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# Integration of Technology into a Nursing Curriculum Using a Mixed Method Approach

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# Walden University

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Susan Ramnarine-Singh

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2014

Abstract

Integration of Technology into a Nursing Curriculum

Using a Mixed Method Approach

by

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MSN, University of Hawaii, 1998

MPA, University of San Francisco, 1989

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Higher Education and Adult Leadership

Walden University

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## Abstract

In 2011, the Institute of Medicine and 2010 Affordable Care Act addressed the need to use technology in nursing programs. The purpose of this study was to understand faculty perceptions of technology use and integration into the nursing curriculum at a college located in Texas. Lewin's change theory acted as the theoretical framework to explore organizational dynamics involved in effective strategies. The guiding research questions explored faculty perceptions of technology use, types of technology used, and correlation to teaching experience using a convergent mixed-method approach. Thirty faculty members completed the Teacher's Intention to Use Technology survey and 15 faculty members participated in interview sessions. Faculty with fewer years of experience were compared to faculty with more years of experience and differed on ease of use ( $p = .010$ ), embracing technology ( $p = .011$ ), enjoying technology ( $p = .026$ ), available assistance ( $p = .020$ ), classroom preparation ( $p = .043$ ), and ease of learning ( $p = .047$ ). The qualitative data analysis used an open coding scheme and resulted in themes indicating the need for training, especially for faculty with less experience. Record review indicated scattered use of technological tools. A professional development workshop promoting teaching strategies using technology to help achieve learning outcomes, an online orientation to available technology, and a hands-on interactive workshop was created. Implications for positive social change include improving faculty members' knowledge and application of technology in order to positively affect and enhance teaching/learning strategies, student learning environment, and ultimately the lives of patients they serve.

Integration of Technology into a Nursing Curriculum

Using an Appreciative Inquiry Approach

by

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## Dedication

This project is dedicated to my husband, Lal and daughters, Mary & Sonia who endured my long hours and nights as I worked on my dissertation. Without their encouragement and support, I would have given up. I thank God every day for I have been truly blessed to have such a wonderful supportive family, friends, and peers who prayed for me along my journey.

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## Section 1: The Problem

### **Introduction**

The Institute of Medicine (IOM) in 2011 and the 2010 Affordable Care Act addressed the need for nursing programs to embrace the use of technology in order to provide safe patient care. Nursing faculty need to keep up with ever-evolving technological practices to enhance teaching and meet the learning needs of a diverse student population. Providing a healthy work environment in nursing academia is essential for retention and recruitment of faculty (Brady, 2010). Faculty members need training to work within the changing healthcare environment, which is increasingly dependent on technology. The National Council of State Boards of Nursing (NCSBN; 2012) and the Quality and Safety Education for Nurses (QSEN; 2012) regulate, provide guidelines, and identify potential advantages and disadvantages of using technological software or simulation tools as a teaching strategy over actual hospital clinical site experience to ensure patient safety goals are met.

I proposed that in order for faculty members to embrace and use technology, administrators must first assess faculty member perceptions of technology usage and how faculty members envision technology as a teaching modality. Bittner (2012) correlated job satisfaction with workload and a positive work environment and suggested that providing a positive work environment that meets technological training needs helps with alleviating faculty frustrations. In the first section, I addressed the problem and the rationale for conducting the study and explored evidence from both local and professional literature that addressed technology

integration with key terms defined. The significance of the study, guiding research questions, review of the literature, and implications was explored and addressed, leading to new information about faculty perception of integrating technology into the nursing curriculum that could lead to positive changes in nursing instruction.

### **Definition of the Problem**

Knowledge about faculty member perceptions of technology integration into the nursing curriculum is very limited. I addressed the problem the Department of Nursing chair reported at a curriculum meeting, that is, her perceived lack of faculty member support for use of the technology purchased for the computer and simulation labs. Understanding faculty member perceptions was essential to identify possible barriers to technology usage. Axley (2008) highlighted challenges encountered in attempts to integrate technology into the classroom and clinical setting, and found one challenge was the lack of actual research conducted among those faculty members who have access to technological tools that can be used in the classroom setting. Edwards (2011) described how the lack of administrative support affected faculty use of informatics, which resulted in a decreased retention rate among first-semester nursing students. Edwards concluded this domino effect can be detrimental to the nursing program, and that more research is needed to understand how to best integrate the use of technology into the curriculum.

In 2010, a college in Texas built a simulation center from funds approved by the college board of directors. The 86,000-square-foot, two-story structure houses state-of-the-art equipment, classroom and lab space, a computer lab, and a variety of



simulated healthcare, emergency, and hospital spaces to provide students a unique learning experience. The Nursing Department chair, a few faculty members, and the managers of the computer and simulation labs were the principal individuals who decided what type of equipment and technology would be ordered prior to the opening of the new center. Millions were spent on low and high fidelity manikins that imitate real patient conditions and symptoms in a simulated hospital environment. The college added an ambulance simulator that offered nursing and emergency medical technician-paramedic student's real-world training inside an ambulance. Hospital room equipment and furnishings allowed students to train on equipment they would use in the actual hospital clinical setting. The computer lab, which housed over 75 computers, was designed to allow faculty members to use software and web-based resource learning tools to enhance classroom and clinical student learning. All equipment was purchased with the expectation by the chair and board of directors that faculty members would use the technology to enhance teaching modalities and support the Department of Nursing mission.

The principal mission of the Department of Nursing simulation center and computer lab was to assist in meeting the healthcare needs of the community by providing a quality education program. The simulation center provided, promoted, and acted as a resource for state-of-the-art teaching, learning, and research on basic to advanced clinical skills. Faculty members used the simulation center resources to promote behaviors that were necessary for independent practice throughout the students' academic endeavors. The college's organizational mission was to provide

education excellence. The college collaborated with affiliated facilities to provide clinical scenarios, situations, and opportunities for maintenance of competencies, enhanced quality of care, and improvement of patient outcomes.

The extent of faculty members' perceptions of technology integration into the nursing curriculum was not known. The issue of using technology was increasingly important to nursing academia (Spencer, 2012). Spencer described how, in 2004, President Bush established a goal that all healthcare data are available electronically by 2014. The chair supported having an electronic format to help with the integration of informatics into curricula. The college spent millions on technology to help the Department of Nursing meet its mission to provide quality education. When faculty members moved into the new building, it was business as usual.

Faculty members used the same teaching modalities as they had in the old building. The newer technologies were not being used which prompted the chair to report at a curriculum meeting her perception that faculty members were not embracing, using, or integrating the available technological tools newly purchased to enhance learning in their classroom and clinical settings. Because the department was not fully embracing the use of available technology, the board of directors, to whom the chair reported to on an annual basis, she felt the directors might not approve future funding for more updated technology. Funding is critical for equipment faculty members had asked for since the opening of the nursing center in 2010, such as computerized patient charting aids that the chair promised to purchase. Computerized patient charting was an area of great concern for her.

The computerized charting aids if purchased would help faculty members train students with patient care documentation prior to entering the hospital clinical setting. Without these training aids, faculty members are forced to use clinical time at the hospital to train students on proper documentation, which is time, spent away from direct patient care. The chair understood that the Department of Nursing needed to meet the IOMs recommendations to deliver competent, safe patient care (IOM, 2012). Training aids are important and the chair needed to prove to the board of directors that funds were needed to equip nursing students with the skills needed prior to entering the workforce. The chair needed to provide data to the board that equipment was being used by faculty members before funding is granted.

Spencer (2012) described the IOMs recommendation that nursing leaders support electronic formats as part of the first-year nursing students' curriculum training to ensure competent, safe patient care. The chair needed to have a better understanding of faculty members' perceptions of technology, how faculty members were integrating technology into their teaching modalities prior to requesting additional funding. I explored faculty members' perceptions of technology use in the classroom and clinical setting and plan to report to the chair, faculty, and board of directors. I explored how technology was currently being used and how it needed to align with the Department of Nursing mission, which was to assist in meeting the healthcare needs of the community by providing a quality, technology-enhanced educational program, which could only be accomplished with faculty member support.

## **Rationale**

Faculty members are the critical gatekeepers who help students' master critical thinking skills (Richer, Ritchie, & Marchionni, 2009). The purpose of this study was to gain insight into faculty members' perceptions of technology use and integration into the nursing curriculum. Adamson (2010) addressed faculty perceptions of possible barriers for integrating technology into nursing curricula and found hands-on training promotes a positive interactive environment where faculty felt engaged. Adamson identified the need for further research to identify what type of training was needed to promote a positive learning environment. It was important to gain insight into whether faculty members felt technology had enhanced or would enhance current best practices. The overall rationale was to understand what strategies faculty members perceived could facilitate the integration of technology into the classroom and clinical settings. Results of the investigation would provide stakeholders and the chair a better understanding of ways current faculty members were integrating technology into their courses and their perceptions of how helpful technology was in providing effective training for students. Polly (2010) used the framework, technological pedagogical content knowledge (TPACK), and found that institutions that used technology-rich instructional materials had strong administrative support that constantly monitored faculty perceptions and provided mentoring methods through pre-services. Faculty inexperience with technology was a barrier for them as they tried to integrate technology in their courses. The ultimate goal was safer patient care, and research was needed to understand faculty members' perceptions of how to integrate technology

into the nursing curriculum. The intent of my study was to help faculty members identify what worked or did not work for them as they try to embrace the use of the technology and identify what was needed to help them integrate technology into the nursing curriculum.

### **Evidence of the Problem at the Local Level**

According to the Department of Nursing chair's report, the college purchased a state-of-the-art simulation center and computer lab—a high-cost investment to provide the most effective instructional program possible. The chair pointed out during a nursing curriculum meeting that there appeared to be a gap in practice and that the instructional technology, including new approaches to laboratory/simulated learning, had not been maximized or, in some cases, even used by current faculty members, as evidenced by the computer and simulation usage report provided by the computer and lab manager. Upon reviewing the NCLEX scores provided by the Texas Board of Nursing (TBON), the chair reported at the curriculum meeting that she believed that low lab usage may be a contributing factor in the steadily decreasing NCLEX pass rate (from 94% in 2008 to 88% in 2011) of first-time test takers. The Robert Wood Johnson Foundation in 2005 funded the Quality and Safety Education for Nurses (QSEN) project, which recommended QSEN and Knowledge, Skills, and Attitudes (KSA) training be part of the first year nursing students' curriculum to ensure competent, safe patient care concepts are introduced and tested (Spencer, 2012).

According to the TBON report provided to all deans and directors of nursing programs, programs with NCLEX pass rates that fell below 80% for two consecutive

years would be placed on warning status and could lose their approval status, based on the TBON regulatory requirements (BNE, 2012). Nursing programs that are placed on warning status must complete a self-study to review their curricula and teaching modalities to ensure concepts that are tested for licensure are being covered. The Accreditation Commission for Education in Nursing (ACEN) reviews the self-study for reaccreditation status consideration. Many hospitals require nurses to be graduates of an accredited program in order to keep their own accreditation status.

In fall 2012, the DON chair reported that, to properly respond to a steadily decreasing NCLEX pass rate (94% in 2008 to 88% in 2011), faculty members needed to look at alternative, more technological, teaching strategies (NLNAC Report, 2012). The chair provided during a curriculum meeting statistics that showed that the 68% faculty turnover over the past 2 years, resulting in increased responsibilities as well as larger student enrollments in the didactic and clinical areas, might be contributing factors to voiced faculty frustrations about integrating technology as a teaching strategy in their courses. The chair explained that there needed to be an acceptable professional development plan of action by which faculty members would adopt, integrate, and implement the new DON technologies so students could experience an interactive and innovative curriculum. She explained that she was required to report to the college board of directors how the new technology that was purchased was helping improve the overall nursing program. The results generated by this study are important in assisting the directors to determine whether future available funds should be spent to support the Department of Nursing or be used to support other college departments.

With faculty member input, the chair shared her vision for the department, which included providing faculty and students positive interactive experiences throughout the curriculum using the technology tools available in the classrooms and in the simulation and computer labs to improve transfer of learning.

### **Evidence of the Problem from the Professional Literature**

The current problem within the nursing department at a regional college in Texas was a perceived gap in professional practice using the available instructional technology in which the college had invested millions of dollars to enhance training and to prepare students to enter the healthcare workforce. Ertmer (2011) found that the lag in technology integration was due to both external and internal barriers. External barriers included lack of administrative or technical support, while internal barriers included attitudes, beliefs, and knowledge. According to the IOM of the National Academies (IOM Report, 2011), there was a need for an action-oriented blueprint to help propel the future of nursing education into the ever-evolving and changing technological age. Achieving an educated workforce that could adapt to the prescriptions of the 2010 Affordable Care Act, which described the need for nursing education to fundamentally improve before nurses receive their licensure was necessary. Edwards (2011) noted how integration of informatics into nursing programs was critical to ensure successful career progression in an increasingly technological healthcare environment. The biggest barrier Edwards found was lack of academic support and faculty resistance, which resulted in decreased retention rates among first-semester nursing students.

Nursing faculty members needed to expand their roles, which historically have revolved around antiquated teaching methods such as lecturing with PowerPoint presentations and creating exams based on rote memory, instead of using newer technological and simulation tools. Newer technologies, such as computer software and simulated scenarios that are designed to enhance teaching and learning needs, support multiple learning styles in diverse classroom and clinical settings while reflecting current best practices, as described by the Quality and Safety Education for Nurses (QSEN; 2012) report. Fetter's (2009) project study of the Technology Informatics Guiding Education Reform (TIGER) initiative coalition found lack of faculty training and knowledge lead to faculty dissatisfaction and resistance to using informatics as a teaching strategy. Fetter concluded that faculty input and involvement was needed to develop policy initiatives necessary to support nursing programs and to help support the educational needs of the students entering the workforce.

### **Definitions**

*Appreciative Inquiry*: Describes how positive solutions are used as a strategy in obtaining input from an organization or individuals on what has promoted or can promote positive change (Hammond, 1998).

*Institute of Medicine (IOM)*: An independent nonprofit organization that works outside of the government to provide advice to the public and decision makers (IOM, 2013).



*National Council Licensure Examination (NCLEX):* The licensure examination nurses must pass in order to work as a registered or licensed practical nurse (NCSBN, 2013).

*Quality Safety Education for Nurses Institute (QSEN):* Organization that continuously monitors and disseminates information about best practices (QSEN, 2013).

*Simulation:* Clinical training that provides prepared scenarios that mimic hospital conditions in which students can practice their skills prior to entering the real hospital setting (NLN, 2013).

*Technology:* Specialized equipment, machinery, or software, such as electronic medical records, used in the nursing program as an adjunct to learning (Barton, 2009).

### **Significance**

The IOM (2011) reported technology needed to be embraced by nursing academia as it increasingly evolved in the hospital setting. Preparing nursing students to enter the workforce with skills already taught at the academic level would help ensure the delivery of safe patient care (IOM, 2012). Faculty members' perceptions and recommendations hold great significance for the ultimate integration of technology into curricular processes. Lewin believed social change could occur when elements that compose the individual were identified and explored (Burnes, 2004). I sought to gain insight into faculty members' perception of technology integration, which would assist the chair to determine what strategies were needed to help faculty members embrace technology in their classroom and clinical settings.

Without the cooperation and input from faculty members, the Department of Nursing might lose funding to obtain new technology or update available technology. The results of my study would be beneficial to the Department of Nursing faculty, chair, board of directors, and students because as Lewin (as cited in Burnes, 2004) described, knowledge of the dynamics of organizational change is crucial for organizations as they implement effective strategies to move forward. My study was important to the local setting as it provided insight into curricular considerations that were based on faculty member perceptions of technology integration.

### **Guiding/Research Questions**

Guiding/research questions were addressed and explored faculty member perceptions of how to integrate technology into the nursing curriculum. The local problem addressed by the chair consisted of the need to explore strategies to increase the use and integration of technology into the nursing curriculum. The 2012 QSEN report described how technologies that are designed to enhance teaching and learning could support multiple learning styles in diverse classroom and clinical settings while reflecting current best practices.

Exploring faculty member perceptions within the Department of Nursing assisted in understanding the perceived gap in professional practice: Why did faculty members use, or not use, the available instructional technology? The college had invested millions of dollars to enhance training and to prepare students to enter the healthcare workforce. The boards of directors and the chair had a stake in how technology was being used so monies could be allocated appropriately for future

technology needs. Answers to research questions were collected using a mixed method approach, which provided comprehensive data were through survey, face-to-face interviews, and record review.

### **Research Questions**

1. What are faculty members' perceptions of technology use in the classroom and clinical setting, as measured by the Teachers' Intention to Use Technology Survey?
2. Do faculty perceptions differ based on teaching experience?  
*H2<sub>A</sub>*: There is a difference between faculty members' perception of the use of technology as a teaching strategy and the level of teaching experience.  
*H2<sub>0</sub>*: There is no difference between faculty members' perceptions of using technology as a teaching strategy and level of teaching experience.
3. What are faculty members' perceptions of support for continued and future use of technology in the classroom and clinical setting?
4. What technology is currently used in the classroom and/or clinical setting?

### **Review of the Literature**

The literature review consisted of an examination of peer-reviewed studies on the topic of technology integration within the nursing curriculum. It presented a compilation of the literature to the saturation point for a comprehensive representation

of current research on this topic, using Walden University's Library, ProQuest, and Google Scholar. I used search terms such as *technology integration*, *nursing technology integration*, *technology curriculum integration*, and *nursing education curriculum design*. Themes and patterns from this review provided structure and support to the project findings during the data collection and analysis phase. The literature review included an introduction of the theoretical framework that supported the project design, followed by literature that addressed the integration of technology.

### **Theoretical Framework**

According to Burnes (2004), Lewin was recognized as one of the founders of modern social psychology and a pioneer in action research. The Gestalt learning theorist's cognitive concepts included theories of individual perceptions, insights, and meanings (Merriam, Caffarella, & Baumgartner, 2007). Burnes stated that Lewin's fundamental belief was that the group with which the individual identified as a member influenced individual perceptions, actions, and feelings. Lewin believed social change could occur when elements that composed the individual were identified and explored. Lewin was a humanitarian known for his integration of theory and practice while conducting his action research. Burnes described the stages of Lewin's theory of change and action research, which involved studying individuals and group dynamics. Lewin's theory explored six major program areas: group productivity, communication, social perception, intergroup relations, group membership, and training (Burnes, 2004, p. 985). His three-step model—*unfreezing*, *moving*, and *refreezing*—described the challenge of change at every level of the individual and

group development process. Lewin understood that knowledge of the dynamics of organizational change was crucial for organizations as they implemented effective strategies to move forward.

Burnes (2004) described Lewin's first step, unfreezing, as requiring the researcher to explore the individual's perceptions of the current situation. Understanding and acknowledging individual perceptions could help the researcher during the unfreezing stage of Lewin's model to develop tools to promote positive change. Lewin's second step, moving, required the researcher to explore what would help motivate positive change. Merriam et al. (2007) explained the cognitivist locus of learning as an internal cognitive structure that viewed the learning process as an informational processing technique that included insight, memory, perception, and metacognition. Understanding the individual locus of learning would help the researcher understand what motivates or could help create an environment for positive change. Burnes described Lewin's third step, refreezing, as an effort to stabilize and prevent regression of behavior, and noted that the cognitivist purpose of learning was to develop the skills and capacity to learn. The researcher would need to develop tools that promoted the creation for the capacity to learn how to integrate technology. Axley (2008) suggested that constant monitoring of faculty member perceptions as technology changed or advanced would be critical for the successful integration of technology into the curriculum. Axley described such research as ongoing and noted that it would add credibility as policies, practices, norms, and organizational culture change.

Lewin's humanitarian cognitivist theory worked best for this study and supported my mixed method research design. I focused on exploring the group dynamics, communication, and perceptions of the participants as they worked to integrate the use of technology into the curriculum. I concentrated on primary sources that explored technology tools used in various institutions to assist faculty with integrating technology by using Walden library search tools such as articles by topic focusing on education, health sciences, information systems and technology, and nursing. Searches (including Boolean) took place in education and multidisciplinary databases, and the related subject database PsycINFO. Search terms included *nursing and technology integration*, *technology integration in the 21<sup>st</sup> century*, *impact of technology on curriculum design*, and *faculty perceptions of technology integration*. I explored and exhausted all literature that supported integration of technology into the nursing curriculum.

### **Integration of Technology into the Nursing Curriculum**

Experiences with the technological or simulation tools in nursing curricula are designed to mimic conditions and teach important concepts nursing students would be exposed to in a hospital clinical setting. One of the goals of the National Council of State Boards of Nursing (NCSBN; 2012) and the QSEN (2012) was to regulate, provide guidance, and identify potential advantages and disadvantages of using technological software or simulation tools as a teaching strategy instead of actual hospital clinical site experience to ensure patient safety goals are met. In 2005, the Robert Wood Johnson Foundation funded the QSEN project. Results led to the

recommendation that QSEN and Knowledge, Skills, and Attitudes (KSA) training be part of the first-year nursing students' curriculum to ensure competent, safe patient care (Spencer, 2012). The IOM adopted universal protocols by integrating quality and safety measures using workshops and electronic measures as training opportunities for faculty and staff (Sherwood, 2010). Results of Sherwood's collaborative project provided a blueprint for curriculum integration placement of key KSAs according to the QSEN recommendations. The National League for Nursing Simulation Innovation Resource Center (NLN SIRC, 2012) offered guidelines to help integrate technological and simulation teaching strategies into the nursing curriculum. Further exploration of the literature conducted explored what knowledge and training was needed to facilitate policy initiatives and uniformity among faculty members at my institution that addressed the chair's concern that faculty turnover had been a contributing factor to faculty frustration about integrating technology into their courses.

