participants that were interviewed.

The following group of questions were related to institutional support:

Question 12: What overall level of support do you feel from your institution regarding use of the LMSs? One faculty selected *very low*. One faculty selected l*ow*. One faculty selected *somewhat low*. One faculty selected *somewhat high*. Four faculty selected *very high*. Responses varied, showing that ultimately three out of eight faculty, or 38% of faculty felt low levels of support in using the LMS from their institution. However, four out of eight, or 50% of faculty rated their institutions *very high* on support. This directly answers research question one, "How do nursing faculty perceive the use and support of integrated online LMSs technology?". The level of support provided by the institution can have an effect on how the LMSs are utilized. Of the four interviewed,

the levels of support from the institutions varied, although no regular workshops are scheduled specific to utilization of the LMSs.

Question 13: How would you rate the amount of time spent by your institution in supporting you in the utilization of LMSs? One faculty selected *very low*. One faculty selected *low*. One faculty selected *somewhat low*. One faculty selected *somewhat high*. Four faculty selected *very high.* Like question 12, in rating the amount of time spent on support of faculty using the LMS, three out of eight, or 38% of faculty selected low options, while five out of eight, or 62% of faculty picked high options. This question provides inquiry related to research question one, "How do nursing faculty perceive the use and support of integrated online LMSs technology?".

Question 14: How would you rate the faculty development program provided by your institution regarding the technology of LMSs? One faculty selected *very low.* One faculty selected *low*. One faculty selected "*somewhat low*". Two faculty selected *somewhat high*. Three faculty selected *very high*. As far as faculty development programs, three out of eight, or 38% of faculty did not think their institution provided an adequate professional development program. However, the remaining 62% of faculty believed their institution's faculty development program was worth high ratings. One possible reason for the latter results could be that was the group of nursing faculty that were not interviewed, meaning the group I spoke with were those selecting the low choices and did not feel their institution was all that supportive by not providing regular faculty development using LMSs. This information helps in answering research question

one, “How do nursing faculty perceive the use and support of integrated online LMSs technology?”.

The remaining questions relate to age as a factor, overall usefulness of the LMSs in nursing education, and additional training to inform the research question one, “How do nursing faculty perceive the use and support of integrated online LMSs technology?” and research question two “How do nurse faculty rate themselves, based on Bandura’s self-efficacy model, regarding the utilization of LMSs technology?”

Question 15: You consider your age as a factor in your level of self-efficacy utilizing the LMSs. Three faculty selected *very low.* Two faculty selected *somewhat low*. Three faculty selected *somewhat high*. Age is not factor for 62% of faculty, but age is a factor for the remaining 38% of faculty. According to the demographics question in the survey, one participants was between the ages 36-45, three participants were between the ages 46-55, and four participants were between the ages 56-65. This could be significant if age is connected to the use or non-use of technologies. I asked this to determine if there could be a connection to age, self-efficacy, and LMSs, which for more than half of this group of participants, it is not.

Question 16: How would you rate the usefulness of the LMSs? One faculty selected *very low*. One faculty selected *somewhat low*. Three faculty selected *somewhat high.* Three faculty selected *very high*. The results show that six out of eight faculty, or 75%of faculty felt that the LMS is useful. One reason for the high results regarding usefulness again could be that was the group of nursing faculty that were not interviewed, meaning the group I spoke with were those selecting the low choices and did not feel

their LMS was useful. Based on the interview results, the LMSs are used for grades and lectures, mostly. This explains why it could be considered useful to some. However, others interviewed stated it is not very useful. Three out of four interviewed participants stated their LMSs was nothing like Blackboard. They knew the capabilities of Blackboard from previous experience and one called their institution's LMSs "hokey" and "clunky".

Question 17: How important would you say the LMSs are to the instruction of nursing students? One faculty selected *very low*. One faculty selected *somewhat low*. One faculty selected *somewhat high*. Two faculty selected *high*. Three faculty selected *very high*. Like question 16, 75% of faculty stated the importance of the LMS in nursing education. This makes sense when you consider the majority of the participants stated the LMS was useful in survey question 16.

Question 18: What is the likelihood you would attend regular workshops on increasing skill levels using LMSs if the institution provided it? One faculty selected *somewhat low*. Two faculty selected *high*. Five faculty selected *very high*. Seven out of eight faculty, or 88%, would attend regular workshops to improve their skills using LMSs. This question was asked to identify if faculty wanted additional support, lending information to research question one, "How do nursing faculty perceive the use and support of integrated online LMSs technology?" The interview results confirmed that no regularly scheduled workshops are available to faculty. One interviewed participant stated "Yeah, and we don't have any faculty development workshops that talks about those types of things, you know what I mean, to enhance your teaching".

