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Exploring the relationship between innovation in nursing education and clinical practice

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EXPLORING THE RELATIONSHIP BETWEEN
INNOVATION IN NURSING EDUCATION
AND CLINICAL PRACTICE

By

Francia I. Reed

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ABSTRACT

Nursing literature is replete with calls for innovation to address the needs of the twenty-first century nurse. However, innovation in nursing education in the United States and the subsequent impact on nursing clinical practice is poorly understood and minimally explored in the literature. This empirical study was designed to explore the relationship between innovation in nursing education and nursing clinical practice. Two key questions guided this inquiry: 1) What perspectives do new nurses hold about the influence of their education on their clinical practice? and 2) What is the impact of the working environment on the ability of new nurses to innovate?

Using a qualitative case study approach, and the theoretical framework of adaptive expertise, this work explored the perspectives of participants from a college of nursing in the northeastern United States regarding innovation within the nursing program. Thirteen participants, eight program faculty members and five program graduates, shared their experiences with innovation in the nursing education program. The data collection methods used in this study included document reviews, demographic surveys, participant journaling and semi-structured focus group interviews using open-ended questions. Inductive descriptive analysis was used to develop thematic coding of the data.

Results of the study demonstrated three main themes, immersion, identified as intensive clinical practicum experiences, seeking answers and making connections. Making connections was further organized into cognitive connections and relational connections. Relational connections and immersive learning emerged as meaningful learning for participants. Perspectives from the cohorts diverged on what was considered innovative. Faculty integrated several innovative teaching strategies, such as technology supported lectures, role-play, role-
modeling, group discussion, reflection, and high-fidelity simulation. Program graduates cited role-play, role-modeling and clinical immersive practicums as the most influential educational experiences. Based on their journal entries, these new graduate nurses demonstrated a propensity to innovate. However, environmental factors in the work place, such as communication issues, and orientation issues, may have played a role in stifling the innovations of these new nurses.
DEDICATION

_The desire accomplished is sweet to the soul...Proverbs 13:19 (NKJV)_

I dedicate this work to my late parents, Francis Sylvester Butler and Neda Myrtle Cameron Butler, neither of whom lived long enough to see me finish this degree. Their unwavering support and their expressed pride in my efforts have inspired me throughout the years to chase my dreams and complete my education.

And to the generations that follow – may you too be bold in the pursuit of your dreams and always remember that with God all things are possible.
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CHAPTER 1

INTRODUCTION OF THE ISSUE

Nurses are professionals who care for individuals, families and communities as they respond to their individual and/or collective healthcare challenges. With numbers nearing three million, nurses in the United States comprise the largest group of care professionals within the healthcare system. (IOM, 2011; National employment and wage data, 2014). Nurses interact with people when they are most vulnerable, and work with them to help them achieve optimal outcomes related to their health. The American Nurses Association (ANA) (2010) provides this definition of nursing: “Nursing is the protection, promotion and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities and populations.” (p.1). For the nurse, no two patients or families are exactly alike, and there is no way to predict all the possible scenarios that may be encountered. It is this uncertainty, this dissimilarity among patients that challenges nurses. In their clinical practice nurses employ a specialized body of knowledge including the science of nursing and the art of caring, often described as praxis. Praxis promotes the ability of nurses to personalize problem solving for individual patients. This notion of individualized care drives the need for innovation as an essential aspect of the nurse’s clinical practice and begs the question of a focus on innovation corollaries within nursing education.

To date, literature addressing innovations in nursing education have focused on utilizing specific teaching strategies. Bradshaw and Hultquist (2017) make the case that education within the health professions must be aligned with professional standards and guidelines. Additionally, they further suggest a simultaneous focus be placed on teaching students to move their thinking
beyond the constraints of a prescriptive education. They suggest that in order to move students outside their comfort zones to become reflective practitioners teachers must employ a variety of teaching strategies. In health education in general, and nursing education in particular, numerous strategies have been cited in the literature. Herrmann (2016) has compiled an entire book on innovative teaching strategies. Some of these include concept mapping, case study analyses, role-play, journals, grand rounds, and high-fidelity simulation labs, with mannequin patients that are programmable to display clinical symptoms of illness. Although it is beneficial that nurse educators use a variety of teaching strategies, I believe innovation in nursing education is more encompassing than a variety of strategies. To fully appreciate the current and future status of nursing education, I first want to provide a brief exploration of nursing history.

**Growth of the Nursing Profession**

Although the vocation of nursing has existed for centuries, the actual profession is relatively young, at just about 150 years old (DeLaune & Ladner, 2006). In America, over those 150 years, nursing practice has been influenced by medicine. Nursing practice has endured the patriarchal influences that proscribe practice boundaries for the registered nurse. This authoritarian influence stifled the ability of the profession to set its own scope and standards for practice. The governing of nursing practice has transitioned from being controlled by physicians and is now under the auspices of nurse leaders, primarily the State Boards of Nursing. Although defining the scope of practice is now in the hands of nurses, nursing practice is strongly influenced by practices in medicine and other allied health professions. There is an interdisciplinary influence on how patients are cared for, however the bedside nurse has typically been the overseer of patient care. Over the years, through both major and minor changes in the scope of practice, nursing continues to evolve in an attempt to protect those needing care.
whether patients, families or communities. The practice of nursing is under immense pressure to evolve into a system that is better prepared to meet societal needs correlating to the fast-paced changes in medicine and technology. One of the agencies leading the charge in the paradigm shift is the National League for Nursing (NLN). In their position statement on innovation (Position Statement, 2004), the NLN calls for drastic change and innovation in nursing education that will then lead to improvements in the practice of nursing. This stance of the NLN asserts that innovation in nursing education will drive innovation in nursing practice; however, this relationship needs further exploration.

**Reformation and Transformation of Nursing**

The Institute of Medicine (IOM) and the Robert Wood Johnson Foundation (RWJF) agreed to form a partnership in 2008 to address the challenges of transforming the nursing profession (IOM, 2011, p. xii). The result of their collaborative effort is recorded in their report on *The Future of Nursing* (IOM, 2011), and has stimulated conversations and motivated critical appraisals of nursing practice and nursing education throughout the nation. In her discussion of the Institutes of Medicine report, Halstead (2012) makes the case that no pertinent conversation about evolutions in nursing practice can exclude the role of nursing education. She emphasizes that the only way we can truly achieve excellence in nursing practice, is to address and achieve excellence in nursing education.

Organizations have contributed to the discussion of innovation within healthcare systems on the domestic and international levels. A few of these organizations include Healthcare Research and Quality (AHRQ), the American Nurses Association (ANA), Sigma Theta Tau International (STTI) and the International Council of Nurses (ICN). The following descriptions provide only a glimpse into these professional organizations and how they address the value of
innovation and excellence in nursing education and professional practice. On their organizational website, AHRQ shares innovative approaches to ensuring patient care and safety, such as decision-making tools for healthcare providers. In 2008 they published guidelines to help institutions determine the feasibility of implementing any specific innovation (Will it work, 2008). The ANA is instrumental in identifying the role and scope of practice of the RN. Among the descriptors they use is the nurse as innovator. In their online publication, Thomas, Siefert, and Joyner (2016) state “Innovative research is helping us to identify how skills and knowledge of RNs can be leveraged to improve healthcare delivery in primary care” (para.13). As the honor society of nursing, STTI promotes excellence in nursing education and clinical practice. Along with Chamberlain College they award annual grants for research that focuses on nursing education innovation. The ICN lists innovativeness as one of the organization’s core values. Two organizations are particularly relevant to this study, The American Association of Colleges of Nursing (AACN) and the National League for Nursing (NLN). In addition to being a highly respected accrediting body for baccalaureate and graduate nursing programs, AACN seeks to recognize excellence and innovation among nursing faculty, with annual teaching awards (AACN, n.d.). Another of the most vocal professional nursing education organizations is the National League for Nursing (NLN). For decades the NLN has espoused the notion of nursing education reform at the program level.

In their statement on innovation, the NLN noted “What is needed now is dramatic reform and innovation in nursing education to create and shape the future of nursing practice.” (Position Statement, 2004, p. 47). The challenge that arises, in the face of a dearth of literature on the subject, is describing what innovation in nursing education looks like. There is some evidence, according to the NLN, that innovative nursing education programs exist. This renowned nursing
organization awards the distinction of “Center of Excellence” (COE) to academic and clinical institutions based on the applicant institution’s ability to demonstrate that they meet certain criteria. There are several categories to this award. Of particular importance to this study is the award for “Creating Environments that Enhance Student Learning and Professional Development” (National League for Nursing, 2014, p. 5). Each category outlines several criteria that the institution must meet to qualify for the award. Two of the criteria of particular interest to this work, address the development of innovative programs and collaborative efforts that ensures innovative nursing education. Several educational institutions have earned this COE distinction from the NLN. It is this focus that the NLN places on educational programs as a whole that prompts me to utilize one such site in my study. Although these institutions have apparently demonstrated innovation in the education of nurses, there remains a gap in understanding how this relates to the clinical practice of these RNs after they graduate. This then begs the question of: What may be the relationship between innovation in nursing education and innovation in nursing practice?

The NLN notes that in the 1980s the call for revolutionizing nursing education curricula did not succeed as was hoped. Although challenged to use new ideas to revamp the curriculum, most programs simply rearranged content (Position Statement, 2004). In a better articulated attempt, the recent calls for reform state that such reform is not limited to simply rearranging or omitting content. The challenge is clearly stated by the NLN, “Rather, innovation implies a dramatic reformation in how students are educated. And unlike the past, the changes we make today must be grounded in pedagogical research” (Position Statement, 2004, p. 48). I believe this stance references a need for innovation of nursing curricula as well as pedagogy. My intent was to explore innovative characteristics infused in the educational experience, including examples of
innovation of curriculum, and pedagogy in selected programs. I also explored any related innovations in clinical practice by graduates from those programs.

**Purpose**

The purpose of this research was to conduct a qualitative exploration of the relationship between innovation in nursing education and innovation in the clinical practice of nurses. In this context, throughout this study, the term nursing education was used to include both pedagogy and curriculum. Influenced by Drucker’s (2002) definition of innovation, as the efforts extended to create purposeful focused change; and Rogers’ (2003) definition as a practice perceived as new, I ascertained, described and articulated evidence of correlations between innovations in nursing education and innovations in clinical practice of the new nurse. Using a case study design in this research I described the relationship between what a selected nursing program, nationally recognized as innovative, identified as innovative within their curriculum and pedagogy, and its relationship to the clinical practice of the program graduate nurses.
CHAPTER 2
RESEARCH QUESTION

Research Objective

This research study was guided by the following question: Given Rogers’ (2003) definition of innovation, and looking through the lenses of new nurses within their first year of clinical practice, what is the perceived relationship of these identified educational innovations and their experiences with innovative clinical practices? I studied the elements of the potential relationship between innovative nursing education and innovative clinical practice. The overall objective of this study was to contribute to the discussion of how nursing education programs promote the development of innovative registered nurses who demonstrate adaptive expertise.

Research Question

What is the relationship, if any, between innovative, as defined by Rogers (2003), nursing education and innovative nursing clinical practice?

To address this research question the following sub-questions guided the inquiry:

1. What perspectives do new nurses within their first year of clinical practice hold on the influence of their nursing education on their practice?

2. What is the impact of the clinical working environment on the ability to innovate? What environmental factors support or hinder the ability to innovate?

Assumptions

This work was based on several assumptions. First, that innovation in selected educational academic settings is existent and documented. Second, that those students within such innovative academic settings are exposed to innovation. Third, as a result of their
educational experience within an innovative academic program, students will likely demonstrate innovation in their own work as they leave the academic institution and enter clinical practice.

**Rationale**

The calls within nursing education for reformation and transformation are at the heart of this inquiry. Before we can make the case for innovative clinical practice being the effect of innovative nursing education, we need to explore the potential relationship between the two milieus. A case study design was used to explore this potential relationship. Information gleaned from this study can fuel further exploration and promote the importance of innovation in pedagogy and curriculum in the transformation of nursing education and clinical practice. It is imperative to the future of nursing that changes in education are supported by research-based evidence.
CHAPTER 3

REVIEW OF THE LITERATURE AND THEORETICAL FRAMEWORK

This literature review addresses information gleaned from extant research and theoretical articles on the topic of nursing practice, nursing education, innovation, and innovation in nursing education. I begin with a brief review providing a historical perspective of nursing. I go on to describe current trends in nursing education and practice. Following this reflection on nursing, I discuss the myriad definitions of innovation in general, innovation in various disciplines, innovation in education and lastly innovation in nursing education.

**Historical Nursing**

In their book chapter on nursing history, DeLaune and Ladner (2006) explore the historical milestones and influences in nursing practice. As society has changed, influenced by major events such as social mores, women’s rights, politics, wars, and the industrial revolution, so has nursing practice. Primarily seen as a practice discipline, historical emphasis was on what nurses did, versus what they thought or knew. This was represented by an apprenticeship model used in the early days of nursing practice (Walker & Holmes, 2008). Major influences on what the (primarily) female nurses did came from medicine and the (primarily) male physicians. In her book, Florence Nightingale (1860) shares her idea of the nurse’s role.

“I use the word *nursing* for want of a better. It has been limited to signify little more than the administration of medicines and the application of poultices. It ought to signify the proper use of fresh air, light, warmth, cleanliness, quiet and the proper selection and administration of diet – all at the least expense of vital power to the patient” (1860, p. 8).
Nightingale’s notions of doing as much for patients as possible to promote healing, while saving them the effort of doing for themselves, was perpetuated into the 20th century. Societal and patriarchal influences have had long-standing influences on nursing practice, including some that linger on today. Walker and Holmes (2008) note “For the best part of a century, nursing not only perpetuated its own subjugation to medicine and the health bureaucracy but more problematically, failed to recognize - let alone act upon- its own possibilities for transformation” (p. 108).

**Academic Preparation of the Nurse - A Past Perspective.**

The late 19th century and early 20th century ushered in changes in academic preparation of the nurse. From a strictly apprenticeship model, early nurse leaders saw the importance of providing nurses with a specialized education. Initially, this occurred in hospitals in the form of the hospital-based nursing programs. Nightingale had advocated for the education of nurses, by nurses. DeLaune and Ladner (2006) note that at the close of the Civil War, the American Medical Association (AMA) pushed to have nursing schools affiliated with hospitals, falling under the purview of medicine. Although they were called nursing schools, the emphasis was on service to the hospitals and students made up the bulk of the unpaid hospital work force, as they obtained their training. In those very early years the emphasis of nursing education was on character traits, personal habits, and the needs of the hospitals. (Dock, 1920; Ervin, 2015). Through the 1960s, the hospital-based nursing school remained the primary method for nursing education and at the conclusion of their three years of training the nurses received a diploma. Ervin (2015) describes several societal influences on the movement of nursing education, from being primarily located in hospitals. The women’s rights movement, and war, helped to bolster opportunities for nurses, primarily women at the time, to be educated in university settings.
Instead of focusing on providing these students with better education, this movement was motivated by a desire to draw a higher caliber of woman into nursing. It was not until the early 1920s that nurse leaders successfully accomplished creating baccalaureate nursing programs.

**Initial university-based programs.** These programs emphasized general education and the arts and sciences for about two years of study, and the nursing specific education over approximately three years. The nurses finishing those programs earned their baccalaureate in the science of nursing degrees (BSN). BSN curricula emphasized preparing the nurse to lead in the clinical setting. Adding to the mix of the Registered Nurse (RN) prepared at the diploma level and at the baccalaureate level, the associate degree was introduced in the mid-1900s. As the project for her dissertation Mildred Montag proposed the notion of the technical nurse, educated at the community college level. Her proposal called for the Associate Degree (AD) in nursing and prepared nurses to function at the bedside under the leadership of the professional baccalaureate prepared RN. (DeLaune & Ladner, 2006; Ervin, 2015). After this proposed new curriculum was deemed acceptable, there was no distinction made in the qualifications for licensure examination, and all nursing students, whether diploma, associate degree or baccalaureate degree graduate, took the same national licensure examination. Over time, and with the growing popularity of AD programs, there were fewer distinctions made in academic preparation among nurses in clinical practice. (Ervin, 2015).

**Influence of tradition.** Nursing education is imbued with tradition. Moody, Horton-Deusch and Pesut (2007) note that the challenge for nurse educators relates to the bureaucracy associated with traditions and hierarchy that has existed in nursing education. While tradition certainly has a place in our lives, it can block us from progressing along with the rest of society.
We need nurses who are not limited in their skills because of a sole reliance on tradition. Our old ways of teaching students how to care for patients, to use their critical thinking, and make decisions no longer work in the 21st century. (IOM, 2011; Benner, Sutphen, Leonard, and Day, 2010). This notion is more clearly articulated in the following passage that describes the past influences and the current challenges in nursing practice and nursing education.

**Clinical Practice – a Past Perspective.**

Registered nurses in clinical practice, regardless of academic preparation, have always worked at providing direct patient care. Volumes have been written about the role of nurses in patient care, and there is no attempt here to either oversimplify the role or minimize the myriad responsibilities of the RN. Porter-O’Grady (2001) describes the nurse of the 20th century as one who was entrenched in beside care, primarily in acute care hospital settings, nursing patients back to health. For years this type of nursing care defined the role of an RN. Over the last 150 years or so, the emphasis on nursing care has been on healing, restoration, and facilitating the patient’s return to a healthy state. In their work, primarily in hospital settings, nurses relied on what they had gained from their formal education and textbooks. Melnyk and Fineout-Overholt (2011) state “The purchase of a good medical text and regular perusal of the top journals in a specialty were once considered adequate for keeping up with new information” (p. 27). Additionally, policy and procedure manuals, and more expert nurses were valuable resources to help nurses in decision-making regarding patient care. In the later part of the 20th century, diagnosis-specific decision pathways, standing orders, and clinical algorithms aided the nurse in using critical thinking regarding general diagnosis-related care to be rendered in applicable patient situations.
As a central aspect to be an RN, Porter-O’Grady (2001) cites the relational nurse-patient interaction that was influenced by long patient stays in acute care hospitals. As recently as two decades ago, it was not uncommon for patients to stay in hospitals for weeks at a time, giving nurses plenty of opportunity to develop working relationships with patients. Over long stays nurses had sufficient time to provide patient and family education, and time to assess their learning, prior to discharge. Porter-O’Grady (2001) makes a strong case for this aspect of nursing care becoming irrelevant, in light of shorter hospital stays, new technological advances, and changes in the overall healthcare system.

Life-long learning – a Past Perspective

The last part of the twentieth century was filled with robust debates among nurse leaders regarding the educational needs of nurses. However, most nurses in clinical practice felt they were well prepared for clinical practice through their basic formal education. Emphasis on required continuing education varied, and still does vary, from state to state. For the most part, it remains at the discretion of the individual nurse to seek out additional educational opportunities. With the lack of consensus on the required degree for entry into practice, many employers treated all RNs the same. Often there was little to no difference in the pay or promotion potential for the BS prepared nurse over the diploma or ADN prepared nurse. Considering this fact, there was little to no incentive for nurses to return to college to earn a baccalaureate degree. In the late 1980s and 1990s, being a life-long learner meant engaging in activities like reading a nursing journal regularly and joining a professional nursing organization.

Twenty-first Century Nursing

The end of the 20th century and the beginning of the 21st century has ushered in a myriad of changes for the practice of nursing. The days of long acute care hospital stays are gone, and
the current trend to discharge patients as quickly as possible has arrived. There is also a trend to manage patient illnesses on an outpatient basis as much as possible, for as long as possible. As a result, patients who are admitted to acute care hospitals are typically more seriously ill. Although these patients are more ill, they do not necessarily stay in the hospital for extended periods. Patients with complex medical cases requiring expert nursing care have been discharged into the community and patient home settings (What is Ambulatory Care Nursing, 2011). Complex cases often require the nurse to manage multiple pieces of technological equipment, along with the patient’s personal care needs. Patients with multiple co-morbidities, i.e. more than one serious health ailment, often have many pharmacological interventions, treatments, and procedures that they must undergo. These healthcare interventions are managed by the nurse. All the while the nurse continues to assess, teach, counsel and advocate for the patient as he or she provides safe, quality, evidence-based care to all assigned patients.