Common themes quickly emerged in the review to support my proposition that further research was needed on nursing faculty members' perceptions of technology integration into the curriculum. One theme that resonated throughout the review was that faculty frustrations correlated with lack of training in technology that could be used in the classroom or clinical setting. Bittner (2012), Adamson (2010), and Axley (2008) all supported the need for training prior to using any technological tools in the classroom or clinical setting, stating that faculty frustrations increase without proper orientation, training, and support of the department. I highlighted these articles as I searched for literature to support my research design.

Bittner (2012) correlated job satisfaction with workload and the work environment. Barriers to job satisfaction included feelings of lack of autonomy and professional growth. A positive work environment that supported autonomy and professional growth resulted in increases in measures of job satisfaction. Bittner suggested that providing a positive work environment that met technological training needs helped with alleviate faculty frustrations around using technology as teaching strategies in their classroom and clinical settings. Further research was needed to find out what type of training would be needed in this area.

Adamson (2010) addressed faculty perceptions of possible barriers for integrating the use of simulators into the nursing curriculum. Simulators aid nursing students to complete specific nursing tasks prior to entering the clinical hospital environment. Hands-on training with the specific simulators promoted a positive interactive environment for faculty members to feel engaged and competent while providing learning opportunities for their students. Further research identified different types of training was needed with specific simulators to promote a positive learning environment.

Axley (2008) highlighted some of the challenges encountered in attempts to integrate technology into the classroom and clinical setting. Axley suggested the challenge was due in part to the lack of actual research conducted among faculty members who had access to technological tools that could be used in the classroom setting. Nurses needed training as new technological tools were being introduced into



the healthcare arena. Research was needed to examine and understand how to best integrate the use of technology into the curriculum.

Researchers who highlight aspects of Lewin's three-step model of unfreezing, moving, and refreezing were found in the following: Barton (2009); Bielefeldt (2012); Buabeng-Andoh (2012); Carter (2010); Davidson (2011); Fetter (2009); Gorder (2008); Griffin-Sobel (2010); Jones (2011); Kardon-Edgren (2008); Kaufman (2007); Klaassen (2011); Mahon (2010); Rager (2009); Robert (2011); Shepherd (2010); Sherwood (2011); Skiba (2011); Smith (2009); Spencer (2012); and Teo (2011). The literature reviews discussed the need for training to decrease stressors experienced by faculty members and students prior to using any technological tool in the classroom or clinical setting. These articles supported Lewin's understanding that organizational change needed effective strategies to move organizational agendas forward. Common themes included capturing individual perceptions, need for training, and obtaining feedback prior to using technology as critical for overall satisfaction and a sense of feeling part of the organization decision-making process. When individual needs are not met, then an overall feeling of dissatisfaction occurs, resulting in little willingness to help promote positive change within the organization. I highlighted some of the articles in the search for data to support my research design.

Bielefeldt's (2012) correlational analysis was conducted over a 2-year period and focused on observation techniques to explore relationships between classroom characteristics, technology use, and teaching strategies used by faculty. Bielefeldt found technology use was most successful when it enhanced learning and was not

cumbersome to use. Ease of use was key to satisfaction. Training was deemed important to understand how technology could enhance learning. Without training, teachers and students were dissatisfied with the learning strategies. Positive perceptions based on met training needs appeared to influence job satisfaction.

Buabeng-Andoh (2012) conducted a literature review and described how changes in information communication and technologies (ICT) have brought rapid growth in the twenty-first century. ICT was influenced by various factors, such as personal characteristics, ICT competence, computer self-efficacy, gender, teaching experience, workload, institutional characteristics, professional development, accessibility, and technical and leadership support. These factors were found to be interrelated and influenced the teachers' perceptions of and satisfaction with technology use for instructional purposes. Changes in information technologies delivery systems appeared to have influenced and shaped healthcare informatics.

Spencer's (2012) described the recommendations of the IOM, which in 2003 set five core goals for healthcare providers, one of which was informatics competency. In 2004, President Bush established a goal that all healthcare data would be available electronically by 2014. Nursing leaders supported an electronic format and conducted surveys among faculty to explore integration of informatics into curricula. In 2005, the Robert Wood Johnson Foundation funded the QSEN project. Results recommended QSEN and KSA training be part of the first-year nursing students' curriculum to ensure competent, safe patient care. Many nursing programs had adopted hybrid classes where students were expected to complete assignments electronically.

Davidson (2011) conducted a program evaluation study among students who enrolled in a nontraditional BSN program, named the Gateway program. The Gateway program was designed as a hybrid-nursing course for adult learners who wanted some face-to-face interaction with faculty and other students. Course completion and standardized test scores were compared between Gateway students and traditional students. Gateway students were asked to participate in formative measures that addressed student perceptions of what factors helped them to succeed. The overall conclusion was that attention to detail with the development of the hybrid course design, including an orientation to the online course requirements, provided the necessary support for the successful completion of the program among Gateway students.

Jones (2011) conducted an Electronic Health Record (EHR) usability assessment among 13 undergraduate nursing students at an Ontario college. Fictional case studies were used and student feedback data were collected over a 2-week period. Student inexperience with the proper use of EHR supported the need to use fictional case studies in nursing curricula to help students with proper electronic documentation.

Klaassen's (2011) descriptive data were explored the legal aspects of guiding undergraduate nursing curricula when integrating scope and standards of practice. The American Nurses Association (ANA), American Association of Colleges of Nursing (AACN), and The American Association of Nurse Attorneys (TAANA) assisted nursing faculty in the proper preparation of nursing students for practice. High fidelity

human simulation (HFHS) experiences provided unique challenges for faculty to ensure students follow their individual state guidelines for meeting clinical hours for licensure. Faculty input and dialogue were necessary to determine how HFHS experiences met student outcomes.

Robert (2011) described the integration of a teaching model that focused on outcomes. Two focus groups provided data that were shown how critical therapeutic communication between students and faculty was for reinforcing or addressing any needs or concerns. Mentoring and providing constructive dialogue allowed students to feel part of their own educational process. Focusing on student qualities allowed faculty to use teaching strategies that enhanced a multitude of learning styles. Student feedback throughout the curriculum allowed faculty to intervene and provided alternatives to help students meet course goals and objectives. Mentoring and providing constructive dialogue allowed students to feel part of their own educational process. Feedback was collected by direct dialogue with faculty and student surveys.

Sherwood (2011) reported the outcomes of a pilot project that used surveys, a Delphi to assess curriculum placement, and policy changes that were evidence-based upon national recommendations by the IOM to adopt a universal protocol by integrating quality and safety measures using workshops and electronic measures. Results of the collaborative project provided a blueprint for curriculum integration placement of key KSA QSEN recommendations. Faculty at the workshops collaborated and designed simulated scenarios that helped students think critically about safety measures needed to provide safe patient care.

Skiba's (2011) quasi-experimental pilot study consisted of two clinical groups. The control group did not participate in the simulated pediatric orientation prior to rotating on the clinical floor. Examination and clinical scores were compared. Data were processed using SPSS version 12 software. Results showed students and faculty valued the simulation experiences prior to entering the clinical site, while the group that did not participate did not. The outcomes from the two groups were clear: integrating training using simulated technologies prior to entering onto the clinical site was beneficial in reframing informatics integration into curricula.

Teo (2011) used the Technology Acceptance Model (TAM) to explore user behavior with technology use. The self-report questionnaire was sent to over 592 schoolteachers within a specific region. The aim of the study was to test and develop a model to explain how technology was being used among teachers in the region. The results showed that there was a relationship between teacher training and the use of technology. Akiba (2010) reviewed the relationship between individual learning styles and faculty teaching approach. Akiba explored many learning theories about how individuals and faculty developed their different learning and teaching styles based on prior experiences, concluding that faculty members who have prior experience using different learning and teaching styles provided a positive learning and teaching atmosphere.

For the students and faculty to be successful, each party must be willing to understand their individual bias, which may have been influenced by culture or individual temperament. Most experienced faculty members took into consideration

the different types of learning styles and incorporated teaching approaches that produced positive results. For visual learners, faculty used visual aids such as PowerPoint or videos. For auditory learners, faculty used more dialogue about the highlights of a presentation. Akiba's (2010) literature review focused on the need for an active approach to learning and teaching to achieve a positive learning and teaching environment, concluding that the individual's temperament and prior experiences influenced learning and teaching styles.

Carter (2010) described the importance of designing a simulated bioterrorism and disaster preparedness scenario, in view of the September 11, 2001, terrorist attacks. In a collaborative study between the U.S. Public Health Department and a nursing college, Carter found bioterrorist training to be necessary in nursing curricula across the nation. Qualitative data on student perceptions showed participation in the simulated disaster resulted in students feeling more prepared to react to emergencies. Simulation provided students a safe environment where mistakes were opportunities for learning. Students learned new collaborative techniques as faculty worked with the biohazard teams.

Griffin-Sobel's (2010) descriptive collaborative project study was conducted in a public university system in New York City and involved over 550 students. The director of the university system asked two nursing faculty members to plan the integration of technology throughout the system. Ninety-eight percent of the students reported being satisfied with the simulation scenarios. Results of the study posed challenges, since the process of change required cooperation and collaborative

teamwork among faculty, librarians, and technical staff to develop a learning environment that would mimic clinical situations in a simulated environment. Faculty at times felt overwhelmed, since training needed to be conducted collaboratively across the city.

Mahon's (2010) exploratory qualitative study used the Constant Comparative Method (CCM) to analyze data that identified significant patterns among nursing students and faculty who used either a paper-based or an Electronic Health Record System (EHRS) for documentation within the clinical setting. Most faculty surveyed reported they used self-taught methods to figure out how to use the EHRS systems at their clinical settings. Faculty felt frustrated with the demands of being the sole resource for students. Recommendations of the study included faculty support networks with time set aside for paid training prior to going to a clinical facility that used EHRS. Faculty training led to student satisfaction with EHRS documentation requirements.

Shepherd's (2010) longitudinal quantitative quasi-experimental design study took place over a period of 3 years among third-year nursing students. Tools were designed to evaluate performances within cognitive, motor, and affective domains while in a simulated environment. Students overall demonstrated a lack of understanding of manual approaches to assess their patients. Students appeared anxious when working within a simulated environment. Data suggested further studies were needed to find out what factors helped students retain knowledge and regain confidence within a simulated environment. Competencies needed to be assessed prior

to third-year entry to determine what prior learning had taken place before using simulation.

Barton (2009) described how the Health Information Technology Scholars (HITS) program collaboration among the University of Colorado, Indiana, Kansas, and the NLN worked to incorporate QSEN informative competencies into a baccalaureate curriculum. Competencies were divided into beginning, intermediate, and advanced levels. Surveys were used to ask students to indicate where in the curriculum information management and technology were used and if they felt it was important for learning. Seventy percent of the students felt it was important for nurses to be competent in using electronic sources for health care information, and 57% felt prepared by the training they received.

Fetter (2009) described the project study results of the Technology Informatics Guiding Education Reform (TIGER) initiative coalition. The mission of the TIGER initiative was to promote information technology. The 3-year action plan explored how curriculum mapping; evaluation of faculty, students, and agencies; learning modules; and documentation development were being used. Results indicated lack of faculty training, knowledge of the use of informatics was detrimental, and that collaborative policy initiatives were necessary for uniformity among nursing programs and clinical agencies to help support patient educational needs.

Rager (2009) addressed the use of technology as a self-directed learning tool in the healthcare setting. Patients often use web-based resources to research healthcare treatment plans and compare them with the treatment plan given by their physician.



Emotions play a key role in making informed decisions with healthcare providers. The study concluded that the healthcare provider needed to assist the patient with their self-directed learning approach by keeping them focused on the context, content, and their individual learning needs while addressing complex emotional issues. Rager supported Knowles's assumption that adults wanted to be engaged in their own learning and recommended that nurses keep up to date with the latest technology.

Smith's (2009) pilot study was conducted among eight nursing students to find out if using a Mobile Clinical Assistant (MCA) device would enhance their clinical experience. All but one student felt the MCA device was helpful and believed it was a faster way to access patient information and provide information the patient may request. Mobile devices opened channels of communication among students and faculty members during post-conference sessions.

Waxman's (2009) study concluded that standardized training was needed for uniformity and collaborative communication among faculty and students. An orientation-training program was found to be essential in order to meet faculty and student learning needs. Faculty who were not trained felt frustrated which added to student dissatisfaction with the program. Exploring faculty members' past experience and open dialogue with administration helped with identifying and improving upon deficiencies found with technology use.

Gorder (2008) conducted a research study using the Technology Integration Standards Configuration Matrix (TISCM) that was developed by Mills and Tincher in 2003 to study technology integration among K-12 teachers. The research questions

explored how teachers currently were integrating technology into the classroom and compared their individual characteristics of age, gender, teaching experience, grade level, and educational and content level taught. The study concluded that technology integration among teachers differs based on grade level taught and personal past experiences using technology.

Kardong-Edgren's (2008) nonexperimental pilot project sponsored by a university grant explored faculty and student perspectives on using simulation in a clinical course. Older faculty members were found to be reluctant to change or to use improved technology for training. The fear of change had to be handled with additional training sessions and allowing input from faculty to address stressors. Once stressors were attended to faculty were then able to overcome and adapt.

Kaufman's literature review (2007) showed how the Carnegie National Survey of Nurse Educators goals correlated with the National League of Nursing (NLN) goals. Through a partnership, the NLN-Carnegie dataset of 400 variables was used to obtain feedback on topics that were crucial to nursing educators. Twenty-five percent of the nursing faculty responded to a web-based survey that collected demographic profiles, educational and employment characteristics, and workload data. The survey found that faculty perceived lack of preparation for the rigors of being an educator, and 63% felt technology increased instead of decreased their workload responsibilities.

In summary, my literature review indicated faculty members perceived the use of technology in the classroom as added workload to their busy schedules, resulting in decreased job satisfaction. Lack of administrative attention to providing faculty paid

training to use the simulators properly resulted in faculty frustration and little use of the expensive simulators. Faculty lack of confidence correlated with student lack of confidence using technology as a learning tool. The uses of structured training programs were deemed helpful for faculty to understand how to incorporate teaching strategies to introduce the newer technological advances into their classroom or clinical settings. Data suggested further studies were needed to find out what strategies can be used to help retain knowledge and regain confidence within a simulated environment. These articles stressed how lack of knowledge and training were detrimental and that collaborative policy initiatives were necessary for uniformity among nursing programs and clinical agencies.

### **Implications**

My study results helped faculty members engage in positive dialogue and become active participants in the integration of technology into the nursing curriculum. My study added to the body of knowledge and provided strategies to promote an environment for positive change in nursing while addressing current research gaps in the scholarly nursing literature that specifically explore technology integration into curricula. Local stakeholders and the chair will be given the opportunity to understand faculty member perceptions of the integration of technology into the nursing curriculum process. Faculty member perceptions were critical for understanding what had helped and would help integrate the use of technology into curricula and to understand what possible challenges to using technology are.

Faculty member interviews, record review, and survey responses were the primary source of data collection in this study. Faculty members had an opportunity to articulate their perceptions, understandings, and challenges regarding the incorporation of technology. I assessed and explored participant perceptions as they considered action strategies to integrate technology into the curriculum. I served, as a facilitator as I explored what types of technology had been most effective in the classroom and clinical settings. Collectively, faculty members explored and brainstormed how the integration would continue to inform their work and their teaching to achieve the learning goals and objectives. In order to inform the body of knowledge and best practices regarding the integration of technology into the curriculum, I designed a convergent mixed method study design that concentrated on exploring faculty members' perceptions of technology integration. I carried out face-to-face interviews using AI as a guide, conducted a record review of technology use, and sent out a survey to all full and part-time faculty members to collect and analyze data. Data, at the conclusion of my study, were provided in written and oral reports highlighting my findings and recommendations to the faculty members, chair, and board of directors on how best to integrate technology into the nursing curriculum. Based on data analysis faculty members indicated there appeared to be a need for some type of orientation program to the available technologies the nursing program offered to enhance and or compliment current teaching strategies.

Jefferies (2013) described how informal and formal skill building sessions, workshops, retreats, seminars, or peers coaching were essential components of

professional development. Based on the findings of the project, possible orientation programs include providing an online orientation that would include an overview of the nursing program using visual descriptions and demonstration of the available technologies, a professional development interactive workshop covering what is available in the computer lab, and the various technologies available in the simulation lab.

### **Summary**

Lewin's belief, as described by Burnes (2004), that social change can occur when elements that compose the individual were identified and explored, supported my research study design. Lewin's humanitarian approach identified positive organizational change as occurring in environments that value and recognized individual perceptions within the organization. The process took time and was continuously evolving based on input and feedback from the individuals involved. The literature review supported the need to explore individual perceptions of how technology had been successfully implemented in the classroom and sought recommendations on what type of orientation and training were needed for individuals to use technology to enhance learning. Lewin's humanitarian cognitivist theory reinforced the fact that individuals who share common values will enhance the organizational vision and mission. When present and past rituals and traditions were appreciated, positive traditions were brought forward to enhance the organization's goals. This study added new information and recommendations to the body of knowledge and best practices focusing on the integration of technology into a nursing

curriculum. In Section 2, I addressed the methodology, population and sample, data collection methods, and instruments.

## Section 2: The Methodology

### **Introduction**

A convergent mixed method research design and approach was used to conduct my study as I explored and assessed faculty member perceptions of technology used in the didactic or clinical classroom setting and how technology could be integrated into the nursing curriculum. A convergent design will help develop an understanding of faculty member perceptions of technology integration (Creswell, 2012). The study involved collecting data from face-to-face interviews, record review of what types of technology faculty members used in their classroom or clinical setting, and a faculty survey. Qualitative and quantitative data were collected concurrently to capture data quickly within a short period for later integration during the data analysis phase. Key characteristics of my study included using the Appreciative Inquiry (AI) generative process as a guide while conducting the interviews to learn and explore each faculty members' perceptions of technology use and integration into the curriculum. A mixed method design provided depth to the study as well as insight into the issue of technology integration and what faculty members perceived and envisioned would be effective in integrating the use of technology in the didactic or clinical classroom.

Qualitative data were collected during one-on-one, face-to-face interviews. The qualitative research component of my study examined categories based on reoccurring themes that surfaced during the interview process. Themes were coded using a highlighter and counted under each category, responses analyzed, and findings illustrated using a table format. The research design was implemented using the AI

approach as a guide to find out what types of technology had been effectively adopted by the participants and what would help in the future to integrate technology into the nursing curricula. The justification for using an AI approach in this mixed method design was to allow for a deeper understanding of each faculty members' perception of technology use in the classroom or clinical class setting and how it could be integrated into the curriculum.

I used the AI approach during the initial pilot phase to substantiate the mixed method approach by presenting and adjusting questions as needed so that faculty members would clearly understand each question. During the initial invitation phase, faculty members were given the opportunity to volunteer and be interviewed. As faculty members agreed to be interviewed, I set up an appointment to meet with them in their offices to assure privacy. I informed each faculty member that up to 30 minutes might be required to complete the interview process. Prior to the interview, I provided an informed consent presentation that addressed the purpose of the study, confidentiality process, how data are analyzed, and how the results would be disseminated among the stakeholders.

Quantitative data were collected from an online survey, which were tabulated and analyzed based on the answers provided using a 7-point Likert scale and record review of the computer and simulation lab request logs. The quantitative research component of my study was a intention to use technology survey that provided the documented data needed to support or augment the qualitative data being collected and vice versa, following the guidelines of Creswell (2012). Descriptive data analysis was



used in the analysis phase to illustrate the participant population similarities and differences. I attached the online survey to an email inviting all full and part-time faculty members to participate in the research study. Record review consisted of reviewing the computer and simulation lab requests for various technological tools.

The intent of mixing qualitative and quantitative data is to provide triangulation of the data sources. Creswell (2012) described how in mixed method studies the researcher compares results from the qualitative and quantitative data are to determine if they yield similar or dissimilar results. A mixed method approach provided a comprehensive view of the research data being collected and was used to collect data with multiple data collection methods: face-to-face interviews, record reviews, and survey. Data collection took place at the college during normal working hours.

### **Setting and Sample**

The setting for my research study was a nursing program located in Texas. The program accepts approximately 60 students in the first semester for the Associate Degree Nurse (ADN) program and 25 students in the Vocational Nurse (VN) program. There are approximately 18 full-time and 12 part-time faculty members. Stakeholders in my study included the chair of the Department of Nursing, the college board of directors, faculty members within the department of nursing, and students. The chair reports to the board of directors about how the funds for purchasing technology are being spent and how they are used to improve overall student learning. The board of directors determines how and where monies should be allocated throughout the college

to enhance student learning. The Department of Nursing must provide updated reports in order to procure and justify monies to purchase additional technology. The computer lab and simulation lab managers provide annual reports to the chair about usage of the lab that includes dates, times, and room and equipment requests.