Question 19: If you attended workshops or regular training on LMSs, what amount of increase do you think your self-efficacy level would raise? One faculty selected *somewhat high*. Five faculty selected *high*. Two faculty selected *very high*. Results show that all eight, 100% of faculty, thought additional workshops and training would increase their level of self-efficacy. The results show that the participants in this study connect regular training using the LMSs with their levels of self-efficacy, indicating the need for more training by the institutions.

Interview questions sought information on the type of LMSs used by the faculty. The interviews were recorded and transcribed using Transcriptionhub.com. The transcriptions were reviewed alongside the audio for accuracy, with necessary corrections made. Transcriptions were sent to participants for member-checking. All audio interviews and transcriptions were uploaded into NVIVO. NVIVO software was utilized for coding. Word query search and phrase query search lead to the creation of categories including communication, faculty development, and self-efficacy. The information provided by the faculty is described below. The interview data results are separated below by individual interviewee responses.

Participants are identified by number:

P1: The participant was asked what type of LMS is used within their program. The program in use is called SONIS. She made sure to state immediately that "it's not anything compared to a Blackboard". When asked what elements of the LMS is used by faculty within the nursing program, she stated the PowerPoint lectures are uploaded there and "that's pretty much it". The faculty member went on to say that it is a one-way

communication stream from faculty to student. There is the capability to send messages to students, but they don't use it for that because there is a 15-character limit in messaging, so faculty usually just send emails to the student body. She reiterated that "that's why there is no way to compare it to Blackboard or something like that". The faculty member confirmed for me that she was very familiar with Blackboard from previous use. She went on to say that theirs is a small school, the students are available, and so a lot of things are done face-to face. As far as how useful the SONIS is, she stated that the grades are put in there for the coordinators of the students to view and compute the grades throughout the year. Additionally, the SONIS has the capability to accept the list of instructors, email addresses, the classroom, and course dates, although she stated "we don't use it very much because it's not very helpful". As far as uploading the lectures, she stated "we don't upload them at once or students will never come to class". She mentioned uploading both a class version of lectures and a print version with any course announcements. She stated it is confusing and limiting to just the 15-characters, again reiterating that is "one way" form of communication. She went on to say that the SONIS can hold general information, course management and course grades, and attendance. When asked to clarify if any faculty store that information in the SONIS, she stated "No, nobody would look in there, no. The only thing that is in there are the grades". Attendance is not tracked in the SONIS although it has the capability. There's also an area if you want to post to buy things and what textbook is in use, along with faculty profiles containing email addresses and contact information. When asked about faculty development programs available for support in using the LMS, she stated there is

a faculty development committee at the school, but it is the school librarians and the Director of the program that are considered "super users" in SONIS that are designated to teach faculty. The students are given a "workshop or rundown" in how to use the system. When asked to state the level of comfort or self-efficacy for specifically using the LMS, she stated "it's not very hard to use". She went on to say:

> It's very simple, yeah. It's pretty simple. It's a simple learning, it's a simple technology platform. And again, compared to Blackboard where you have oh my goodness, every do this do that, blah blah blah. It could be very confusing, it's very basic.

P2: When asked which LMS was in use at her facility, the faculty member stated "We use a system called SONIS, it's very similar to say, Blackboard. Where we put things up online for them to see the communication there, grades are there, so, SONIS is what we use'. She went on to say that the elements used include posting the Power Point slide presentations, announcements to students because they have their emails there. Power Point lectures can be loaded to the SONIS before or after scheduled lectures for student access. Additionally, there is the text message capability in the system. The grades are posted in the system as well. She reiterated that "it's very similar to Blackboard". When asked to describe how texts are received if sent, clarifying if that meant via cell phone, she stated that they could receive texts to their cellphones, however they use their Prime email accounts, which is the hospital system email account in which the school operates and functions. Assignments and reading lists have also been uploaded

to the SONIS, although assignments are also given out during class. Faculty development inquiry led to her response:

> Yes. The librarian pretty much helps to do like a little training with her and then she's also available for support if there are issues with SONIS. So, I would say, our school librarian is pretty much primarily the one like when I first came here, she is the one that taught me how to use it.

She went on to say that the students get an introductory class as freshman, but then faculty themselves take it on case by case, one by one with students going forward. As for stated level of self-efficacy using the LMS:

> My goodness. I mean, I'm comfortable now uploading documents and reaching out to students through it and checking grades. So, I would say I'm at a medium comfort level. I'm certainly not an expert by any mean. I'll tell you that, I mean, I feel blessed here because honestly, working at other places usually get the email about it and you're kind of on your own, so.