**Clinical practice for the twenty-first century nurse.**

Despite the influences of time and technology, some aspects of nursing practice are stable and continue to be significant. Regardless of the setting, as noted by Benner, et al. (2010) nurses remain at the forefront of direct patient care, ensuring safety, compassion and advocacy within a variety of complex healthcare systems and settings. Nurses are also responsible for assessing a patient’s physical, psychological and spiritual needs. The nurse works with patients to prioritize their needs in light of their personal health challenges and preferences. Working to develop an individualized plan of care, the nurse provides direct treatments, medications, and other necessary therapies, while he or she educates the patient and family. Nurses advocate for the patient in coordination with other healthcare disciplines to provide comprehensive care that helps the patient to reach their desired and optimal goal prior to discharge.
Influence of technology is apparent. Although the basics of care remain at the center of nursing practice, other influences, such as technology, financial reimbursements, length of stays, to name a few, add to the challenges of nursing practice remaining current. Porter-O’Grady (2001) notes “In the 21st century the whole foundations of healthcare are being shaken. Technology is taking service to new heights of portability: less invasive, short-term, and with greater impact on both the length and quality of life.” (p. 183). There is a system-level shift of focus from acute care to prevention (IOM, 2011). Changes in the healthcare system, economics, and healthcare policies mean the 21st century nurses are caring for patients in a variety of settings, and not just hospitals. They are in outpatient settings such as free-standing clinics, surgery centers, industrial centers, schools, and they are in patients’ homes (What is Ambulatory Care Nursing, 2011). Visiting nurses are able perform complicated treatments and interventions for patients in their homes. Many of these procedures were once only performed in the hospital setting. Additionally, technological advances such as telehealth have expanded the role of the nurse. Silsbee and Reed (2014) describe telehealth nursing as a means to assess patients over a distance. Mobile transmitting equipment within the home sends data to the telehealth nurse, who then can dialogue with the patient, via telephone, to assess their status. This virtual nurse presence promotes prompt nursing care, patient assessment, education and medical attention, without the patient ever leaving home.

Compassionate care is a central nursing focus. Benner et al. (2010) note “To practice safely and effectivel, today’s new nurses must understand a range of nursing knowledge and science, from normal and pathological physiology to genomics, pharmacology, biochemical implications of laboratory medicine for the patient’s therapies, …and much more” (p.1). A nurse must assess his or her patient to make an accurate nursing diagnosis, consider relevant evidence,
input the data to the electronic health record (EHR) and employ his or her nursing knowledge, and clinical reasoning, to arrive at innovative strategies for the good of the specific, individual patient. Nurses must be simultaneously personal, personable, caring and attentive, while they are scientifically knowledgeable and technologically savvy. The IOM report (2011) suggests increased emphasis be placed on RNs functioning within the broad scope of their practice, and to move beyond seeing them in a single role. The IOM (2011) purports how important it will be for nurses to have a part in influencing not just the role of nurses but also the design or redesign of a more efficient healthcare system.

Registered nurses (RNs) need to provide care that is of high quality, is evidence-based, safe and innovative. High quality nursing care extends beyond providing the correct care to the correct patient at the correct time. Haviley, Anderson and Currier (2014) describe quality care as the treatments and interventions provided to patients that are effective and appropriate to the individual patient. This notion of quality includes the idea that the nurses providing the care are qualified to do so, and they provide that care in a timely manner. From the nurse’s perspective, an essential aspect of quality care is to insure optimal patient outcomes. When patients’ perspectives were explored, it yielded additional measures of quality. Patients have rated the quality of their experiences based on the timeliness of nurses responding to their needs, the degree to which they are involved in the decision making for their care, and the attitudes of the nurses responding to their questions. Other characteristics noted by patients included the quality of non-tangible things such as quietness at night, cleanliness of their space, harmony among the staff members and education provided at discharge. (Andersson & Lindgren, 2013; Berglund, et al., 2013; Liu & Wang, 2007; MacGuire, 1991). Haviley et al. (2014) noted that patients expect high-quality care provided in a safe manner. These characteristics of quality and safety go hand-
in-hand. Quality indicators that are linked to optimal patient outcomes are closely related to safety and evidence-based practice.

**Quality care and safe care go hand-in-hand.** Traditionally, safety meant using the side rails on the patient’s bed, having the call bell within reach, and assisting patients with ambulation. But safety is more than just the protection from actual harm, such as falls or medication errors. It also includes minimizing risks for potential harm or injury. For example, practices such as nurses using aseptic techniques serve to reduce a patient’s risk of contracting an infection. (Armstrong & Barton, 2014).

Quality and Safety Education for Nurses (QSEN) is a recognized initiative that has set the standard for essential patient safety information inclusion in nursing education. (Armstrong & Barton, 2014). QSEN (2014) has established a list of competencies that are recommended aspects of nursing education. These competencies include “patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics” (para.3).

**Clinical expertise is undergirded with evidence-based practice.** Evidence-based practice (EBP) is defined as clinical actions taken by healthcare providers as they interpret findings, complete diagnoses, and plan interventions based on findings from research. The American Nurses Association (2010) defines EBP as “A scholarly and systematic problem-solving paradigm that results in the delivery of high-quality healthcare” (p. 65). This typically stands in opposition to providers making decisions solely based on intuition, outdated policies, traditions, or historical practices. (Melnyk & Finehout-Overholt, 2011; Sackett & Rosenberg, 1995; Williams, 2004). Melnyk and Finehout-Overholt (2011) further explain that the evidence is a “collection of facts believed to be true” (p.4) if the facts have been obtained using rigorous research. Evidence-based practice involves knowing what to do, how to do it and when to do it –
to provide each patient with the best chances for an optimal outcome. In addition to the nurse using skilled clinical knowledge, EBP takes into account the current research to support clinical practice, and patient preferences. EBP has as its aim to deliver high quality, safe patient care (Fischer Sellers & McCrea, 2014). Utilization of EBP is driven in part by an organization’s appreciation for and promotion of curiosity and innovation. Fischer Sellers and McCrae (2014) cite Rogers’ work on diffusion of innovation, as a key tool for promoting the adoption of EBP. Not only is EBP promoted in clinical areas, it is also valued and taught as an essential component of nursing education.

In addition to providing safe, quality, evidence-based care, nurses also need to be competent with many computer-based technologies, documentation systems, medication administration systems, and monitoring devices. Although rewarding, nursing care today is complex, fast-paced, and challenging. Unfortunately, not all nurses are ready to practice in this 21st century environment. The IOM (2011) states, “Many members of the profession lack the education and preparation necessary to adapt to new roles quickly in response to rapidly changing healthcare settings and an evolving healthcare system” (p.25). Nurses need to be prepared for the rigors and challenges of nursing practice almost immediately upon entering the workforce from school. Concerns arise over the perceived and actual gaps between the nurse’s completion of formal education and the nurse’s actual readiness to enter clinical practice.

**Nursing education pathways in the twenty-first century remains essentially unchanged.** The historical issues cited above regarding the confusion among nurses with different academic preparation remain today. Although diploma nursing programs have all but disappeared, many nurses working today are diploma prepared RNs. According to the Nursing Fact Sheet (2011) about fourteen percent of working nurses in 2008 held a diploma as their
highest degree in nursing. They also reported the percentage of nurses with Associate degrees as their highest degree was about eighteen percent in 1980 and increased to over thirty-six percent in 2008. The percentage of nurses with the BS as their highest degree rose from twenty-two percent in 1980 to nearly thirty-seven percent in 2008.

The curricula for the two major pre-licensure nursing education programs, ADN and BSN, remain distinct in their focus and preparation of an RN. However, graduates of both types of programs take the same licensure exam and, after passing that exam, are entitled to be called “Registered Professional Nurse” or RN. The ADN program emphasizes readiness of the nurse for providing bedside care. The preparation is on basic competencies, critical thinking and bedside care. At the BS level, emphasis is on the expanding role of the RN to include things such as leadership responsibilities, community health roles and participation in and utilization of research. Despite the variability in degree preparation for entry in to practice, pre-licensure nursing education continues to focus only on preparing nurses to provide patient care in acute care settings. Regardless of the focus of the degree, nurses are still being educated in a type of nursing silo, with few to no opportunities to learn or work with other healthcare providers. Yet upon entering practice, nurses are expected to engage in collaborative working relationships with other members of the healthcare team, to manage complex care issues, and to master patient care technologies.

**Necessary Changes in Nursing Education**

There are several areas of nursing education that need to be addressed to prepare the RN for 21st century nursing practice. There are four main aspects that the IOM (2011) identifies as needing change. They include what needs to be learned by nursing students, where the education should take place, how nursing students should be taught, and who should do the teaching.
Among the proposed ideas is an emphasis on teaching nursing students to apply clinical reasoning skills in collaborative and interprofessional situations. Another recommendation is to develop partnerships between academic and clinical agencies to promote contextual and authentic learning experiences. This section discusses a few of the changes that are needed to improve the way we educate nurses.

In the committee report from the Institute of Medicine (IOM, 2011), several recommendations were made regarding the future of nursing practice, among which is a need to re-evaluate how we are educating nurses. “At no time in recent history has there been a greater need for research on nursing education.” (IOM, 2011, p.198). The IOM (2011) report suggests we need to explore ways to facilitate authentic learning that promotes graduates who are knowledgeable, safe practitioners, but who can also be creative problem solvers. But what does it mean to be creative?

**Creativity and Innovation**

Creativity involves looking at a problem in a new light and generating a new solution, which demonstrates innovation. In their book chapter examining characteristics of creative children, Sternberg and Lubart (2011) identify creativity as generating new insights amidst information that is not obviously related to the potential solution. They note that arriving at a creative solution entails possessing a body of knowledge and arranging seemingly disconnected ideas to generate a new one. The healthcare arena needs nurses who see beyond the obvious. Registered nurses need to be creative professionals who are able to demonstrate integration and application of their knowledge in the care of their patient who needs a unique solution to their issue (Boland, 2012). Using creativity in problem solving to arrive at a new idea, a new method or a new approach is an example of innovation.
Promoting creativity requires an environment that embraces risk-taking, supports the learner with the notion that it is acceptable to be wrong, and encourages the practice of personal reflection on choices (Rockwood Lane & Samuels, 2011). But in nursing practice, with actual humans, making mistakes and taking risks are not considered moral practices. At the center of our practice, is the profound need to provide, safe, ethical, expert care, in an ever-changing, complex healthcare system.

One approach currently used in nursing education is simulation labs as practice arenas for nursing students. These simulation experiences are generally designed to teach and reinforce required psychomotor skills. Learners are provided with opportunities to respond to a scenario and make a decision. Then they may reflect upon those clinical decisions and revise them, if necessary, which promotes clinical reasoning (Benner et al., 2010). Mannequins in simulation labs are not harmed when students practice and possibly make mistakes. Although they serve a purpose, it is questionable if these simulation labs alone facilitate creativity development or problem-solving skills within the student nurse population. Story and Butts (2010) make the case that creative teaching helps to model creative approaches to practice. They suggest that learners, who observe faculty using creative approaches, can then utilize creative approaches in their own professional experience. They suggest opportunities to model “deep thinking” (p. 292) and an appreciation for curiosity are particularly beneficial. Role-play is one way to engage students in safe authentic patient scenarios. Other ideas may include games, or activities that stimulate the senses, perhaps using food to demonstrate a particular concept. For example, a pomegranate could be used to represent a lung, while each of the seed clusters could represent the alveoli clusters within the lungs. This reinforces the knowledge that the lung is not an empty sac of air, and lung function is dependent upon healthy alveoli. Touching and smelling the pomegranate
provides a concrete experience learners can associate with anatomy and physiology. An effective game for orienting learners to a new clinical site is a scavenger hunt. This challenges the nursing student to locate necessary tools, equipment and supplies within a nursing unit before they actually need them. It also reinforces the notion of increased competence, and self-reliance as they take responsibility for familiarizing themselves with their new unit.

Although creativity and innovation can sometimes be used interchangeably in the literature, I intend to make a distinction. Creativity is a human characteristic closely associated with new ideas. Innovation connotes action on those creative ideas. I believe innovation is an external manifestation of an internally conceived idea. Webster defines innovation as the introduction of something new. Drucker (2002) defines innovation as “the effort to create purposeful, focused change in an enterprise’s economic or social potential” (p.96). Others define innovation as a new process or product used to meet a need (Goswami & Matthew, 2005; Price, 2005; Rogers, 2003). With the intent to explore externally located processes and behaviors as opposed to the internal characteristics that might motivate them, I use the term innovation for the purposes of this study. For the purposes of this research project, I use the term innovation to describe any newly designed or newly applied strategy that is employed to transform a curriculum, course, or learning activity that is learner-centered, promotes engagement, and results in learning. To situate innovation within nursing education, I first need to discuss innovation.

**Innovation - From Heresy to Necessity**

Innovation has not always been a popular word. Citing the work of Godin, Green (2013) describes innovation as a buzzword for our modern times but notes that historically it has not always implied something good. Godin (2010) explores the history of the term and tells the story
of a seventeenth century Englishman imprisoned following the accusation of being an innovator. Seen as a threat to the religious practices of the day, the 1500s are noted for laws and decrees against anyone who would innovate. According to Godin these “negative thoughts on innovation” (p. 6) would extend into the seventeenth century. Godin thoroughly describes the influences of the Reformation period and the religious conflicts surrounding the practices of Protestants as they set themselves apart from Catholicism. In those times of religious disputes, deviations from the prescribed worship practices were likened to innovation. The interrelated nature of religion and government supported the idea that “innovation in one threatens authority in the other” (p. 28). Innovation was not just considered heresy, it was illegal. In those centuries innovation brought imprisonment, or worse. By the nineteenth century, influences such as the industrial revolution and the fast pace of inventions influenced the altered perception of innovations (Godin, 2012; Green, 2013). By the 1900s, technological innovations became a major factor in industry. Inventions garnered respect as advancing scientific knowledge and helped to put a positive spin on creative projects, ideas and innovation (Godin, 2012; Green, 2013). Green makes the statement that although the word is used with increasing frequency, actual innovations in contemporary society are waning.

**Innovation Defined**

In my search for a clear definition of innovation, it became quite apparent that there is no succinct definition. With origins of use traced to economics in the early 1930s, several authors credit Joseph Schumpeter for defining innovation in this modern age. In his essay on entrepreneurship and the economy, Schumpeter (1947) identifies the “defining characteristic” (p. 151) of an entrepreneur as “simply the doing of new things or the doing of things that are already being done in a new way” (p151) and equates this with innovation. Consistent with this idea,
Rogers (2003) defines innovation “as an idea, practice or object that is perceived as new by an individual or another unit of adoption” (p. 12). More than just an idea, Drucker (2002) defines innovation as action taken to bring about a change within an organization. Citing earlier work of Schumpeter, Lange (1943) explored the impact of innovation on productivity within organizations. He describes the economic principle of uncertainty and notes the variableness of the result of innovations ranging from potentially negative, potentially positive or neutral.

Perceptions of the value of innovation are situational and contextual, based on the company and the industry. Goswami and Mathew (2005) make the case that the level of innovation within an organization is directly linked to how that organization defines innovation. They used descriptive statistics in their study to rank the propensity of organizations to be innovative. They found those companies that defined innovation as inventing something new had a higher score of potential innovation (p. 376) as compared to those companies who were desiring to adopt a new practice already in use elsewhere.

Although Downs and Mohr (1976) suggest a consistent working definition across disciplines would foster better valuation of innovative practices, this, as yet, has not been found in the literature. In fact, Godin (2012) suggests innovation could be a discipline itself as similarities in implementing innovative ideas or practices crosses the disciplinary lines.

Johannessen, Olsen and Lumpkin (2001) conducted research within the industrial sector of Norway in an attempt to better define innovation and to measure it. Key to the study was their investigation of “three dimensions of newness: what is new, how new, and new to whom?” (p. 20). Using survey tools, they obtained information from nearly 900 company heads. They explored aspects of innovation including production process, end products, services and organizational systems.
The likelihood of pursuing an innovation is related to both the size and the governing structure of an organization. In an attempt to measure innovativeness among information technology companies in India, Goswami and Mathew (2005) limited their study to large Fortune 500 companies. They postulated that innovation was more likely in larger, progressive companies. Information obtained from 61 companies led them to develop a list of innovations they subsequently used to survey company executives and arrive at a rating system of innovativeness. In addition to size, the level of complexity within the organization correlates to the innovation they experience (Damanpour, 1996). In this study organizational complexity was defined as structural, which correlated to the number of levels below the chief operating officer, and functional complexity which correlated to the number of specialty areas below the chief operating officer. The findings yielded a positive correlation of organizational complexity to innovations being implemented.

Organizational attitudes are related to innovation as well. Hurley and Hult (1998) surveyed nearly 10,000 employees of a federal government non-profit organization in the United States to explore their ‘capacity to innovate’ (p. 48). Basing their criteria on how many employee-suggested innovations were adopted by the agencies, they ranked the innovativeness of the agencies. Their findings suggest that organizations that encourage learning, support education and reward innovation, are highly innovative agencies and are more productive. Other organization characteristics may play a role in innovativeness. Edgell and Vogl (2013) note the strong relationship between information processing within an organization and the potential for innovation. They suggest information sharing among the stakeholders fuels the desire of those who innovate (Edgell & Vogl, 2013). Even if organizations think they want to be innovative, if
the leaders do not promote an atmosphere that encourages innovation instead of the status quo, innovative practices will be less likely (Hurley & Hult, 1998; Schumpeter, 1947).

Much of the literature I was able to locate centered on the process of adopting a specific innovation or innovative practice. From an industrial perspective, this focus included developing new technology from within the organization or adopting a technology being used by someone outside the organization (Boer & During, 2001). Adopting an innovation previously unfamiliar to the organization is considered new to that organization as they adopt the new process or product.

The emphasis in current research is on the evaluation process, and subsequent adoption or rejection of a particular innovation (Boer & During, 2001; Downs & Mohr, 1976; Rogers, 2003). The studies primarily focused on the ways in which a selected innovation is assessed, evaluated and/or adopted within a particular industry, often with a focus on the economic impact. Regardless of the impact from its adoption, an innovation can be viewed as either a new product or a new process.

**Innovation as a Product**

In the field of business and marketing, an innovation often means a new product that can be brought to market and generate revenue. It can be tangible, such as a new tool or device, or intangible, such as a specific knowledge (Goswami & Matthew, 2005). Downs and Mohr (1976) cite the need to consider the cost versus potential gain from the new product in determining if it is truly innovative. Newness of an innovation is discussed as either being new to the industry at large or new to a specific company or organization.

Godin (2012) notes that innovations in the technology industry follow similar patterns first demonstrated in economic innovations. One aspect essential to innovation, regardless of the discipline, is a creative idea. Schumpeter (1947) draws distinctions between a great idea, the
work of an inventor and the actual manifestation of something new, the work of an entrepreneur. Drucker (2002) supports the notion of innovation as a part of “entrepreneurship” (p.95) and suggests that an innovation contributes to economic advancement. He defines innovation as “the effort to create purposeful, focused change in an enterprise’s economic or social potential” (Drucker, 2002, p. 96).

**Innovation as a Process**

It is important to note that not all innovations are technological in nature. In her work to arrive at a universal definition of innovation, Subbotina (2015) applied the principles of innovation in technology and industry, to the cultural sector. Her work includes the concept of considering new ideas as innovations. She describes “soft innovation” (p. 385) as that which refers to innovations of a more cerebral nature, ones that concern the intellect for example. Process innovations focus on decreasing costs or increasing the quality of a particular service. She makes the case that new information and intellectual innovations are as important as technological innovations in the effort to bring about improved quality or services. Services and processes could include business practices, communication, organizational systems and social systems.