The computer lab is used primarily for completing case studies along with standardized testing for preparation to take the National Council Licensure Examination (NCLEX). The simulation lab is equipped for faculty members to teach nursing skill sets such as taking vital signs, administering medication, and head-to-toe assessments using low and high fidelity manikins. The main difference between low and high fidelity manikins are operational. Low fidelity manikins can only be programmed to simulate vital signs whereas high fidelity manikins are fully functional and can be programmed to speak, react to drug intravenous injections, and mimic cardiac arrest. Faculty members can conduct simulated scenarios and videotape the encounter for later debriefing purposes. Numerous technological teaching aids can be used in the computer and simulation labs. My record review was used to explore and capture the types of technology faculty members use to enhance student learning in the nursing curriculum.

### **Population Sample**

The sample population consisted of the 30 full- and part-time nursing faculty members who work in the ADN and Vocational Nurse VN programs of the Department of Nursing who use technology to teach in the classroom or in the computer and simulation labs. Using Faul's (2009) G\*Power 3.1.7 power analysis *t*

tests to compare two groups resulted in a suggested sample size of 45. My potential maximum convenience sample size of 30 fell short of the suggested sample size; however, I only had 30 potential participants and did have some significant results. Faculty members who agreed to participate clicked on the survey link that created their electronic signature of consent to participate in the research study. The intention to use technology survey link was provided in the invitation email and consent form (Appendices C and D) that I sent out to all full- and part-time faculty members once I received permission to conduct the study from the IRB (03-13-14-0248637). Fifteen faculty members clicked on the embedded link within the survey and agreed to participate in a face-to-face interview session. I contacted the fifteen faculty members who volunteered to be interviewed to set up face-to-face appointments.

### **Selection of Participants**

The sample of participants was selected from the convenience sample based on the electronic signatures sent back to me indicating the faculty member filled out the survey and wanted to volunteer to be part of the interview process. The cover letter of the survey explained the purpose of the survey and that declining to participate would not affect my collegial working relationship with them. The eligibility criteria for the target population of nursing faculty members consisted of use of any type of auditory or visual computer program software or lab equipment to enhance student learning in their didactic or clinical courses. I wanted to explore and examine how each faculty member used technology and their perceptions of how to integrate technology into the nursing curriculum.

### **Description of Data Collection Methods**

I obtained approval from the Department of Nursing chair and obtained a letter of agreement from the college prior to sending out an invitation to all nursing faculty members. Invitations were sent via email to all 30-faculty members who worked full- and part-time for the department of nursing to see if they would be interested in volunteering to be a participant. Since there are approximately 30 faculty members, I sent out a reminder e-mail within a week of sending out the original invitation email in order to capture as many participants as possible and reach an acceptable response rate of 70%. A link was embedded for faculty members to click on to read the consent form that communicated the purpose of the study, procedures, institutional information, and confidentiality stipulations prior to agreeing and electronically signing the consent form. The purpose statement included the nature of the study which was to collect qualitative and quantitative data using one-on-one, face-to-face interviews to explore how faculty members perceived the integration of technology use in the curriculum, an intention to use technology survey, and to review the logs kept by the computer and simulation managers that track what type of technology faculty members were requesting to use. All data were stored and locked in my home office cabinet and on my home office computer during the study process. Once a faculty member clicked on the link on the survey form (Appendix C) indicating their consent to participate, an embedded survey popped up for each faculty member to fill out (Appendix F). Upon filling out the survey, faculty members were given the opportunity to click on the link asking if they would volunteer for a face-to-face

interview or on the link giving them the option to withdraw from the study. There were no faculty members who opted out of the face-to-face interview. Data results will be shared with the chair, board of directors, and faculty members who work within the Department of Nursing.

Data collection methods for this mixed method design included collecting qualitative and quantitative data. Analysis of the data encompassed the triangulation of the data were from multiple sources: interviews, record reviews, and survey. Using multiple methods promoted the validity and triangulation of the data leading to discovery of data convergence from interviews, record reviews, and survey. Table 1 below presents these data collection methodologies.

Table 1

*Description of Data Collection Methodologies*

Data Collection Methodology	Tool	Data Source	Analysis
Faculty survey administered online	Teachers Intention to Use Technology Survey with added questions	27 faculty	Quantitative, descriptive, inferential
Faculty interviews	Faculty Interview Guide	15 faculty	Qualitative
Record review	Review abstraction tool	Computer & Simulation Lab Log Books of Technology utilization records	Quantitative, descriptive

### **Qualitative Data Collection**

Qualitative data are collection methods that included data collection, transcription, and coding of categories and emergent themes from faculty member interviews. Before setting up interview appointments, I needed approval from the

Department of Nursing chair and the Walden IRB, and a letter of agreement from the college. I developed open-ended questions to encourage faculty members to answer freely and spontaneously. I piloted my questions with a few faculty members to see if the questions were reliable and valid. Glesne (2011) described how conducting pilot interview questions with the actual study group could help develop clearly informed interview questions. I did not have to modify my interview questions. Once I constructed my questions, I set up appointments with each faculty member who agreed to be interviewed.

Confidentiality was ensured by assigning numbers to each interviewee that only I knew based on a list of each faculty members' initials, which was stored and locked in my home office cabinet. Data collection involved setting up appointments with each faculty member based on their office schedule availability. I interviewed 15 faculty members, about one-half of the possible population of 30 full- and part-time faculty members who worked within the department. On the consent form, I stated I planned to spend at least 30 minutes with each participant and therefore would need to set up an appointment with them based on their availability. The same interview protocol was followed for each faculty member. For the qualitative data, questions identified meanings and themes as the investigation progressed, as recommended by Lodico et al. (2010).

### **Interviews**

Qualitative methods often use interviews as a means to obtain the deep meaning of the study under exploration (Merriam, 2009). Qualitative data added depth

and breadth to my mixed method research study that included quantitative data, resulting in triangulation of data and increased insight into the issue (Creswell, 2012). My method for establishing a researcher-participant working relationship included discussing the purpose of my study, data collection methods, data analysis, data collection storage to ensure participant confidentiality, and how the data would be shared at the end of the study. I explained in the participation letter my questions were focused on exploring his or her perception of technology integration from the past and current experiences along with future expectations. As a researcher, I understood that my initial plan might undergo changes, but by reporting multiple perspectives and identifying factors that were involved in a situation, a larger, holistic picture could emerge, as affirmed by Creswell (2009). By using the AI model as a guide for question development, I intended to ask questions that would promote positive feedback from faculty members.

### **Appreciative Inquiry Approach**

Ruhe (2011) described the use of AI as a change approach for energizing quality management while fostering organizational growth by tapping into core values, strengths, and motivations of healthcare providers. AI encourages fostering positive relationships while building on basic positive personal, situational, and organizational collaborative common goals. The AI generative process guided the study as I developed research questions to explore faculty member perceptions of technology integration. Ruhe described how participants' attitudes toward each other change when

each organization understands they share similar goals, missions, and visions. The interviews generated qualitative data were for this study.

Using an AI approach, I explored faculty member perceptions of technology use in the past, what worked, and what might work in the future for integrating technology into the curriculum. All data were kept confidential and locked in my home office cabinet for later analysis. Answers were coded. Once data were collected and coded, the intent was to analyze the data for patterns and themes. The findings were presented to identify issues and concerns and were shared at the Department of Nursing faculty and board of director meetings to address faculty perceptions of technology use and how the Department of Nursing was integrating technology into the curriculum.

### **Role of the Researcher**

My existing relationship to the participants was supportive. I assisted faculty members as needed in the clinic and in the classroom with training and evaluation of students during clinical check off with nursing tasks such as tracheostomy suctioning, foley catheter insertion and intravenous insertions. I helped faculty members by videotaping and acting as the voice of the manikin during faculty-led scenarios. My role as the simulation coordinator was as a resource and mentor.

My role in the data collection process was to provide faculty members a participation letter with information about the purpose of my study and a request for permission to audiotape the interview for later transcription. As the simulation coordinator, I know the technology availability status and what type of technology



many faculty members request to enhance their classroom instruction. As I interviewed each faculty member, I actively listened, respected all comments, and suspended judgment. I reviewed the transcription for any recurring word frequency, patterns, and themes. I analyzed, categorized, and used different color highlighters to code recurring word frequency, patterns, and themes for strengths and weakness faculty members perceived as contributing factors to integrating technology into the curriculum. Codes identified data and provided chronological order for subsequent interaction. Coding involved keeping the AI approach model as the lens through which I determined which methods of integration had been working effectively and which were in need of improvement.

### **Qualitative Data Interview Collection Instruments**

I interviewed 15 faculty members using the AI questions (Appendix I). The taped interview session was projected to be 30 minutes in length. As I met with faculty members, I thanked them for their time and reviewed the purpose of the study. I explained in the opening statement how the data were later to be shared while using the AI principles that are strengths-focused to allow for further expansion and building upon foundational knowledge and techniques, as described by Candace and Smith (2008). Using AI as a technique will foster organizational growth by enhancing the development of core motivations, values, and strengths as I explored faculty member perceptions of technology integration into the curriculum.

Using the AI generative process as a guide allowed me to develop open-ended interview questions during the discovery phase that included knowledge as well as

opinions that promoted expansion of ideas and perspectives of the participants, to provide a rich narrative analysis about the use of technology. Open-ended AI questions allowed participants the opportunity to explain and expand their responses. Qualitative questions were formed during the collection process and could be modified throughout the investigation, as noted by Lodico et al. (2010). I piloted the questions with some faculty members to determine reliability, validity and clarity. I did not have to adjust any of the questions. Questions were asked in the same manner during each interview session (Appendix I). Permission to audiotape the interviews was included in the survey with the explanation that it might take up to 30 minutes (Appendix C). For qualitative data, questions were used to identify meanings and themes as the investigation progressed, as suggested by Lodico et al. (2010). The interview schedule is presented in Appendix G.

#### **Interview Data Collection Questions (Primary Questions during Each Phase)**

1. Discovery phase (organization members are encouraged to explore what they value most about themselves and program; frame questions in a positive appreciative manner).  
  
Describe a time when you believed the use of technology made a positive difference in the nursing program or in the way, you taught in the classroom setting.
2. Dream phase (organization members share dialogue of what they envision will work well in the future).

How do you envision the integration of technology into the curriculum improving the overall program?

3. Design phase (organization members share dialogue and start planning and prioritizing the processes that would work well).

Describe what prioritized steps will be needed to enhance or streamline the integration of technology into the curriculum process.

4. Destiny phase (AI stimulates forward thinking and creativity while providing a framework in which meaningful change can occur; members put their dreams and design together and actually implement the changes described; faculty members actually work on the specific areas they want to address).

Describe what technological tools will be needed to enhance or streamline the integration into the curriculum process.

Glesne (2011) described the use of interviews, observation, document collection, and surveys as multiple means of data were developed that can contribute to trustworthiness and authenticity in triangulation of data in a mixed method research design. I wanted to make sure the research was rigorous, plausible, trustworthy, valid, and reliable. Using the AI generative process helped guide my study as I collected qualitative data are throughout the discovery, dream, design, and destiny phases. The additional quantitative collection tools include record review and administration of the intention to use technology survey.

## Quantitative Data

Quantitative methods often use surveys to quantify and generalize data are the results and measure incidence of various views or opinions from a population sample, and are usually followed by a qualitative research piece to add depth and breadth to a mixed method research study, as observed by Creswell (2012). During my literature review, I found a quantitative measurement tool, Teachers' Intention to Use Technology Survey, which is a self-report questionnaire that I administered to the faculty members. Teo (2011) tested the survey model as he explored user behavior with technology use among 592 schoolteachers. The aim of his study was to test and develop a model to explain how direct and indirect perception of technology influences usefulness and ease. This tool is shown in Appendix F. Faculty members responded to questions and concepts that measured Perceived Usefulness (PU), Perceived Ease of Use (PEU), Subjective Norm, Facilitating Conditions, Attitude Towards Use (ATU), and Behavioural Intention to Use (BIU). Teo (2011) describes the 7-point Likert scale as follows: Level of agreement ranged from 7 (*Strongly agree*), 6 (*Agree*), 5 (*Somewhat agree*), 4 (*Neither agree nor disagree*), 3 (*Somewhat disagree*), 2 (*Disagree*), 1 (*Strongly disagree*).

Permission to use the survey was obtained using Walden's PsyTESTS library tests and measurements search engine and is shown in Appendix E. The survey was attached to the survey invitation email cover letter (See Appendix C) that I sent out to all 30 full- and part-time faculty members once I obtained approval from the chair,

college administration, the facility, and Walden IRB. I added additional survey questions to measure independent variables such as teaching experience to determine if there were any connections to the concepts the survey explored.

Creswell (2012) advocated using a survey as an effective way to generalize from a sample to a general population while making inferences regarding opinions of a population, trends, and attitudes. The independent variables of the survey compared teaching experience with the questions asked on the Teachers' Intention to Use Technology Survey. Descriptive statistics and analyses were performed to examine each faculty members' perceptions of technological educational practices, self-confidence, satisfaction, and collaboration in the class or clinical setting. Data were collected and analyzed using descriptive statistics for mean, median, standard deviation, frequency, and percentages. Data from the survey were analyzed using SPSS, The Teachers' Intention to Use Technology. Cover letter for the Survey is shown in Appendix D.

### **Record Review**

Record review is another primary method of data collection in quantitative research, according to Merriam (2009). Based on previous reports provided by the simulation and computer lab manager at faculty curriculum meetings, it was noted that many faculty members did not take full advantage of the available technological tools located in the computer or simulation labs that were purchased to augment and enhance student learning. I reviewed the computer and lab manager log reports as I collected data for my record review. I set up appointments with the computer and

simulation lab manager to review records and track what type of technology had been requested by faculty members to use in their class or simulation lab classes. I kept a spreadsheet listing the different types of technology requests based on each semester taught. I compared the list against all available technology to provide a snapshot of what was being used and how frequently it was being used, while writing my observations descriptively. Data were collected using an Excel spreadsheet indicating how each course used technology and analyzed using descriptive statistics in a table and narrative format. A table was developed illustrating how each course used the available technology, frequency of use, and type of technology requested. Data are presented in the table shown in Appendix H as raw information on available technological tools and what was used. I will present this report to the stakeholders so they will be able allocate monies for future technology needs.

### **Data Analysis and Validation**

Data analysis and validation addressed the research questions.

### **Research Questions**

1. What are faculty members' perceptions of technology use in the classroom and clinical setting, as measured by the Teachers' Intention to Use Technology Survey?
2. Do faculty perceptions differ based on teaching experience?

*H2<sub>A</sub>*: There is a difference between faculty members' perception of the use of technology as a teaching strategy and the level of teaching experience.

*H2<sub>0</sub>*: There is no difference between faculty members' perceptions of using technology as a teaching strategy and level of teaching experience.

3. What are faculty members' perceptions of support for continued and future use of technology in the classroom and clinical setting?
4. What technology is currently used in the classroom and/or clinical setting?

Analyzing and interpreting data ensured the findings were valid and accurate, as noted by Creswell (2012). Glesne (2011) described triangulation as a method of data collection in a mixed method design study where multiple methods are needed to collect data. Using multiple methods promoted the validity of the data I collected from interviews, record reviews, and survey. I coded and analyzed the interview transcriptions and used descriptive statistics in a table and narrative format. Quantitative data were collected from the intention to use technology survey and record review was presented in descriptive table format. Data were stored in my locked office cabinet at home ensure participant confidentiality. Triangulations of data were demonstrated in the use of data collection techniques and tools. Data collection methods enhanced communication between the researcher and participants, allowing for exchange of ideas to facilitate data collection. Upon completion of the study, the findings and recommendations were shared with the department chair and will be shared with the appropriate stakeholders of the institution.

### **Role of the Researcher**

My role in the collection of the data analysis and validation process included recording, transcribing, and coding the qualitative data and providing statistical data collected from the survey and record review for later quantitative analysis. Working as the simulation coordinator for the Department of Nursing, I noticed most faculty members used only a limited amount of the available technology located in the computer and simulation labs. Although I would like to see faculty members use more of the available technology, I maintained objectivity and was mindful of interview bias when data gathering. Quantitative and qualitative data were collected concurrently, and the triangulation of data occurred in two stages.

**Stage 1.** Stage 1 consisted of analyzing the qualitative and quantitative data separately. Quantitative data were collected from the Teachers' Intention to Use Technology Survey (Appendix F), and record review of the computer and simulation lab logs that track what technological tools faculty members requested (Appendix H). The descriptive calculations included the mean, median, and mode. A frequency chart illustrated the frequency distribution. The descriptive statistical data described the local central tendency and variability of the sample faculty member population.

Data analyses for qualitative and quantitative data followed similar steps, such as preparing and organizing the data, exploring, reviewing, coding, building themes, applying statistical tests, and interpreting and reporting the data results, as described by Lodico, et al. (2010). Using AI as a guide during the interview sessions with faculty members helped with capturing what worked well while using technology, why it



worked well, for whom, and how it translated to success in one or more educational endeavors. A mixed method approach provided a broad view of the research data being collected as I explored faculty member perceptions of technology integration. I analyzed the qualitative data for themes and categories and the quantitative data for descriptive statistics for mean, median, mode, and standard deviations. Inferential statistical testing using a *t* test provided data comparing faculty member years of teaching experience with technology integration and use as a teaching strategy.

**Stage 2.** Stage 2 included merging the dataset to provide a complete picture of data were convergences, themes, and survey results that were similar, as recommended by Lodico et al. (2010). Qualitative research reports was presented in the narrative as performance-based, thematic, historical, theoretical, or traditional scientific formats expressed in the participant's own words, again as recommended by Lodico et al.(2010). Categorizing and coding themes helped keep data dated and in chronological order for later interpretation. Coding in my study involved looking for patterns and themes that would provide data were on what has been working well and what could be improved upon when trying to integrate the use of the available technology into the curriculum. Glesne (2011) recommended the use of frequency distribution tables to illustrate themes expressed concerning the use of technology in the current curriculum. Using thematic analysis, the researcher can focus on analytical techniques while searching through data for patterns and themes. Glesne described how computer-assisted qualitative data analysis software (CAQDAS) could assist with interpreting coded data. I found the CAQDAS cumbersome and chose to manually

code the data for patterns and themes to help make connections from my data were for data analysis.

**Quantitative data.** Creswell (2012) described how quantitative data were providing the documentation needed to support relationships among variables that can be analyzed using statistical procedures. Quantitative data were presented in a table format to provide a snapshot of the survey data analysis using the Teachers' Intention of Using Technology Survey based on a 7-point Likert scale designed to evaluate faculty member perceptions of technology integration and if perceptions differ, based on teaching experience. It measured the concepts of perceived Usefulness (PU), Perceived Ease of Use (PEU), Subjective Norm, Facilitating Conditions, Attitude Towards Use (ATU), and Behavioural Intention to Use (BIU) technology.

The quantitative research questions were intended to explore and examine the relationships between the variables and the statistical significance, magnitude, and direction differences. The analysis sought to determine whether faculty members with high levels of teaching experience using technology and low levels of teaching experience using technology differed in their responses to the survey questions concerning technology use in the classroom and in the clinical setting. It was hypothesized that there would be a significant difference between faculty members' perception of the use of technology as a teaching strategy by the level of teaching experience (high vs. low).

Teaching experience with technology was measured based on the answers provided from questions 21, 22, and 23 on the intention to use technology survey.

Each question asked faculty members what years of experience they had working with technology from 0 – 5 years, 5 to 10 years, and over 10 years respectively. A *t* test was conducted to determine if the mean of the dependent variable (technology perception) was significantly different between the faculty members who had many years of teaching experience compared to faculty members who did not. SPSS was used to list and place into columns data were for each faculty member (1–27) on the following measures: participation in the survey, the mean of the Likert scale scores, broken down by question, and years of teaching experience.

Using SPSS, another table was developed to provide a condensed summary of the total number of faculty and the means of the survey. Descriptive analysis provided a summary and description of the data themes. Table 2 below illustrates a matrix of research questions and data collection methodologies, and Appendix F illustrates the questions from the Teachers' Intention to Use Technology Survey, with additional questions to assess faculty member teaching experience.

Table 2

*Matrix of Research Questions and Data Collection Methodologies*

	<b>Research Question</b>	<b>Faculty Survey</b>	<b>Faculty Interview</b>	<b>Record Review</b>
1.	<b>What are faculty member perceptions of technology use in the classroom and clinical setting as measured by the Teachers' Intention to Use Technology Survey?</b>	X	X	
2.	<b>Do faculty perceptions differ based on teaching experience?</b>	X	X	
3.	<b>What are faculty perceptions of support for continued and future use of technology in the classroom?</b>		X	
4.	<b>What technology is currently used in the classroom and/or clinical setting?</b>			X

### **Measures Taken for Protection of Participants' Rights**

Ethical considerations to protect the rights of the participants included obtaining an IRB approval from Walden University, a letter of cooperation from the college, and chair approval prior to data collection. A consent form was sent via email through intention to use technology survey with a cover sheet to invite potential faculty members for the study. The cover sheet explained the purpose of the study, purpose for the interview(s), procedure(s), institutional information, confidentiality stipulations, and participant protection. Faculty members acknowledged consent by clicking on the link provided in the survey indicating that they either would volunteer or did not want to volunteer to participate in the research study. Upon clicking on the link and agreeing to volunteer to participate, participants were directed to an embedded pop-up survey. After completing the survey, an additional question asked each faculty member if they would volunteer to be interviewed and audiotaped. Faculty member participation was voluntary, with the opportunity for withdrawing from the study at any time. If a faculty member decided to withdraw from the study, then I would ask them if I could still use the data I collected from them while they were participants. No faculty members withdrew during my study. Protection of the participants' rights followed the guidelines of the IRB process. All materials used and collected data were stored in a locked cabinet in my home office. All participant personal data were coded to assure anonymity and confidentiality.