I appreciated the response saying I was glad she told me that because that is what I am trying to find out. She responded:

> And even as an employee here honestly, we're connected to the hospital and the hospital is changing systems and basically get emails but you need to sign on to the systems but no real, I mean an email instruction and that's it. No class or anything like that. Yeah, I mean that is kind of out there happening unfortunately. Yeah, and we don't have any faculty development workshops that talks about those types of things, you know what I mean, to enhance your teaching. You

> never have any in-services on that. These are the things you can use online to enhance your teaching and you never get that, so.

P3: When asked what LMS is used within the nursing program the faculty member told me SONIS. I clarified if she had used any other LMS and she stated "mostly just SONIS". As for the elements of the LMS that are in use by the program, she stated:

> SONIS allows us to post our documentation and students can go there and we can actually email them. If we need it for SONIS, we can also post our grades on SONIS.

In addition to the email capability, she stated the faculty mostly email via the hospital email system mail. The school functions within a hospital system and as a part of the system the students and staff use the system email. In discussing faculty development in connection with using the LMS, she stated:

> We do have, yeah, we do have a faculty development program to allow us to get there to upload our documentation there. And when they first came out with this, we had a representative from the company who came here to talk about how to use it. It's not very user friendly. I'll probably get in trouble for that. We do have our recruitment specialist who has special training in SONIS. And if we have a problem, we can go to her and she sends out all of the information from the company to all of us.

As for her level of self-efficacy using the LMS, she said she would say “medium”. Clarifying the meaning of medium in the survey, I asked her if her comfort was “somewhat high” and she could not remember her initial response on the survey.

P4: When asked what type of LMS is in use within the nursing program, the faculty member stated “we are using a hokey program called Campus Cruiser”. I said I had heard of it and she said “Yeah, you don’t want to hear of it”. I asked if it wasn’t good and she reiterated “No, it’s not. It’s hokey. It’s very inefficient, terribly, terribly, terribly inefficient”. She went on to say that in the Fall of next year, they would be switching to a different program called Canvas. She clarified that Campus Cruiser is like a Blackboard, but “it’s just clunky, very, very clunky”. When she was asked, what elements are there for teaching she said:

> Oh, everything is there. It’s just 300 buttons we have to push to get it. So, it’s like a Blackboard ultimately, but it’s go here, find there, go through the list, pick it up, move it around, blah, blah, blah. It’s really ridiculous.

She continued on to say that the system works and “that’s so clunky, yeah. It’s grotesquely inefficient”. More commentary on what elements the nursing program uses from the LMS included:

> We post the course on there and, on the message board. We use the grade book, we can email people, we have a front page with information, there is a site to upload papers, articles, anything you want to upload. So, you’ve it got available. It’s just clunky.

As for support or faculty development using the LMS, she stated that the “whole IT operation supports it”. When asked if there are regular supports offered, like seminars annually or bi-annually, she stated they use a program called Lynda.com. She continued

on to say that they (the IT department) have done intermittent seminars “here and there but nothing regular”. When asked her level of comfort or self-efficacy, she stated she was “fairly new at it, about 60%. I know enough to get by, enough to be dangerous”.

Evidence of Trustworthiness

Evidence of trustworthiness was established through a specific data collection process, precision note-taking, review of notes and journaling, audio recording of interviews, transcription and audio comparing, and participant review of transcriptions.

Credibility represents the authenticity of the data or the participant views and the explanation and depiction of them by the researcher (Polit & Beck, 2012). “A qualitative study is considered credible if the descriptions of human experience are immediately recognized by individuals that share the same experience. To support credibility when reporting a qualitative study, the researcher should demonstrate engagement, methods of observation, and audit trails” (Pope, 2014, p.89). Audit trails were maintained through journal notes with reflective thoughts, audio of the interviews with transcription, and data analysis information.

Transferability occurs when the same study can be conducted in other settings and situations (Polit & Beck, 2012). Transferability was established through detailing the description of the methodology, participants, and data collection procedures to provide sufficient information for readers to associate the findings with their own experiences.

Dependability was established through the detailed data collection process which should be easily replicated by future researchers. The process included a survey, collecting data from participants. Following the survey, a selection of the participants was

interviewed for further clarity on the survey questions. Detailed notes and journaling was maintained throughout the process.