Often innovation involves doing things differently from the way they have been done (Drucker, 2002; Goswami & Mathew, 2005; Schumpeter, 1947). Price (2005) describes innovation as a process of solving problems. It requires the ability of those involved to view the situation through a new lens. He suggests the impetus to innovate is stimulated from “personal concerns and perceived needs” and is propelled by a “conviction that a need is worth satisfying” (Price, 2005, p. 4). Rogers (2003) adds to this notion in suggesting that innovation, “a new idea,
process or object” (p.12) is perceived as such by the individual who adopts the innovation. He makes a strong case for the key role of individuals in the transmission of a particular innovation.

In his work on exploring how organizations and people adopt innovations, Rogers (2003) noted the influence of individual adopters on the organizational practices. He has identified individual characteristics related to the ease or difficulty of adopting a specific innovation over time. At the highest level of adopting an innovation is the category called “innovators” (p. 282) who Rogers (2003) describes as being practically obsessed with “venturesomeness” (p. 282) and possessed with “a desire for the rash, the daring and the risky” (p.283). They also exhibit the ability to cope with the unknown and have a keen grasp of complex knowledge.

Downs and Mohr (1976) draw correlations between an innovative process and an organization’s focus on improvement and promotes the idea that the practice is positive in nature. On the other hand, Edgell and Vogl (2013) suggest that not all innovations are positive. In the realm of business and industry, they suggest that some innovations may have the potential for harm. In his work on how innovations are adopted, Rogers (2003) cites this perceived harmfulness as influential in individuals deciding not to adopt an innovation. Critical for any group in considering a new process as a valuable innovation, is the recognition of the need for innovation within the function of that group, whether it is a department, an organization or a community. This recognition of an innovation can result from internal or external influences. A major impediment for an organization to adopt a selected innovation is insufficient time and energy invested in idea generation. (Boer & During, 2001; Rothwell, 1986). Senge (2004) states that this ability to accept an innovation also requires that individuals possess a willingness to “abandon what doesn’t work to clear the decks for trying something new” (p. 4).
Boer and During (2001) reviewed three categories of empirical studies on innovation in Dutch, Belgian and UK industries. They examined the internal operations related to the “product, process and organization innovation” (p. 94). As they examined the studies focused on process innovation, they noted the importance placed on trials of the innovation. Companies needed to test the waters, so to speak, prior to adopting a new process. They also investigated barriers, one of which was the protracted timeframe for implementing an innovation. Regardless of the type of innovation implemented, companies were slow to recognize the need for improved or innovative processes. Senge (2004) refers to this as a cultural practice to maintain the status quo out of the fear of failure, reflective of the adage that “we’ve always done it this way”. Some innovations within an organization may consist of processes that are not easily recognized as innovations. Subbotina (2015) makes the case that new information and intellectual innovations are equally important as technological innovations, but they may not be viewed as such.

Key to understanding the impact of an innovation within any industry is in knowing what the consumer needs as well as the current trends in the industry in general. Rothwell (1986) suggests “technological innovation is a dynamic, iterative process” (p. 113) that takes into account internal and external factors in balance as innovative ideas are generated. Utilization of a particular innovation is related to the characteristics of the user and the characteristics of the innovation from the perspective of the user (Rogers, 2003; Rothwell, 1986). Rogers’ (2003) work demonstrates the importance of a user recognizing an innovation as useful, practicable, and readily visible, before they adopt it.

**Innovation as a process embodied as a service.** Service is recognized as a type of process. Distinguished from an industrial process which produces some tangible item, service is focused on doing what needs to be done, more efficiently, more effectively to produce a better...
outcome. One example of a service industry is formal education. Within economics and marketing, technological innovations lead to products generating a greater market share; similarly, the transformation of services in educational settings improves their marketability.

Nguyen, Marcoux, and Guihur, (2015) note the challenge and difficulty of articulating innovation in a field in which the end result of service is so intangible. In their study of over 400 college students’ perceptions of innovation, Nguyen et al. (2015) categorized the services the students identified. They found that both faculty and academic programs were critical components that influenced the learners’ choices to attend that institution. Other supportive services were noted as well, but not viewed as critical to their perceptions of innovation within the institution.

In summary, innovation, whether a new product, process or service, is considered a requirement for today’s industries to facilitate improvement, save money, enhance competitiveness, or drive profitability. Innovation in the economic and marketing sectors focuses primarily on end-products. In terms of driving influences on adoption, and implementation it is evident that organizational and leadership attitudes that encourage or even reward innovation are vital to the process. Individual characteristics like risk-taking and problem solving were also noted as essential to innovation. Within environments where leaders support and encourage change, individuals who are driven by a vision of something better, are able to take risks and engage in innovation (Hurley & Hult, 1998; Price, 2005; Rogers, 2003). Not much has been written about innovation in nursing practice and nursing education, especially in the US. The following sections examine the available literature relative to innovation in education, specifically nursing education and nursing clinical practice.
Innovation in Education

There is sparse evidence in the literature on research conducted to identify innovations in education. While some studies equate technology with innovation, others explore how institutions self-identify as innovative based on their own definition. Using a more qualitative approach, Hazzan and Zelig (2016), examined the characteristics of innovation within selected educational institutions. They looked at the frequency of adopting innovations and drew similarities to the process used in the business sector. Hazzan and Zelig (2016) categorized the educational institutions as having either “pedagogical innovation” (p.20) or as having “organizational innovation” (p. 21). For their study, they defined pedagogical innovation as curriculum innovation, innovation in teaching strategies or methods, and faculty preparation. In contrast, organizational innovation involved everything but teaching and learning, areas such as budgets, lines of authority, and marketing (Hassan & Zelig, 2016). They found similarities between the two sectors, business and schools, in motivations to innovate, although the educational centers were likely to actually implement fewer innovations. Their conclusions describe a reactionary approach on the part of the educational institutions in which the influence of pedagogy or organizational innovation was somewhat blurred. They further cited a trend in the educational centers to measure the outcomes of teaching and learning, such as test results, versus the processes use in teaching and learning. By comparison, the business innovations tended to examine both outcomes and processes. Hazzan and Zelig (2016) make a good case for an ongoing need to study the “relationship between organizational innovation and pedagogical innovation” (p. 27).
Innovative Curricula and Pedagogy

Additional studies blur the distinctions between pedagogy, curriculum and organizational innovation. Beyond instruction, other concepts of innovations can be organized around new curricula, faculty development, and new organizational processes. Working in the Netherlands, Haelermans (2010) conducted a two-phase study to describe the characteristic influences on innovative secondary schools. These characteristics may pertain to the type, size, and purpose of the school, or it may pertain to the type, quality and purpose of the innovation itself. Initially she sent survey questionnaires to nearly 600 heads of Dutch schools to get their responses to a list of 132 innovations. She then categorized the survey responses as innovations in courses, educational pedagogy, educational process, teacher preparation and collaborative efforts. She clarifies what she means by new courses as a completely new course added to the existing curriculum. This is differentiated from educational pedagogy which includes both what is taught in the course content and how it is taught. In contrast to the work of Hazzan and Zelig (2016), Haelermans (2010) includes organizational innovations in the pedagogy category. She followed the questionnaires with interviews of 15 school administrators. The data gathered allowed Haelermans (2010) to organize the innovations into clusters, such as courses, pedagogy, processes, and teacher preparedness (p. 158). Using descriptive analysis of the data, she found the strongest positive correlations to innovation diffusion included increased school size, whether or not the school had an academic competitor, and non-traditional instructional methodology. She states, “Larger schools, in a more competitive environment with a progressive way of teaching seem to innovate more” (p. 162). In a footnote, she states “competition is estimated as the number of schools per 10,000 inhabitants in a municipality” (p.158). Although labeled as growth in faculty professionalism in this study, innovative instructional approaches, or what
most refer to as pedagogy, had a larger influence on innovation than course content, or what most refer to as curriculum.

**Innovative Faculty**

In their work to investigate student perceptions of innovation Nguyen, Marcoux, and Guihur (2015) analyzed responses to survey questionnaires from over 400 Canadian college students. They found the strongest correlation of innovation with two key components: faculty and curriculum. They noted the skills of the faculty and the curriculum designs were associated with perceptions of innovation. Conclusions from their work suggest academic institutions need to improve their “efforts to make the curriculum more attractive in order to influence or change the attitudes and behavior of students” (p. 15). Curriculum design that provides exposure to innovative projects and processes can serve to facilitate students’ authentic engagement in innovation as a mindset. Ideally, as learners see, feel, and experience an innovative idea, project or process, this begins to create within them the thinking that innovative approaches are valuable and desirable. Similarly, Chell and Athayde (2011) noted the curriculum could be constraining and discourage innovative behaviors. The positive correlations they noted were with extracurricular activities that provide time and opportunities for students to focus on areas of interest. In their work among secondary school students, their mixed method study of innovative behaviors, helped to shed light on the role of faculty. They identified teaching style, or pedagogy, as a key aspect in promoting innovative behaviors in students (Chell & Athayde, 2011).

In Australia, Tytler, Symington and Smith, (2009) examined efforts of the “Australian School Innovation in Science Technology and Mathematics (ASISTM) initiative” (p. 9) to improve student engagement as they learned about the sciences. In this initiative the Australian
government provided the financial resources to train faculty and to underwrite the cost of the development of over 300 innovative projects. These projects were collaborative efforts between the schools and outside agencies, such as businesses and industry. Tytler et al. (2009) explored the use of these innovative projects to determine ramifications for the curriculum of science education, and any correlation to creating a culture of innovation. They explored projects developed at 16 different sites. Their study reports several significant findings with positive effects for all parties involved. Significant to this work is their finding that as students were exposed to authentic learning environments, their engagement with the sciences improved. They found these learners expressing new ideas, and engaging in new practices, hence engaging in innovation.

Making comparisons between creativity and innovation, Cropley (2015) studied the state of creative curriculum within engineering programs of Australian universities. He makes the case that creativity in engineering education is directly linked to increased creativity in the learner. Key among the curriculum components are risk taking, rethinking problems, facilitating thinking that leads to fresh ideas, and exploring alternative solutions. This approach to curriculum is not constrained to STEM subjects or engineering. The exploration of innovation in curriculum design and pedagogy is essential to comprehending what exists within nursing education.

**Innovation in Nursing Education**

Based on the work of a 2003 National League for Nursing (NLN) focus group that examined what we understand about innovation, Pardue, Tagliareni, Valiga, Davison-Price, and Orehowsky (2005) arrived at an essential definition for innovation. They define innovation as “…using knowledge to create ways and services that are new (or perceived as new) in order to transform systems” (Pardue et al., 2005, p. 55). They draw correlations between innovative
teaching practice and excellence in nursing practice. Pardue et al. (2005) proposed the purpose of their focus group was to challenge nurse educators to document the effects of innovative strategies, to help build on the science of nursing education. The NLN (Position Statement, 2004) took a stance on innovation and emphasized that it calls for a “dramatic reformation” (p.48), not solely in the content provided, or curriculum, but also in pedagogy, that is, the methods used to educate learners. Reformation of nursing education implies not just a shift in what is taught, but also a paradigm shift in how, where, when and by what means learning is occurring.

**Programmatic Innovations**

Pardue et al. (2005) suggest, for example, that nursing educators need to explore a shift in the use of classroom time. Instead of faculty delivering new content, they suggest class meetings should be used to engage students in a dialog whereby they synthesize information gleaned from extensive readings. They questioned the basis for the current configuration of semester credit hours, and clinical practice hours. Some examples of programmatic innovations include interdisciplinary education programs and dual degree programs. In interdisciplinary healthcare programs, nurses are educated alongside physicians, physical therapist, et cetera, which fosters improved understanding of team-based approaches to healthcare. This system of education, more closely aligns with the experiences all healthcare workers will engage in after graduation. Exposure to other disciplines generates mutual respect and collegiality within the workplace.

Dual degrees, such as Master of Science in Nursing (MSN) or the Doctor of Nursing Practice (DNP), combined with a Master’s in Public Health (MPH), or a Master’s in Business Administration (MBA), promotes the ability of the nurse to expand their circle of influence to impact healthcare on a larger scale. Education from two complimentary disciplines creates a
practitioner who can attain a level of expertise beyond nursing, as they earn their advanced degree in nursing. By working with other educational disciplines to create unique opportunities of focused studies, nurses can positively impact healthcare of larger populations, enhanced by different perspectives. For example, the nurse leader with a keen business sense learned in an MBA program is well situated to promote fiscal stability in the healthcare arena. (Hughes, 2006; Shaw, Harpin, Steinke, Stemmer, & Krajicek, 2016).

**Innovation in Clinical Practice**

Innovations in clinical practice can involve the implementation of new ideas, products or processes within the clinical setting. Much of the available literature on this topic seems to focus on system level innovations that affect overall healthcare delivery. One such innovation cited is the influence of new roles for nurses, particularly the clinical nurse leader (CNL) role (Bender, Williams & Su, 2016). In their study of over 600 CNLs, Bender et al. (2016) attempted to examine the impact of this innovative role on healthcare outcomes. This study does not look at innovative practices of individual nurses, but instead examines the scope of practice of nurses with the certification as a clinical nurse leader. Other researchers have described and studied the implementation of specific clinical innovations.

**Influences on adopting innovations**

Based on a presentation at an international conference, Hughes (2006) describes nursing innovations in several areas such as education, public health, research and clinical practice. The intention of the presentation (and paper) was to shed light on nursing innovations that are occurring world-wide. Hughes (2006) describes nurse innovators as tenacious, determined, ambitious people, who persevere in the examination of new ways of doing things. They are motivated to learn and take risks to explore new ideas, products or processes. Citing work in
New Zealand, Hughes (2006) highlights several specific nurse-led innovations, such as culturally-sensitive diabetes education, designed by the Tongan Health Society, and mobile surgical suites, invented by Maryanne Sweeney, that go where the people are who need the specialized care. Pertinent to this study are the noted innovations in nursing clinical practice and education. Hughes (2006) describes the invention of patient positioning device, by an American nurse Kathleen Vollman that helps critically ill patients who are unable to achieve optimal positions to promote healing. She also cites educational innovations in Ethiopia to improve the quality of public health, and innovation in policy such as the collaborative effort between the US CDC and Kenya to address the needs of nurses in dealing with the HIV/AIDS epidemic. Although Hughes (2006) provides a long list of examples across many areas of nursing and healthcare, it is not a discussion of the propensity of any nurse to innovate.

Some studies have examined the utility or adaptability of staff in regard to a specific practice innovation that was deemed important to adopt. One such example is in the national safety initiative of “Transforming Care at the Bedside” (TCAB) (Pearson, Upenieks, Yee, & Needleman, 2008, p. 146). In this study they examine multiple sites and the mechanisms in place to support the adoption of this specific innovation. What they found was the bottom-up, decentralized approach yielded the best results in nurses implementing the innovation. They noted when this approach was used, nurses were empowered, and they generated additional innovative ideas. Similarly, Amo (2006) explored the influence of employee perceptions of management on innovative practices among healthcare workers in Norway. Most notable was the finding of the relative position of the employee in the hierarchy in relation to innovative behaviors. For example, the innovative behavior of higher skilled employees, such as nurses was impacted to a greater degree by the influence of upper management. On the other hand, the
innovative behavior among unskilled workers was strongly influenced by their peers. In other words, the management’s promotion of innovation served to empower the nurses to exhibit innovative behaviors but had less influence on innovative behavior of unskilled employees (Amo, 2006). Weston (2009) makes the case that management needs to have a well-designed approach not only to recognize innovative approaches, but to diffuse them as well. An environment that fosters nursing innovation correlates to a higher level of nursing satisfaction as well.

**Nurse Innovators**

I have encountered relatively few studies on nursing innovations in clinical practice. However, one key study conducted in Taiwan explores the correlating factors of nursing innovation in clinical practice environments. Tsai, Liou, Hsiao and Cheng (2013) looked at the relationship between innovative nurses and their workplace environments. They identified innovative nurses by selecting recipients of the “Nursing Innovation Award” (p.2650). They recruited approximately 30 award recipients and over 500 nurses who had not been recognized with awards to participate in their descriptive survey. They hypothesized that a relationship existed between innovation of these nurses, their personal traits and “worksite support” (p. 2650). Citing the work of Yeh and Cheng, (2000), in Chinese, they used items from a personal inventory tool to measure creativity traits of the nurses. They also included in their survey questions that addressed workplace support for their innovations, and personal perceptions of creativity. Their findings indicated that although personal traits and work environment support correlated to perceptions of creativity, only personal traits, such as being an independent thinker, having an interest in change, having imagination and good problem-solving skills and enjoying their work, correlated to innovative outcomes (Tsai, et al., 2013).
Theoretical Framework

The theoretical framework that undergirds this study is Adaptive Expertise. Hatano and Inagaki (1986) define adaptive expertise as the consequence of personal growth that occurs when a person uses their conceptual knowledge in a new situation, to develop a new solution. Based on their work in Japan with children in primary education, they observed the natural characteristics of children who crave knowledge. They differentiate adaptive expertise from what they term routine expertise, which describes increased speed and efficiency in doing the same tasks in the same way. They claim that an ideal environment for adaptive expertise to occur is one in which people are exposed to variations in problems and are encouraged to take risks and experiment with potential solutions. Adaptive experts possess the mental capacity to see how things are interrelated, can readily access previous knowledge pertinent to a situation, and use these skills to address new problems. It is not just a skill set they possess, but the knowledge and ability to apply their skills to the current situation (Bohle Carbonell, Stalmeijer, Könings, Segers, & van Merriënboer, 2014; Opre, 2015).

Adaptive Expertise in Professional Practice

Regardless of the discipline, today’s professional workplace is likely very dynamic, rapidly changing and filled with complex issues. Adaptive experts possess the skills that help them adapt to a changing workplace. New issues and problems that may be difficult for routine experts to solve are readily addressed by the adaptive expert. Adaptive expertise is thought to encompass discipline-specific knowledge, experience, and certain personality traits. Bohle Carbonell, et al. (2014) conducted a literature review to uncover the factors that distinguish adaptive experts from routine experts. They examined personal traits, characteristics of learning, and the environmental factors related to adaptive expertise within 21 articles exploring these
concepts. Among these articles, there were five key personal traits that were repeatedly explored, they include “agreeableness, conscientiousness, extraversion, emotional stability/neuroticism and openness to experience” (p.22). Although strong evidence of personal traits being a major factor in adaptive expertise was inconclusive in this work, these traits are consistent with findings from other studies that added self-awareness, flexibility, work enjoyment, good problem-solving skills and an appreciation for learning to the list of personal characteristics (Fisher & Peterson, 2001; Opre, 2015; Tsai et al., 2013). Bohle Carbonell, et al. (2014) suggested characteristics of learning yielded a stronger correlation to adaptive expertise. Consistent throughout the studies they reviewed was the idea that adaptive expertise is fostered by using a variety of instructional techniques. These include active learning strategies, self-directed learning opportunities, the use of increasingly complex issues, and encouraging the learner to analyze errors to arrive at a solution. Most of the studies that looked at environmental factors suggest supportive management and organizations that were accepting of change were more closely associated with adaptive expertise development among the workforce. Within education, Williamson McDiarmid and Clevenger-Bright (2009) suggest that teachers, as adaptive experts, thrive in environments that are not rigid, but instead promote innovation and risk-taking.

**Adaptive Expertise in Healthcare Education**

Similar to supportive management, teachers may play a role in the development of adaptive expertise. Due to increased complexities in healthcare, treatment modalities are often not straightforward. Healthcare workers are routinely confronted with patients who have multiple comorbidities and complex health issues. It is in these challenging situations that patient care can benefit from innovation by the adaptive experts. Sockalingam, Mulsant, and Mylopoulos
(2016) suggest adaptive expertise can be taught in healthcare. They indicate that healthcare education needs to include more than basic knowledge of standard treatment modalities. Along with developing routine expertise, learners need opportunities to be innovative, and to confront ambiguous situations more representative of real patients with multiple physical and mental illnesses. Before they can become adaptive experts, learners must first believe they possess the ability to accomplish adaptive expertise.