### **Assumptions, Limitations, Scope, Delimitations**

Assumptions are things the researcher assumes to be true and need to be verified, according to Lodico et al. (2010). My main assumption was that faculty members would share their perceptions of the use of technology in their didactic or clinical classes and help me explore how technology could be integrated successfully into the nursing curriculum. I assumed the use of an AI approach as a guide during the interview sessions would help faculty members be more at ease in sharing their experiences and perceptions about the use of technology as supplemental to their didactic and clinical classes. I assumed faculty members would become engaged with designing strategies to help integrate technology use into the nursing curriculum. The mixed method design would provide a snapshot of how current technology was being used, what had been successful or not successful, and how it could be successfully integrated into the nursing curriculum. Analysis of faculty member feedback to improve the technology integration into the curriculum experience was critical in order to provide a positive experience and outcome. Wiggins & McTighe (2011) described understanding by design as a continuous improvement approach.

Limitations are items the researcher has no control over that may influence the results of data analysis, such as participants sharing information the researcher had not intended them to share, as described by Lodico et al. (2010). The limitations of my study included faculty member lack of interest in participation, small convenience sample, and time constraints with scheduling interview sessions with faculty members. Lodico (2010) identified scope and delimitations as the specific items the researcher

intends to study for data collection, demographic control, occupation, and geographic area. Lodico (2010) identified a variable as a characteristic or attribute, such as a person, group, setting, or institution that can change. Changes can be due to external influences such as people, nature, or a circumstance not related to the study but affecting the results. A variable can also be something that changes as a direct result of a treatment in the research study. Using a mixed method research design, I explored faculty member perceptions of what has or had not helped, or will help, with integrating technology into the nursing curriculum. Faculty members were the primary stakeholders, with ultimate control, of the integration and implementation of technology into the curriculum. I wanted to find out what faculty members' perceptions were and what actions, with the support of the department chair and board of directors, needed to happen in order to integrate technology into the nursing curriculum. I worked collaboratively with each faculty member to identify solutions. Lodico (2010) observed that using a mixed method approach would involve using an ongoing approach involving data collection, reflection, and action.

### **Results of Research**

The data were obtained from the online survey, face-to-face faculty interviews, and record review. The data results were explored and described the status of technology integration in the nursing program to determine whether and how technological innovations were being used in instruction and learning. Documents reviewed included a 30-question online Intention to Use Technology survey, transcripts from the 15 faculty participants who volunteered for a face-to-face

audiotaped interview, and a record report of the computer and simulation calendar logs. The calendar record report logs provided a snapshot of what technology was being requested by each faculty member per semester course. The results of the study were outlined according to the results of the faculty survey, interview transcripts, and requested technology calendar logs kept by computer and simulation lab managers.

Data collection was conducted over a 3-week period. First, a pilot study was conducted with a few faculty members to review the interview questions for clarity. The interview results indicated that there were no revisions needed with the interview questions that were guided using the Appreciative Inquiry (AI) approach.

The quantitative and qualitative data were collected concurrently and triangulated to present a true picture of the research study's intent. The quantitative 30-question online survey was used to collect data and SPSS<sup>®</sup> was used to analyze, and interpret findings (Tables 3 and 4). The qualitative data were from the face-to-face interviews from the 15-faculty member volunteers were analyzed using an open coding scheme based on the coding schemes of Creswell (2012) to set forth major categories based on reoccurring themes that revealed how faculty members perceived the technology integration process in the nursing program and how the process related to their work (Table 5). The record review of the computer and simulation calendar logs provided a snapshot of what technology was requested and used by faculty members from various courses (Table 6).

The qualitative data revealed several factors that hindered and enabled technology integration in the nursing curriculum. The descriptors for each theme were

counted according to frequency of occurrence to create a table from the 15 transcribed interviews (Table 5). The chart allowed me to provide a numeric count of how many times the categorized reoccurring themes were voiced by faculty members and their perceptions of what has, has not, and would aid the integrate technology into the nursing curricula (Creswell, 2012).

## **Quantitative Data Results**

### **Research Question 1**

What are faculty members' perceptions of technology use in the classroom and clinical setting, as measured by the Teachers' Intention to Use Technology Survey?

For my analysis, descriptive statistics regarding each respondent's perception of technology use in the classroom and in the clinical setting are provided. All 27 respondents who attempted the survey provided valid responses. The mean response provided by each unique respondent ranged from 3.23 to 7.00, with the majority of these average responses being above 5.00. The mean response provided in the entire survey was 5.53. Therefore, it seemed that a majority of respondents were at least *Somewhat Satisfied* with their technology use in the classroom and in the clinical setting overall.

Looking at the response to each unique question, Table 3 shows the statistics for mean, median, mode, and standard deviation. The mean response for each question ranged from 4.69 (Q27) to 6.63 (Q19), indicating that respondents were least satisfied with their preparation using technology in the simulation lab, and most satisfied with their expectation to use technology in the future.



The standard deviation for each question ranged from 0.742 (Q19) to 1.739 (Q25), indicating that respondents were most uniform in their expectation to use technology in the future, and least uniform in their perception that administration provides orientation training prior to using any type of technology in the classroom or simulation lab. The average standard deviation for each question was 1.35, indicating that responses were generally dispersed around the means.

Table 3

*Descriptive Statistics for Teachers' Intention to Use Technology Survey by Question*

Question Description (Q)	N	Mean	Median	Mode	Standard Deviation
Q1 Accomplish tasks	27	6.22	7	7	1.22
Q2 Improves performance	27	5.81	6	6	1.33
Q3 Increases productivity	27	5.96	6	7	1.34
Q4 Enhances effectiveness	27	5.93	6	7	0.99
Q5 Easy to learn	27	5.22	6	6	1.40
Q6 Easy to use with what I want to do	26	5.23	6	6	1.43
Q7 Does not require much effort	27	4.85	5	3*	1.70
Q8 Easy to become skillful	27	5.00	5	6	1.62
Q9 Easy to use	27	4.81	5	3	1.64
Q10 External influence	27	5.52	6	7	1.34
Q11 Personal importance	27	5.48	5	5*	1.31
Q12 Available assistance from specific person	27	5.41	6	6	1.48
Q13 Awareness of assistance	27	5.63	6	7	1.55
Q14 Timely assistance	27	5.33	6	6	1.52
Q15 Technology is additive	27	4.89	5	4	1.50
Q16 Embrace technology	27	4.89	5	4	1.48
Q17 Enjoy technology	27	5.27	5	6	1.22
Q18 Continued future use	27	6.33	7	7	0.92
Q19 Expected continue use	27	6.63	7	7	0.74
Q20 Plan to use	27	6.52	7	7	0.85
Q24 Administrative technical support	27	6.22	7	7	1.37
Q25 Administrative orientation support	27	5.22	6	7	1.74
Q26 Classroom preparation	26	5.31	5.5	5*	1.44
Q27 Simulation preparation	26	4.69	5	5	1.44
Q28 Technological confidence	27	5.37	6	6	1.33
Q29 Enhances student learning	27	6.11	7	7	1.22

\*Multiple modes exist. The smallest value is shown

## Research Question 2

Do faculty perceptions differ based on teaching experience?

(1) Hypothesis: There is a difference between faculty members' perception of the use of technology as a teaching strategy and the level of teaching experience.

(2) Null Hypothesis: There is no difference between faculty members' perception of using technology as a teaching strategy and level of teaching experience.

My analysis sought to determine whether faculty members with high levels of teaching experience using technology and low levels of teaching experience using technology differed in their responses to questions concerning technology use in the classroom and in the clinical setting. It was hypothesized that there was a significant difference between faculty members' perception of the use of technology as a teaching strategy by level of teaching experience (high vs. low).

Responses to Q21-23 were used to separate the population of respondents into faculty members with high and low levels of teaching experience using technology. As the above hypothesis was to be answered with an individual samples *t* test, which compares the means of two independent populations, the intent was to create two groups of roughly the same size. Respondents meeting the following criteria were considered to have a high level of teaching experience using technology:

1. Per Q23, at least Somewhat Agree to having over 10 years of teaching experience using technology

2. Per Q22, Strongly Agree to having 5 to 10 years of teaching experience using technology

Splitting the respondent population using this method resulted in 13 respondents with a high level of teaching experience using technology and 14 respondents with a low level of teaching experience using technology. The null hypothesis for the independent samples *t*- test was that there was no significant difference between faculty members' perception of the use of technology as a teaching strategy by level of teaching experience (high vs. low).

As the responses to Q21-23 were used to split the respondent population, *t* tests were run on the responses to Q1-20 and Q 24-29. Comparing the two populations, on almost every question the mean responses of faculty members with high levels of teaching experience using technology were higher than the mean responses of faculty members with low levels of teaching experience. These differences were significant on six questions (Q5, Q6, Q12, Q16, Q17, and Q26). Therefore, the null hypothesis was rejected for these six questions. Based on these results it can be concluded that faculty members with high levels of teaching experience using technology were significantly more satisfied than faculty members with low levels of teaching experience with the following (Table 4):

1. Their ease in learning to use technology (Q5)
2. Their ease in using technology to do what they want to do (Q6)
3. Their perception that a specific person is available to provide assistance when they encounter difficulties in using technology (Q12)

4. Looking forward to aspects of their job that require the use of technology (Q16)
5. Their enjoyment working with technology (Q17)
6. Their feeling of preparedness using technology in the classroom (Q26)

Table 4

*Level of Teaching Experience by Teachers' Intention to Use Technology Survey*

Question (Q)	N	Mean (Few Years Many Years)	SD (Few Years Many Years)	<i>t</i>	df	Sig
Q1 Accomplish tasks	14	6.14	1.03	.345	25	.733
Q2 Improves performance	14	5.79	1.12	.116	25	.909
Q3 Increases productivity	14	5.71	1.33	.998	25	.328
Q4 Enhances effectiveness	14	5.71	.99	1.152	25	.260
Q5 Easy to learn	14	4.71	1.60	2.084	25	.047*
Q6 Easy to use with what I want to do	14	4.54	1.45	2.800	24	.010*
Q7 Does not require much effort	14	4.43	1.65	1.362	25	.185
Q8 Easy to become skillful	14	4.29	1.56	2.014	25	.055
Q9 Easy to use	14	4.29	1.54	1.813	25	.082
Q10 External influence	14	5.50	1.58	.073	25	.942
Q11 Personal importance	14	5.43	1.56	.213	25	.833
Q12 Available assistance from specific person	14	4.79	1.72	2.491	25	.020*

*(table continues)*

Question (Q)	N	Mean (Few Years Many Years)	SD (Few Years Many Years)	<i>t</i>	df	Sig
Q13	14	5.14	1.70	1.763	25	.090
Awareness of assistance	13	6.15	1.23			
Q14 Timely	14	5.00	1.66	1.193	25	.244
assistance	13	5.69	1.32			
Q15	14	4.71	1.64	.619	25	.541
Technology is additive	13	5.08	1.38			
Q16 Embrace	14	4.21	1.53	2.760	25	.011*
technology	13	5.62	1.04			
Q17 Enjoy	14	4.79	1.31	2.381	24	.026*
technology	13	5.83	.84			
Q18	14	6.21	.98	.691	25	.496
Continued future use	13	6.46	.88			
Q19 Expected	14	6.64	.76	.094	25	.926
continue use	13	6.62	.77			
Q20 Plan to	14	6.57	.85	.330	25	.744
use	13	6.46	.88			
Q24	14	6.43	.85	.808	25	.427
Administrative technical support	13	6.00	1.78			
Q25	14	5.07	1.77	.460	25	.649
Administrative orientation support	13	5.38	1.76			
Q26	14	4.79	1.67	2.141	24	.043*
Classroom preparation	12	5.92	.79			
Q27	14	4.21	1.63	1.931	24	.065
Simulation preparation	12	5.25	.97			
Q28	14	5.00	1.47	1.535	25	.137
Technological confidence	13	5.77	1.09			
Q29 Enhances	14	5.79	1.53	1.471	25	.154
student learning	13	6.46	.66			

\*Null hypothesis rejected

### Research Question 3

What are faculty members' perceptions of support for continued and future use of technology in the classroom and clinical setting?

Research question 3 explored faculty members' perceptions of the technology integration process in the nursing curriculum. The goal of the qualitative component of the study was to use seven focused interview questions guided by the AI approach with faculty members to examine and explore their perceptions of integrating technology into the nursing curriculum by gathering information not collected by the survey that could further explain their perspective of the technology integration process within the nursing program and confirm the quantitative findings. The seven open-ended questions were guided by the AI phases. Seven general open-ended questions were used for this phase of the study:

1. Discovery phase (organization members are encouraged to explore what they value most about themselves and program; frame questions in a positive, appreciative manner).

*Q1. Describe a time when you believed the use of technology made a positive difference in the nursing program or in the way, you taught in the classroom setting.*

*Sub question:*

*Q7. How do you think technology supports student-learning needs?*

2. Dream phase (organization members share dialogue of what they envision will work well in the future).

*Q2. How do you envision the integration of technology into the curriculum improving the overall program?*

*Sub questions:*

*Q5. What do you envision for the future of technology usage in the classroom and clinical setting?*

*Q6. What would help you continue to use technology as a teaching strategy?*

3. Design phase (organization members share dialogue and start planning and prioritizing the processes that would work well).

*Q3. Describe what prioritized steps will be needed to enhance or streamline the integration of technology into the curriculum process.*

4. Destiny phase (AI stimulates forward thinking and creativity while providing a framework in which meaningful change can occur; members put their dreams and design together and actually implement the changes described; faculty members actually work on the specific areas they want to address).

*Q4. Describe what technological tools will be needed to enhance or streamline the integration into the curriculum process.*

The questions on the interview protocol were designed using AI to measure evidence of the faculty members' perceptions of technology integration in the nursing curriculum. Three faculty members were invited to participate in a pilot study to review the guided questions for accuracy and clarity to reduce bias. Questions were asked and audiotaped with the faculty member's permission and transcribed later for further data analysis. To triangulate the data and eliminate researcher bias, I transcribed the audio-recorded interviews, shared the transcripts with the interviewees, categorized common themes and coded the data with highlighters. An open coding

scheme based on the coding schemes of Creswell (2012) was used to set forth categories that revealed themes relating to how the faculty members viewed the technology integration process in the nursing curriculum and its relation to their work.

The data revealed several factors that faculty members felt would enable technology integration in the nursing curriculum. The descriptors for each theme were manually counted according to frequency of occurrence to create a table from the 15 transcribed interviews. The table reflected all the guided AI questions I used and the emergent themes from the transcriptions, which allowed me to compare data among the participants (Creswell, 2012). I then counted the number of times the repetitive descriptors occurred in order to create a chart listing the categorized themes and then ranked them at the bottom of the table. I then used descriptive statistics to analyze the qualitative data while grouping them into six broad categorized ranked themes, which include Simulation, Training, Resources, Online Classes, Faculty Input, and Enhance Learning respectively. Total numbers of themes are listed to the corresponding AI question (Table 5).



Table 5

*Faculty Member Themes per Appreciative Inquiry (AI) Guided Question*

Questions (Q)	Q1 Discovery Phase Positive difference	Q2 Dream Phase Improve overall program	Q3 Design Phase Prioritized steps needed	Q4 Destiny Phase Tools needed	Q5 Dream Phase Envision for the future	Q6 Dream Phase Help continue use	Q7 Destiny Phase Support learning needs
Faculty							
A1	Simulation Case Studies	Increase Technology Usage	Train & Encourage Faculty	Virtual Tools Online courses	Virtual & online tools	Support	Alternate Delivery system
A2	Online courses Simulation Case studies	Resources	Evaluation	Blackboard Distance Education	Technology Simulation	Support Resources	Support Resources
A3	PowerPoint Simulation	Second Life Resources	Faculty input Training	Simulation Resources	iPads EBooks	Training Wimba	Simulation
A4	Virtual Tools Online courses	Technology	Training	iPads Online courses	Computer Charting	Enhance technology	Enhances learning
A5	PowerPoint You Tube	Simulation Debriefing	Training Support	Simulation Pyxis	iPads Laptops	Resources	Enhances learning
A6	Therapeutic communication	Don't like technology	Training Resources	Champions	Skype Online tools	Resources	Adjunct
A7	Simulation	Mixed feelings about technology	Consistent Training Faculty input	Consistent Training Faculty input	Simulation	Continuing education Training	Continuing education Training
A8	Simulation	Resources	Manikins in simulated scenarios	Human actors in simulated scenarios	Electronic presentations	Computer applications	Enhance learning
A9	Simulation	Keep up with change	Training Faculty Input	Computers	Simulation	Increase Simulation use	Supports hands-on training
A10	Simulation	Practice in simulation lab prior to clinical entry	Training	Computers	Simulation	Increased technology in the simulation lab	Supports hands-on training
A11	Alternate methods	Alternate format	Seminars	Enhance delivery	Second Life	Seminars	Communication links
A12	Interactive tools	EBooks iPads	Faculty input Training	Computers iPads	Online courses iPads,	Training	Provides resources
A13	PowerPoints	Resources	Faculty Input Hands-on Training	Computers Simulation	Increased Technology usage	Training with new equipment	Provides resources
A14	Simulation	Simulation Electronic medical records	Faculty input Training	Virtual High fidelity manikins Crash carts Pyxis	Flipping classroom EBooks Informatics	Training	Online resources
A15	Manikins	Simulation	Faculty input Training	Computers	Online classes Faculty Input	Simulation	Remediation
Total Themes by ranking:	Simulation – 17	Training – 16	Resources - 10	Online Classes – 8	Faculty Input – 7	Enhance Learning - 6	

Faculty members valued using technology such as simulation to enhance learning but felt additional support and resources would be needed in order to integrate technology into the curriculum. Faculty members felt orientation and training were needed to be prioritized by administration if future technology were to be successfully integrated. Giving faculty members a voice through involvement with training and input in the usage of technology would benefit and enhance student-learning needs (Polly, 2010). Faculty members felt additional training tools such as iPads, electronic medical records, computers in the computer and simulation lab would help them prepare students to work in the hospital setting. Common themes that fell under each AI phase to include ranking are listed in Figure 1.

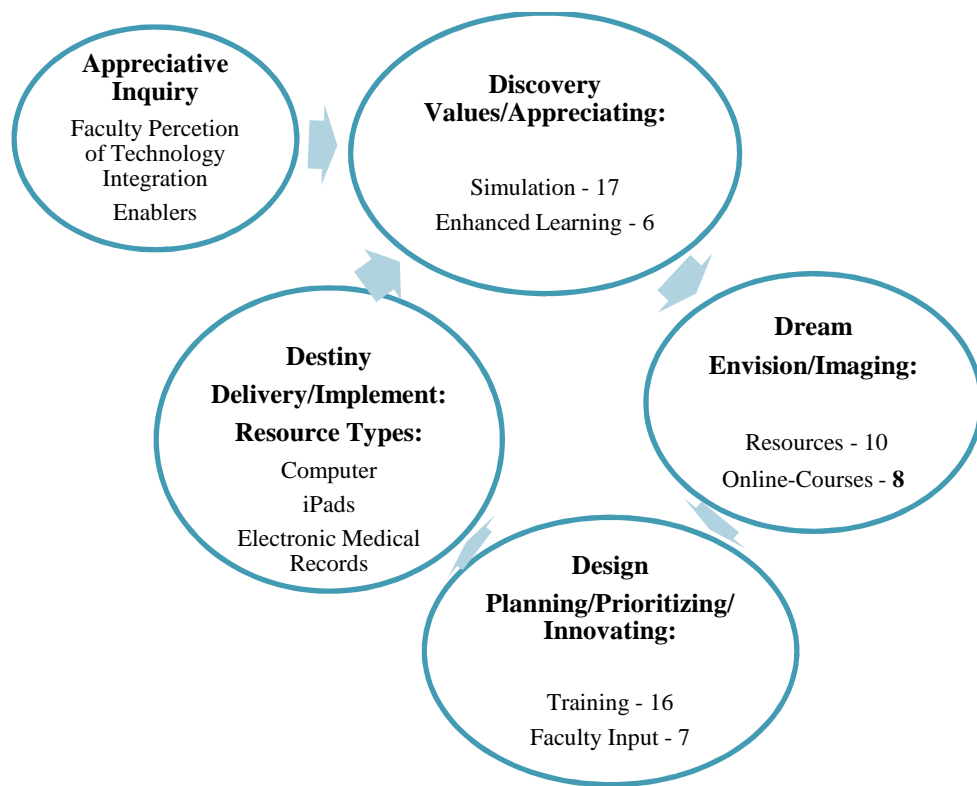


Figure 1. Appreciative Inquiry common faculty perceived integration enablers.

### **Themes from the Study Results**

Based on the analysis of the coding that emerged from constant comparison of the transcriptions, six categorized patterns of key words revealed themes that ran through the experiences of the faculty members in the AI processes. The themes connected with the previous literature on AI provided insights for the stakeholders and faculty members. Repeated themes were grouped into six broad categories and then listed under each AI guided questions (Table 5).

**Discovery Phase.** During the AI discovery phase, faculty members were encouraged to explore what they value most about themselves and program by answering the questions:

Q1. Describe a time when you believed the use of technology made a positive difference in the nursing program or in the way you taught in the classroom setting.