Confirmability is the researcher's way to prove the data is representative of what the participants revealed. Confirmability was established through reflexivity. Reflexive journals detailed how the findings were established. Conclusions should be results directly found in the data (Pope, 2014). One way to ensure this is to keep detailed notes and direct statements from participants. Confirmability ensures the data has been collected and analyzed without bias on the part of the researcher. One way to avoid bias is through clarification. Participants were asked clarifying questions regarding their responses if there was uncertainty in understanding the initial response given in the interview. Participants were allowed to review the transcription of the interview as a form of member-checking. One way to ensure neutrality of the findings is to keep an audit trail of the research process. For survey data, results were collected automatically through Survey Monkey and the data was analyzed based off of the number of responses through central tendency. Audio transcripts were reviewed alongside the audio of the interviews for accuracy. In addition, the transcriptions were sent to each participant via email to ensure their responses were accurately transcribed. This form of member-checking collected feedback from participants to validate the translation of their responses and correct information that had been transcribed inaccurately.

Results by Research Question

Results from this case study are qualitative and based on information received from survey and interview responses. The results exposed differences in opinion on the

part of the faculty when it came to support using LMSs from their institutions. Survey results revealed high marks for faculty development programs, however, interview results were drastically different. For use and support inquiry, faculty that participated in the interviews did not give high ratings to their faculty development programs, stating there is no regular workshops scheduled when it comes to using LMSs. For the self-efficacy inquiry, qualitative results varied, however most respondents gave themselves high marks in self-efficacy connected to the use of LMSs.

For the question "how do nursing faculty perceive the use and support of integrated online LMSs technology?", results were divided. The survey data results showed that six out of eight faculty, or 75% of faculty, felt that the LMS is useful. Additionally, six out of eight faculty, or 75% of faculty, also felt that the LMS is important in the teaching of nursing students. Interviewed faculty stated their LMS was "very basic", "simple", and "not very hard to use". They also stated the LMSs are mostly used for uploading lectures, PowerPoints, and grades. Most considered themselves at a medium comfort level as far as use. The survey data results showed that as for support, three out of eight, or 38% of faculty, did not think their institution provided adequate support, selecting "very low", "low", and "somewhat low" choices. However, the remaining five, or 62% of faculty, believed their institution's support was worth "somewhat high" and "very high" choices. The interview data revealed that support is available in varying forms, either as one-on-one with a librarian, or through a website platform that offers the user resources to utilize on their own time. The one faculty mentioned a specific website that is provided by the school. Upon investigation, I found

this website is for faculty to select and schedule learning modules to increase their skills. The survey data results showed that as for faculty development programs, three out of eight, or 38 % of faculty, did not think their institution provided an adequate professional development program, selecting “very low”, “low”, and “somewhat low” choices. However, survey data results showed the remaining 62% of faculty believed their institution’s faculty development program was worth high ratings, selecting “somewhat high” and “very high” choices. One reason for this result could be that survey participants that were not interviewed could have selected these high responses.

In regards to the amount of training received using the LMSs, the survey data results varied. The results equate to 38% of faculty with less than 5 hours of training, 50% of the faculty received between 11-25 hours of training, and 12% of faculty received greater than 25 hours of training. No regularly scheduled faculty development programs were scheduled, specific to the use of the LMSs, in either school that participated in the interview portion of this study.

For the question, “how do nurse faculty rate themselves, based on Bandura’s self-efficacy model, regarding the utilization of LMSs technology?”, the results varied. Survey data results show six out of eight faculty, or 75% of participants, rated their overall level of self-efficacy, or the belief in their ability- regarding the use of LMSs- with “somewhat high, “high”, and “very high” choices. The results connect to interview responses that explain the type of LMSs in place. Three of the interviewed faculty were from one school and all use the same LMS. The LMS in use at this particular school was labeled “not hard to use” and “very basic”. This could explain higher self-efficacy levels

in those that use this LMS. When asked to correlate the amount of training to reported self-efficacy levels, the survey data results revealed that more than half of the participants, five out of eight faculty, or 62% of participants, selected “somewhat high” and “high” choices, connecting the amount of training received to their reported level of self-efficacy, or comfort, using LMSs. Again, this could be that those that were not interviewed gave high responses, or it could also mean that those that had the individual training from the librarian had very good training and that is why their self-efficacy is high. Furthermore, survey data results showed that five out of eight faculty, or 88% of participants, selected “high” and “very high” choices when asked if they would attend regular workshops to increase skills in utilizing the LMSs. Survey data results showed that all participants selected “somewhat high”, “high”, and “very high” choices when asked if additional training would increase levels of self-efficacy using LMSs.