In their study of the perspectives of medical students, Mylopoulos and Regher (2009) found that the medical students did not describe themselves as innovative, nor did they have that as an expectation. The students saw innovation as something utilized only by seasoned physicians. To overcome this thinking the authors suggested that medical school education needs to stress “capability over competence” (p.131) and begin introducing innovative problem solving early in the educational process. Capability suggests the potential to be an innovator, whereas a focus on competence suggests simply meeting minimum standards of routine knowledge and practice. Mylopoulos and Regher (2009) put the onus on the teachers and stated the medical educators need to make it plain to the learners that becoming an adaptive expert is at the core of their education. Early and regular exposure to opportunities to confront problems helps to foster development of adaptive expertise in healthcare providers as they transition into practice.

This emphasis on professionals becoming adaptive experts applies to multiple disciplines. Nurses need to have the ability to cope with the ever-changing healthcare environment. This theoretical framework helped me explore what has occurred in each participant’s educational experience, and how he or she demonstrates behaviors indicative of adaptive expertise within their clinical area. Adaptive expertise is particularly beneficial within environments where situations are unpredictable, uncertain, and perhaps do not align with commonly encountered
problems or situations. Thus, adaptive expertise supports the importance of using innovative
techniques, strategies, and problem-solving skills to address workplace, and in this case, clinical
issues.

**Summary**

Nursing has continued to slowly evolve over the last couple of centuries. Within the last few decades the nursing profession has placed an emphasis on the need for innovation in nursing education. However, there is little research from which to glean understanding of the impact of innovation in nursing education on clinical practice. Similarly, there is little research from which to ascertain the impact of nursing education on the innovative nurse in clinical practice.

The literature clarifies for us that innovation, whether a new product, process or service is essential in a multitude of fields. The research on innovation within the economic and marketing sectors reflects an emphasis on the bottom-line effects. Innovation has been explored in terms of driving influences on adoption, and implementation. It is evident that innovation in nursing practice has minimal exposure in the literature although there seems to be a universal acknowledgement that nurses need to be and are innovative. Much like physicians and other healthcare workers, nurses need to become adaptive experts who use innovation to address unfamiliar, non-routine patient care scenarios. There is some literature that suggests this innovation can be taught through innovative educational experiences. The question remains however, what is the relationship between innovation in nursing education and innovation in nursing clinical practice?
CHAPTER 4 METHODS

In this chapter I describe the selected methods for conducting this study. Qualitative methods provide depth to a study by examining the nuances of an issue. By examining participants’ experiences and documenting their stories, qualitative research provides a comprehensive picture of what is occurring and allows the readers to extract meaning from the information (Patton, 2002). Creswell (2009) makes the case that qualitative inquiry is best suited to under-explored issues because it promotes exploration of key components of the issue or problem under investigation. Innovation in clinical nursing practice is a relatively unexplored issue in the United States. Although many approaches are available to qualitative researchers, I have identified the case study approach as the most appropriate method for this study.

Rationale

The case study method is valuable in conducting qualitative research because it allows for deeper and richer exploration of the given topic based on individuals’ experiences (Creswell, 2009; Yin, 2009). According to Yin (2009) case studies allow the investigator to probe more deeply into the issue under investigation, especially when there is no intent to alter the behavior of the participants. This study focused on exploring how, and if the participants’ exposure to innovation within their formal academic nursing education, may be related to their propensity to be innovative in their clinical employment. According to Creswell (2007), “case study research involves the study of an issue explored through one or more cases” (p. 73), and for the purposes of this study my one case is the organization. I studied one exceptional nursing education program, at a college of nursing in Northeastern United States, which has earned the National League for Nursing’s designation as a Center of Excellence ©. I captured the stories of program
faculty and program graduates to explore what connections exist between innovation in nursing education and innovation in nursing clinical practice.

There is a vast amount of theoretical literature calling for innovation in nursing education; however, empirical studies exploring the influence of innovation in nursing education on nursing practice are sparse. No studies were found that examined the implications of students’ participation in an innovative nursing education setting and the relationship to their clinical practice. To capture these potentially rich descriptions, a case study is the best approach. Using this method facilitated achieving a more in-depth narrative of how newly graduated nurses approach unknown situations in clinical practice that may require some level of innovation, and in what ways they draw upon their nursing education. Details and descriptions captured from faculty and graduate interviews helped to put their stories into context within the overall educational experience. The procedures section delineates the steps taken to carry out the data collection phase of the study.

**Procedures**

Critical to the success of any empirical study was to have a straight-forward, clearly designed plan for the process of data collection. This section details the steps I followed to achieve readiness for and completion of the data collection phase of the study.

**IRB Approval**

After achieving IRB approval from the University at Albany, my own institution, I identified the lead administrator of the selected nursing program and sent an introductory email to the dean (see Appendix A). The email outlined my study and explained my request for permission to conduct research at their college of nursing. At the dean’s request, I followed up that email with a telephone conference call with the dean and the institution’s research liaison.
Once I obtained the agreement of the program dean, the research liaison took the lead in assisting me with the process of obtaining local IRB approval as well as making connections with potential participants.

**Local IRB Process**

The research liaison worked with me as I developed a letter of intent for my study. This letter of intent followed the prescribed format for that institution, which challenged me to condense my research proposal into a three-page letter. Over a period of weeks, we communicated via emails and phone calls to hone the letter into the final draft. The process involved submitting the letter of intent to both the dean of the college and the hospital medical director. Each party then emailed me a formal letter of approval, which allowed me to engage in the online IRB application process. Once I obtained local IRB approval, I recruited participants.

**Nursing Program**

I used the National League for Nursing’s organizational website, www.nln.org, to examine their published list of nursing programs that have been awarded the distinction as a Center of Excellence ©. I then compiled a list of those nursing programs, within a reasonably close geographical area, in the northeastern United States. Based on meeting the selection criteria, and the geographic location, I determined the order in which I would inquire into the various programs. This was unnecessary however, as I was welcomed to conduct the study at the first school I contacted.

As cited earlier, The National League for Nursing is a premier organization dedicated to the promotion of and support of excellence in nursing education. As such, they recognize outstanding nursing institutions for demonstrating excellence in several categories. For the purposes of this study, I selected an institution from among those that have been recognized for
excellence in “Creating Environments That Enhance Student Learning and Professional Development” (National League for Nursing (NLN), 2014, p. 5). Some of the criteria for earning this distinction include creativity, program design innovations, and collaborative efforts among all stakeholders to promote innovative nursing education.

**Institution**

The site for this study was a private hospital-based college of nursing that has earned the National League for Nursing’s designation as a Center of Excellence ©. The college of nursing is in the northeastern United States and is situated within a large metropolitan city. The city’s population is approximately 140,000 with a racial diversity of more than fifty percent Caucasian, more than twenty-five percent African American, less than ten percent Hispanic/Latino and Asian (QuickFacts, 2017). The college of nursing is affiliated with a non-profit, teaching hospital.

**Participants**

I recruited two categories of participants for this study. One category consisted of new nurses who recently completed their formal pre-licensure nursing education and the second category consisted of members of the program faculty, who are currently teaching.

**Inclusion/exclusion criteria**

I used purposeful sampling in this study (Patton, 2002). Creswell (2007) describes purposeful sampling as the way in which a researcher selects participants who will best “inform an understanding of the research problem” (p. 125). Inclusion criteria for graduates included: 1) being a recent graduate (within the last year) from the selected pre-licensure nursing program which has earned the distinction of a Center of Excellence ©, and 2) recently entered clinical practice as an RN. Inclusion criterion for faculty members was that they were currently engaged
in teaching within the designated program. I had hoped to recruit participants of different ages, genders, and ethnicities to help make the understanding of the issue more robust. However, despite the inclusion of both genders, and varying ages, the participants were all Caucasian.

**Participant Description**

A total of 13 individuals participated in the complete study, eight faculty and five new nurses. The age ranges for all participants was 21 to 69 years of age. All participants were Caucasian, and 12 of the 13 or ninety-two percent were female. Among the new nurses, sixty percent had graduated three months prior to their participation in the study. The other forty percent of new nurses graduated one year prior to participating in the study. All new nurses are currently practicing as registered nurses on various units within the hospital affiliated with the college of nursing.

**Recruitment of New Nurses**

The research liaison facilitated a networking opportunity with the nurse who runs the new nurse orientation classes. I was invited to attend the upcoming orientation classes to speak directly to the new nurses to attempt to participant recruitment from that pool. Upon invitation from the residency program director, I attended two orientation meetings of new nurses. The first meeting I attended consisted of nurses who had graduated within the last ninety days. The second meeting consisted of nurses who had graduated within the last year. The director provided me with a thirty-minute window of opportunity to speak to them at the end of their course day. As I spoke to them I provided an overview of my study including the purpose and the process. I briefly explained my project, and number and the types of participants I was seeking, and that I specifically required graduates of the local program. Of the new nurses who expressed their willingness to participate, and that met the criteria, I recruited eight from the first cohort and four
from the second cohort. After verifying their interest to participate was of their own free will, and that they did not feel coerced, I accepted these volunteers as study participants.

**Informed Consent of New Nurses**

On the day that I recruited the new nurses, I informed them it would take about 15 minutes to go over the study. I entertained their questions and verified that no person felt coerced to participate. I also made a point of reminding them they had the right to withdraw from the study at any time. I disseminated two copies of the consent form, (see Appendix B) and verbally reviewed the consent with the entire group. I explained that the informed consent included all stages of the study, to include collecting demographic data, and audiotaping the focus group interactions. I then reviewed each aspect of the study: the demographic survey, the journal, and the audiotaped focus group interview that would take place later. I asked each participant to read over the consent, and I answered their questions. Some questions they asked pertained to the timing of the interview, as some thought I intended to interview them that day. Having addressed all questions, I asked each participant to read and sign one copy of the consent form for me, and to keep the other copy for their own records.

After I collected their signed consent forms, I disseminated the demographic survey, reviewed it and asked them to complete the form. Each participant completed the demographic survey form and returned them to me. I then reviewed the journal instructions, in which I explained there are no right or wrong ideas, and no area that was out of bounds. However, I did remind them to not record any patient related information in their journals and to remain cognizant of HIPAA regulations. I then gave each participant a journal, several index cards, a pen, a copy of the journal instructions, and my calling card with my contact information. As a thank you for assisting with the study, I gave each participant a ten-dollar gift card. The gift
cards were for Dunkin Donuts, Starbucks or Subway, and each participant was given their choice from the available selection of gift cards.

Before we ended our time together I asked them for a list of potential dates we could meet to conduct the interview. In the first cohort, several participants did not yet know their work schedules, and agreed to email me their days of availability. In the second cohort we could narrow down potential dates for the focus group interview, however they too needed to wait for their confirmed schedules to be posted for the three-week time frame.

**Recruitment and Informed Consent of Faculty Members**

I communicated with both the college dean and the research liaison to plan a date to recruit faculty participants. Initially I had planned to recruit the faculty, obtain informed consent on one day, and conduct the focus group interview on another day. The dean suggested a second day was not needed to complete the interview process and requested I recruit faculty members and conduct the focus group in the same day. The dean arranged for a time and place for me to meet with faculty members. On the scheduled date, faculty members met with me in the conference room where I provided an overview of my study, including the expectation of the participants. I asked for participants who were willing and available to participate in my study which included a demographic survey and an audiotaped focused interview on that day. One faculty who was feeling ill, left, and I simply excused one faculty member who reported being very new to teaching in the program, with only one semester of experience.

Due to the nature of the arrangements, I made a concerted effort to verify the faculty had not been coerced to participate in the study. My concerns were initially met with surprise, as evidenced by their expressions. Although they found humor in my persistence with verifying they did not feel coerced, each faculty member verbally assured me that they were not coerced.
Once assured everyone was truly willing to participate, I disseminated two copies of the consent form to each faculty member and asked them to read it as I reviewed the elements. I informed them of their right to ask questions or withdraw from the study at any time. None of the participants had questions and readily signed the consent forms. I then had them complete the demographic survey forms and return them to me. As a thank you for helping me, I gave each participant a ten-dollar gift card. The gift cards were for Dunkin Donuts, Starbucks or Subway, and I gave the participants their choice from the available selection of gift cards. Next, I proceeded with the audiotaped focus group interview that day, as my means of collecting data from the faculty.

Data Collection

The data collection phase of my study took place over a span of seventeen weeks after obtaining local IRB approval. Timing of the focus group interviews varied with each group (see Table 4.1). I conducted each focus group interview at a time that was convenient for the participants. One factor that I had to consider for the new nurses was their work schedule. I needed to plan the interview either on their day off or before or after their shift on a day they worked. The hospital was not paying them for their time to participate in the survey, and it was my responsibility to make sure the participants knew they needed to participate on their own time. The scheduling of the faculty focus group interview was related to their monthly schedule for designated meeting times. In the middle of the semester, it was quite challenging to find a suitable time for many faculty members to meet. Both the Research Liaison and the College Dean were instrumental in helping me plan for data collection dates. My means of data collection included 1) a demographic and personal characteristics survey, 2) focus group interviews with new nurses, 3) focus group interviews with faculty, and 4) an artifact review, including course
and program related documents from the college of nursing. Figure 4.1 is a chart depicting the sequential completion of data collection throughout that phase of the study. Timing of recruitment days was contingent upon the availability of the participants.

**Figure 4.1 Schedule of Data Collection**

<table>
<thead>
<tr>
<th>Week</th>
<th>Type of Data Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IRB Consent (Local)</td>
</tr>
<tr>
<td>2</td>
<td>Recruit New Nurse cohort group 1</td>
</tr>
<tr>
<td></td>
<td>Demographic Surveys</td>
</tr>
<tr>
<td></td>
<td>Disseminated Journals</td>
</tr>
<tr>
<td>5</td>
<td>Focus Group Interviews- New Nurse cohort group 1</td>
</tr>
<tr>
<td>6</td>
<td>Focus Group Interviews- Faculty</td>
</tr>
<tr>
<td>13</td>
<td>Document review</td>
</tr>
<tr>
<td>13</td>
<td>Recruit New Nurse cohort group 2</td>
</tr>
<tr>
<td></td>
<td>Demographic Surveys</td>
</tr>
<tr>
<td></td>
<td>Disseminated Journals</td>
</tr>
<tr>
<td>16</td>
<td>Focus Group Interviews</td>
</tr>
<tr>
<td></td>
<td>New Nurse cohort group 2</td>
</tr>
</tbody>
</table>

**Demographic Surveys**

Upon recruitment of participants, and after obtaining their signed consent, I asked them to complete a brief survey to capture demographics and a brief inventory of personal characteristics related to innovation, (see Appendix C). Fisher and Peterson (2001) developed a list of innovative characteristics from their work with engineering students. The characteristics they inventoried are not limited to the field of engineering. Some of these include flexibility in
addressing new problems, a willingness to consider potential alternatives, and a positive attitude in facing new challenges. In their work among innovative nurses in clinical practice in Taiwan, Tsai et al. (2013) delineated key personal characteristics noted in these nurses. These characteristics included the enjoyment of work, good problem-solving skills, and great imaginations. Hughes (2006) wrote about specific innovations of nurses in many countries. She identified characteristics that were consistently noted in nurses that innovated. These nurses tended to be driven and ambitious risk-takers. They demonstrated self-confidence, initiative, and a desire to learn.

There are some indications that innovativeness may be influenced by personal characteristics. Based on the work of Fisher and Peterson (2001), and Tsai, et al. (2013), I designed a brief personal inventory that the participants completed at the time they gave their informed consent to participate in the study. I found consistency among my participants, between their self-reported personal traits and the traits affiliated with adaptive expertise. Each participant completed the demographic survey and rated themselves on the eight personal characteristics that I have correlated to adaptive expertise.

The personal characteristics were listed as positive statements and participants rated themselves using a Likert scale to reflect the degree to which they agreed or disagreed with each statement. The ratings were 1- strongly disagree; 2- disagree; 3- more agree than disagree; 4-agree; and 5- strongly agree. The survey was designed to assess eight personal character traits closely associated with innovation as demonstrated by adaptive experts. These traits included 1) job enjoyment, 2) being a risk taker, 3) being a creative thinker, 4) enjoying a challenge, 5) being good at problem solving, 6) craving change, 7) having a good imagination, and 8) appreciating autonomy, (Figure 4.2). Most of the participants agreed (a score of 4) or strongly agreed (a score
of 5) with three of the characteristics. On enjoying a challenge 76% (10/13) agreed or strongly agreed. On being good at problem solving 84% or 11/13 agreed or strongly agreed. Finally, on appreciates autonomy 92% or 12/13 agreed or strongly agreed. At the other end of the spectrum, only 30% (4/13) agreed or strongly agreed with being a risk taker. It was also the only characteristic in which someone selected a score of 1 to indicate they strongly disagreed. The demographic survey instrument was used for the first time during this study.

**Fig. 4.2 Personal Character Traits**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appreciates autonomy</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good imagination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Craves change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good at problem solving</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoy a challenge</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creative thinker</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Taker</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Enjoy my job</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

**Journals**

Using reflective journals provided a means of capturing details of the participants’ experiences in the moment. As a research tool, a journal gave the participants a means to document their thoughts and experiences in real time. The journal entries served as memory prompts for the participants during the interviews. I asked the new nurse participants to use their journals to capture any instances of innovative ideas or practices. Along with the written instructions I provided, (Appendix D), I specifically asked the new nurse participants to record
their ideas on any new processes, new ideas or new solutions to problems that came to their minds during their clinical days. I also stressed the informal nature of the journals. I emphasized there was no right or wrong way to document their thoughts, except to include as much detail as possible, to enhance their recall of events. I recommended participants keep index cards, which I provided, in their pocket to be able to quickly record their thoughts during the workday. The plan was for them to use the index cards to write their thoughts in the moment, and then later, transfer the notes into their journals. I encouraged them to record the date and time along with their new ideas or suggestions. They brought their journals with them to the focus group interviews and used them as memory prompts as they shared their stories. By their accounts, participants’ journal entries did help them to recall the details of their stories as they answered my questions during the interviews.

Focus Group Interviews

This type of interaction is primarily an interview among a homogenous group of individuals who have been exposed to the same experience (Patton, 2002.). In addition to it being a pragmatic approach to collecting data from multiple participants at one time, focus groups generally yield more robust responses. Interaction among group members is dynamic and evolving. Krueger (1988) makes the case that people develop their opinions by listening to others. Patton (2002), citing the work of Krueger, suggests these interactions provide a type of “checks and balances on each other, which weeds out false or extreme views” (Patton, 2002, p. 386). These checks and balances were evident during the interviews as participants echoed the sentiments of the main speakers, supplying affirmation of their statements. Patton (2002) also makes the case that focus groups should be fun for the participants as they address an internal human need to be social. Based on the laughter that ensued and the interactions among the

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participants there was evidence the participants enjoyed the focus group interactions. Krueger (1988) suggests that to ensure focus groups are successful the participants need to be provided with a detailed explanation at the outset regarding the purpose of the group, and the intentions for the data.

It was essential for me to stress that the goal of the process was to attain descriptions of their experiences with innovation. To facilitate open exchange of ideas I articulated the notion that there were no right or wrong responses, no good or bad responses, only their stories, whether positive or negative. According to Yin (2009) interviews in case studies need to be less rigid with more exploratory questions. Based on a model by Creswell (2007) I used an interview guide for the focus group interviews. In addition to open-ended questions, I incorporated follow-up questions which allowed me to probe for details as the participants shared their experiences with innovation. I intentionally kept the group sizes small, at approximately six to eight members. However, I found that a group of eight was perhaps a bit too large to facilitate a robust, and orderly discussion.