Sub question:

Q7. How do you think technology supports student-learning needs?

Emergent themes of what faculty members valued included the use of simulation to enhance student learning. Faculty members felt orientation and training would encourage them to use the available technologies.

A14 stated,

When I was teaching fundamentals of nursing and going into the lab and teaching the students skills I thought the concept part prepared them for clinical. In reality, it was not doing it. They could not tie both

things together, so then what I started doing is we utilize the simulation scenario with the vital sim the mid-fidelity manikin, and we made a very basic scenario....I would say that the use of technology, using scenarios, using the manikin, was very effective and enhanced student learning.

A13 stated,

An example of a time that I believe the use of technology made a positive difference was when you use the PowerPoint lectures for lecturing. I think that helps to promote the learning with the students...we are now addressing those needs with the use of technology by utilizing resources and certain programs where they don't have to necessarily read the book.

A3 stated,

I believe using technology can promote students to visualize something they may have read in a chapter. This is helpful prior to going into a clinical setting. We can demonstrate step-by-step in real life, things I think that would be helpful to them to be able to translate into the clinical setting. This supports students learning needs.

Reflecting on the transcriptions, most faculty members valued the use of technology as an enhancement of learning opportunities for their students. Patterson (2010) described the use of technology in the nursing classroom as engaging which promoted interaction among and between faculty members and students. Burns (2010) described

how pre- and post-simulation assessments overall was an effective learning strategy which promoted confidence and overall critical thinking, communication skill development, and problem solving skills. Technology overall was valued by faculty when training was provided.

**Dream Phase.** During the Dream AI phase, faculty members shared dialogue of what they envisioned would work well in the future. Questions included:

Q2. How do you envision the integration of technology into the curriculum improving the overall program?

Sub questions:

Q5. What do you envision for the future of technology usage in the classroom and clinical setting?

Q6. What would help you continue to use technology as a teaching strategy?

Emergent themes faculty members envisioned as helping promote the use of technology included support resources, administrative support, and training with any new equipment purchased for the computer or simulation lab.

A2 stated,

If we don't teach how to use technology then we are not preparing students for facing a very technological world in hospitals, clinics etc. So we have to integrate it if we are going to keep up and graduate a product that can function out there....Make sure it is right for here to support the infrastructure.... I mean we would all wish for more time and people but there's a limit to what there's only so many hours in a

day in so many FTEs allowed department so that would be the only thing. I can't think of anything at this point.

A9 stated,

I envision what we are seeing a lot are face-to-face programs and classes are going to become online classes. The wave of education is instantaneous, people don't have to do a lot of changing in their lives to get education and so I think technology allows a person to sit in front of the computer from their home or wherever they choose to learn.... But here again on making sure that I'm properly trained to use the equipment making sure that the equipment is functional is something important to me. I would like to see other faculty members using the equipment safety and more of a team effort and not one or two people just using the equipment. All those things would inspire me to continue to use technology in the teaching process.

A10 stated,

Technology can improve the overall program by allowing students the hands on time to practice prior to going into the clinical setting. More computers with the right software can help train students for example the IV trainer allows students to practice the prioritized steps of insertion. Trainers help students with understanding and practice the steps of various nursing skills prior to entering the clinical setting. If I had more training on how to use the manikins then I would conduct

more simulation scenarios with the students because I believe practice is important prior to going to clinical.

A4 stated,

If I were a student I would choose a program that would allow me to practice prior to going into the clinical setting. I would want to be able to touch and feel these things before actually in the clinical setting and I think that's a positive for the program because it will allow me to understand the concept prior to touching a patient. If we incorporate a sort of format of what hospitals are using and get the exact same thing that would help with training.... I don't feel completely comfortable with all the technology that we have right now but with proper training I know it would help the students. Demonstration with real life situations before you actually are in the clinical setting is helpful. You can read something in the chapter and try to visualize it is sometimes difficult so if we have things available to us that we can demonstrate step-by-step in real life, things I think that would be helpful to them to be able to translate into the clinical setting. More training would help me incorporate more technology into my classroom.

Reflecting on the transcriptions, most faculty members envisioned successful technology integration could be accomplished if there were adequate resources to help them with online course development. Sherwood (2011) described how global attention has been given to using technology in nursing education to promote safety

and patient outcomes as identified as a quality and safety goal given by the IOM (2011) report. Training programs and orientations are essential for faculty to train students to provide safe competent care.

**Design Phase.** During the Design AI phase, faculty members shared dialogue about how to start planning and prioritizing the processes that would work well to integrate technology into the nursing program. Questions included:

*Q3. Describe what prioritized steps will be needed to enhance or streamline the integration of technology into the curriculum process.*

Emergent themes faculty members thought were priority-included time dedicated for orientation and training with the technology purchased.

A1 stated,

If a person does not know how to use it, never been taught how to use it, they're not going to what to use it, so that's number one priority.

A14 stated,

The very first thing is faculty acceptance and so with faculty acceptance change can occur. Because the majority of people do not take change well. We have to inform, educate, teach, and reinforce practice....faculty has to learn it then the students need to be oriented to simulation. I think the students need to learn what our goal is in using simulation so that they're not afraid of it and not intimidated by it.

These are all important steps in learning so that would be my priority is



getting the faculty to accept it and use it and then teaching the students and finally of course evaluation to improve it.

A7 stated,

Continuous education for faculty because a lot of the faculty that are coming in I find this is their second career in nursing and we are just not computer literate. Continuous education needs to be a slow but steady process not a wam bam thank you ma'am type training. One time training never works for me.

A8 stated,

I would like to see a direct line into educational resources on the net...More teaching aids that are interactive based on different case study scenarios which would list questions for students to answer. If a student does not answer correctly the learning aid would provide the student the rationale upon completion of the case study scenario. This type of technology would be beneficial for the faculty and students.

But training would be needed to help faculty train students.

Reflecting on the transcriptions, most faculty members wanted input into what training was needed. Faculty members mentioned they felt valued and empowered when their input was asked during curriculum meetings. Having a vote on how the curriculum design was to be implemented is an important predictor of shared vision. Salas (2012) described how investing in training employees have helped reduce errors in high-risk settings. Research in training has shown training works when designed, delivered, and

implemented with the employees input. Best practices and evidence-based recommendations to maximize training effectiveness include training needs analysis, promoting trainee self-efficacy, and ensuring transfer of training after training (Salas, 2012). Salas (2012) referred to several theorists such as Lewin who understood that knowledge of the dynamics of organizational change was crucial for organizations as they implemented effective strategies to move forward and Knowles's assumption that adults wanted to be engaged in their own learning and recommended that nurses keep up to date with the latest technology (Rager, 2009).

**Destiny Phase.** During the Destiny AI phase, faculty members shared forward thinking and creativity while providing a framework in which meaningful change could be addressed and specific areas they wanted to address. The question addressed: *Q4. Describe what technological tools will be needed to enhance or streamline the integration into the curriculum process.*

Emergent themes faculty members felt would help with integration included purchases such as computers on wheels, software that mimic hospital health record documentation, and alternate learning tools for students to access online.

A14 stated,

We have the tools we need in our virtual hospitals, which is the actual set up of a clinical setting, we have that. The only thing we don't have is a full electronic medical record; I think we have parts of it on our simulation learning management system....What we don't have is the time or training. This is what is important to faculty having the time to

train and space to accommodate faculty and students in the computer and sim lab.

A5 stated,

I think we definitely have to have the infrastructure to be able to integrate technology into the curriculum process so we need proper equipment and we need equipment that's going to work. We need people in place that are trained to take care of this equipment keep it running keep the maintenance on this equipment so when faculty actually go in and bring students in and they're trying to integrate this technology into the curriculum that it's working for them so I think those are some tools that we're going to need, proper working equipment and then the people that can probably run that equipment.

A15 stated,

We need equipment that works and maintained. Computers are needed to help train students with the computer skills they will need in the clinical setting. Actual computers and manikins that are functional with training are needed. How can I be expected to use something I don't understand?

A12 stated,

I think it would be nice if we had access to more laptop computers and that they have the ability to work long enough to be able to utilize them. I found students like using laptops and being able to Google things just

makes it nice in the classroom because passing information on some stuff that I can do online, quizzes and things like that in the classroom with devices they may already have would be nice for the students in order to log into my classroom so that they can take the quiz or join the discussion or something like that would be beneficial as we go toward online classrooms....I certainly see the use of iPhone for looking up things and find videos that demonstrate how to do procedures and things like that so I can see some portions of learning things even clinical possibly being online type things they watch videos or video themselves during a skill. We could assess their video during a skill or something so I do see the future just becoming more and more technological. These are just some tools I can see we would be using in the future.

Reflecting on the transcriptions, most faculty members stated they would like to see the department purchase more resources such as computers, iPads, Electronic Medical Records, and Virtual Tools for students to learn to use, since more and more technologies are accessible using hand-held devices. Kala (2010) described how nurse educators found electronic learning methods to be useful guides when designing electronic learning experiences to promote positive patient outcomes. Building on the constructivism theoretical foundation, which encouraged individual center learning Salas (2012) described how an active learning environment supported development of social and interpersonal skills using real-world decision-making skills. Decision-

making skills are crucial for faculty to embrace technology and be able to teach their students to use technology in the classroom and or clinical settings.

#### **Research Question 4**

What technology is currently used in the classroom and/or clinical setting?

The purposes of record review data analysis are to explore what type of technology faculty members were effectively using. To obtain data I used the computer and lab manager logs kept on their daily calendar that was accessible online. The daily calendar of the computer and simulation lab listed what equipment, supplies, and support each nursing course was requesting. After reviewing the calendar, I found the computer and simulation logs kept on the calendar contained detailed embedded emails that described what faculty members were requesting. The computer and lab managers designed the calendar log as a resource for all faculty members to access to view why and when the computer and simulation labs were being booked. By having the calendars accessible by faculty members, the computer and simulation lab managers felt it would decrease any overbooking of rooms or equipment. The computer and lab managers provided the data of room usage to the department chair, which used the information for future resource planning and purchases.

Data were collected using an Excel spreadsheet indicating how each course used technology and analyzed using descriptive statistics in a table and narrative format. A table was developed illustrating how each course used the available technology, frequency of use, and type of technology requested. Data are presented in

the table shown in Appendix E as raw information on available technological tools and what was used. I altered the Appendix to present the information in Table 6.

Table 6

*Record Review*

<b>Course</b>	<b>Computer Lab Determined by course objectives Frequency: Monthly</b>	<b>Simulation Lab Course Determined by course objectives Frequency: Monthly, weekly, to meet course objectives</b>	<b>Simulation Lab Frequency: Determined by course objectives</b>
Registered Nurse Semester 1	Course orientation HESI Practice Quiz/Exams Case study practice	Medication Administration Nursing Skills practice & check off Assessments Equipment: Vital Sign Machine; Patient assistive devices, medication dispenser, oxygenation & suction devices, call light system.	Medication Administration Medical Surgical Scenarios Debriefing
Semester 2	Course orientation HESI Practice Quiz/Exams Case study practice	Medication Administration Intravenous, Injections Assessments Equipment: Intravenous pump	Medication Administration Pre and post obstetrical & newborn assessments & scenarios Medical Surgical Scenarios Debriefing
Semester 3	Course orientation HESI Practice Quiz/Exams Case study practice	Medication Administration Assessment	Mental health scenarios Medication Administration Pediatric Clinical Scenarios Medical Surgical Scenarios Mental Health Scenarios
Semester 4	Course orientation HESI Practice Quiz/Exams Case study practice	Medication Administration Assessments	Medication Administration Medical Surgical Scenarios Debriefing
Vocational Nurse Level 1	ATI Practice	Medication Administration Nursing Skills practice & check off Equipment: Vital Sign Machine; Patient assistive devices, medication dispenser, oxygenation & suction devices Health Assessment	Pediatric Clinical Scenarios Medical Surgical Scenarios Mental Health Scenarios Debriefing
Level 2	ATI Practice	Medication Administration Intravenous, Injections	Medication Administration Medical Surgical Scenarios Debriefing

**Data Analysis**

Data analysis record review consisted of reviewing the calendar logs of the computer and simulation labs to explore and assess technology usage among faculty

members. Upon review, it was noted that the first semester levels of the registered and vocational nursing programs heavily used the computer and simulation labs to teach the foundational concepts of the nursing process. Simple task trainers and low-fidelity manikins were used to prepare the students prior to entering the clinical setting. The advanced semesters used the computer lab for standardized testing to prepare the nursing students to sit for licensure, whereas the simulation lab was used for advanced scenarios to prepare students to work in intensive care units.

### **Summary of Data Results**

Data were collected from the survey, face-to-face interviews, and record review revealed faculty members wanted to embrace the idea of technology integration. Quantitative data using the SPSS statistical program found faculty members supported the fact that faculty members with little teaching experience had a certain degree of lower confidence about using technology as opposed to faculty members who had more years of teaching experience. The record review data illustrated how each semester used the available technology in the computer and simulation lab. Faculty members who taught the foundational courses were more likely to use the computer and simulation lab to teach basic fundamental nursing processes and skills. Faculty members who taught the senior students used the computer lab for standardized testing to prepare the students to sit for licensure while using the simulation lab to conduct scenarios that dealt with patients that are more acute in an intensive care setting. Qualitative data using the AI process explored faculty perceptions of technology integration. Faculty member transcriptions pointed

to the need for organizational support and resources to successfully integrate technology into the nursing curriculum. Qualitative and quantitative data pointed to the need for additional training and resource support based on faculty input for a successful integration process to occur.

### **Conclusion**

Caffarella (2010) addressed the importance of transfer of learning into practice as key to learning new content and creating positive change within an organization. The four phases in the AI approach include discovery, dream, design, and destiny (Bushe, 2011). Each phase helped guide me as I explored participant perceptions to learn if technology made a positive difference in the nursing program, what participants envisioned for the future of technology use, what steps were needed to prioritize integrating technology, and what steps participants would take to implement the integration of technology into the curriculum. I conducted interviews with each faculty member, reviewed documentation of overall general technology use, and provided a survey as I examined and explored faculty members' perceptions of integrating technology into the curriculum. Understanding common expectations or goals among faculty members helped the chair and will help institutional stakeholders understand what plans of action are needed to support participants as they actively try to integrate technology into the curriculum. Evidence from the data analysis will result in organizational and social change within the Department of Nursing as faculty members move forward to create and implement positive changes.



Using the data analysis in Section 3, I will provide a description, rationale, and review of the literature for my proposed project.

### Section 3: The Project

#### **Introduction**

Section 3 includes the proposal for my final project based on the data analysis from my study. I will introduce the proposed project, project goals, rationale, a literature review, proposed implementation and evaluation tools. The project is designed to provide faculty members with a professional development (PD) 3-day training workshop to enhance integration of technology into the nursing curriculum. An online module with embedded auditory and video links will augment the PD and will provide faculty members 24/7 access to what types of technologies are available in the computer and simulation labs.

The purpose of my project study was to explore and assess faculty member perceptions of technology used in the didactic or clinical classroom setting and how technology could be integrated into the nursing curriculum. A mixed method design provided depth to the study and insight into the issue of technology integration and what faculty members perceived and envisioned would be effective to integrate technology use in the didactic or clinical classroom. Because of this mixed method approach study, it was discovered that there are potential areas requiring change in the integration of technology into the nursing curriculum. Using Appreciative Inquiry (AI) as a guide, I was able to explore with faculty members their perceptions of how to integrate technology into the nursing curricula. Based on the data analysis I discovered faculty members felt they would benefit from some type of orientation and training program that would enhance the integration of technology into the nursing curricula.

My proposed project will be titled “Two Step Approach to Technology Integration”. Step 1 will involve development of an online module using software that would house an orientation presentation of the various technological tools the computer and simulation lab offers using embedded auditory and video links. The online module would be available 24/7 for faculty members to review at their own discretion (Appendix A). The online module presentation would have auditory descriptors of the available technologies using pictures and embedded operational videos of how equipment, manikins, and computer software work. Step 2 would be the 3-day PD workshop designed for faculty members to have the opportunity to interact with each other around the available technologies in the computer and simulation labs.

The 3-day PD training workshop will be designed to accomplish the following:

1. Orient faculty members to the new online module in its entirety
2. Demonstrate and provide an interactive instruction on how to use the available computer software.
3. Demonstrate and provide an interactive instruction on how to use the available equipment in the simulation center.
4. Demonstrate and provide operational instructions about the low and high fidelity manikins.

The success of the program will be assessed with a formative and summative survey on how faculty members felt the goals of the Two Step Approach to Technology Integration were met. The following section is a description of the project goals.

### **Description and Goals**

The goal of the professional development-training workshop will be to promote and facilitate faculty members as they learn how to use the various technologies the computer and simulation lab have to offer. The training will allow faculty members to view first hand and consider integrating some of the technologies as part of their teaching strategies. By discovering what positive core teaching-learning strategies are, available faculty members will be able to integrate technology into their didactic or clinical courses (Cooperrider, 2008). The goal is to capitalize on the best practices that incorporated the use of technology throughout the program in order to improve the integration of technology into the curriculum.

### **Brief Project Description**

My project was an affirmative inquiry or curriculum evaluation based on faculty members' perceptions of the current department of nursing approach to technology integration into the curriculum. My study revealed faculty members currently incorporate the use of technology differently in each of their didactic or clinical courses. Faculty members provide a significant amount of rich data that allowed me to create a curriculum plan that would capitalize on the current use of effective technological teaching-learning strategies used in the nursing curriculum. My project will provide faculty members the opportunity to become familiar with the available technologies housed within the computer and simulation lab. The hands on approach and review of the available technologies will hopefully encourage faculty to use the computer and simulation labs more often. Polly (2010) described

characteristics of a successful professional development plan included giving faculty members a voice through involvement with training. Burnes (2004) described Lewin's model as promoting change by allowing participants to have input on how change could take place. Involving faculty member input can promote positive change. Polly described training as not a one-time event but rather continuous, with support from faculty members and administration. Training would provide time for faculty members to reflect on ideas, beliefs, and practices. I have chosen this genre for the project resulting from the data analysis because these characteristics form and inform my two-step orientation project.

Day 1 – The target audience for my project will be all full and part-time faculty members of the department of nursing. Training will focus on Step 1 of my online module orientation presentation. I will demonstrate how to access the module online and how to open up the embedded links that demonstrate and explain the operational procedures of equipment housed in the simulation center. Once the module is covered, a formative evaluation survey will be distributed for faculty member feedback.

Day 2 – The target audience for my project will be all full and part-time faculty members of the department of nursing. Training will occur in the computer lab and focus on demonstration, instruction, and discussion of the resources available within the computer lab area. Upon completion, a formative evaluation survey will be distributed for faculty member feedback.

Day 3 – Training will focus on the simulation hospital and six specific rooms that house low and high fidelity manikins along with specialty equipment and supplies.

A hands-on demonstration, instruction, and discussion of the operational procedures of each manikin will be covered.

### **Rationale**

I chose my particular project in order to address the problem that there is no clear methodology used among faculty members to help with the integration of technology into the nursing curriculum. Most faculty members new to teaching felt ill prepared to use the available technology and felt they lacked the expertise to use it as a teaching-learning strategy. Faculty members' lack of confidence and motivation were the motivating factors for choosing this particular project in order to discover effective technological teaching-learning strategies upon which the research could capitalize in order to improve technology integration into the nursing curriculum. My project integrates with the data analysis completed in Section 2.

The data analysis in Section 2 revealed that the current faculty members' perception of technology integration has many existing efficacious teaching-learning strategies, which were discovered by all full and part-time faculty members who were interviewed. A workshop is an active participatory workshop, which can provide opportunities for idea sharing and emotional support (Rogers, 2010). The project reinforced that technology used in the nursing program curriculum is taught using efficacious technological teaching-learning strategies. My project study discovered that the nursing curriculum program does contain positive and effective technological teaching-learning strategies upon which the program faculty members can build.

## **Review of the Literature**

Jeffries (2013) and Williamson (2010) described integrating technology into the curricula as imperative for faculty members to provide students the tools to keep up with best practices in an ever-changing technological healthcare environment. Polly (2010) described effective training as providing continuous fluid support from administration and faculty members. Training should provide time for reflection on ideas, beliefs, and practices. Administration and faculty members must share a common vision of technology use to facilitate teaching and learning modalities in order for technology integration into the curriculum to be successful. The quantitative and qualitative data analysis concluded the need for an interactive professional development-training program to engage faculty members with technology.

My project is designed to assist faculty members in developing a repertoire of integrating technology in the classroom and or clinical setting. Based on the analysis of the research and theories of infusing and integrating technology into curricula, a comprehensive professional development orientation program is an initial appropriate approach for addressing integrating technology for my project. The two-step approach I proposed will provide an online and hands-on orientation and training opportunities for faculty members to the available technology located in our computer and simulation labs.

A review of the relevant literature in the area of practices and trends in implementing professional development programs to improve technology integration are addressed in this section. Jefferies (2013) described how there have been

significant increases in the use of technology in the nursing curricula. Technology has opened the door to new teaching strategies for nurse educators. Technology involves considerably more skill, knowledge in order to bridge the gap between experienced, novice educators, and learners (Axley, 2008).