Summary of the Data

This study pursued the nursing faculty perspectives on LMS use, support, and levels of self-efficacy. Participants were confident in their ability to take on challenges and had high commitment levels when projects and activities interest them. This was important to establish early on, since this study sought levels of self-efficacy of faculty using LMSs. The survey questions revealed how faculty feel about their confidence and commitment levels. High confidence and commitment is directly related to higher self-efficacy levels. Additionally, faculty rated their self-efficacy levels in the high range in using LMSs. The interview results support the survey results as well. Interview results revealed that faculty are comfortable using their specific LMSs. Faculty revealed that

their LMS was relatively basic and easy to use. As for support and use, the survey results were somewhat different than the interview results. Participants in the survey provided high marks for their institutions faculty development programs in the area of utilizing LMSs. The interview results differed. Participants' responses exposed a lack of support and faculty development when it comes to the LMSs.

In Chapter 5, I will discuss the interpretation of the findings, recommendations for future research, and the implications of the research. In addition, the importance of this study in future research and competency-based program development is presented.

Chapter 5: Conclusions and Recommendations

Introduction

The purpose of this study was to understand how nursing faculty perceive the use and support of integrated online LMS technology, along with levels of self-efficacy, at the institution in which they work. The research questions addressed how nursing faculty perceive the use and support of integrated online LMS technology, along with levels of self-efficacy, at the institution in which they work. The nature of this study was a case study approach. The case study design was consistent with the stated purpose of the study. First, data were collected through an online survey designed to solicit stated levels of self-efficacy, and gauge perspectives on LMS use and support for faculty. The survey data were then connected to data collected in follow-up interviews. The interviews served to clarify survey responses through deeper discussion of the topics of technology support using LMSs and stated levels of self-efficacy. Finally, member-checking acted as a final data source. The data collection and interpretation was guided by Bandura's (1994) self-efficacy theory. This case study provided valuable insight into professional development and necessary levels of support based on the perspectives of a sample of nursing faculty who use LMSs within their teaching.

Interpretation of the Findings

Since there was very little current literature in this area, I wanted to conduct a study on nursing faculty who use LMSs. According to Rock (2014), "Nursing faculty development programs are critical to cultivate new faculty into skilled educators, provide veteran faculty with opportunities to develop and strengthen skills, and initiate needed

changes in nursing education" (p. 679), but the number of nurse educator candidates is shrinking. The use of online educational practice is important in the development of competent, practicing nurses (Rock, 2014).

One of the findings of my study was that participants had a negative opinion of the LMS in use at their institution. A few of the interviewees mentioned their prior use of the LMS platform Blackboard and how much better it was than the LMS platform in use within their institution, noting that their current LMS does not compare to "something like Blackboard." The results may have been quite different if the faculty liked their LMS platform. Increased time and skill demands are placed on nurse educators to acclimate to the current use of technologies such as LMSs (Button, Harrington, & Belan, 2013). Faculty described their platform as "clunky" and "grotesquely inefficient", however, the majority of the faculty did consider the LMSs useful.

The results of my study expand on previous literature by uncovering how the nursing faculty feel about the use of LMSs. The results provide current, specific information regarding self-efficacy of nursing faculty utilizing LMSs. As stated in Chapter 2, previous studies covered areas outside of nursing education, and any literature on nursing faculty was not recent enough to be relevant. The results of my study showed that even though most faculty felt the use of LMSs is important to the student's education, some faculty gave low marks to the amount of time and support provided by their institution when it comes to using their LMS. Despite the initial training the participants had when they began using their institution's LMS, the majority of the survey participants desired additional training. In fact, all of the participants surveyed

said they would attend regular workshops. Although the survey data revealed that most of the participants gave high ratings to their faculty development programs related to use of LMSs, the interviewed participants stated that such programs were not regularly scheduled. For the interviews, three of the four participants were from the same school of nursing. One was from a different school of nursing. Since faculty from three schools responded to the survey, and interviewees were from two of those schools, it may be that the faculty from that third school were the ones who gave the high marks to the faculty development programs. This could explain the apparent discrepancy between survey answers and interview answers.

According to the literature reviewed for this study, teachers report a lack of self-efficacy and confidence due to deficiency in their own online experiences with technology (Duprez, Van Hooft, Dwarswaard, Van Sta, Hecke, & Strating, 2016; He, 2014;). Based on Bandura's theory, high confidence and commitment is directly related to higher self-efficacy levels. The survey data revealed how faculty feel about their confidence and commitment levels, with *high* and *very high* marks. However, faculty rated their self-efficacy levels in the *somewhat high* and *high* range in using LMSs. This can be interpreted to mean that although faculty are very confident and committed overall, they may not be so confident and committed specifically in their use of their LMS. Three of the faculty talked about only using their LMSs for posting grades and lectures. Upon investigation, I discovered that the capabilities of the LMS in use at their institution include creating online forums, displaying course schedules, taking attendance, setting reminders, adding booklists, sending/receiving emails, grading, and uploading