Faculty member focus group interview. The program faculty members were interviewed to capture their stories of incorporating innovation in program design and pedagogy. I crafted an interview tool which I used as a guide to facilitate the focus group discussion among faculty, (see Appendix E). I used open-ended questions to ask the faculty about their use of pedagogical approaches and strategies. I asked them what they enjoyed most in their teaching, what ideas they applied consistently, and how they perceived the impact on their learners.

New nurses focus group interviews. The other focus group interviews I conducted were with two cohorts of program graduates whom I describe as new nurses. The first cohort consisted of new nurses who graduated approximately three months prior to the focus group
interview. This cohort was engaged in their clinical residency program, and in various stages of completing their clinical orientation. The second cohort consisted of new nurses who had graduated approximately one year prior to the focus group interview. This cohort completed their clinical orientation and completed their residency program on the day I recruited them. To facilitate this interaction, I used an interview guide designed with open-ended questions for the new nurses, (see Appendix F). Through these focus group interviews, I investigated the new nurses’ perspectives on their educational and clinical experiences. For example, I asked them to identify which, if any, specific educational experience influenced their decision-making process. I asked them to recall instances in which they faced a non-routine situation in their clinical practice and describe how they dealt with it. I asked them to refer to their journals and share one story that demonstrates their approach to dealing with a new idea, or a new issue in their workplace. These questions were designed to elicit evidence of adaptive expertise demonstrated by these nurses.

The questions centered on exploring their personal approaches, and their propensity to innovate, while also discussing the influence of their academic preparation on their role as a nurse. The data collection tools were designed to capture the rich stories of the participants to help me answer the overarching research questions, (Table 4.1).
Table 4.1 Research Question Matrix: Correlation of research questions and Adaptive Expertise concepts

**Research Question 1:** What perspectives do these participants hold on the influence of their nursing education on their practice?

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Collection Strategies</th>
<th>Sources</th>
<th>Adaptive Expertise - Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of key teaching and learning experiences.</td>
<td>Focus group interview</td>
<td>Participants</td>
<td>Personal growth/ conceptual knowledge</td>
</tr>
<tr>
<td>Stories depicting adaptive expertise.</td>
<td>Focus group interview</td>
<td>Participants</td>
<td>Application/ new situation</td>
</tr>
<tr>
<td>Stories of workplace innovations.</td>
<td>Personal Journals</td>
<td>Participants</td>
<td>Application/ new situation</td>
</tr>
</tbody>
</table>

**Research Question 2:** What is the impact of the environment on the ability to innovate? What environmental factors support or hinder the ability to innovate?

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Collection Strategies</th>
<th>Sources</th>
<th>Adaptive Expertise - Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of personal and environmental characteristics.</td>
<td>Demographics survey Interview Program documents</td>
<td>Participants</td>
<td>Personal growth/ conceptual knowledge</td>
</tr>
<tr>
<td>Description of clinical practice.</td>
<td>Personal Journals</td>
<td>Participants</td>
<td>Application/ new situation</td>
</tr>
<tr>
<td>List of problem solving suggestions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stories of applied learning in clinical area.</td>
<td>Focus group interview</td>
<td>Participants</td>
<td>Application/ new situation</td>
</tr>
</tbody>
</table>

**Interview guides.** The interview guides I used consisted of open-ended questions to elicit detailed descriptions of the participants’ personal experiences with innovation in their nursing education and their clinical practice. These interview questions for the graduates are the result of several iterations after piloting them with willing respondents. I piloted my interview questions to assess clarity and the ease with which they were understood. As a result, I made revisions in
the terms used and the order in which I asked the questions. For example, I removed the word dilemma, since feedback demonstrated a tendency for respondents to focus only on clinical ethical dilemmas. I substituted words like issue or situation for the word dilemma, and that helped me to elicit a broader array of stories about any issue they have encountered. Another edit I made was to the overview or introduction of the study. By using the word innovation at the onset, the respondents immediately assumed I was looking to instances of technological innovation. I revised that section, to describe that I was looking for stories in which they had suggested a new solution, idea or process, and then later I referred that as being innovative. After some respondents used a familiar nursing phrase about bridging classroom to clinical, I included a question about how the participants have applied concepts from nursing theory to their clinical practice. Finally, I revised the order of questions to evoke recall of their educational experience, and then transition to questions of how those experiences they cited have impacted their clinical practice. I included follow-up or probing questions to facilitate participants providing thorough explanations.

During the interviews, I used notetaking to capture my personal reflections on the interview process, tracking the comments as they correlated to each speaker. I also captured key terms used by the participants, to support the audio recording and to refresh my own memory. Creswell (2007) suggests notetaking can help the researcher organize her ideas and can serve as back-up to the audio recording. There are two types of notetaking he describes in this regard. One is a brief description of events and the other is the researcher’s personal reflections on what is transpiring (Creswell, 2007). I organized my notes in a single document which I entitled interpretive memos. My interpretive memo is arranged in three columns in which I tracked 1) my personal reflections or reactions, 2) my thoughts on my methodology or process, and 3) my
thoughts on the theoretical framework. In this memo I documented the order of events and the process followed and recorded my reactions to what transpired. My descriptive and reflective notes helped me to identify my own biases and assumptions as I conducted the study. Additionally, these notes proved particularly helpful during the analysis phase, assisting me in contextualizing each case.

**Review of Artifacts**

To enhance my in-depth study of a single program I requested and received permission to review pertinent programmatic documents. According to Yin (2009) documents, such as program and course descriptions, should be cataloged and filed for the duration of the study, until the report is complete, and for a number of years afterward. Although faculty members expressed a reluctance to allow me to have copies of their course syllabi, I was granted restricted access to read course syllabi and review documents on site. I perused approximately 100 documents which were made available to me at the college. Among these documents were binders organized by courses. Within each binder, there was a course syllabus, a weekly outline of semester topics, topical lesson plans and sample assignment forms. As I examined the documents, I gained increased insight into how innovation is demonstrated within the educational program’s curriculum and pedagogy. In addition to the course binders, I also reviewed publicly available documents from the college’s website. The publicly available documents included the college’s mission, vision, and philosophy statements, the college catalog, and the program’s learner outcomes. This information has been beneficial to my description of the context of the case study, reflected in the analysis chapter.
Research Quality

To achieve a high level of quality in my research, I planned for and implemented standard practices. These practices helped to ensure quality and rigor in this study and further potentiated the replicability of this work. Standard practices I addressed included ethical considerations, rigor, and triangulation. In this section I also acknowledge limitations and biases of my study.

Ethical considerations

Consideration was given to the participants, both individuals and institutions, about maintaining confidentiality of their responses where possible. Typically, confidentiality may be assured regarding personal identification collected during personal interviews, and information collected from artifact review. In this study capturing participants’ identities and means of personal contact was necessary for planning, and follow-up. I made every effort to safe-guard the participants’ personal information. Although Patton (2002) makes the case that some participants prefer to use their real names in studies, I used pseudonyms instead of the participants’ real names in my reported findings (Creswell, 2009). Instead of the actual name of educational institution and place of employment I have used general descriptions of the locales. There were minimal to no risks assumed by the participants. There was no anticipated risk of physical, psychological, social, economic or legal harm to the participants (Creswell, 2009), nor was there evidence of any actual risk to the participants.

As previously identified, I provided each participant with a printed copy of the consent form to maintain for their records. I verbally reviewed the consent and addressed any questions or concerns prior to asking the participants to sign the consent form. I also made reasonable efforts to minimize any intrusion into the participants’ lives. All participants were reminded of
their rights and the available points of contact for concerns or issues with the study. As the primary investigator, I verified with each participant that there was no coercion taking place and made sure each one knew they had the option to participate in or withdraw from the study at any time.

Assuring Quality and Rigor

**Issues of trustworthiness.** Schwandt (2007) describes trustworthiness as the means of applying certain criteria to qualitative research to insure high quality. Credibility, triangulation and thick description are criteria that should be addressed in qualitative research studies. It was important for me to address the issue of trustworthiness from the beginning, and I applied the same criteria throughout the study to maintain the quality of my findings.

**Credibility within the study.** Credibility speaks to the procedural steps undertaken by the researcher that promotes authenticity in the way the participants’ stories are portrayed (Schwandt, 2007). Miles and Huberman (1994) state that credibility answers questions about the process used to conduct the study. To assure credibility in this study I have thoroughly documented and clearly articulated the procedural steps I followed in this work. For example, I used an interview protocol to help maintain consistency in the questions I asked of each participant group. Credibility is enhanced through the steps taken in conducting the research as well as the steps taken to present truthful, accurate data (Polit & Beck, 2006). To achieve truthful and accurate reporting of the data, I regularly reviewed the codes during the analysis phase. It was important for me to document and review the definitions of my codes, to maintain consistent application throughout the study (Creswell, 2009; Miles & Huberman, 1994). Keeping accurate documentation of the procedures I used, the questions I asked, and the coding definitions I developed, provides concrete evidence of a clear path that can easily be followed.
Triangulation

Triangulation points to the procedural steps a qualitative researcher takes to insure the integrity of the study. One means of triangulation is thought to be achieved by consistency of information obtained from a variety of sources (Creswell, 2009), which thereby enhances credibility. This involves using multiple sources of data to examine the findings (Stake, 2005; Schwandt, 2007). I accomplished triangulation by using multiple focus-group interviews, and by reviewing documents. I found consistency among the stories shared by faculty and graduates, which was supported by the evidence in the module level teaching-learning plans. Miles and Huberman (1994) suggest asking the question: “Do the findings of the study make sense?” (p. 278), to address the quality of the study. In other words, I worked to make sure the data I amassed from multiple sources converged to portray the complex truth of the issue and not an oversimplified single viewpoint (Polit & Beck, 2006). It was my responsibility as the researcher to demonstrate the use of a variety of measures to insure the report is accurate from the perspective of the study participants as well as the investigator (Creswell, 2009). One way to achieve this is through triangulation. I conducted focus group interviews of program faculty members, and of two cohorts of new nurses. One cohort of new nurses had graduated within the previous ninety days, and the other cohort had all graduated within the last year.

In addition to achieving triangulation from using multiple data sources, I also employed member checking with the participants. Among the graduate nurse cohorts, I conducted member-checks via emailed summaries of the codes and evidence from the focus group interviews. The participants replied via email. I met with the faculty cohort face-to-face in a private informal setting to member check, as I reviewed the codes that emerged from their focus group interview. Member-checking allowed me to clarify ideas that were expressed among the participants and
allowed them the chance to support or disclaim what was shared. In general, the members provided verification of the data, and shared some additional insight and explanation of ideas expressed.

**Thick Descriptions**

Another step cited by Creswell (2009) is to include “rich, thick descriptions” (p. 191) when presenting the findings. Thick descriptions are more than details in a report; they contextualize the data and provide for a better understanding of the participants’ stories. These descriptions are not limited to the data, but include the environments and processes involved in the study as well (Schwandt, 2007; Polit & Beck, 2006). Following this example, I have provided a thick description, to include the details of my meetings with the interviewees, the settings, and the steps taken to initiate the process. I have included information on how the interviews began, how the interaction proceeded, and details of the overall process through the concluding moments as a way of giving the reader the opportunity to have a sense of being present in that interview. Although the aim of qualitative research is not generalization, thick descriptions provide the reader with enough information to consider if this study could be carried out in another setting. Finally, in accordance with another strategy suggested by Creswell (2009), I have intentionally attended to any “negative or discrepant information that runs counter to the themes” (p. 192) that I have uncovered in the study.

Quality is increased, and issues of trustworthiness are minimized by using open-ended questions in the qualitative interview process. By not limiting participants to pre-select their answer among various options, such as in a survey, the responses are more authentic. When participants can answer the questions in their own words, using their own examples and descriptions, there is less potential for the investigator to influence the responses.
Analytic Process

Discussing the analytic process facilitates a contextual presentation of the findings. The data sources I used include demographic surveys of each participant, document reviews, and transcripts from each of the focus group interviews. The information collected from these three sources led to the emergence of three main themes: making connections, immersion, and seeking answers.

I used manual analysis or hand coding to analyze the data. Manual analysis consists of several stages that I will delineate. Based on the work of Creswell (2007) and Miles and Huberman (1994), I have analyzed the data through these stages of hand coding. The stages are identified as preparation, reading through, coding, interpreting the data, member checking and making conclusions. The analytic strategy I applied is described by Yin (2009) as “Relying on theoretical propositions” (p.130). As I proceeded through the steps, I examined the codes through the lens of adaptive expertise, relative to personal traits, supportive environments, and knowledge application that facilitates adaptive expertise.

Preparatory

In my first step I organized and prepared the raw data. Interviews were transcribed verbatim and my handwritten notes were typed as soon as possible after the data collection experiences. This preparatory phase allowed me to examine each interview transcript, one by one (Creswell, 2007; Creswell, 2009, Miles & Huberman, 1994). In addition to the transcriptions, and the interview notes, I also kept interpretive memos throughout each phase of data collection and data analysis. These memos were both descriptive and reflective notes I kept as I conducted my study. After the interviews were transcribed, I read them through, noting all the details and nuances of the individual and collective stories.
Reading Through

This next step included using a systematic approach to read the interview transcripts, and the document artifacts. I followed the same plan for each interview, (see Fig. 4.2) to read, review and analyze the transcripts. Initially, I read through the interviews to get a general feel of the stories told. Creswell (2007) suggests that case study analysis thoroughly describe the setting and context of the case. On subsequent readings I examined the transcripts in detail, looking for key words, key phrases, and any evidence of themes, recurring comments and issues. I followed the suggestion noted in Creswell (2007), and made notes in the margins as I read, along with highlighting key sections to tease out an initial list of codes.

For the demographic surveys I used an excel spreadsheet to organize the basic information from the participants and to tally their responses to the questions on personal characteristics. I had one opportunity to read through the document artifacts, taking notes and recording my own thoughts as I reviewed them.

### Fig 4.3 Data Analysis Plan

<table>
<thead>
<tr>
<th>Focus Group Faculty</th>
<th>Analysis, Coding, and Member Checking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus Group Graduates</td>
<td>Analysis, Coding, and Member Checking</td>
</tr>
<tr>
<td>Document-Artifact</td>
<td>Analysis coding</td>
</tr>
</tbody>
</table>

**Thematic Coding, Interpretations And rich descriptions**

Coding

In this project I used inductive analysis to identify the codes as they emerged from my reading of the raw data. Patton (2002) describes this inductive analysis as a way to find meaning as the researcher interacts with the data. He contrasts this with deductive analysis where data is
analyzed relative to select criteria outside of the data itself. Creswell (2009) says “[T]he traditional approach in the social sciences is to allow the codes to emerge during the data analysis” (p. 187). As these codes emerged, I organized them, using key terms and concepts extracted from the data (Miles & Huberman, 1994).

My coding yielded an initial set of 24 codes. This list included advocacy, being new, competition, critical conversations, empathy, enjoyment of work, growth, humor, immersion, innovation, making connections, mindfulness, narrative pedagogy, performance, reflection, role modeling, role-play, seeking help, super-ego, teamwork, technology, testimonials, theory to practice, and visual aids. Through the lens of my theoretical framework, I mapped the codes to the concepts of personal traits, using knowledge, and environmental factors that support adaptive expertise development.

Initially, I used a table in which I organized the interview transcripts in chronological order according to the research questions with all participants’ responses together. I highlighted various phrases that I identified as potential codes. Next, I generated a word document with a table as my code book to delineate the codes as they emerged. Within this code book, I listed each term alphabetically, defined it, and included a representative excerpt from the data as an exemplar of that code, (see Figure 4.4). I added to the code book as the terms and concepts emerged from the data. The descriptions and meanings I aligned with the data facilitated my ability to make authentic interpretations about the data.
Using the code book facilitated my ability to be consistent throughout the analysis phase. I reviewed key concepts from the theoretical framework such as innovation, problem-solving, flexibility, and autonomy. I used a concept map to correlate codes from my data to the key concepts related to adaptive expertise, (see Figure 4.5).

**Personal Traits.** This concept refers to both mental capabilities and personality or disposition closely aligned with adaptive experts. Among the codes from this study, mindfulness, reflection, personal growth, seeking answers and critical conversations, all align with this concept. Fisher and Peterson (2001) and Opre (2015) identify key personal traits as mental capacity to see the interrelatedness of concepts, self-awareness, and the ability to address new problems, as they appreciate learning.
**Environmental Factors.** This concept is associated with characteristics of the workplace that supports learning, risk taking, and opportunities to face new problems or challenges. From the data, immersion stands out as related to environment. Additional codes that pertain to environment are enjoyment of work, role-play, seeking answers and technology, especially that of simulation scenarios.

**The Role of Knowledge.** This concept addresses the way in which an adaptive expert transcends implementing routine knowledge and uses what they know to achieve innovative solutions for unknown problems. The related codes from the data include making connections, theory to practice, role-play, immersion and personal growth. Concepts from the theoretical framework helps to put appropriate emphasis on key codes, as I interpreted the data to arrive at the major themes of this work.

**Fig 4.5 Concept Map Coding for Adaptive Expertise**

Miles and Huberman (1994) make the case that coding helps the qualitative researcher to ascribe meaning to the words and to be selective in what is useful to the study. They caution the researcher to not get lost in the voluminous accounts and mistakenly believe everything is significant (Miles and Huberman, 1994). With this notion in mind I reviewed the codes again for
considerations of usefulness as an individual code. Several codes could be subsumed into another code. For example, I included performance with growth, and super-ego was incorporated into mindfulness. The code of testimonials was included in narrative pedagogy. I reviewed the data again looking for patterns, correlations and consistencies among the codes. Upon subsequent review, the code of competition did not align with any other data sources except one, therefore I omitted competition from the list of codes. Using this process, I narrowed down my list to eighteen codes that I used in the process of interpretation.

**Interpreting**

Interpreting, which is sometimes called reorganizing or classifying, is the process in which I deconstructed the data, and rearranged it into categories and themes, based on the codes that emerged (Creswell, 2007; Creswell, 2009; Miles & Huberman, 1994; Patton, 2002). As I explored the results from each document, each transcript and each survey, I uncovered the nuances, themes, and patterns which illuminated the issue under investigation. In addition to the code book, I reorganized the transcripts onto an excel spreadsheet with one page per speaker to tease out the codes relative to each participant. Using the spreadsheet helped to see clearly which codes emerged repeatedly, and which codes aligned to which participants. This process led me to arrive at three overarching themes of 1) immersion, 2) making connections, and 3) seeking answers which I mapped to the eighteen codes, (see Table 4.2).
### Table 4.2 Thematic Mapping of Codes

<table>
<thead>
<tr>
<th>Themes</th>
<th>Making Connections</th>
<th>Immersion</th>
<th>Seeking Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codes</td>
<td>Advocacy</td>
<td>Being new</td>
<td>Critical</td>
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<td></td>
<td>Critical Conversations</td>
<td>Enjoyment of work,</td>
<td>Conversations</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>Growth</td>
<td>Innovations</td>
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<tr>
<td></td>
<td>Humor</td>
<td>Role-play</td>
<td>Seeking Help</td>
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<td></td>
<td>Mindfulness</td>
<td>Theory to practice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Narrative Pedagogy</td>
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<td></td>
<td>Reflection</td>
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<td>Role-Modeling</td>
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<td>Teamwork</td>
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<td>Technology</td>
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</tr>
<tr>
<td></td>
<td>Theory to practice</td>
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<td></td>
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<td></td>
<td>Visual Aids</td>
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</table>

*Note:* Themes are located at the top of the table in the horizontal axis. The columns contain the codes aligned to each theme.