The literature review addresses the proposed professional development-training program and format of my project. Saturation of the literature review consisted of an examination of books, journals, and peer-reviewed studies, preferably within the past five years, on the topic of professional development for nurses and hands-on practice for teaching technology. I used a compilation of the literature to the saturation point for a comprehensive representation of current research on this topic, using Walden University's Library, ProQuest, and Google Scholar. I used search terms such as *professional development, nursing professional development, technology, adult learning strategies, learning styles, integrating technology into curricula, learning theories, professional development design, and nursing education professional development design*. I explored professional development, technology integration, and learning theories to assist with training faculty members.

Mastrian (2011) identified two main theories, behaviorism and cognitivism that are covertly or overtly called upon in the Theories in Practice (TIP) database that list 57 theories of learning (Kearsley, 2009). Behaviorism built on the research of psychologists such as Pavlov, Watson, Guthrie, Thorndike, and Skinner described learning as occurring based on the interrelationship of responses to a stimulus (Mastrian, 2011). Cognitivism built on the research of psychologists such as Wundt,



Piaget, and Vygotsky described learning based on human intelligence and cognitive development (Mastrain, 2011).

Combining behaviorism and cognitivism results in a learner-centered instructional design where the instructor acts as a facilitator and coach to engage the learner. Professional development instructional designs using a step or sequential approach help facilitate active learning keeping faculty members engaged. I have chosen this genre for my project based on my data analysis because these characteristics helped inform and form my two-step professional development orientation project. Mastrain (2011) described that there were several learning theories and philosophies of education used to develop and implement lesson plans such as behaviorism, constructivism, problem-based learning, and situated cognition. Implications for teaching and learning include identifying the situation, providing scaffolding for novices and experts, providing support to track progress, and assessing the situated learning.

Willcockson (2010) described emerging technology integration models as having historically not been linked to a learning problem or theory. Understanding the learning needs is the center of technology implementation into the classroom. Based on the data analysis I developed a professional development orientation-training program that will meet the needs of novice, intermediate, and expert faculty members by employing a combination of learning theories and philosophies of education. Themes and patterns from the literature review provided structure and support for the project. Four sections in my literature review included: (a) identification of situation

needs assessment, (b) scaffolding technology training, (c) learning support, and (d) assessment. These will be addressed further to support my project.

### **Identification of Situation Needs Assessment**

Data analysis provided a glimpse of what faculty member's perceptions were to facilitate their learning needs. Social constructivism framework researchers use qualitative data collection and are actively engaged with their participants to understand meanings and perspectives. Lodico (2010, p. 8) described social constructivists as using observation, interviews, pictures, videos, and individual history to collect their data and "bringing them closer to the participants" (p. 8). Adults learn best when they are respected, allowed to participate in their learning, and encouraged to share their experiences with others (Knowles, 1968). Many of the faculty members I interviewed voiced an interest of being part of an interactive orientation-training program only if their feedback about the training were used to improve future training sessions. Faculty members wanted to share their experiences and be engaged during training.

Knowles (1968) developed a theory of adult learning that he distinguished as being different from pre-adult learning. He developed several assumptions as he studied adults, concluding that adults were self-directed, self-motivated learners who developed through a continuum of life experiences that added to their reservoir of learning opportunities and growth. Best practices in the classroom focus on the mechanics of teaching and learning. Knowles's assumptions focus on the human

element of the progressive evolution of human learning and how self-directed learning and experience influence learning. Educators must become facilitators of learning.

Caffarella (2010) and Jefferies (2013) described how facilitating learning and training in the nursing education setting occurs in a variety of education genres. Examples include informal and formal skill building sessions, workshops, retreats, seminars, or peer coaching. McLeskey (2011) described professional development as having a variety of intentions to include providing knowledge and awareness to new procedures, educational issues, or providing faculty member's new strategies for instruction and skill training. Christesen (2014) described how networking and collaborative relationships provided positive working relationships. Rogers (2010) and Conrad (2011) described how an active participatory workshop could provide opportunities for idea sharing and emotional support. A professional development workshop is what I have chosen for my project to implement training for faculty members.

Adamson (2010) and Bernard (2010) recommended strategies for creating a positive core and supportive environment where collaborative inquiry would be encouraged to improve faculty member success. Based on these findings, the online module would allow faculty members to review the available technologies at their convenience and attend the biannual 3-day workshop for hands on training. I developed an online orientation module to help faculty members visually view the available technologies and understand how specific equipment operate prior to attending the 3-day workshop. The focus of the 3-day hands-on workshop was to help

faculty members gain confidence, collaborate, and reflect upon strategies to integrate technology into their didactic and clinical classes. Bielefeldt (2012) and Salas (2011) described how active engagement among faculty members should be encouraged in order to facilitate collaborative learning and support change. Griffin-Sobel (2010), Buabeng-Andoh (2012), and Davidson (2012) all describe how content and demonstration is beneficial to facilitate role development and address the situational needs of technology integration.

### **Scaffolding Technology Training**

Data analysis provided a glimpse of the available technology based on faculty member perceptions of what type of training would be needed to help integrate technology as a teaching strategy. The challenge was to provide realistic training that would support the learning needs of all faculty members from novice to expert. Scaffolding training appeared to provide a sequential orientation-training format that would provide continuous support (Mastrain, 2011). Taplay (2014) described scaffolding as essential to accommodate ongoing and initial changes. Scaffolding to manage change is interrelated with information exchange and the process of adoption and incorporation of interdependent shared motivators and physical locale (Taplay, 2014). Byceson (2007) and Khanal (2013) described how scaffolding provided a maximum supportive environment for participation, communication, meaningful engagement in activities through instruction, coaching, prompting, and questioning. Understanding faculty member perceptions and experiences are necessary to explore potential gaps of knowledge. A needs assessment of available technology and faculty

member baseline teaching experiences was necessary for planning and implementing my professional development-training project.

Technology investments are costly and a needs assessment to establish a baseline of current educational requirements, experiences, and viable equipment is necessary to uncover educational gaps and redundancies (Jeffries, 2013). Exploring faculty members' perceptions of past, present, and future integration of technology into the nursing curriculum led to designing orientation modules faculty members could access online prior to attending a formal orientation workshop. The online modular component acted as an orientation and refresher for the novice and expert faculty members.

The online orientation module was designed to help faculty members go back to review modules at their convenience. Rice (2011) described how identifying needs of the learners, providing interactive multimodal teaching methodologies to illustrate new content to learners were recommendations incorporated by Knowles core tenets of adult learning theory. Shriner (2009) described how workshops could be effective in changing and improving multiple components of teachers' behaviors, such as instructional skills and the application of new knowledge into the classroom setting. Adamson (2010), Caffarella (2010), Fountain (2011), Berkowitz (2011), and Keefe (2011) all addressed the need for stakeholder support and that is was crucial for programs to be successful. Maintaining competency is important as technology advances and changes. Berkowitz (2011) and Keefe (2011) describe how setting up an orientation-training program that is updated to meet the requirements of best practice

changes is crucial for faculty members to keep up with the ever-changing technological landscape in healthcare.

The online modular orientation and 3-day workshop was designed based upon strategies and suggestions that surfaced from faculty members during the appreciative inquiry process of my project study. Williams (2009), Dunst (2010), Fountain (2011), Howard (2011), and Davidson (2012) all described in their articles how online modules and hands-on training provided faculty members the opportunity to view, assess, explore, and discuss operational equipment concerns and support networks. Bielefeldt (2012), Skia (2011), Nehring (2011), and Miller (2013) all described how active engagement among faculty members during the hands on training workshop should be encouraged in order to facilitate collaborative learning, reflection, and support change.

The 3-day professional development workshop was designed using an orientation training strategy for orienting new faculty members and for reinforcing competency training of faculty members to maintain currency of technology. Cost to the program would be minimal since the orientation training would occur during the start of spring and fall semester. Adamson (2010) recommended incentives such as workload release for training to offset integration barriers such as lack of time, support, or equipment. Polly (2010) and Salas (2012) described how an orientation-training program that provides the time, equipment, and a support network would result in a win-win training experience for faculty and students to facilitate safe,

competent patient care.

### **Learning Support Tracking**

Data analysis identified learning support as crucial for faculty members to engage in training. Jansen (2009) described there were several barriers of technology use, which included disinterest; lack of space; time; training; equipment; scheduling; staffing; funding and student engagement. Adamson (2010) described helpful support systems included workshops, support from administration and colleagues, and incentives to improve the use of technology. Anderson (2011) identified demonstrations, workshops, specialists, and being able to practice with technology as an interactive supportive approach to meeting the learning needs of faculty members. Allowing faculty members the opportunity to provide immediate feedback during training allows the facilitator the opportunity to immediately adjust, support, and provide additional training in the future.

Supporting positive experiences faculty members reflect upon provides future possibilities for using technology in the didactic and clinical classroom (Tanner, 2006). Tracking learning support involves continual data collection of the steps and strategies used to facilitate the incorporation of technology into the curriculum (Taplay, 2014). Supports from the institutional department include allowing the time to conduct a professional development workshop, provide expert facilitators and resources, space, funding, and purchase of software to provide an online orientation component. Data analysis helped with developing the daily workshop goals and objectives to match the overall outcomes of the program, which was to facilitate the

integration of technology by faculty members. Allowing faculty members to view and engage in hands-on training throughout the professional development workshop facilitates the process of incorporating and adopting technology into the nursing curricula (Taplay, 2014).

Adopting technology occurs when faculty members are comfortable with the equipment or situation presented during the workshop (Taplay, 2014). Individualized training sessions may be needed to allow additional time for faculty members to fully understand the mechanics or the equipment being demonstrated. Tse (2014) described how faculty member burnout could occur if faculty members were not adequately supported when technology was purchased and being introduced. A facilitator who is an expert with the technological tools is necessary to assist faculty members. Faculty members who perceive colleagues as collegial while given the time and support during training will be more confident using technology and likely to introduce it in their didactic and clinical courses.

### **Assessment of the Situated Learning**

Data analysis of the professional development workshop involves faculty member feedback about the overall online and daily orientation and training during the 3-day workshop. Feedback is crucial for adoption of technology. Integrating technology in the nursing curriculum is recognized as the state-of-art best practice learning techniques for educating nurses at all levels (Taplay, 2014). Learning and development of critical thinking is the goal of using technology to augment classroom



and clinical teaching strategies. Faculty member and student reflection of past performance are catalysts for clinical learning (Tanner, 2006).

Program evaluation is used for decision-making purposes (Lodico et al., 2010). Research builds a general understanding and knowledge of a particular topic and best practices. Lodico described how the evaluation process helps to define worth and refer for future programmatic modification and success. Feedback, designing new programs, and making changes to the existing approaches are the goals of program evaluation. Program evaluation requires data collection. Two types of data collection include formative and summative.

Formative evaluation goals are used to implement new programs or make changes to existing ones. The goal of summative evaluations is to describe how the program affects the participants. Formative and summative evaluations can be used in both qualitative and quantitative studies to collect data based on the audience and rationale of the evaluation. Long, (2011) described formative data as collected and reported to the participant throughout the study whereas summative data as collected from standardized test scores, surveys, interviews, and shared at the end of the project. Formative evaluation forms will be provided for faculty members to reflect upon the daily content of my professional development workshop project. A summative survey will be provided at the end of the 3-day workshop to capture faculty member perceptions of the overall workshop. Adjustments to future workshops will be based on the feedback faculty members provide.

In summary, my literature review indicated professional development facilitated faculty member training needs and promoted a collaborative environment. The examination of theory and research supports professional development orientation and training programs that would allow faculty members to engage in using technology in the classroom as an additional teaching strategy or aid to promote critical thinking skills students need in the ever-changing technological landscape of the hospital environment. A structured training program is deemed helpful for faculty members to understand how to incorporate teaching strategies to introduce the newer technological advances into their classroom or clinical settings. These articles stressed how knowledge and a professional development-training program would promote self-confidence allowing for the integration of technology to flourish in the nursing curricula.

### **Implementation**

The nursing computer, simulation laboratory, and one classroom with audio visual aids will be reserved for the 3-day professional workshop to allow faculty members to visualize and have the opportunity for hands on experience with the technological tools the nursing program has to offer. The 3-day workshop will be conducted during the first week when faculty members return prior to first day of classes. The group will be comprised of all full and part-time faculty members. The lesson plan for the 3-day workshop is outlined in Appendix A. There would be no cost involved since the workshop will be held the week faculty members return, which is a

week before classes on campus start. Minimal cost would be used for a continental breakfast and snacks during breaks.

The 3-day workshop will consist of orientation dedicated to the online module that encompasses an overview of what the simulation center has to offer via embedded auditory and video links. The embedded links within the online presentation will be shown which will provide an overview of what software, equipment, and operational instructions are available prior to entering the simulation center. Day 2 will consist of an interactive demonstration and instruction allowing faculty members the opportunity to go online in the computer lab to various sites such as Blackboard and other course resources. Faculty members will have access to simulation scenarios, and various games such as Bravo, which can be used in the classroom setting. Day 3 will consist of an interactive demonstration and instruction to the various equipment, supplies, and manikins stored in the simulation hospital rooms and wards. Faculty members will be divided into groups and will rotate through the simulation rooms in order to have hands on experience and training of how equipment and manikins operate. During the training, faculty members would be given time to ask questions and engage in learning on how to use the various technological tools. Faculty members would be given opportunities for reflection at the end the workshop using a workshop summative evaluation tool.

The main goal is to increase the knowledge base of faculty members on technology availability that could be used to enhance teaching strategies in the didactic and clinical classroom. The available online information may help faculty members

develop an understanding that technology could be part of the teaching planning process. The information would provide resources for ideas, templates, and examples for teaching planning strategies. Faculty members would have the opportunity to add technology integration to their didactic and clinical classrooms. Additional data analysis were of the formative and summative evaluation survey's would be needed to assess if the proposed program provided the necessary tools faculty members needed or if additional resources would be needed.

After completing the project, I would conduct a data analysis of the faculty member workshop evaluation survey's to determine what additional resources I should or could provide faculty members as they integrate technology into the nursing curriculum.

### **Potential Resources and Existing Supports**

Potential resources and existing supports include assistance from the computer and simulation lab managers in order to reserve the labs for the 3-day workshop. Participation by the computer and simulation lab managers to include technicians will be required to assist in the group simulation activities. As the simulation coordinator, I will act as the facilitator during the workshop.

### **Potential Barriers**

Potential barriers include lack of time, lack of knowledge, lack of self-confidence, and logistical issues (Williams, 2009). During the data analysis, faculty members expressed a desire to learn how to use the available technology but some felt not prepared. Another potential barrier is cost. I would have to find out from the

department chair if adjunct faculty would be paid for the workshop training. If not, then I would have to come up with another time that would be agreeable with the department chair to conduct hands on training with adjunct faculty members.

### **Proposal for Implementation and Timetable**

The workshop will begin at 8:00 am and end at 1 pm each day over a 3-day period to allow faculty members time in the afternoon to prepare for their classes that start the next week. Daily continental breakfast and snacks will be provided as faculty members take their breaks during the workshop. There will be multiple activities presented as faculty members go through the training sessions. Day 1 will include the online orientation module, which lists various tools, equipment and supplies housed in the simulation center. Operational video of various manikins will be shown to allow faculty members to learn and understand the operational instructions of each manikin and their performance capability. Day 2 will consist of faculty members going online in the computer lab to access the various instructional resources available. Day 3 will consist of faculty members rotating in groups in the simulation hospital and being exposed to the various manikins, equipment, and supplies. The lesson plan is listed in Appendix A.

### **Roles and Responsibilities of Students and Others**

The roles and responsibilities of the faculty members will be to participate in-group sessions and keep abreast of the technologies available as it affects learning and teaching modalities. Best practices and evidence-based recommendations include promoting trainee self-efficacy, and ensuring transfer of training after training (Salas,

2012). Lewin understood that knowledge of the dynamics of organizational change was crucial for organizations as they implemented effective strategies to move forward (Burnes, 2004). As adult learners, faculty members need to keep up to date with the latest technology (Rager, 2009).

### **Project Evaluation**

Formative and summative evaluation surveys will be used to determine if faculty members felt the learning objectives were met and what recommendations they may have for future workshops (Caffarella, 2013). A hard copy 1- page combined Likert scale (1-5 point) and open-ended question formative and summative evaluation survey will be distributed at the conclusion each workshop day to extract common threads.

Common threads would steer future strategies to ensure transfer of learning. One formative survey would be used at the end of each day to determine if the goals were met (Appendix A). Below is a list of guiding questions and outlined details of the data gathering tools and reporting strategies.

The following questions will guide the overall program evaluation process:

1. What are the faculty's expectations of technology training?
2. What transfer of knowledge did faculty demonstrate?
3. To what extent did the orientation program meet faculty's expectations?
4. What additional training did faculty feel was needed to help them incorporate technology training?
5. To what extent was, the program checklist followed?

### **Data Collection Tools**

A formative and summative survey tool would be used to collect data daily and at the conclusion of the workshop. Daily formative surveys would provide data using open-ended questions, which would be ranked using a Likert scale. The summative survey would be administered at the end of the workshop using open-ended questions, which would be ranked based on a Likert scale. Based on data analysis future workshops would be adjusted as needed.

### **Implications Including Social Change**

#### **Local Community**

The implication for social change on the local level is to bring an understanding based on faculty members' perceptions and feedback on how technology could affect the nursing program. Understanding and supporting positive experiences faculty members may have experienced is the first step to opening the door of future possibilities for using technology in the didactic and clinical classroom. Integrating technology in the nursing curriculum is recognized as a state-of-the-art best practice learning technique for educating nurses at all levels (Tanner, 2006). Integrating technology is a conservative, cost-effective change for faculty members. Faculty members have the power to make teaching and learning fun, interesting, educational, and in the process promote social change (Tanner, 2006).

#### **Far-Reaching**

The qualitative data in my project study suggests technology integration stimulates changes in faculty members' pedagogy. It opened the eyes of faculty

members to the possibilities to help not only themselves but also the students who have grown up in a technological age. Technology has opened the doors to the delivery of education. Online courses, video streaming of faculty lectures, hand-held devices that provide instant access to information, and high fidelity manikins are but a few items that faculty members need to be up to date using in order to be effective for their students (Tanner, 2006). The success of my project could lead to replication for other nursing programs searching for orientation options.

### **Conclusion**

Section 3 was an overview of the project. Rationale, literature, resources, and timetables were discussed. Support resources and potential barriers were discussed. Evaluation process tools and implications for social change at the local and far-reaching levels were discussed.

Section 4 includes the strengths and limitations of the project and includes reflections on scholarship, leadership, and the project development; evaluation; reflections on self; and implications for future research.



## Section 4: Reflections and Conclusions

### **Introduction**

The purpose of this project study is to address faculty members' perceptions of technology integration into the nursing curriculum. Based on the results of the completed research, I developed a 2-step orientation program, which included an online component and a hands-on professional development-training workshop. Through implementation of this program, technology integration is expected to improve, allowing faculty members to integrate technology into their didactic and clinical classes. The program's strategies followed best practices from the literature for improving faculty member overall satisfaction and confidence using technology as a teaching strategy.

The purpose of this section is to address the project's strengths and limitations and address the personal reflections about the research process and doctoral study experience emphasizing scholarship, leadership, and change. Social change impact would be addressed as well as implications for future research.

### **Project Strengths**

Researchers have identified numerous factors contributing to faculty perceptions of technology integration into the nursing curriculum. The project study was developed based on those findings, as well as evidence-based findings that revealed strategies that contribute to faculty member success for using technology as a teaching strategy (Bittner, 2012; Adamson, 2010; Axley, 2008; Smith, 2009; Teo, 2011). The strengths of this study came from past, current, and results of the data

analysis which led to development of a professional development workshop that allow faculty members to collaborate, learn, and explore the possibilities of incorporating technology in their classroom and or clinical courses. Data analysis using AI as a guide was key to finding out faculty member perceptions of integrating technology in the nursing curriculum. AI provided a positive approach to the insights of faculty member perceptions and encouraged dialogue. The research project has the potential to improve faculty member confidence with using technology as a teaching strategy, therefore integrating the use of technology into the nursing curriculum. Ultimately, students benefit from increased faculty member training and confidence.

Faculty member perceptions helped with the design of the professional development workshop orientation and training sessions. Faculty members wanted something easily accessible online so they could review and see what technologies the nursing program offered. The design of the online presentation incorporates narrative, snapshots, and video of how each of the different software and technological tools work. Faculty would be able to take their time reviewing the online presentation and review it repeatedly. Bandura (1995) believed performance improves with repetition, which helps build confidence. Building on past knowledge is an important step for building self-confidence when comparable experiences occurred. Providing a training program to help faculty feel confident using technology would be a win-win situation for faculty, students, and ultimately the Department of Nursing (Tanner, 2006).

### **Recommendations for Remediation of Limitations**

The project limitations are cost and time. Costs include purchasing software that can be placed on the college internet server and would be accessible 24/7 for faculty members to view at work and or at home and cost to attend the hands-on workshop. The department chair would have to allow faculty members, full-time, part-time, and adjunct to attend the workshop. I would propose to the department chair the cost and time saving benefits of providing orientation and training to all faculty members to use the available technology. Waxman (2009) described how standardized orientation training programs are essential in improving overall deficiencies found with technology use.

Time is the second limitation. The 3-day half-day workshop may not be enough time to allocate towards training. Faculty may request additional time spent on equipment they were more interested in learning as opposed to being exposed to all the equipment in the simulation hospital. Consideration should be given to holding refresher workshops because faculty members need the opportunity to maintain proficiency.