course materials. Both in survey responses and interviews, most faculty indicated that they thought their LMSs were very basic in style and simple to use. Interview results also revealed that faculty are comfortable using their specific LMSs. This could explain the mostly high self-efficacy levels reported by these faculty members. The perceived levels of self-efficacy had a direct correlation with adoption and use of the technology, as they did in Kim and Kim (2013). Understanding faculty perspectives can greatly influence how effectively a LMS is used (Cheok & Wong, 2015). Interview results confirmed that some faculty have the support of the librarian when there are issues using the LMS. The survey results revealed faculty believed there is a correlation between their level of self-efficacy and the amount of training received. Factors that predict satisfaction included ease of use, organizational support, training, attitude, interaction, and self-efficacy (Cheok & Wong, 2015). It seems some do feel supported by their institution but would like more training using the LMSs.

Limitations of the Study

This study was exploratory in nature, thus only a small sample of schools/faculty were chosen to participate, unlike the larger sample seen in a broader study. This study was limited to nursing programs within an area of one state in the eastern region of the U.S. This study was also limited by time and financial constraints of the researcher. Limitations included not extending participation to all the faculty within the nursing program. Specific guidelines for identification of participants was inclusive to those that are nursing faculty and have utilized a LMS. One nursing faculty member declined to participate as she felt she did not qualify as a participant, stating she did not use the LMS

available to her in the program. The survey opened on August 1 and initially was only going to be kept open for 2 weeks. When responses were limited, an additional 2 weeks was added to allow for more responses. The number of participants who completed and returned the survey was an issue; however, persistent reminders were sent to make every effort to get as many participants as willing to complete the survey. Invitations were sent multiple times to the schools. The directors of two of the schools stated faculty were on summer break until the end of August. The suggestion was to extend the time period for the survey. Once classes were back in session, one school lost the long-time Director of Nursing to an illness. This situation could have been very preoccupying to staff and faculty of that program and a reason why none participated in the study.

Recommendations

With the application of Bandura's self-efficacy theory and the information gathered in this study, the directors of the nursing programs will have a baseline knowledge of what level of self-efficacy faculty have, as well as levels of support needed and desired when it pertains to LMS utilization. Faculty agreed that their self-efficacy is connected to the amount LMS training that was provided. Furthermore, all faculty desired more training on using the LMSs. The nursing programs, directors, and faculty development committees in educational institutions can perform additional inquiry to uncover implementations that can improve the levels of self-efficacy for the nursing educators. In addition, further inquiry can aid the programs in uncovering what is working and what is not, as far as the level of support provided, and what can be done to make levels of support even higher for the faculty.

Implications

This research can contribute to positive social change in the nursing education environment by informing future practice for nursing programs utilizing LMSs. The research can benefit stakeholders in nursing education, faculty, directors, and support developers, by addressing the use and support of current LMSs. The results offer insight into the faculty perceptions on self-efficacy using LMSs and can be of use to other nursing programs. This research can contribute to improving the amount of support provided to nursing faculty to promote higher levels of self-efficacy in the utilization of LMSs through recommendations for future practice. Recommendations for practice include regular workshops on utilizing the LMSs to maintain high self-efficacy of the nursing faculty. Another recommendation would be obtaining feedback from nursing faculty on a consistent basis to gauge how the LMSs are working for them. If nursing faculty can provide input that can help improve use, support, and self-efficacy, faculty can be an integral part of faculty development within their institution. It is also recommended that further research be performed within additional nursing schools to inform stakeholders of changes needed in the LMS platform being used or in faculty development desired by faculty.

Conclusion

Due to the dated literature and lack of details on the topic of LMS use in nursing education, there was a need to investigate the perceptions of self-efficacy and perceptions of support by nursing faculty. I had been teaching nursing myself and realized the technology was not being utilized to its fullest potential. In fact, I noticed that some

colleagues were not using the technology at all. The nursing faculty would have other faculty, including myself, upload documents for them because they stated they did not feel comfortable with that task. I started searching for literature on the topic of nursing faculty self-efficacy and LMS use. The review of literature required the inclusion of literature outside the area of nursing education to support the need for my study. Researchers in other disciplines in education have inquired about the perspectives and levels of self-efficacy for the faculty and also their use of the LMSs for instruction. This research filled the gap in the literature regarding the levels of self-efficacy for nursing education faculty using LMSs. The findings of this study provide university nursing programs a starting point for addressing the need for faculty development, specifically in using LMSs, to improve faculty use of technology for the betterment of nursing education.