**Concluding**

This phase of analysis includes making sense of the data. In other words, I took the descriptions and interpretations and used them to draw conclusions. Yin (2009) makes the case that analysis is an iterative process of coding, organizing data, and looking for meaning. I followed this process from the onset. I examined, and re-examined each data source individually, and comparatively to look for similarities across the participants’ stories. Through this process, I was able to find any outliers, such as competition. Competition only aligned with findings from one faculty member’s comments and was not found in any other transcripts or documents. Through this concluding process I began to uncover the connections that signaled a possible relationship between innovation in nursing education and nursing clinical practice. This information is examined in the findings chapter.
Limitations of The Study

Case studies by their very design can be a limitation. Case studies depict the real, rich experience of a small subset of individuals. Therefore, the findings from this data collection method may not be generalizable. Although informative to the issue at hand, it cannot reliably represent the experiences of a majority. Another potential limitation of this study is the ability to identify any direct cause and effect between innovation in nursing education and that in clinical practice; however, the participants’ stories revealed relational characteristics that suggest connections. Their stories suggest a need for further discussions of other possible influences on and/or barriers to innovation in clinical nursing.

Acknowledging bias

In a perfect world a researcher would be able to conduct their study devoid of bias, which Yin (2009) suggests as an aim. A researcher needs to be willing and able to acknowledge both supporting and contradictory findings relative to the issue being studied. Creswell (2009) suggests the researcher clearly identify his or her bias with the issue at hand. As such, I acknowledged my bias at the onset of the study, in that I was expecting to find nurses engaging in innovation. My perspective is influenced by the review of the literature as well as my own lived experience as a nurse. It is only through hindsight that I realize the innovative nature of clinical reasoning that is at the heart of my own clinical practice, as a registered nurse and as a nurse practitioner. It has been my intent to be transparent in this written report, and to that aim I have infused it with personal reflections that reveal my potential biases within the findings of the study.

During the time of piloting my interview questions, my test subjects shared rich detailed stories of classroom and clinical learning activities. I had anticipated similar results with my
actual research subjects. I was prepared to identify specific classroom learning activities that influenced these new nurses. However, that did not happen. With few exceptions, my participants shared more generalized feelings and impressions instead of specific learning activities from the classroom. Among the five graduate nurses there were two stories of classroom memories that were shared, the narrative pedagogy regarding their caring experiences and the manipulation of the Mr. Potato Head lesson about skill accuracy. The overwhelming majority were focused on the personal enjoyment of their clinical transition experiences, their final clinical rotation before graduation.

My underlying assumption, that nurses are innovative, did emerge from the data. Having them keep journals was an effective means to aid their recall. Each one shared multiple ideas from their journals. Unfortunately, there was a disconnect between the innovative ideas they recorded in their journals and shared with me and what they actually did with any innovation. I noted my disappointment in my own interpretive memos, that none of these new nurses have yet to act upon their ideas. I was surprised at this during the interviews and my most frequent follow-up prompts were “What did you do with your idea?” or “Who did you speak to about that?” I tried to avoid the judgmental sounding question of ‘why’ – and instead asked questions like, “Is there a reason you have not shared this with anyone?” Most often, they responded by dropping their gaze, avoiding eye contact, and shrugging their shoulders. It was apparent to me that they were not pleased by their answers, and they seem to struggle to pinpoint specific reasons. I found it hard to believe that not one of these nurses has yet to act on their ideas.

Summary

Qualitative research designs promote deep exploration of a narrowly focused topic of study. In this case study method of inquiry, I explored a single college of nursing as the case
under review. Although this method has limitations in generalizability, I believe the case study approach has led to a deeper understanding of the issue. In this empirical study I have conducted focus group interviews of three cohorts of participants and reviewed relevant college documents. The stories were captured through the perspective of program faculty and program graduates. Following the principles that Yin (2009) describes, I utilized multiple sources of information, such as interviews and document reviews. By following these guidelines, I have insured the rigor of this study.

The process of data analysis began with verbatim transcriptions of the interviews. I then read through the transcripts and listened to the recordings to get a general sense of the data. From that point I applied inductive analysis to tease out codes from the data. Initially I identified 24 codes that I pared down to 18. I mapped the codes to the key concepts addressed in adaptive expertise, such as personal traits, environmental characteristics and the use of knowledge. Interpretation of the data revealed three major themes: making connections, immersion, and seeking answers. In the findings chapter I further delineate the interconnections among the codes, themes, and theoretical framework.
CHAPTER 5

FINDINGS

The purpose of this empirical study was to explore the relationship between innovation in nursing education and innovation in clinical practice. To that end I set out to address two main research questions, 1) What perspectives do new nurses within their first year of clinical practice hold on the influence of their nursing education, particularly innovative methods, on their practice? And 2) What is the impact of the clinical working environment on the ability to innovate? What environmental factors support or hinder the ability to innovate? In this chapter I describe the findings and correlate the major themes to samplings of the associated codes, as a construct to support the answers to the research questions posed in this study. I also integrate the major themes that emerged from the data with the key concepts from the theoretical framework that underpins my work. Making relational connections, reflection, empathy and advocacy are relative to characteristics of personal growth of adaptive experts, including problem solving and enjoying new challenges.

Educational Influences on Clinical Practice

My first research question asked: What perspectives do new nurses within their first year of clinical practice hold on the influence of their nursing education, particularly innovative methods, on their practice?

The stories of the graduate nurses, in general, reflected their ability to identify the most influential experiences that impact their practice today. Some participants referred to a singular classroom experience as having an impact on their practice. Most cited a clinical assignment tool that continues to influence their practice. All the participants noted the clinical immersive experiences as the most memorable component of their nursing education.
Making Connections

I define making connections as linking concepts or ideas from didactic course content and clinical practicum experiences to add meaning to a situation. Making connections is essential to nursing education and practice. This occurs within two dimensions, 1) cognitive connections, meaning connecting with information, ideas or knowledge, and 2) relational connections, meaning connecting with people, such as patients, mentors and peers. For the nurse, educational experiences and clinical practice are embedded with opportunities and challenges to make connections in both areas.

Cognitive Connections

Nursing students need to make connections between classroom material and the clinical environment, applying what they have learned in practical ways. The Clinical Practice Guide (CPG) tool used in the clinical practicums is a good example of something that helped the graduate nurses to organize their thinking about their patient care.

Theory to practice. I define this as clearly articulated instances in which a student appropriately connects the didactic course content to a clinical situation. Whether through articulation or through demonstrations, it is in these moments that the learners apply the theoretical understandings to make patient care decisions and clinical judgements. Faculty and students shared similar perceptions of these moments. When faculty witness these moments of applied learning they often describe them as “ah-ha” moments or when the “light-bulb goes off.” One faculty member noted a specific activity used to promote connecting theory to practice, “A lot of times in my post-conferences, I will bring them to the library, to the computer room, and give them so much time that they have to look up and really talk about the pathos [pathophysiology] and that contributing history to get the patient to where they are. Which
brings the theory part that they're learning, into the patient...” –(Andi). A consistent example cited by all the graduate nurses was the Clinical Practice Guide (CPG) they learned to use. “And it kind of makes me think about … the CPGs we did... they really like challenged you to do the patho and like the risk factors leading up to diseases, to kind of figure it out on your own, you know, what you're seeing in the clinical setting too. Which kind of helps like now. ... maybe [you] see something on the floor, and you can kind of put together, what's causing this and why they're at risk for this type of thing.” –(Sophia). Sophia’s example and others like it clearly shows how students engage in putting the learned pieces together to get a clear understanding of what is happening with their patient. The use of such a tool, such as the written Clinical Practice Guide helped the nurses move beyond simply digesting segments of routine knowledge, to applying their knowledge and clinical skills to analyze the new patient situation at hand.

**Narrative pedagogy.** A more powerful tool for connecting theory to practice was story. As an instructional method, narrative pedagogy infuses storytelling into teaching to facilitate learning by contextualizing concepts as they pertain to circumstances, patients or processes. Typically done within the classroom setting, narrative pedagogy helps the content to come alive in the minds of the listeners. When learners hear stories, they can easily connect the story to clinical presentations, and recall the appropriate interventions needed in that situation. As they listen to the stories, the learners can imagine themselves in these situations. Later, in clinical practice, this recall can aid the new nurse in responding to a similar situation. Within the faculty cohort, their stories were replete with a variety of pedagogies they believed facilitated students making connections in their learning. “I often share... my experiences I've had on clinical [meaning practicum days of providing direct patient care] in the hospital and bring that into the classroom to help the students use it more easily, to correlate that and get a better picture of
Faculty members displayed an awareness of the power of telling stories, particularly those shared by guest lecturers such as actual patients or family members. Story telling helps listeners relate to the concepts and perspectives shared by the storyteller.

Although faculty members are typically the ones to tell the stories, learners can also partake. It is common for students to share their stories of patient care during clinical post conference times. One story shared by the cohort within 90 days of graduation relates to narrative pedagogy. They discussed the impact of both telling and hearing each other’s stories about caring on the first day of nursing school, and they shared how those stories moved them. They stated the experience of hearing other student’s stories about what motivated them to enter nursing impacts their clinical practice, keeping them empathic to the patient’s perspective in the healthcare experience. It is clear these moments ignited something within the nurses and left a lasting impression on them both mentally and emotionally. Anita shared the impact of one such student to student story-telling: “The caring stuff we did the first day, I think went a long way. ...Our very first day of nursing school, we had to pretty much write one act of caring that we’ve done that we’re proud [of]... And I think hearing everybody's story and you know in practice today ... that you can't forget that it's a person. ... it's a human being in there”. –(Anita)

When Anita shared this example the other group members seemed to have a corporate flashback. They softened, and reminisced about being so moved, so touched by the group story-telling. They mentioned there was a lot of crying on that first day of classes. Anita’s story is an example of how we are affected by stories of compassion, caring, empathy and helping other humans. These stories speak to our spirits and move us emotionally as we hear about and tell stories of personal caring. What moves us emotionally tends to have a lasting effect on our
memories and our learning. These caring stories seemed to ignite their emotions and leave a lasting impression on them. From their perspectives, this experience made them better advocates, and helped them to speak out on behalf of patients and to make changes for the sake of patients. With no need of technology, narrative pedagogy demonstrates relational connections that lead to personal growth. Authentic human stories are powerful tools that can ignite the spirit within an individual and stir their soul.

**Reflection.** This is an instructional practice that promotes thinking about and articulating, either in voice or in writing, the substance and value of a specific experience. Reflection is a guided activity that prompts the learner to think more deeply about an assignment or activity. For example, journal entries students make after each clinical day to document instances of personal growth or personal challenges. Reflective activities were frequently described in the course module assignments, as well as cited in the stories of the participants. Reflection consisted of formal written assignments students completed following their community experience practicum, and after viewing videos about ethical situations. Evidence from the data reveals the integration of reflective practices, such as clinical post conference sessions and simulation debrief sessions. One graduate nurse stated, “We ... had discussions after, too, that kind of reflected on, ... what we would do in those simulations, and you know kind of apply 'em to future practice, too, which I think kind of helped” --Sophia. This story clearly indicates how students used reflection to derive meaning from what they had just experienced. Learning occurred once they could process what had happened to make some sense of it and attach meaning to the experience. Taking the time and space to reflect transformed a felt experience into a cognitively meaningful one. Another new nurse cited current clinical practice on her unit: “And our unit, ..., we have a debriefing every day, which is kind of cool.” --Edna. Edna clearly appreciates the opportunity to
discuss the events of the day to learn from those experiences and enhance her personal growth as a nurse. One faculty member described how she incorporated reflection into a learning activity: “At the end of the experience, they learn about the interviewing skills. But the takeaway, I give them time to reflect and say, how did that feel? How did it feel to be the nurse?” –(Susan, faculty). These examples of the impact of reflective practice demonstrates a means to support personal growth among the learners. These nurses were provided opportunities to consider the meaning of their experiences, which promotes deeper learning. Their collective stories indicate they consistently engage in reflecting on their professional practice.

**Technology.** I define technology as the use of any electronic, web-based, or computer-based tool, software, or digital device to aid in learner application of knowledge. Technology is meant to prompt faculty and learners to make connections with information and use equipment that promotes learning of essential didactic course content and patient-care skills. One example of technology includes the use of clickers during lectures. Clickers are hand-held devices that support active engagement of students as they respond to questions embedded in PowerPoint presentations. Only the faculty participants shared a perspective on the use of clickers. These devices allow students to respond to questions in real time and provide the instructor with an immediate formative assessment of the content being covered. The graduate nurse participants did not cite the use of clickers as a memorable learning experience. Another example of technology is the high-fidelity mannequins used in the simulation lab. High fidelity mannequins are computer programmable to simulate certain patient behaviors that help the students learn to respond appropriately as if it were a real patient. “I think too, with our simulations, we videotape them and then we have them look at it and watch their role-playing ... see where they could have improved, what did they do well, as well.” –(Anne, faculty). This description was echoed from a
graduate nurse’s perspective. “We were also videotaped throughout the simulation so while it was hard to watch ourselves, it did give me an outside view of what I was doing. It was a chance to see our actions from an outside source (almost as if we were just critiquing some other random student) and then it is easier to see what I did do well, and what I could’ve done differently” – (Olivia). This comment reflects the ability not only to reflect on the learning but to conduct a self-assessment, which seems to have promoted personal growth.

An example of lower fidelity type of technology would be the use of headsets students wore in their role-play activities. One graduate nurse, Olivia described the headset experience: “Yeah, it builds- a lot of like empathy. ... you know, like [you’re thinking-] ‘Oh, yeah, schizophrenics hear voices,’ - but ... these headsets were like really realistic, and they would whisper, ‘Turn around’, and you would really like turn around- ... you build like a new, ... a respect for patients like that” – (Olivia). This exposure to technology, whether of low fidelity or high fidelity had the impact of enhancing the learning experience by adding realism. The technology provided virtual experiences to address the gaps of learning opportunities within clinical rotations. These virtual experiences coupled with personal and group reflection promoted personal growth among the learners. Additionally, these experiences were another means to allow learners to become ‘other-minded’ and develop empathy.

**Relational Connections**

Beyond cognitive connections the more important types of connections are relational connections such as those between the nurse and patient, the nurse and the family, the nurse and the healthcare team, and between the student nurse or new nurse and his or her mentor. The relational connections are dominant among my findings and speak to the nature of nursing as the art of interacting with people when they are most vulnerable.
**Personal traits.** These findings related to human connectedness and parallel the personal traits associated with adaptive expertise. Participants in this study self-identified as enjoying a challenge (76%), being good at problem solving (84%), and appreciating autonomy (92%). Each of these personal traits align with those of an individual who is poised to be an adaptive expert. In addition to having essential knowledge and working in a supportive environment, adaptive experts are thought to be risk-takers who enjoy problem solving and appreciate the opportunities to face new challenges in the workplace. The findings in this study support the idea that these nurse graduates possess personal characteristics closely associated with adaptive experts.

**Advocacy.** I define advocacy as speaking out or acting on behalf of another, generally when the individual or group is unable to speak on their own behalf. Advocacy connects the nurse with the patient in a special relationship. Some graduate nurse participants described memories of specifically being taught to advocate for their patients. When a nurse serves as an advocate, he or she verbalizes the patient’s concerns, rights, decisions or preferences within the healthcare team. Advocacy is a means to connect an individual with those in decision making-positions. Although a large aspect of any nurse’s practice, advocacy is especially important when working with vulnerable groups of patients, such as babies or comatose patients. One example is Bonnie’s comment “I’m that patient’s eyes and ears, and I’m the one that’s keeping them safe because they can’t speak for themselves. So, I’m the one saying, no, you can’t- - no, we’re not doing this, this way.” –Bonnie. It is clear through Bonnie’s story that she senses the weightiness of the responsibility to safeguard her patients. She emphatically states her role “I’m the one that’s keeping them safe.” It underscores her deep sense of responsibility as a nurse. It is that high level of human connectedness that describes the art of caring as the nurse. It also
demonstrates her voice – an occasion where she feels empowered to say “No” if necessary to keep her patient from potential harm.

**Critical conversations.** I define this as a behavior that consists of talking with another person to establish a relationship, to gain clarity, or to understand an issue or situation, and to convey knowledge from one to another. This is a means for individuals to make a connection with one another, regardless of position or role. Examples from the data include students learning to speak to patients, and faculty providing one on one feedback. One faculty member expressed it this way: “But I think what’s nice about this program and what’s nice about teaching and nursing in general is that we’re constantly meeting with students and talking with them and evaluating them. Especially in the clinical setting, you have a smaller group size, usually. But, ... we’re constantly meeting with the students and kind of having the students self-reflect and having the students evaluate themselves” –(Susan, faculty). One graduate student shared what it was like after participating in a simulation scenario. She stated, “So, you look back at the video and like realized all that you did wrong. But... they [the faculty] weren't like harsh about it. They [would say], ‘Maybe you should have done this, or you did good by thinking of this, but this is what else you could have done’ ... we talked about it a lot after. I think that helped...” – (Sophia). Sophia’s story exemplifies the power of spoken words of correction. She simultaneously acknowledged her lack of success, and her appreciation for constructive feedback. This kind of learning from feedback evokes a sense of self and demonstrates personal growth. This speaks to the reality of the internal desire to serve her patients well. It demonstrates that strong desire to be a nurse who renders quality patient care, despite the personal angst endured from the learning experience. These experiences seemed to resonate with the new nurses and shaped their sense of the kind of nurse they desired to become.
Empathy. I define empathy as understanding and appreciating the patient’s or family’s experience from their perspective. When a nurse has empathy, it allows him or her to make a connection between what the patient is experiencing, and how that may impact the patient’s life. Empathy facilitates the relationship between a nurse and his or her patient, by allowing the nurse to be other-focused. “I still remember when we first started learning how to bathe people ... it makes you realize how vulnerable that person in that bed is. ...it just makes you put in perspective what they're feeling ... Privacy is a big thing” –(Bonnie). This learning activity of bathing patients occurs in the first semester for the students. Clearly this was a memorable experience for Bonnie as she expresses how this impacts her awareness today. This example demonstrates how she was moved to develop a keen sense of personal space, and respect for patients as real people, who are in vulnerable situations. The story shows how Bonnie was able to be other-minded, walk in her patient’s shoes and empathize with them as she provided heart-centered care. This is another example of powerful learning in nursing education that made an impact on the learners, yet did not require innovation. These experiences demonstrate the power of human connectedness as nurses interact with patients on very personal levels.

Mindfulness. I define mindfulness as being present in the moment, both physically and mentally. It means being fully aware of self, with the ability to self-assess within a given situation. Being mindful allows a person to connect on a deeper level with their own internal views, or ideas as well as external experiences. Mindfulness can allow a person to have an alternative point of view, to be other-focused, and to engage in a type of empathic viewpoint. “[Our teacher] had everybody take a piece of paper and she said, ‘I want you to draw yourself and what you think you look like right now...Is that what the patient sees?’ I’m a little more mindful ... even when I’m really tired” –(Edna).
Regardless of her level of fatigue, or her personal stamina level, Edna makes the point that it’s important for the patient to not detect it. Making human connections with your patient requires a blend of situational awareness, self-awareness, and awareness of patient needs. The example Edna shares supports the notion that nurses need to be aware, or mindful of how there are perceived by their patients. Nursing care is more than doing the right thing for the right patient at the right time, it also encompasses how to interact with the patient as you care for them. A smile, a gentle touch, a calm manner, and slowed pace are just a few ways in which a nurse can transform a set of tasks to complete during the nurse-patient contact into a therapeutic interaction that meets the holistic needs of the patient.

**Role-modeling.** I define this as speaking and/or performing acts that demonstrate for students the ideal or realistic nurse behaviors. While role-modeling can occur as an unintentional act, it is most valuable as an intentional practice that demonstrates for learners the exemplary level of clinical practice. Positive role-modeling occurs within the context of a relationship in which two or more people are connected because of their roles. Often in nursing education this relationship is that of mentor to learner. The faculty identified role-modeling specific behaviors for the students such as skill performance and communicating with patients. Other behaviors they model include professional dress and appearance, and professional behavior in the clinical area and in attendance at professional meetings. The faculty members seize teachable moments to role-model diffusing conflict between various healthcare workers and confronting inappropriate behavior. One example was provided by Aubrey, a faculty member, who described an approach used during a Psych rotation, “I go obviously with them, and we sit down at a table with some patients ... and have a conversation with them and I notice that they'll like sit, like not too far away from me. You know, and watch that, and listen to that. And then in post-
conference I'll always bring it up, you know. About what they've learned by watching me.” – (Aubrey, faculty).