### **Scholarship**

Objectivity is an important goal while conducting and presenting research, because without objectivity, there may be bias (Lodico et al., 2010). Subjectivity needs to be taken into account when collecting and analyzing data. Depending on experiences, being objective about a particular subject may be challenging for some individuals who may have preconceived ideas of what they already want their research

to reflect. Some researchers may find their results to be something completely unexpected. A novice scholar-practitioner may be tempted to alter findings to fit the hypothesis. If a researcher enters the topic with the understanding that it is all right for the hypothesis to change, the practitioner will find being fully objective is the recommended and logical course of action. Long (2011) described both quantitative and qualitative research approaches as having different levels of objectivity. Quantitative research data are based on quantifiable data, which can be numerically displayed. Qualitative research data are based on conclusions extracted from surveys, observations, and interviews. The conclusions can have a higher risk for subjectivity. If the researcher is careful, quantitative and qualitative data together can give a research project the depth and breadth needed to be all-inclusive with the data results.

### **Project Development and Evaluation**

Project development and evaluation occurs when a research question is identified and a review of the literature provides a compass on past research designs and recommendations. When the problem is understood, then a plan can be created to address the problem. Goals and outcomes need to be decided. The project should consider the needs of the stakeholders participating in the project. Quantitative and qualitative measures need to be understood in order to establish the best way to evaluate the project objectives.

Lodico (2010) identified scientific methods of reasoning as a hypothetic-deductive method employed in quantitative research methodologies. The quantitative researcher first forms a hypothesis based on concepts or theories. Researchers use the

scientific process to ask questions, collect and analyze data, and interpret and report findings that generate new questions to investigate or explore. After data analysis, the researcher will either accept or reject the proposed hypothesis using this scientific method of reasoning.

Long (2011) described positivism as connected to empiricism, which relies on positive facts connected to the scientific method of reasoning. Positivism relies on the researcher's senses of touch, sight, hearing, taste, and smell. Researchers try to maintain objectivity while using their senses by not jumping to conclusions based on experiences.

Long (2011) described post positivism as being completely the opposite of positivism. Post positivist researchers believe positivism must not rely solely on empiricism. Researchers need to collect qualitative research data, which is based on understanding the meanings of triangulation of data (Long, 2011). This adds depth and breadth to the research project. Formative or summative measures can be used to evaluate measures taken. Formative data were gathered to assist with making ongoing changes, and summative data are collected after the project is completed to measure if change occurred and the goals and outcomes were achieved.

### **Leadership and Change**

I have learned leadership and change together is a process that can lead to growth into various areas of expertise as a nursing educator. Benner (1984) described effective leadership skills as developing over time and consists of lifelong learning where change may take place. It is situational and leads to mastery and becoming an

expert who no longer relies on analytical principles to connect to understanding the situation (Schon, 1987).

During the literature review, I found change was a determining factor that needed to be embraced for effective teaching and learning to take place. However, change needs to be supported with adequate and reasonable expectations. Allowing change to be gradual and with the input of participants and a supporting infrastructure seems to be the best choice when implementing integration of technology into the nursing curriculum. Asking questions and listening seemed to be my best approach to gathering the data needed to support my research project plans.

The climate of the department determines how much change and growth can occur. The leader promotes a climate of collaboration and support in order for technology integration to flourish. As faculty member and simulation coordinator, my job is to act as a resource for and liaison to faculty members to share and assist with the integration of technology as a teaching strategy.

### **Analysis of Self as Scholar**

Analysis of self as a scholar requires reflection on what one believes or on what one has done. Reflection helps to identify new and possibly better ways of performing (Schon, 1987). As a novice researcher embarking on my first research project, I feel I am a lifelong learner and will continue to need to reflect on my journey as a researcher. Focus on my goal of becoming a scholar has formed the foundation of my understanding that patience is a necessary ingredient in completing a doctoral program. Sometimes I felt discouraged, but with the help of my colleagues and

professors, I was able to overcome the hurdles of finishing this project. My goal now is to continue my work and help faculty members integrate technology while obtaining certification as a simulation educator through a national association, the Society for Simulation in Healthcare (SSIH).

### **Analysis of Self as Practitioner**

As a practitioner, my analysis of self-included exploring new technologies for the nursing program to incorporate as our program continues to grow and admit more students. The program will eventually grow into an online program with limited face-to-face classroom structure, which means technology would comprise the majority of didactic and clinical teaching. Technology within the computer and simulation lab will become more crucial for faculty members to understand. Each new semester brings new faculty members who are new to the teaching arena, so it will be critical to have an orientation for them.

I have decided to continue to pursue advanced certification as a technology expert nursing educator. I plan to use my EdD and build upon it as I act as a facilitator for change. Understanding how to facilitate change will help me as a practitioner to assist the Department of Nursing toward integrating technology in the curriculum.

### **Analysis of Self as Project Developer**

As the project developer, I would need to present my plan to the stakeholders. Implementation strategies and realistic timelines are essential for a successful orientation program. Upon acceptance of my project implementation plans, I understood I would need to be open-minded and flexible concerning changes that

might be necessary for the orientation plans to be successful. Using Lewin's change theory (Burnes, 2004), I have learned to understand that time is needed to unfreeze old habits, and gradual implementation of new habits was the best approach for a successful implementation plan.

### **The Project's Potential Impact on Social Change**

Technology integration is a process that takes time, and faculty members may need additional time to digest the information. By allowing change to occur slowly, I believe faculty, based on the data analysis, would embrace the orientation process, resulting in positive changes that would enable them to embrace the use of technology as a teaching strategy. Change could occur when faculty members are supportive and supported with the proper infrastructure.

Data analysis showed proper infrastructure such as time, resources, faculty member input, and training are needed for the successful integration of technology into the curriculum. Faculty members need to understand their input is crucial for the success of the nursing program. Without faculty member input or support, changes might not occur. When faculty members feel part of the organization, positive changes could occur and have a ripple effect through the program to other institutions that have a connection to our college.

### **Implications, Applications, and Directions for Future Research**

The importance of the work is evident from the IOM (2011) and the 2010 Affordable Care Act, which reflected the need for nursing programs to embrace the use of technology in order to provide safe patient care. Faculty members need to keep



up with the ever-changing technological landscape that is used on a daily basis in the classroom and clinical settings. Advances in technology are being purchased by hospitals to keep up with the demand of providing or retrieving patient information. A well-trained workforce is needed to keep up with these demands.

Nurse educators are at the forefront of training new nurses and therefore need to be kept up to date with the ever-changing technological landscape. In order for educators to teach using technology, opportunities need to be provided to allow the educator to first understand and become an expert with the technology. When the educators master technology, then they can pass on the knowledge to the students who would be providing patient care.

Data analysis from this research project led to the development of a two-step introduction to the technology orientation program. Published findings of this study will allow other programs to replicate and establish similar orientation programs to meet their needs. Because technology is changing constantly, the need for future research and evaluation would be continuously needed.

### **Conclusion**

The purpose of my project was to explore faculty member's perception of integration of technology in the nursing curriculum. Quantitative and qualitative research findings consistently indicated a need for further training to help faculty keep up with the ever-changing technological landscape. Tanner (2006) described integrating technology in the nursing curriculum as a state-of-the-art best practice. Integrating technology through training is cost-effective and promotes collaborative

learning which is a win-win situation that promotes positive change (Tanner, 2006).

Data analysis showed there were gaps in how faculty members were embracing technology. Understanding the gaps provided the opportunity to design a program that reflected faculty input and needed infrastructure for the program to be successful.

Based on the data analysis I developed a professional development workshop to help faculty members engage as they went through the interactive workshop.

My workshop is tailored for my department, and I hope it would allow for future growth and research in the professional community of educators that delivers quality instruction for their students. Implications for positive social change for nursing include improved technological training, which will promote critical thinking learning skills students need as they enter the workforce that is technology driven.

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## Appendix A: Proposed Project

**Title of Program:** “Two Step Approach to Technology Integration”

**Purpose:** The purpose of the project is to provide an orientation and training professional development workshop for nursing faculty members to the available technologies the computer and simulation labs have to offer. As evidenced by the data analysis in Section 2, faculty members preferred a structured approach to orientation and training in order to understand and effectively adopt the usage of available technologies in their teaching strategies.

**Goals:** The goal of the project is to provide a hands-on interactive learning forum for faculty members to gain knowledge, share their experiences in a collaborative environment.

**Desired Outcomes:** The desired outcome is faculty members incorporate and increase the use of technologies in their teaching modalities.

**Target Audience:** The target audience is all full and part-time nursing faculty members.

**Timeline:** A 3-day professional development workshop. Details are listed in the workshop lesson plan.

**Workshop Activities:** Specific activities include the workshop lesson plan, course materials, and evaluation processes.

**Workshop Lesson Plan:** The lesson plan provides an outline and roadmap.

Course Name: "Two Step Approach to Technology Integration"				
Course Description: 3-day hands – on interactive professional development workshop whose purpose is to provide orientation and training of the available technologies the computer and simulation lab offers....				
Course Objectives: At the end of the workshop, faculty members will be able to:				
<ol style="list-style-type: none"> <li>1. Gain knowledge of the technologies the computer and simulation center offer</li> <li>2. Share experiences as faculty members use the online tools as demonstrated in the computer lab.</li> <li>3. Share experiences as faculty members view and manipulate various technological tools in the simulation hospital</li> </ol>				
Day 1 (5 hours)				
Objective	Content	Time	Methodology	Resources
Welcome	Opening remarks Faculty check-in	8:00 am 15 minutes	Statement/discussion	Facilitator
Introduction of Course content	Introduction of facilitators and faculty members	8:15 30 minutes	Group discussion	Facilitator Computer & Lab Managers
Housekeeping	Establish ground rules of facility and where break session food is placed	8:45 am 15 minutes	Statement/questions	Facilitator
Workshop Objectives	Cover Objectives	9:00 am 15 min	Discussion	Facilitator
Break		9:15 am 15 min		
Schedule Overview	Workshop agenda for the 3-days is covered	10:15 am 1 hour	Statement/discussion	Facilitator
Orientation to online Module	Cover the module and embedded links: Lab policies, nursing templates for scenario building, operational demonstration of equipment, computers of each specific manikin located in the simulation center	12:15 pm 2 hours	Online Module prompted lecture	Facilitator
Day 1 Wrap up	Summarize highlights of the day and answer questions. Distribute Day 1 informal formative evaluation survey	1:00 pm 45 min	Group discussion Collect evaluation surveys	Facilitator
Day 2 (5 hours)				
Welcome	Welcome and answer questions Review agenda for Day 2	8:00 am 15 min	Statement/discussion	Facilitator

Computer Lab	Cover software available in the computer lab. Demonstrate online access to Blackboard, Classroom support software, specific resources used for classroom and or clinical assignments. Help faculty members connect online and follow as each online topic is demonstrated.	8:15 am 2 hour  10:15 am -Break at 2 hour mark for 15 min  10:30 am continue computer lab training for another 2 hour	Online prompted instruction/group interactive exercise/discussion	Computer Lab Manager Facilitator 30 computers for faculty members to work on during presentation
Day 2 Wrap up	Summarize Day 2 , answer questions Distribute informal formative evaluation survey	12:30 pm 30 min	Group discussion Collect evaluation surveys	Facilitator Lab Manager
Day 3 (5 hours)				
Welcome	Welcome, answer questions, review Day 3 agenda	8:00 am 15 min	Statement/discussion	Facilitator Simulation Lab Manager
Simulation Center Orientation	Break class into 6 groups. Each group will take a turn in specific rooms ( 30min each room then move to the next room in a clock pattern.):  Room 1 Medical Ward (low fidelity manikins, room standard room equipment , and supplies)  Room 2 Intensive Care (High Fidelity manikin)  Room 3 Pediatric (High & Low fidelity manikin)  Room 4 Obstetrics (High fidelity manikins)	8:15 am – Room 1, 2, 3, 4, 5, or 6  30 min in each of the 6 rooms with designated facilitator located in each of the 6 rooms  With 5 minute breaks between entering next room (30min – break time total) 8:45 am – break  9:50 am next room 10:20 am break  10:25 am next room 10:55 am break  11:00 am next room 11:30 am break  11:35 am next	Interactive group exercise/discussion	Facilitator Simulation Lab Manager Lab Computer Lab Manager Technicians

	<p>Room 6 Control Room (Video Recording equipment)</p> <p>Room 6 Static Room (Intravenous task trainers, classroom models)</p>	<p>room 12:05 pm break</p> <p>12:10 pm next room 12:40 pm break</p> <p>Total time – 4 ½ hours</p>		
Day 3 Wrap up and course evaluation	<p>Summarize learning of day 3. Ask faculty members to complete course evaluation and explain a follow-up evaluation will be sent in 2 months. Distribute summative evaluation survey</p>	<p>12:45 pm 15 min</p>	<p>Group discussion/participant reflection Collect summative evaluation surveys</p>	<p>Facilitator/Course evaluation instrument</p>

**Materials to facilitate the course: Day 1:**

Day 1 (5 hours)				
Objective	Content	Time	Methodology	Resources
Welcome	Opening remarks Faculty check-in	8:00 am 15 minutes	Statement/discussion	Facilitator
Introduction of Course content	Introduction of facilitators and faculty members	8:15 30 minutes	Group discussion	Facilitator Computer & Lab Managers
Housekeeping	Establish ground rules of facility and where break session food is placed	8:45 am 15 minutes	Statement/questions	Facilitator
Workshop Objectives	Cover Objectives	9:00 am 15 min	Discussion	Facilitator
Break		9:15 am 15 min		
Schedule Overview	Workshop agenda for the 3-days is covered	10:15 am 1 hour	Statement/discussion	Facilitator
Orientation to online Module	Cover the module and embedded links: Lab policies, nursing templates for scenario building, operational demonstration of equipment, computers of each specific manikin located in the simulation center	12:15 pm 2 hours	Online Module prompted lecture	Facilitator
Day 1 Wrap up	Summarize highlights of the day and answer questions. Distribute Day 1 informal formative evaluation survey	1:00 pm 45 min	Group discussion Collect evaluation surveys	Facilitator

Audio Visual equipment, online orientation module:

Simulation Center Orientation - Mozilla Firefox

HESI Faculty Access Simulation Center Orientation

file:///C:/Users/SRamarine-Singh/Documents/My Adobe Presentations/Simulation Center Online Orientation 24 July 2014/Index.htm

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## Welcome to Department of Nursing Orientation Module

**Simulation Center Orientation**  
 Resan Ramnarine-Singh  
 Simulation Coordinator/Professor of Nursing  
 Contact

Outline	Thumb	Notes	Search
Slide Title			Duration
▶ Welcome to Department ...			01:13
▶ Simulation Center Orie...			01:05
▶ Policies and Templates			00:40
▶ Student Preparation			00:55
▶ Simulation Lab Manager...			01:12
▶ Nursing Faculty Resour...			00:34
▶ Standard Equipment			00:23
▶ Standard Equipment			00:17
▶ Standard Room Equipmen...			00:20
▶ Standard Room Equipmen...			00:19
▶ Simulation Center Map			00:39
▶ Medical Surgical Wards			00:46
▶ ICU			00:34
▶ Harvey Cardiopulmonar...			00:18
▶ Emergency Room & Ambul...			00:11
▶ Static Room/Operating ...			00:18

12 Minutes 25 Seconds Remaining

Slide 1 / 26 | Stopped 00:00 / 01:13

Outline	Thumb	Notes	Search
Slide Title			Duration
▶ Welcome to Department ...			01:13
▶ Simulation Center Orie...			01:05
▶ Policies and Templates			00:40
▶ Student Preparation			00:55
▶ Simulation Lab Manager...			01:12
▶ Nursing Faculty Resour...			00:34
▶ Standard Equipment			00:23
▶ Standard Equipment			00:17
▶ Standard Room Equipmen...			00:20

12 Minutes 21 Seconds Remaining



## Day 2

### Computer lab and computers

Day 2 (5 hours)				
Welcome	Welcome and answer questions Review agenda for Day 2	8:00 am 15 min	Statement/discussion	Facilitator
Computer Lab	Cover software available in the computer lab. Demonstrate online access to Blackboard, Classroom support software, specific resources used for classroom and or clinical assignments. Help faculty members connect online and follow as each online topic is demonstrated.	8:15 am 2 hour  10:15 am -Break at 2 hour mark for 15 min  10:30 am continue computer lab training for another 2 hour	Online prompted instruction/group interactive exercise/discussion	Computer Lab Manager Facilitator 30 computers for faculty members to work on during presentation
Day 2 Wrap up	Summarize Day 2 , answer questions Distribute informal formative evaluation survey	12:30 pm 30 min	Group discussion Collect evaluation surveys	Facilitator Lab Manager

### Day 3

Day 3 (5 hours)				
Welcome	Welcome, answer questions, review Day 3 agenda	8:00 am 15 min	Statement/discussion	Facilitator Simulation Lab Manager
Simulation Center Orientation	<p>Break class into 6 groups. Each group will take a turn in specific rooms ( 30min each room then move to the next room in a clock pattern.):</p> <p>Room 1 Medical Ward (low fidelity manikins, room standard room equipment , and supplies)</p> <p>Room 2 Intensive Care (High Fidelity manikin)</p> <p>Room 3 Pediatric (High &amp; Low fidelity manikin)</p> <p>Room 4 Obstetrics (High fidelity manikins)</p> <p>Room 6 Control Room (Video Recording equipment)</p> <p>Room 6 Static Room (Intravenous task trainers, classroom models)</p>	<p>8:15 am – Room 1, 2, 3, 4, 5, or 6</p> <p>30 min in each of the 6 rooms with designated facilitator located in each of the 6 rooms</p> <p>With 5 minute breaks between entering next room (30min – break time total)</p> <p>8:45 am – break</p> <p>9:50 am next room</p> <p>10:20 am break</p> <p>10:25 am next room</p> <p>10:55 am break</p> <p>11:00 am next room</p> <p>11:30 am break</p> <p>11:35 am next room</p> <p>12:05 pm break</p> <p>12:10 pm next room</p> <p>12:40 pm break</p> <p>Total time – 4 ½ hours</p>	Interactive group exercise/discussion	Facilitator Simulation Lab Manager Lab Computer Lab Manager Technicians
Day 3 Wrap up and course evaluation	Summarize learning of day 3. Ask faculty members to complete course evaluation and explain a follow-up evaluation will be sent in 2 months. Distribute summative evaluation survey	12:45 pm 15 min	Group discussion/participant reflection Collect summative evaluation surveys	Facilitator/Co urse evaluation instrument

Access to the Simulation hospital: Lab Staff will be available at all times to assist and demonstrate various equipment during the hands-on orientation with equipment located in each simulation lab area (1) – (6):

(1) Medical Surgical Ward

Low-Fidelity Manikins with control units set with preset vital signs, lung and heart sounds for faculty to interact with.

Wall unit set-up: oxygen, suction, medical air, call light system

Bed

Ceiling mounted patient lifts

(2) Intensive Care Unit

Specialty bed

High Fidelity manikins with computer controls set with preset vital signs, lung, heart, abdominal sounds.

(3) Pediatric ward

Low and High Fidelity child and infant manikins with computer controls set with programmed vital signs, heart and lung sounds

(4) Obstetric ward

High Fidelity Manikins (Mother and newborn) with computer controls preset vital signs.

(5) Audio Visual Control room

Computer and monitor controls demonstrating videotaping capabilities

(6) Static room: Lab Staff will be available to help assist with demonstration and hands-on training with:

- Intravenous arm set up stations
- Equipment and models on display (Lab Staff will provide information on how to sign out equipment for lecture or to use in the simulation lab for demonstration purposes with their students.

## Evaluation Surveys:

### Formative Survey

<p>“Two Step Approach to Technology Integration” Formative Survey for Day 1 &amp; 2</p> <p>Please check the box that matches your answer:</p>				
1.The instructor(s) had expert knowledge of content presented.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
2.The orientation to the online module and computer lab software was informative				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3.Learning activities were well integrated				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
4.The physical facilities provided were appropriate.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5.Time allotted was adequate				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
6.The strengths of this workshop session were:				
7.Suggestions for improvement:				

### Summative Survey

<p>“Two Step Approach to Technology Integration” Summative Survey for Workshop</p> <p>Check the box that matches your answer:</p>				
1.The instructor(s) had expert knowledge of content presented.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
2.The instructor(s) provided adequate opportunities for questions and discussion.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3.Learning activities were well integrated in the workshop.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
4.The physical facilities provided were appropriate.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5.The course materials contributed to learning of the available technologies.				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
6.The strengths of this workshop were:				
7.Suggestions for overall improvement:				

## Appendix B: Invitation Letter and Consent for Pilot Study

### Invitation Letter & Consent for Pilot Study

#### Integration of Technology into a Nursing Curriculum Using a Mixed Method Approach

You are being invited to take part in a pilot study to validate an interview guide which will be used to conduct a research study which will explore faculty member perceptions of technology integration into the nursing curriculum. The researcher is inviting all full and part-time nursing faculty members to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Susan Ramnarine-Singh, who is a doctoral student at Walden University. You may already know the researcher as a professor of nursing, but this study is separate from that role. The researcher gives assurance that declining or discontinuing will not negatively impact the participant's relationship with the researcher.

#### Background Information:

The purpose of this study is to collect data on faculty members' perceptions of technology integration into the nursing curriculum.