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Appendix A: Survey Questions

Purpose

The purpose of this proposed study is to address the gap in literature regarding nurse faculty perspectives on support and self-efficacy levels regarding the utilization of Learning Management Systems (LMSs) technology. The information collected in this survey will be analyzed using central tendency. From the information gathered, baseline knowledge of what level of support is felt on the part of the faculty and additional research can be gathered. This information may help uncover implementations that can change/improve the levels of self-efficacy for the faculty, if warranted.

Survey

A survey using a Survey Monkey link will be emailed to prospective participants to 6 select Southeastern Pennsylvania nursing programs. A minimum of 15-30 responses is desired for the critical case sample.

Self-Efficacy and Support of Nursing Faculty Regarding the Use of Learning Management Systems in Nursing Education

This proposed research purpose is to identify technology support and self-efficacy levels for nurse faculty utilizing LMSs.

Basic Demographic questions:

Age of Faculty:

☐Under 35 ☐36-45 ☐46-55 ☐56-65 ☐Over 65

Identify yourself as:

☐Male ☐Female

Length of time in years teaching nursing:

☐Less than 5 ☐5-10 ☐10-20 ☐20-30 ☐Greater than 30

Answer the following questions based on the scale of 1-6:

1-Very low 2-Low 3-Somewhat low 4-Somewhat high 5-High 6- Very high

1. When faced with a challenge, you would consider yourself as someone that can master most anything:
   ☐1 ☐2 ☐3 ☐4 ☐5 ☐6
2. You consider yourself someone that invests deeply in projects or activities in which interest you:
   ☐1 ☐2 ☐3 ☐4 ☐5 ☐6
3. The commitment level is strong for projects and activities that interest you:
   ☐1 ☐2 ☐3 ☐4 ☐5 ☐6

4. Rate your overall level of self-efficacy, or your belief in your ability, regarding the use of LMSs.
   ☐1 ☐2 ☐3 ☐4 ☐5 ☐6

5. What amount of training would you say you received on utilizing LMSs?
   ☐None ☐1-5 hours ☐6-10 hours ☐11-15hours ☐16-20hours ☐21-25hours

   ☐>25hours

6. How would you correlate your level of self-efficacy to amount of the LMSs training you received?
   ☐1 ☐2 ☐3 ☐4 ☐5 ☐6

7. How much more LMSs training would you like?
   ☐None ☐1-5 hours ☐6-10 hours ☐11-15hours ☐16-20hours ☐21-25hours ☐>25hours

8. How much time of your time is spent productively using the LMSs?
   ☐None ☐1-5 hours ☐6-10 hours ☐11-15hours ☐16-20hours ☐21-25hours ☐>25hours

9. What level of comfort do you have uploading documents to the LMSs?
   ☐1 ☐2 ☐3 ☐4 ☐5 ☐6

10. What overall level of support do you feel from your institution regarding use of LMSs?
    ☐1 ☐2 ☐3 ☐4 ☐5 ☐6

11. How would you rate the amount of time spent by your institution in supporting you in the utilization of LMSs?
    ☐1 ☐2 ☐3 ☐4 ☐5 ☐6

12. How would you rate the faculty development program provided by your institution regarding the technology of LMSs?
    ☐1 ☐2 ☐3 ☐4 ☐5 ☐6

13. You consider your age as a factor in your level of self-efficacy utilizing the LMSs:
    ☐1 ☐2 ☐3 ☐4 ☐5 ☐6

14. How would you rate the usefulness of the LMSs?
    ☐1 ☐2 ☐3 ☐4 ☐5 ☐6

15. How important would you say the LMSs are to the instruction of nursing students?
☐1 ☐2 ☐3 ☐4 ☐5 ☐6

16. What is the likelihood you would attend regular workshops on increasing skill levels using LMSs if the institution provided it?
☐1 ☐2 ☐3 ☐4 ☐5 ☐6

17. If you attended workshops or regular training on LMSs, what amount of increase do you think your self-efficacy level would raise?
☐1 ☐2 ☐3 ☐4 ☐5 ☐6

Appendix B: Interview

Interview Method

Follow-up interviews will be conducted via telephone, which will be approximately 30-45 minutes in length.

Follow-up Interview

From the perspective of nursing educators who have implemented LMSs:

1. Identify the type LMSs technology that you have implemented online. (Blackboard, Chat forums, Discussion boards, Wikis)

2. Describe the type (s) of LMS technology elements you have implemented when teaching online.

3. What types of LMS elements seem to work best for you?

4. How did you use the LMS within your course(s)?

5. Explain what programs, if any, are in place at your facility that supports the use of the LMSs technology being implemented.

6. What is your stated level of self-efficacy utilizing LMSs?

Appendix C: Letter of Cooperation

I am requesting your cooperation in the data collection process as part of my dissertation study at Walden University. I propose to collect data via email link using Survey Monkey, of a survey to nursing faculty at your institution, along with interview of selected faculty.