This was consistent with how the graduate nurses described their experience, “So, I think that watching some of my instructors, how they interacted with patients, especially in the beginning when you're just learning like, how to talk to people, and how to give people baths, and move people and stuff like that, um, has really helped me now.” – (Edna). Another viewpoint expressed by the faculty was articulated as a pleasure to acknowledge his or her role in demonstrating for his or her students how to be a nurse. “I think ... all of us [are]a role model with our students [especially in the] comfort level that we have going in and just striking up a conversation [with patients].” – (Andi, faculty). Among the various learning moments cited by the new nurses, having the opportunity to observe their role models was specifically mentioned as key to their learning. These moments allowed the students to peer into the role of the nurse and witness the ease with which their mentors functioned as RNs. This role-modeling provided another opportunity for the learners to imagine their future selves, to believe what they could become.

Immersion

A significant factor in nursing education is the hands-on practical experience with patient care that students obtain during their clinical components. Much of what the participants shared as memorable aligned with being immersed in the role of an RN, and making connections with other people, and course content. Their stories revealed that they relished opportunities to observe nurses in a variety of settings. They seemed surprised that the college of nursing fostered such a variety of these opportunities. Some of them spoke with confidence that the community observational experiences were not common to what nursing students in other programs have
experienced. They spoke highly of how much these experiences broaden their views of nurses, where nurses worked, and the variety of roles nurses played. They mentioned how much they appreciated seeing nurses function in diverse settings with varied groups of people.

Nursing education typically includes clinical rotations through various units within and outside of the hospital setting. Among those clinical rotations, the graduate nurses specifically mentioned their community-based experiences and their Transitions to Practice (TTP) experiences as the most meaningful.

When discussing the TTP experiences, the participants’ faces lit up, and they smiled as they recalled those experiences. This is one experience that was shared in a positive light by all the graduate nurses. They spoke strongly about having that unique perspective of seeing all aspects of what nurses do, and how they carry out their roles. Some referred to this as the ‘behind the scenes’ viewpoint. They specifically cited instances of watching nurses give and receive the shift report, admit patients, and interact with providers over the telephone. Each of those skills require higher levels of personal organization, and complex interactions with other members of the health care team. Having some choice about their selected unit for the TTP seemed to empower them. They shared the fact they also had some choice about who their mentor would be during that experience. When asked what they wished they could have had additional experience with in nursing school, most of the graduate nurses stated, the TTP experience. It makes sense that this practicum would be cited as a time of perceived growth in their ability to practice independently, as they described it as working like a real nurse.

This sense of increased competence and confidence is consistent with what Kaihlanen, Haavisto, Strandell-Laine, and Salminen, (2018) discovered in their review of the literature on final clinical practicums. They reviewed seventeen empirical studies on how to conduct these
transitional practicums for student nurses. In most of the studies they reviewed, these transition experiences were key to providing nursing students with a realistic view of nursing. Additionally, the participants in those studies cited practicum experiences as being instrumental in their personal growth. There was a strong correlation between the positivity of these experiences and the mentors assigned to the students. Kaihlanen, et al. (2018) arrived at four main concepts from their review of the studies on quality transition experiences. The main ideas were the mentors’ characteristics, the adjustment of the student to the role of an RN, the student achieving levels of confidence in the role, and the student feeling a sense of competence. Among my participants, I found elements consistent with these concepts. The graduate nurses discussed seeing what real nurses do, feeling like a real nurse and sensing their growing competence, during TTP experiences, which are all key to their professional growth. The ability to request a specific mentor for the TTP added to their sense of empowerment. I believe this level of control in knowing who their mentor would be, added to the positivity of their experience. The relationship with the mentor is central to their success and enjoyment.

Immersion rose to the level of a theme when I found several codes related to this type of clinical experience. As students progressed through their clinical practicums they gained increasing levels of independence. I defined immersion as autonomously engaging in the role of an RN. Students always have some level of oversight by a mentor. However, as they move through their educational programs they engage in higher levels of independent practice that resembles what they will do after graduation. Among the graduate nurse participants, clinical rotations were described as the most memorable experiences, because that is when they got to be real nurses. All of them noted the significance of their Transitions to Practice (TTP) rotations, and wished they had more time in that role.
Being New

I defined being new as a sense of unease when someone feels unsure of his or her position and feels unworthy to speak up or speak out. There were elements of feeling new expressed by all the graduate nurses. The sense of being new was reflected in their stories of when they became immersed in their roles as registered nurses. It also depicted an area of challenge for the new nurses, particularly in their stories about orientation. This sense of being new infused their details of what they have encountered adjusting to their roles as new RNs. Being new was cited primarily as a barrier to action, specifically the action of speaking out for change in their circumstances. “Nobody understands, I get [people say to me]: ‘but you're out of school’; Okay, I'm out of school, but I'm learning a brand-new job.” – (Anita).

“Overall, I think I've had a pretty good experience, but um, kind of like Anita was saying earlier, I think that people are not as patient with you being new.” – (Edna).

“Cause I mean everyone can say like, ‘Oh yeah, if you have a problem with your assignment, say something,’ but like no one's gonna say anything, at least not until you're like really experienced,” – (Olivia).

These statements about being new and feeling new reflect a need for the nurses to become acclimated to their work environments, to adjust to new conditions as all novices must do. It represents that area of personal challenge that when well supported, promotes personal growth within a new situation. Some participants felt well-supported, but not all.

Enjoyment of work

I defined this as finding and experiencing pleasure in your chosen profession. In the demographic survey 77% of participants strongly agreed or agreed they enjoyed their job. During the interview of graduate nurse participants, their level of enjoyment in their work was not
always explicitly stated. Their facial expressions, level of animation and amount of enthusiasm they displayed during the interviews was more indicative of work enjoyment, than perhaps what they said. With regard to their educational experience, the graduate nurses described their favorite and most memorable experiences as those related to being immersed in clinical rotations, particularly their outside agency experiences, and their 92-hour Transitions to Practice (TTP) experiences. “Yeah, I liked the outside experiences a lot. You just shadowed, but they were like really cool, just to see all the different things you could do, you know, as a nurse.” – (Edna). This sentiment was echoed by others, “I like that they kind of gave us some diverse options to prepare us for what we wanted to do. I feel like we really got to see the whole span of care and stuff before actually deciding where we wanted to go work, ... we went and saw surgeries, we went into pediatrics, we worked with babies, like in labor and delivery” –(Sophia). Similarly, another graduate nurse explained, “... I didn’t think we’d do clinical like in the school setting..., and I went to an eating disorder clinic... you didn’t think that nurses would really be there” –(Olivia). Sophia’s description of her TTP experience best represents what most of the graduate nurses shared. “…I really learned a lot during that, because you were really like practicing in the role of a nurse ... I think that was really helpful.” –(Sophia).

**Growth**

I defined growth as making improvements in knowledge application, skill proficiency, and/or levels of independent practice. This term applies to observed or assessed changes from the mentor’s perspective, as well as self-perceived development on the part of the learner.

Immersion aligned well with reported evidences of personal growth on the part of the learners, as these immersive experiences revealed and facilitated professional growth. One faculty member put it this way: “And this time of the year, students are all independent, .... Their success is our
success and they're out being independent. It's a great feeling. And when I sit them down at our last post-conference [and I say...], remember when, I knew you when. ...and they're very proud of their accomplishments.” – (Toni, faculty). This teacher demonstrates the privilege of observing students over time as they grow from tentative, reticent new learners to confident, competent, autonomous nurses. While discussing the impact of simulation scenarios, Olivia, a graduate nurse shared: “…I just like look back to how I was ... It's a good way to judge how far you've come. ...I feel like no one really knew what they were doing during the simulations. And you look back now and like think you've had some of those scenarios in real life”. –(Olivia). This new nurse’s story demonstrates her ability to gauge her own growth over time, from feeling a sense of inadequacy during the simulation scenarios to now having a sense of confident knowing of what to do.

**Role-play**

I define role-play as engaging in a simulated scenario for understanding an experience, or developing a new perspective about an event, situation, or problem. Examples of role-play include acting as an RN in a simulation scenario in a lab. Role-play gives the learner opportunities to practice role immersion without the risks of interacting with real patients. Both teachers and learners can engage in role-play within any given scenario. Typically acted out in real time, role-play can also be videotaped and later used as a teaching opportunity. One example of role-play cited by faculty is an example of teaching students about the lived experience of an elderly patient, “We have the students, they have to put popcorn kernels in their shoes, so they know what it's like to be unsteady when you're an elderly Alzheimer's patient.” –(Toni, faculty). Another example provided by a faculty member, “I'll show videos, but I also do some interactive things, like, for my skin and pressure areas, I'll have some of the class just lean on
their elbows for 15 minutes, some kneel in the aisle, some cross their legs, so that they can see how uncomfortable it is for a patient who can't move.” —(Andi, faculty). Another example is when students assume the duties of an RN while responding to a patient’s needs in the Simulation Lab. One of the graduate nurses shared this perspective, “…the simulations kind of were a little bit of role-play too because you know, one person ...would act as a charge nurse, one would be a family member... so there's a little bit of acting to it.” —(Sophia). Clearly simulation experiences were challenging learning opportunities, even if not always enjoyable, “Yeah, no actually, I hated sims, but I really did learn a lot from sims.”, —(Edna). The most lasting impressions from role-play is the personal assessment component that occurs with constructive feedback and personal reflection. Although the scenarios provide opportunities for learning, the sense of personal growth occurs when the learner assesses his or her performance in the role of a nurse and recognizes strengths as well as areas that need improvement. Often mistakes made in a simulation experience rise to the level of consciousness such that the learner never makes that same mistake again.

Seeking Answers

As the third major theme in this study, seeking answers represents that impetus for a person to move beyond the present circumstances to consider yet unseen alternatives and solutions. Adaptive experts cite this as a workplace challenge of facing new problems to solve. It goes beyond a focus of getting individual help and includes a broader perspective. People seeking answers tend to not settle for the status quo, or the conventional practices and instead find alternatives. Subsumed in this behavior are innovations, seeking help and critical conversations.
Innovations

Innovations includes new ideas, new approaches, or new practices that can be applied to the educational or clinical setting to seek answers. Course syllabi provided a detailed list of innovative pedagogy employed at the college. This list included strategies such as flipping the classroom, unfolding case studies, concept mapping, discussions, reflections, and role-play. Other innovations are related to technology, such as embedded questions in power points with students using clickers, and high-fidelity simulation mannequins. Faculty members provided examples of instructional approaches and explicitly stated the collective mindset of appreciating innovation. “And we make changes, I say this in all sincerity, we make changes continuously. To make it best for the students.” –(Toni, faculty). Another faculty member states, “So ... with innovation, you know, we do have those high-fidelity mannequins... We always have the opportunity to bring them [the students] into this simulation lab and work with the students and this mannequin to give them a close to real experience.” –(Mya, faculty)

Innovation among the graduate nurses was revealed primarily in their ideas for change within their clinical practice areas. The graduate nurses each did a great job of documenting their ideas in their journals and sharing them during the interview. Their innovative ideas related to both patient care practices, such as medication administration, and workplace ideas. Some workplace ideas were related to orientation, scheduling, assignments, communication and equipment and supplies. However, these were merely ideas of innovations and they were not actually carried out by the participants.

One idea about medication administration concerned the use of written parameters to guide nurses on when to administer a medication and when to hold it. One graduate nurse suggested information technology could be the answer to enforce consistency, “…when they're
[the providers] putting in the order in the computer, they can't accept the order without putting ...what their parameter would be to give it ...... and not give it.” – (Olivia).

Another area that the graduate nurses discussed regarded hospital equipment. There were several ideas they had for safeguarding, storing, and maintaining equipment in such ways that would facilitate a higher quality of patient care. “Why does it take me 20 minutes to find the temperature probe. They should be in every single room. ...maybe we need to come up with a policy of putting them in a certain place ...and that's where it needs to be every time you're finished using it,” –(Anita).

Finally, several of the graduate nurses cited an area in need of improvement related to administrative issues, such as preceptors, work assignments and communication within the unit. For example, their stories center on making sure preceptors were qualified for their roles. The graduate nurses also expressed the importance of having consistency among the preceptors they worked with.

“...if you're going to preceptor people you have to go to preceptor class.” –(Edna).

“I was with one preceptor one day and then the next day, I'd be with a different one, and then I'd be with this one for two days..., I couldn't get any organization.” –(Bonnie).

Innovation includes a variety of pedagogies employed by faculty ranging from technology embedded in lectures, to high fidelity simulation laboratory experiences. The graduate nurses typically cited simulation as their example of innovation in their learning environments. The graduate nurses’ innovative ideas, as documented in their journals, demonstrates the ability of these graduates to function as adaptive experts as they desire to advocate for change and construct new solutions to unsolved problems. The only missing piece is the manifestation of innovation beyond the idea stage, which had not yet occurred.
Seeking Help

I define seeking help as seizing the opportunity and taking the initiative to get assistance and answers needed to better perform one’s duties. This behavior is consistent with the practices of an adaptive expert, to apply their knowledge in new ways to seek answers. Among the graduate nurses this concept manifested as more of a desire than an action. Although some of them shared instances in which they sought help, particularly on behalf of their patients, not all of them spoke of this behavior. Many of the graduate nurse participants articulated a desire to seek help, and apparently recorded instances and ideas in their journals, yet when pressed by me during the interview, some of them admitted not always speaking out. One graduate nurse shared her challenging situation, “…and she started going off again about how I'm an RN, and I was like no, I don't know. I'm new, and you need to help me. And [her response was] ‘You’re never going to learn if I help you’. And I [said], but everybody's gonna die, if you don't help me.” – (Edna).

Some of the graduate nurses expressed concerns over patient assignments, especially when the patient is particularly challenging. One graduate nurse shared her reticence in speaking out of the fear of appearing to shirk her responsibilities, “I feel like it puts a lot of pressure on the nurse too to ask to switch shifts or to switch sections. It kind of makes them look like, ‘Oh yeah, I can handle it’, or ‘No. Give it to one of my coworkers.’ Like you don’t really want to be that nurse. But I would never... say anything. Even though I was so burned out, I feel like I'd still stay there...not say anything.” – (Olivia). This hesitancy to speak out and speak up was in stark contrast to statements confirming that they were taught to speak up. “But, we were always kinda were taught to advocate for ourselves and stuff like that”. – (Olivia). And another confirmed this when she stated, “Yeah, don't be afraid to ask for help, like when you need it? I think a lot of new
nurses ... they might be a little reluctant, but I think it's really important that we kinda learn that in school to speak up and ask for help when you need it.” –(Sophia). There is an apparent disconnect between what the students were apparently taught to do, and what some of them demonstrated by their behaviors.

Environmental Influences

My second research question asked: What is the impact of the clinical working environment on the ability to innovate? What environmental factors support or hinder the ability to innovate? Answers to these questions emerged from the participants’ stories. Seeking answers was clearly a motivating tool for the new nurses to problem-solve. The comments were indicative of supports within their previous educational environment and barriers within the work environment. There were few if any factors identified within the work environment as supportive of innovation. Several graduate nurses spoke of their frustrations with what they had witnessed or experienced. Some of these frustrations were related to policies, practices, and equipment. Others spoke of what they felt was missing or lacking, such as effective communication, and consistent mentors. Those articulated frustrations contributed to the participants documenting their ideas and potential solutions in their journals. I categorized their comments as either administrative issues or patient care issues.

Administrative Issues

Administrative issues were cited repeatedly by the graduate nurses. Two main topics they mentioned were orientation practices and communication. Orientation practices seem to be a source of stress among the cohort of nurses who had graduated most recently. This cohort shared several ideas from their journals about both the people and processes involved in orientation. Their expressed perceptions were that preceptors were not always well prepared, knowledgeable
or helpful to new nurses. Additionally, each graduate nurse reported having several preceptors which precluded an opportunity for them to build a relationship of trust or establish good communication. Not only is this a potential barrier to innovation, it may be a barrier to professional development as a new nurse. In their study of 117 mentor-protégé relationships, Eller, Lev and Feurer (2014) identified that effective mentoring required affirming communication from the mentor to the novice. They noted this relationship was critical to the growth and professional development of the proteges. In my study, all the graduate nurses cited communication issues within the workplace, with either peers or mentors. They expressed a lack of awareness on the proper system to use to make improvement recommendations. One story shared noted the use of an idea board on their unit, on which they could place ideas for public viewing. Beyond this concept, the many of the graduate nurses denied knowledge of any regular unit meetings, or any means to make formal suggestions. It was a consistent finding in my data, that although the participants documented good ideas, and innovative solutions in their journals, they did not know the means with which to share the ideas on their units.

**Patient Care Issues**

The other area of focus was on patient care issues. One issue regarded equipment that was either not easily located, was misplaced or was broken. In addition to missing equipment, they also shared stories of not receiving adequate training on the use of some specialized equipment. They perceived delays in patient care, as they lost time looking for properly working equipment needed to complete their patient assessments. Several of them documented recommendations to rectify the situation on their respective units. Most of the participants recorded solutions or suggestions in their journals but did not verbalize these ideas to anyone.
Among those who did make the recommendation to their unit manager or preceptor, they felt the manager’s response was minimal.

Another patient care concern was about medication administration. Several participants raised concerns about what they described as institution wide procedures that governed medication administration, which they did not fully understand. The passion in their hearts was evident when they discussed these issues. They shared detailed examples from their journals of both the issues and potential solutions. Although they raised concerns and wrote about recommendations in their journal entries, they reportedly have not spoken to anyone about their ideas, nor have they questioned the existing policies. It is reasonable that these novice nurses still have questions as they enter professional practice, however it is concerning those questions remain unasked and unanswered, and that good ideas for solving problems that impact patients went unheard.

**Workplace Barriers**

The primary theme affiliated with workplace barriers was that of being new. Participants expressed a belief that they had no voice and did not believe their ideas would be heard or validated. This correlates to possible organization imbalances in information and power. The work by Edgell and Vogl (2013), cite the need for an institution to establish a balance between information sharing and power among the employees to foster innovation. For innovation to flourish, there needs to be a supportive culture in which employees know how and with whom to share their ideas. In their work with New Zealand student nurses, Beckett, Gilbertson and Greenwood (2007) found similar characteristic among novices. Although the students in their study demonstrated quality patient care practices, other healthcare team members disrespected and devalued their patient assessments, just because of their novice status. Among their
participants, Beckett et al. (2007) noted the students continued to be vocal and strive to be heard. This is inconsistent with my findings in which the novice nurses tended to remain silent.

Workplace barriers were identified by the graduate nurse participants included communication issues, administrative issues and patient care issues. Although the graduate nurses compiled lists of innovative ideas they kept those ideas to themselves. The perceived lack of avenues to share their ideas, along with their sense of feeling too new to have a voice, were barriers to innovation. Positive, supportive workplace environments are necessary for adaptive experts to fully realize their potential and engage in innovation.

**Conceptual Model**

The graduate nurses did record innovative ideas in their journals. Some graduate nurses clearly articulated being taught to advocate for themselves as well as their patients, yet they remained reticent to share their innovative ideas. The conclusions I draw from this is that nurses are innovative; however, for various reasons, they keep silent. See Figure 5.1 for a pictorial depiction of the conceptual model of the relationships between innovation in nursing education and clinical practice.