#### Procedures:

If you agree to help with the pilot phase of the study which consists of reviewing the questions with the researcher for clarity purposes you will be contacted by the researcher to set up an appointment time. Based on your input questions may be rephrased during the actual data collection phase. Participate in one interview session that will last approximately 30 minutes.

**Voluntary Nature of the Study:** This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one at Central Texas College will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time.

**Risks and Benefits of Being in the Study:** Being in this study would not pose risk to your safety or well being. The study will provide faculty members additional opportunities to share experiences and knowledge of technology.

**Payment:** There will be no payment, thank you gifts, or reimbursements provided to participants.

**Privacy:** Any information you provide will be kept confidential and transcripts locked in my office cabinet and filed on my office computer, which is password protected. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure in a locked cabinet and password secured computer. Data will be kept for a period of at least five years, as required by the university.

It is recommended that each participant keep/print a copy of this consent form.

**Contacts and Questions:** You may ask any questions you have now. Or if you have questions later, you may contact the researcher via 254-289-5075 or [susan.ramnarine-singh@waldenu.edu](mailto:susan.ramnarine-singh@waldenu.edu). If you want to talk privately about your rights as a participant, you can call Dr. Leliani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 812-312-1210. Walden University approval number for this study is 03-13-14-0248637 and it expires on March 12, 2015.

#### Statement of Consent:

By clicking on the link below "I Consent" and agree to participate.

I agree as a participant during the interview process to allow for the interview session to be recorded and transcribed for later review by the researcher and myself for clarity.

### Invitation Letter & Consent for Pilot Study<br>

Link



## Appendix C: Invitation Letter to Participate in a Research Study

**Invitation Letter to Participate in a Research Study**

You are invited to take part in a research study of technology integration into the nursing curriculum. The researcher is inviting all full and part-time nursing faculty members to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Susan Ramnarine-Singh, who is a doctoral student at Walden University. You may already know the researcher as a professor of nursing, but this study is separate from that role. The researcher gives assurance that declining or discontinuing will not negatively impact the participant's relationship with the researcher.

**Background information:**  
The purpose of this study is to collect data on faculty members' perceptions of technology integration into the nursing curriculum.

**Procedures:**  
If you agree to be in this study, you will be asked to:  

- Complete a onetime online survey that will take approximately 15 minutes.
- At the end of the survey, you will have the opportunity to indicate if you would also like to be interviewed, however you do not need to agree to be interviewed to complete the survey.

**Voluntary Nature of the Study:**  
This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one at Central Texas College will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time.

**Risks and Benefits of Being in the Study:**  
Being in this study would not pose risk to your safety or well being. The study will provide faculty members additional opportunities to share experiences and knowledge of technology.

**Payment:**  
There will be no payment, thank you gifts, or reimbursements provided to participants.

**Contacts and Questions:**  
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via 254-289-5075 or susan.ramnarine-singh@waldenu.edu. If you want to talk privately about your rights as a participant, you can call Dr. Lellani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 612-312-1210. Walden University approval number for this study is 03-13-14-0248637 and it expires on on March 12, 2015.

**Privacy:**  
Any information you provide will be kept confidential and transcripts locked in my home office cabinet and filed on my home office computer, which is password protected. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure in a home office locked cabinet and password secured computer. Data will be kept for a period of at least five years, as required by the university.

It is recommended that each participant keep/print a copy of this consent form.

**Statement of Consent:**  
I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By participating in the survey, I understand that I am agreeing to the terms described above.

By clicking on the link below "I Consent" and agree to participate.

### Invitation Letter for Research Study<br>

**Link**

[CLICK HERE](#)



## Appendix D: Cover Letter for Survey

Cover Letter for Survey
<p>Thank you for your participation in this survey.</p> <p>Data Collection Tool used with permission was found under Walden's University Library, Tests and Measures, PsyTEST data base which includes many fulltext tests, scales, and other assessments. Questions 1 - 20 are from the database tool:</p> <p>PsycTESTS Citation: Teo, T. P. (2011). Teachers' Intention to Use Technology Survey [Database record]. Retrieved from PsycTESTS. doi: 10.1037/t14028000</p> <p>Source: Teo, Timothy. (2011). Factors influencing teachers' intention to use technology: Model development and test. Computers &amp; Education, Vol 57(4), 2432-2440. doi: 10.1016/j.compedu.2011.06.008, © 2011 by Elsevier.</p> <p>Full Test Format: Items are rated on a seven-point Likert scale, ranging from 1 – strongly disagree to 7 – strongly agree. Questions 21 - 29 are questions specific to the research study. Question 30 is the last question of the survey.</p> <p>At the end of the survey you will have the opportunity to indicate and consent you would be willing to participate in an interview.</p> <p>You do not need to participate in the interview in order to complete the survey.</p> <p>Conflicts of Interest: The researcher gives assurance that declining or discontinuing will not negatively impact the participant's relationship with the researcher.</p> <p>Contacts and Questions: You may ask any questions you have now. Or if you have questions later, you may contact the researcher via 254-289-5075 or <a href="mailto:susan.ramnarine-singh@waldenu.edu">susan.ramnarine-singh@waldenu.edu</a> . If you want to talk privately about your rights as a participant, you can call Dr. Lefani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 512- 312-1210. Walden University approval number for this study is 03-13-14-0248637 and it expires on March 12, 2015.</p> <p>Privacy: Any information you provide will be kept confidential and transcripts locked in my home office cabinet and filed on my home office computer, which is password protected. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure in a home office locked cabinet and password secured computer. Data will be kept for a period of at least five years, as required by the university.</p> <p>It is recommended that each participant keep/print a copy of this consent form.</p> <p>By clicking on the link below and completing the survey "I Consent" and agree to participate.</p>

### Intention to Use Technology Survey

Link to Survey



## Appendix E: Teachers' Intention to Use Technology Survey

**Permission to Use the Survey****Teachers' Intention to Use Technology Survey**

Note: Test name created by PsycTESTS

**PsycTESTS Citation:**

Teo, T. P. (2011). Teachers' Intention to Use Technology Survey [Database record]. Retrieved from PsycTESTS. doi: 10.1037/t14028-000

Test Shown: Full

**Test Format:**

Items are rated on a seven-point Likert scale, ranging from 1 – strongly disagree to 7 – strongly agree.

**Source:**

Teo, Timothy. (2011). Factors influencing teachers' intention to use technology: Model development and test. *Computers & Education*, Vol 57(4), 2432-2440. doi: 10.1016/j.compedu.2011.06.008, © 2011 by Elsevier. Reproduced by Permission of Elsevier.

**Permissions:**

Test content may be reproduced and used for non-commercial research and educational purposes without seeking written permission. Distribution must be controlled, meaning only to the participants engaged in the research or enrolled in the educational activity. Any other type of reproduction or distribution of test content is not authorized without written permission from the author and publisher.







**Intention to Use Technology Survey****28. I feel confident using technology.**

Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Agree	Somewhat Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**29. I think technology enhances student learning.**

Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Agree	Somewhat Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**30. Will you agree to volunteer and participate in an interview?**

- YES  
 NO

You do not have to participate in the interview after completing this survey. If you answered yes, please provide your email address to the researcher in the box below. Upon receipt an "Interview Consent Form" will be emailed to you.

## Appendix G: Interview Schedule of Faculty Members

Faculty Member	Date	Time
A1		
A2		
A3		
A4		
A5		
A6		
A7		
A8		
A9		
A10		
A11		
A12		
A13		
A14		
A15		





## Appendix I: Interview Guide

	<b>Themes</b>	<b>Repeated Terminology</b>	<b>Frequency</b>
1. Describe a time when you believed the use of technology made a positive difference in the nursing program or in the way you taught in the classroom setting.			
2. How do you envision the integration of technology into the curriculum improving the overall program?			
3. Describe what prioritized steps will be needed to enhance or streamline the integration of technology into the curriculum process.			
4. Describe what technological tools will be needed to enhance or streamline the integration into the curriculum process.			
5. What do you envision for the future of technology usage in the classroom and clinical setting?			
6. What would help you continue to use technology as a teaching strategy?			
7. How do you think technology supports student learning needs?			

Appendix J: Few vs Many Years Teaching Experience

ID	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Avg	Q21	Q22	Q23	Exp	Q30
314771592	6	6	4	5	2	2	2	3	3	2	2	3	2	3	2	2	2	5	5	5	5	2	2	2	2	2	2	2	5	3.23	4	4	4	1	2
31338836	5	4	4	5	3	2	2	2	2	5	5	2	2	2	2	1	4	5	7	5	7	6	5	1	6	2	3.69	5	5	4	1	1			
315254055	4	4	4	4	3	3	3	3	3	5	5	6	6	6	4	4	4	5	5	5	5	5	4	5	4	5	4	5	4.38	5	4	2	1	1	
312529366	2	1	2	4	5	6	4	4	5	5	5	6	5	6	5	6	5	5	5	5	1	6	6	6	6	6	6	4.63	4	5	5	2	1		
313532155	7	7	7	6	5	6	4	3	3	4	4	5	6	3	5	4	4	7	7	7	5	3	3	3	4	4	4	4.85	7	4	1	1	1		
316254388	7	6	6	5	3	4	3	4	3	6	7	2	3	3	4	4	5	5	7	7	7	7	3	5	5	6	4.88	5	2	2	1	2			
315282123	7	6	7	6	4	3	3	3	3	5	5	5	5	3	5	5	5	5	7	5	7	7	5	5	3	7	5.04	5	5	5	2	1			
313463467	7	6	6	7	6	6	3	6	3	4	5	5	3	3	2	4	5	7	7	7	5	5	6	3	5	6	5.08	1	7	1	2	1			
313221309	6	5	5	6	5	4	4	4	4	6	7	7	7	7	4	4	4	7	7	7	7	3	3	3	3	5	5.15	7	6	3	1	1			
314470914	5	5	7	5	6	6	5	6	5	7	6	5	5	5	5	4	4	5	6	7	6	3	4	4	5	7	5.31	7	1	1	1	2			
313237267	6	5	6	5	5	6	5	5	6	5	5	6	6	6	5	6	5	5	5	5	6	3	5	5	5	7	5.35	7	7	7	2	1			
313317752	7	7	7	7	3	5	3	3	3	6	5	3	5	5	5	4	5	7	7	7	7	6	6	6	6	7	5.46	5	3	2	1	1			
313646687	5	5	5	5	6	5	6	6	6	7	7	7	7	7	4	4	4	7	7	7	7	5	5	5	4	7	5.77	5	3	2	1	2			
313530254	6	5	4	5	5	5	5	5	5	7	7	6	7	6	6	5	6	6	7	7	7	7	5	6	6	5	5.81	7	6	1	1	2			
313343335	7	7	7	6	6	5	6	6	6	4	4	5	5	5	4	4	6	7	7	7	7	7	7	6	5	7	5.88	7	1	1	1	1			
313228282	7	7	7	7	5	6	3	3	3	7	7	6	7	6	4	6	6	7	7	7	7	6	5	6	7	6	5.96	5	5	5	2	1			
315487832	5	6	6	7	6	6	7	7	6	6	7	5	6	6	6	5	6	6	6	6	7	6	6	5	6	6	6.04	7	7	7	2	2			
313370425	7	7	7	7	5	5	4	5	4	7	6	6	7	6	5	6	6	7	7	7	7	7	6	5	5	7	6.08	7	7	7	2	1			
314474859	7	7	7	7	6	7	7	7	7	4	4	4	5	6	7	6	6	7	7	7	6	4	6	3	7	7	6.08	7	1	1	1	2			
316748887	7	7	7	7	6	6	7	7	7	4	4	7	7	7	6	6	7	7	7	7	4	1	6	5	6	6	6.08	4	6	6	2	1			
313400982	7	6	6	7	6	6	4	4	7	6	6	6	5	7	6	6	7	7	7	7	7	6	7	4	6	7	6.12	5	2	2	1	1			
313350686	7	6	6	6	7	7	7	7	7	6	6	6	7	6	4	4	5	7	7	7	7	5	6	6	6	5	6.15	7	7	2	2	1			
313345908	6	6	6	6	6	6	6	6	6	4	4	7	7	7	6	6	6	7	7	7	7	7	7	6	6	6	6.19	4	7	4	2	1			
314486180	7	6	7	5	7	6	7	7	7	6	5	6	6	5	4	7	7	7	7	7	6	5	5	5	7	7	6.19	7	7	2	2	1			
3147321379	7	6	7	6	6	7	6	6	6	6	6	7	7	6	7	4	6	7	7	7	7	5	7	5	7	7	6.35	7	7	4	2	2			
314541164	7	7	7	7	6	6	6	6	6	7	7	6	6	7	7	7	7	7	7	7	7	7	7	6	7	7	6.69	7	4	4	1	1			
314454324	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7.00	7	7	7	2	1		
Average	6.22	5.81	5.96	5.93	5.22	5.23	4.85	5.00	4.81	5.52	5.48	5.41	5.63	5.33	4.89	4.89	5.27	6.33	6.63	6.52	6.22	5.22	5.31	4.69	5.37	6.11	5.93								
Exp. 1	Few years of teaching experience																																		
Exp. 2	Many years of teaching experience																																		

## Curriculum Vitae

Susan Ramnarine-Singh

<b>Education</b>		<b>Degree</b>
Walden University EdD	Minn., MN	2010- present
University of Hawaii at Manoa	Honolulu, HI	1998 MSN
University of San Francisco	San Francisco, CA	1989 MPA
Wright State University	Dayton, OH	1985 BSN
Sinclair Community College	Dayton, OH	1982 ADN

**Licensure**

Nursing Lic #: TX:

CNOR Certification

CPR: expire: June 2016

**Employment History****College, Texas , 2007-present**

I currently work as the simulation coordinator/professor of nursing. I coordinate all simulation activities with faculty and help with didactic courses as needed. I participate in various positions within the Department of Nursing to include faculty advisor for SNA, Standard 6 committee chair, webmaster for the department & Facebook account, and keeper of statistical data for the department chair and faculty. I

act as primary clinical instructor in the simulation lab for faculty as needed. I am a member of TOADN & TCCTA and the Faculty Senate. I am the department NLN ambassador and an individual member. I am a member of the INASCL. I am the secretary and have acted as a board officer in the local Texas Nurses Association (TNA) District #7 chapter since 2008.

Prior to my current position, I acted as the lead and clinical professor for a foundation course for 5 semesters and for the Adult Health Course for semester 3 for 4 semesters following WECM guidelines. Average class size was 30–40 students. I acted as curriculum chair, recruitment chair, Standard III chair and member of Student Affairs, SNA, mentor program, and equipment team for the new nursing school. Core responsibilities include but are not limited to working with other team members for class and lab instruction, clinical rotational instruction, monitoring student progression, grades, and acting as advisor for students needing additional monitoring or instruction.

I perform additional departmental duties as assigned such as faculty advisor for SNA, curriculum chair, recruitment chair, chair of Standard III, member of TOADN & TCCTA, and faculty senate. I acted as the department NLN ambassador and individual member.

Entered active duty status as an Army Nurse Corps officer in 1985 and proceeded to Officer Basic Course and then on to the Perioperative Nursing Course and earned the 66E MOS (Operating Room Nurse). Retired from Active Duty, Dec. 2005.

**Darnall Army Community Hospital, Various Leadership Roles, 2002-2005**

Assigned as Head Nurse of Central Material Services, providing counseling and educational programs for CMS and OR staff of 70 military and civilian personnel at Darnall Army Medical Center at FT Hood, Texas which provides service the operating room, labor and delivery and 45 hospital and outlying clinics. Successfully standardized over 40 crash carts for the hospital and clinics. While assigned to the 126th Forward Surgical team, acted as the operating room OIC supporting four surgeons and coordinating necessary equipment for deployment. Attended and successfully completed the Jackson Ryder Trauma Training program in July 2004. Deployed to Iraq for OIF III—Kirkuk and Afghanistan till August 2005. Retired 1 Dec 2005. Major assigned as head nurse in the operating room at Darnall Army Community Hospital at FT Hood, Texas, which consisted of 6 operating rooms averaging 450 cases per month servicing ENT, plastic, general, podiatry, orthopedic, OB/GYN, eye, and GU. Responsible for the supervision and evaluation of over 60 military and civilian staff. Continuously updating and monitoring unit SOPs for preparation of JCAHO inspection. While PROFIS to the 31st CSH was assigned as OIC of the Operating Room section while in training for deployment.

**Tripler Army Medical Center, Various Leadership Roles, 1999-2000**

Major assigned as team leader in the operating room at Tripler Medical Center. As team leader, was responsible for the daily coordination of 10 surgical rooms, monitoring staffing (OR, anesthesia, surgeons) and equipment needs (support

monitors, X-ray, instruments, equipment, special supplies). While PROFIS to Korea attended three field, training exercises acting as the head nurse of the Field DEPMEDS performing live surgery on active duty patients. Acted as the controller/observer of the Pacific Warrior exercise responsible for the coordination of supplies and equipment for 50 planned surgical episodes, in conjunction with the Air Force and Navy forces.

### **1998-1999 Tripler Army Medical Center**

Major assigned as head nurse of the Ambulatory Surgical Service ward. Supervised and evaluated over 14 civilian support staff of 5 RNs, 5 LPNs, 4 nursing assistants, and 1 NCOIC. Responsible for the daily mission of the ambulatory surgical ward consisting of coordinating and tracking of the patients' perioperative, anesthesia, lab, and x-ray teaching/workup, 3 days prior to their surgical episode which averaged 30 patients per day, and postoperative monitoring and teaching averaging 25 patients per day. Filled in as necessary providing preoperative teaching, booking appointments, and postoperative recovery of patients. Continuously updated and revised SOPs in preparation for JCAHO inspection.

### **1996 – 1998 Tripler Army Medical Center**

Attended University of Hawaii at Manoa and completed Masters in Nursing specializing in Perioperative Nursing and Adult Nurse Prac. Assessment Course. Published an article for the AORN journal Feb. 1999.

### **1994-1996 Tripler Army Medical Center**

Major, assigned as chief nurse, Central Material Supply at Tripler Medical Center which serviced the operating room, labor and delivery, 35 clinics, and standardization

of all crash carts throughout the hospital and clinics. Supervised and evaluated over 25 military and civilian support staff. Responsible for the coordination of training, infection control, quality assurance, and budget. Continuously updated instrument count sheets and provided support to all the operating room staff when consolidating, creating new, and updating instrument count sheets. Constantly updating and revising unit SOPs and preparation for JCAHO inspection.

### **1991-1994 Tripler Army Medical Center**

CPT assigned to the operating room which consisted of 10 surgical suites servicing cardiovascular, open heart, neuro, general, GU, ENT, plastic, pediatric, OB/GYN, podiatry, eye, orthopedic, and C-sections averaging over 550 cases per month. Rotated various shifts working all services. Primary head nurse of the neuro service, coordinating preference sheets, instrument count sheets, training of newly assigned personnel, and maintaining budgetary requirements for inventory and ordering neuro supplies. Assigned additional duties as infection control/education coordinator for the operating room, monitoring over 65 human resource folders and the training of all newly assigned staff as the laser certification nurse. Coordinated the operating room weekly inservices with various other surgical services and representatives. Constantly updating SOPs for preparation of JCAHO inspection. Acted as charge nurse during off shifts and as floor coordinator for all 10 rooms on a daily basis.

### **1989-1991 18<sup>th</sup> MEDCOM Korea**

First lieutenant assigned to 121st Combat Support Hospital, Seoul, Korea.

Acted as the head nurse of central material supply and as staff nurse in the operating room. The 121st consisted of four operating rooms servicing general, orthopedic, OB/GYN, GU, pediatric, and C-sections averaging 250 cases per month. Worked various shifts in all services and acted as charge nurse during off duty shifts. Assigned additional duties as infection control coordinator.

### **1985-1989 Letterman Army Medical Center**

Started out as a first lieutenant and worked as an operating room nurse in charge of various shifts and surgical services when on duty in the operating room while stationed at Letterman Army Medical Center, San Francisco, CA. Letterman consisted of seven operating rooms servicing cardiovascular, open heart, general surgery, orthopedics, neuro, ENT, plastic, GU, rye, OB/GYN, podiatry, pediatric, and C-sections averaging 500 surgical cases per month. I was assigned as head nurse of the Neuro and Eye Service. Worked various shifts as charge nurse supervising at least 2 RNs and 2 91Ds. Assigned additional duty as the educational coordinator for the 91D training program (surgical scrub), supervising and evaluating classes averaging six to eight students, every 12 weeks. Acted as the infection control and quality assurance assistant for the operating room during my tour at Letterman. Completed Masters in Health Administration from University of San Francisco.

### **1982-1985 Dayton, Ohio**

Worked at several area hospitals in Dayton, Ohio while working on BSN. Worked on medical/surgical wards as a float nurse at Good Samaritan Hospital, Kettering Memorial Hospital, and as an agency nurse.



**Organizations and Other Relevant Experience**

TNA Board Member

TCCTA

TOADN

Faculty Senate Awards Member

CNOR since 1987

NLN Ambassador

ANC Retired Nurse Corps Officer Member

INACL Member

NLN Ambassador and Individual Member

**Military Courses:**

Officer Basic Course            1985

Officer Advance Course        1989

Command & General Staff    1994

Advance Head Nurse Course   2000

Army Trauma Training         2004

**Publication:**

1999 Feb. *AORN Journal*, Therapeutic Touch.