The purpose of my study is to understand the connection between Learning Management Systems (LMSs) technology support for nursing faculty and self-efficacy levels in using LMSs within their teaching. In reviewing the literature about nursing faculty's use of the technology, I found that there have been limited studies.

If you agree with the potential value of this study, I would then ask that you forward a letter invitation for the survey and interviews to your nursing faculty. Faculty can respond directly to me via email, and I will then send them a consent to participate. Once consented, a link to the survey using Survey Monkey will be provided for participants. Data will be instantly tabulated in Survey Monkey. Selected participants (4), across all participating program, would then be invited to complete an interview.

If you prefer not to be involved in this study, I will understand.
If circumstances change, please contact me via XXXXXXXXX@XXXXXXXXXX
Thank you for your consideration. I would be pleased to share the results of this study with you after completion of the study.

My IRB approval letter will be sent to you with the request to invite your faculty.
I am requesting that you reply to this email by signing below, "I agree" in the signature line. This will document that you are interested in supporting this data collection within your nursing program.
Please send this entire document back to me as proof of cooperation.

Sincerely,
Diane Burling
Educational Technology PhD Candidate

I agree to include the nursing faculty from _____nursing program in the study identified.
Name:
Title:
Date:
Electronic signatures are regulated by the Uniform Electronic Transactions Act. Legally, an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. An electronic signature is just as valid as a written signature if both parties have agreed to conduct the transaction electronically.

Appendix D: Widener University Letter of Cooperation

I am requesting your cooperation in the data collection process as part of my dissertation study at Walden University. I propose to collect data via email link using Survey Monkey, of a survey to nursing faculty at your institution, along with interview of selected faculty.

The purpose of my study is to understand the connection between Learning Management Systems (LMSs) technology support for nursing faculty and self-efficacy levels in using LMSs within their teaching. In reviewing the literature about nursing faculty's use of the technology, I found that there have been limited studies.

If you agree with the potential value of this study, I would contact your faculty directly with your permission to do so. Faculty can respond directly to me via email, and I will then send them a consent to participate. Once consented, a link to the survey using Survey Monkey will be provided for participants. Data will be instantly tabulated in Survey Monkey. Selected participants (4), across all participating program, would then be invited to complete an interview.

If you prefer not to be involved in this study, I will understand.

If circumstances change, please contact me via XXXXXXXXX@XXXXXXXXXX

Thank you for your consideration. I would be pleased to share the results of this study with you after completion of the study.
My IRB approval letter will be sent to your faculty with an invitation to participate.
I am requesting that you reply to this email by signing below, "I agree" in the signature line. This will document that you are supportive of direct contact of nursing faculty within your nursing program.
Pease send this entire document back to me as proof of cooperation.

Sincerely,
Diane Burling
Educational Technology PhD Candidate

The faculty at Nursing Widener University may be contacted independently for this study.

Name:
Title:
Date:

Electronic signatures are regulated by the Uniform Electronic Transactions Act. Legally, an "electronic signature" can be the person's typed name, their email address, or any

other identifying marker. An electronic signature is just as valid as a written signature if both parties have agreed to conduct the transaction electronically.

Appendix E: Invitation to Participate in Research Study

I am requesting your cooperation in the data collection process as part of my dissertation study at Walden University. I propose to collect data via email link using Survey Monkey, along with interview of selected nursing faculty across 5 separate institutions.

The purpose of my study is to understand the connection between Learning Management Systems (LMSs) technology support for nursing faculty and self-efficacy levels in using LMSs within your teaching. In reviewing the literature about nursing faculty's use of the technology, I found that there have been limited studies.

If you agree with the potential value of this study, I would then ask that you respond to this email and I will forward a consent for the survey and potential interview. You may send consents directly to me via email listed below. Once consented, a link to the survey using Survey Monkey will be provided to you. Data will be instantly tabulated in Survey Monkey.

If you prefer not to be involved in this study, I will understand.

If circumstances change, please contact me via XXXXXXXXXXXX@XXXXXXXX

Thank you for your consideration. I would be pleased to share the results of this study with you after completion of the study.

Sincerely,

Diane Burling

Educational Technology PhD Candidate

Appendix F: Reminder to Complete Survey

On _____ (date survey sent), you were sent a link to a Survey Monkey on a research study being performed by Walden University student, Diane Burling.

If you have not yet done so, this is a reminder to please complete the survey. The link to the survey is provide here:

_____ (Survey Monkey link)

Thank you for your cooperation in the study.

Sincerely,

Diane Burling
Email: XXXXXXXXX@XXXXXXXXXX

Phone: XXX-XXX-XXXX