The circles depict the key themes related to learner perceptions of their nursing education. Personal Growth occurs at the intersection of concepts related to making connections, and immersion, and is demonstrated by the learner as they enter professional clinical practice. As new nurses encounter new situations in clinical practice it prompts them to seek answers. Seeking answers stimulates new nurses to develop innovative ideas. In my findings, innovative ideas are arrested, symbolized by the brick wall of environmental factors, which impedes or prevents innovation.
This study provides one viewpoint of nurses transitioning from novice nurses towards becoming adaptive experts in nursing practice. From my data analysis among the graduate nurses, personal growth occurs at the intersection of making connections and clinical immersion.

Clinical immersion strongly correlates to the final clinical practicum before graduation and just prior to initial employment as an RN. Clinical orientation for new nurses is also a type of clinical immersions. Orientation is that timeframe when a newly hired nurse becomes accustomed to their role, generally under the guidance of a mentor. For new RNs, orientation further influences their formation as a practicing RN. When graduate nurses encounter new situations as they engage in practice as RNs, they are challenged to seek answers. This aspect of
seeking answers correlates with the generation of innovative ideas. Among these cohorts of graduate nurses their innovative ideas collided with environmental barriers and remained unspoken instead of becoming new products, new processes, or new solutions.

**Summary**

The perspectives new nurses hold regarding the influence of their education on their clinical practice centers on immersive clinical experiences and making personal connections. The graduate nurses demonstrated the ability to be innovative in idea generation, which they captured in their journals. However, environmental factors became impediments to most of the new nurses sharing their innovative ideas. One impediment was their inability to make connections with a trusted mentor with whom they could communicate. Another impediment was their sense of newness, which created a vulnerability that stifled their voices instead of empowering them to act on their ideas. My findings have led me to believe there is a relationship between innovation in nursing education and the potential to be innovative in clinical practice. I ponder how much of a deficit in healthcare is created when the voices of potential innovators are not heard.
CHAPTER 6

DISCUSSION

This empirical study was designed to address questions about the relationship between innovation in nursing education and nursing clinical practice. In this chapter I provide a discussion of the significance of the findings of this study. There are several key ideas that rise to prominence. These ideas include the relative impact of innovation, the role of conceptual learning or learning about caring, the power of experiential learning, or learning through caring, and a new focus for nursing education. When looking at adaptive expertise as a three-fold concept, the participants in this study reflect characteristics from two of the three concepts: demonstrating personal traits of adaptive experts and moving beyond routine knowledge to engage in innovative problem solving. For the graduate nurse participants, the third component of a supportive workplace environment was not a consistent experience, the reasons for which bear exploration.

Impact of Innovation

The primary aim of this study was to uncover the relationship between innovation in nursing education and nursing clinical practice. Influenced by findings from other educational disciplines, my work was based on the assumptions that there is a correlation between these two facets of a nurse’s experience. In the process of examining this relationship the data reveals that innovation in and of itself is not necessarily a good answer. As I explored the meaningfulness of innovative educational experiences from the perspectives of new nurses, I uncovered what really influenced them. Their memories of educational experiences were filled with instances that moved their hearts and not necessary those that would be described as innovative pedagogy. In
fact, their collective recall reflected few to no memories of innovative teaching strategies they had been exposed to. These study findings raise questions about the overall impact of innovation.

**Underwhelmed or Normalized**

Nursing education is often described as having curricula with content overload. As healthcare has changed through the decades, nursing programs have attempted to keep pace by adding new information to the curriculum, without making proportional content deletions. The learning within nursing education programs is intense, serious, and voluminous. Nursing education is rife with ‘ah-ha’ moments, as nursing students could easily be challenged to learn multiple new concepts and skills daily. The findings from this study revealed regular implementation of innovative teaching and learning strategies on the part of the faculty. It is conceivable that with so many innovative strategies employed, no single instance stands out among the rest.

Although innovation was not prominent in their thinking, there was a collective appreciation, among the graduate nurses, for the overall quality of their educational experience. For example, none of the graduate nurse participants could recall a single simulation scenario, yet each of them reported that they learned so much from those experiences. They reported the bulk of the learning occurred during the subsequent reflection on and discourse about the simulation experience. At first glance it may seem these learners were underwhelmed by innovation, in their inability to recall specific instances. A more likely explanation is that innovation for them has become normalized. I believe these new nurses were so consistently and regularly exposed to innovative pedagogy and curricula throughout their education, that they became conditioned to learning this way. Although the innovativeness did not seem to make a lasting impression on the graduate nurses, the memorable experiences were those that touched their hearts and shaped their ideas of what it means to be a nurse. The innovations infused in
their learning environment portrays their normal educational experience, which leads them to describe their program’s pedagogy as standard.

Although they described their learning environment as standard, the program graduates cited the positive impact of learning in a supportive environment. For example, in describing their simulation experiences, they noted the faculty provided corrective criticism that encouraged them to look at what they did well, and not just focus on the areas in which they needed to improve. I believe the influence of an overall innovative, experientially engaging environment cannot be underestimated. Positive, transformative learning environments produce balanced, positive, professional graduate nurses who are poised to serve, to care, to empathize and advocate for their patients.

**Rival Explanation**

In this study there is clear evidence from the faculty participants, as well as course documents, that innovative teaching strategies are implemented throughout the curriculum. There were detailed accounts of various learning activities designed to engage learners and promote active learning. Faculty clearly articulated their individual and collective efforts to promote innovation throughout the curriculum. What is interesting to me is the lack of recall on the part of the new nurses regarding specific innovative strategies. With few exceptions, like participating in the simulation lab scenarios, the learners had little recall of the innovative strategies they had been exposed to during their nursing education. There is a possible rival explanation for why innovative strategies cited by faculty did not leave lasting impressions on the learners. It is my conclusion that if those learning activities are not deeply rooted in long-term memory of the learners and are not recalled by new nurses to support their clinical practice, it is because they are not as significant to the learners as other types of learning experiences.
This study revealed clinical practicums as the learning instances that left lasting impressions on the learners and influenced their clinical practice. Those authentic, experiential learning opportunities shaped these new nurse participants and helped them to store knowledge in their long-term memories that guides their clinical practice today. Considering what the new nurse participants reported, it causes me to consider if I asked the right question in this empirical study. While I am not suggesting innovation is unimportant, perhaps what is more essential is the exploration into which types of learning supports the development of an innovative, problem-solving nurse. Clearly the most powerful learning for these participants occurred in the clinical immersion experiences. The participants identified these immersive learning opportunities as times in which they truly understood the role of the nurse; times when they gained insight, increased their personal confidence, and improved their level of competence in patient care. All of these descriptors are also associated with the personal growth typically demonstrated by an adaptive expert. Authentic clinical experiences with increasing complexity throughout nursing education facilitates nursing students’ transitions from employing routine knowledge to becoming adaptive experts as they apply that knowledge to novel situations of patient care in clinical practice.

**Learning About Caring**

Caring is the central tenet of nursing practice. Caring is a complex art that may take on a different appearance based on the patient, the situation, or the setting. Caring, however, is not necessarily intrinsic to each person who desires to become a nurse. In the process of facilitating the development of nurses, educational programs emphasize the need to teach the art of caring. Within the nursing education curriculum students are given opportunities to learn about caring. Conceptual knowledge of how to care is typically infused into the didactic component of the
Listening, showing respect, and communicating effectively are just a few of the topics addressed with learners. Learner knowledge of caring for diverse patient populations, is discussed, described, critiqued and assessed. Although instrumental in helping learners put the pieces together, didactic learning was the least of their meaningful experiences as expressed among the study participants. Although study participants could not recall specific classroom learning activities, or innovative teaching and learning strategies, they did recall the stories of caring. Many of them shared their memories of the first day of nursing school in which their peers shared personal stories of what motivated them to become a nurse. Many of the participants recalled being moved to tears and they described the emotional impact of listening to other students’ stories of caring and sharing their own. This employment of narrative pedagogy was the only example of classroom memories the participants shared. The bulk of their memories centered on experiences in clinical rotations providing simulated or actual patient care.

**Experiential Learning**

The most powerful, and memorable learning experiences cited by the new nurse participants were the opportunities to interact with patients. Faculty and new nurse participants alike identified an array of tools used to transition students to practice in authentic care situations. From laboratory simulation scenarios, and role-play, to the rotations through clinical practicums, learners are sequentially introduced to direct patient care. With opportunities in a variety of settings, students evolve from observing experts providing patient care to providing direct care to patients, under the mentorship of their instructors. Toward the end of their formal education, students experience increased autonomy in their transition to practice experiences when they become fully immersed in the role of an RN, under the mentorship of an experienced
nurse. These humanistic connections between student nurse, and graduate nurse, and the patient forges the bonds of caring, and underpins their professional practice as nurses.

**Interpersonal**

The graduate nurse participants reported experiential learning in which they were immersed in patient care had the greatest effect on them. Clearly this interpersonal connection generated an emotional spark they did not forget. The relational component of experiential learning occurs on multiple levels. Initially, the student nurse forms a relationship with their instructor who serves as a role-model. Role-models dramatically influence the social and professional formation of the nurse. Students learn by initially observing and later emulating them in clinical practice. Ideally, role-models serve as exemplars for professional clinical reasoning and professional nursing practice. Following the examples set by their role-models, and engaging in quality patient care, is what moves the heart of the nurse to care and drives them to improve their own practice. Later, a developing nurse learns to forge a relationship with his or her own patients. Nursing at the very core is about caring, and these immersive experiences, often labeled clinicals or practicums, facilitate the level of professional development necessary for providing quality patient care.

**Passion for Advocacy**

One thing that happens as a new or developing nurse learns through caring is the development of empathy for his or her patients. Empathy evolves from a sense of other-mindedness. It provides a lens through which a nurse can better understand what is occurring with his or her patient. When nurses consider the experience from the patient’s perspective, it enhances awareness of the patient’s needs, and fosters a patient-first mentality. Empathy helps the nurse anticipate a patient’s needs, or questions, and allows the nurse to be proactive in
providing holistic patient care. When the nurse-patient relationships are formed, nurses display a sense of responsibility for and a commitment to their patients. This level of empathy leads to the nurse serving in the role of patient advocate. Advocacy means the nurse speaks and acts on their behalf, and for the benefit of the patient whenever the need arises. This is particularly important with vulnerable populations such as children, the aged, comatose patients, and developmentally delayed patients, just to name a few. Too often, due to the patriarchal influence of medicine, nurses need to advocate for patients and their families as they interact with the patient’s health care team. This empathy, and associated level of advocacy, represents a heightened level of personal service. Among the graduate nurse participants, the innovative ideas they documented in their journals related to seeking solutions for patients. The evidence of passion in the stories they shared about potential improvements in patient care practices was unmistakable. And yet the same patriarchal forces that were in place at the beginning of the nursing profession remain at a level that may severely limit the nurses’ capacity for growth and innovation.

The Urge to Serve

One outcome of this most personal caring relationship is the evidence within the nurse of an urge to serve. Coupled with a personal development in clinical practice, the urge to serve propels the nurse into a mindset of seeking answers on behalf of the patient. The graduate nurse participants demonstrated a sense of being empowered to make a difference in the lives of their patients, and a willingness to accept the responsibility to do so. This urge manifests as more than caring, to include an array of behaviors that serve the patient’s needs comprehensively. Patient and family education and support are among the list of practices that include addressing the spiritual, emotional, and physical needs of the patient. When unique situations arise, this urge to serve impels the nurse to search for novel solutions to resolve patient issues. This search for
solutions and answers correlates to nurses generating innovative ideas and solutions. However the power of environmental factors acts to stifle the manifestation of the innovativeness, rendering the urge to serve as not completely fulfilled.

**A New Focus**

Within the larger discipline of nursing education, we must answer the cries for innovation with a questioning response, why? We know what we want is innovative clinical nurses. What we need are nurses who can respond to new challenges and arrive at potential solutions that meet the needs of the patient. We want caring nurses who can meet the challenges of health care in the 21st century, with all its complexities. This description of what the 21st century nurse needs to know and do aligns well with the description an adaptive expert. This then should be the new focus of nursing clinical practice and related nursing education: How do we facilitate the formation of adaptive expertise within nursing professionals and foster a sense of self-efficacy that supports their pushing through obstacles to innovate?

This study demonstrates that nurses have the personal traits of desiring to learn, welcoming challenges, and enjoying the process of problem solving. The real challenge at hand is how we construct learning and practice work environments that support and encourage the innovative practices of nurses. It should be the focus of nursing education to facilitate professional formation of RNs and inspire the mindset within each future nurse that they need to become an adaptive expert. This study demonstrates the potential for adaptive expertise exists. New ideas and solutions were generated and documented by the graduate nurses. The challenge lies in manifestation of innovation beyond the idea stage. This challenge will take work on the part of all stakeholders. I have developed these ideas in the concluding chapter.
Summary

This work is not an indictment of innovation in nursing education. However, it is also not an endorsement of innovation for innovation’s sake. We must recognize the complexity and deeply human dimensions of nursing education and clinical practice and acknowledge that there are no simple answers. There are some complex answers that help to explain what makes an impact on nursing students’ learning. This study reflects the powerful influence of immersive experiences combined with reflection on the long-term memory and clinical practice of graduate nurses. Evidence from their stories reflects the idea that their passion for caring, and their urge to serve are driving factors in their ability to generate innovative solutions in patient care. The task at hand is the challenge of a new focus for nursing education and clinical practice in the direction of facilitating the development of nurses as adaptive experts.
CHAPTER 7
CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

In this chapter, I draw conclusions, delineate the implications of this work to a variety of stakeholders, and recommend considerations for future research. Although this study set out to demonstrate a relationship between innovation in nursing education and nursing clinical practice, I uncovered so much more. At the heart of nursing clinical practice is the well-educated nurse, armed with a deeply human passion to care for his or her patient. With the passion, the nurse who has an urge to serve, is empowered to engage in a professional caring relationship, to advocate for his or her patients, and to innovate on their behalf. All of this speaks to the implications of achieving the formation of an innovative nurse who demonstrates adaptive expertise.

Conclusions

This qualitative case study was conducted at a private college of nursing in the northeastern United States, designated as a NLN Center of Excellence. Its focus was to explore the relationship of innovation in nursing education and nursing clinical practice. The results of the study demonstrated three main themes, immersion, seeking answers and making connections. Making connections was further organized into cognitive connections and relational connections. Relational connections and immersive learning emerged as meaningful learning for participants. These themes aligned with the concepts of adaptive expertise. Making relational connections and immersion align with the personal factors seen in adaptive experts, such as work enjoyment, problem-solving skills, and the sense of enjoying a challenge. In addition to answering the research questions, a significant finding from this study is the powerful influence of immersive experiential learning, which had more of an impact on learners than innovative strategies.
Although the focus of this study was innovation in nursing education, the discussion clearly demonstrates the more important focus should be on how we facilitate the development of nurses as adaptive experts. Memorable learning through immersive clinical experiences lays the foundation for nurses to build on their professional growth into adaptive experts. The combination of personal characteristics of nurses, and the qualities of supportive work environments, promotes innovative practices. When adaptive expert nurses confront new problems, they arrive at innovative solutions on behalf of their patients.

The Lens Becomes the Focus

Adaptive Expertise is the theoretical framework I used for this study. The concepts of this theory helped me frame the components of the demographic survey I used with the participants, as well as provide initial schema for data analysis. The more I examined the findings through the lens of adaptive expertise, the more correlations I found to practices that should guide nursing education. It is my conclusion that a new goal of nursing education should be to facilitate the formation of Professional Register Nurses into adaptive experts. To ensure that graduate nurses are poised to address the health care challenges of the 21st century, nursing education, and clinical practice sites need to foster this development. An intentional focus on adaptive expertise holds implications for nursing practice and nursing education.

Theoretical Framework- Formation of RN Adaptive Experts

This conceptual model, Figure 7, depicts the interplay of four key components that promotes the formation of RNs as adaptive experts. First, the environment provides the foundational support of individuals who are poised to take risks and confront problems. This is true for the learning environment of nursing education programs as well as clinical work place environment. Overseeing the transformative process are the role-models. Initial role-models
include faculty members who are gradually supplemented by nursing staff mentors, and finally replaced by preceptors as graduate nurses enter clinical practice. Faculty and mentors utilize appropriate pedagogy, such as role-play, simulation, narrative pedagogy, clinical immersion and problem-based learning from the onset of nursing education. Personal traits of learners influence the learner’s readiness to take on the challenges of problem-solving, at each stage of their education. In supportive environments with dedicated faculty and skilled explicit role-models, utilizing varied pedagogies, students progress from novices to routine experts. As their formal education ends and graduate nurses enter clinical practice, clinical immersive learning becomes workplace orientation, and quality preceptors replace the role of faculty. Graduate nurses, with consistent quality relational connections, evolve into adaptive experts poised to innovate whenever they are confronted with new problems.

Fig. 7: Theoretical Framework: Formation of RN Adaptive Experts
Implications

There are several implications that can be drawn from this study. The following sections in this chapter address the implications of how this study’s data can be used to potentially impact nursing education and nursing clinical practice. I address the implications as they apply to various stakeholders, such as nursing education programs, nurse educators, nursing students, and clinical practice sites.

Implications for Nursing Education Programs

Although nursing faculty should continue to use the innovative pedagogies that promote active engagement of the learners, they should understand innovation alone is not enough. Strategies such as narrative pedagogy, role-play, role-modeling, and clinical immersive opportunities facilitate learners in making those humanistic connections that promote learning. These strategies seem to have the most memorable impact on the student nurses’ learning and should be emphasized and integrated throughout the learning experience. An added benefit of altering pedagogy is the minimal impact to curriculum, eliminating the worry of content overload. Providing early and regular immersive clinical experiences with a mentor would enhance nursing students’ professional growth and potentiate their development as adaptive experts. All graduate nurse participants in this study stated they wanted more transitional clinical experiences. Students’ personal growth will surge with effective utilization of making connections with clinical immersion experiences. Educational programs will be further enhanced by providing learners with opportunities to share their ideas about the meaningfulness of their educational experiences.
Implications for Nurse Educators.

Nurse educators should become aware of which teaching strategies had the most powerful impact on learners and integrate those approaches into didactic lessons as often as possible. These powerful teaching strategies include role-play, role-modeling and clinical immersion. One shift in thinking that needs to occur is to make becoming an adaptive expert more explicit to nursing students, and to promote the notion of innovative problem solving. Within instruction on professional formation, nursing students need to be told they are expected to be innovative in their approach to patient care. In addition to dialoging with learners, faculty should strive to role-model adaptive expertise for nursing students to emulate.

Role-modeling. The influence of role-modeling needs to be recognized as the powerful tool it is. Faculty should determine who the role-models will be for their students. These individuals need to explicitly model their thinking as well as their actions for their assigned students. Role-modeling problem-solving will help pave the way for future nurses to begin thinking innovatively prior to graduating and entering professional practice. Role-modeling should not be viewed as a passive experience but used as a deliberate means of instruction. Role-models should be selected and educated on the purpose, intentions, and practices of interacting with and instructing learners.

Role-play. Nursing education needs to maximize the utilization of role-play and not just view it as reserved for the simulation lab scenarios. Creating opportunities for students to role-play speaking out, making suggestions, and finding solutions, should empower them to continue the behavior in clinical practice after graduation. Role-play could be a useful strategy to help students make consistent connections between didactic content and clinical practice. Through
role-play students can practice appropriate professional relationships with their mentors, and with their patients, within risk-free environments.

**Learning environments.** In this study graduate nurses described a positive learning environment when they were students. This is an essential aspect of a person’s ability to develop into an adaptive expert. Hatano and Inagaki (1986) suggest that the environment needs to be one in which the learners feel supported and encouraged to take risks to solve the problems they face. For students to learn how to deal with new problems, they need to be exposed to Problem-Based Learning (PBL). PBL in nursing education is not a new concept. Saylor (2015) describes PBL as a constructivist teaching approach that provides learners with opportunities to face real problems and apply what they know to generate realistic solutions. This type of learning activity requires a significant time investment on behalf of the faculty. The faculty member not only needs to research real problems to present to learners, but must also provide guidance, support, and re-direction if indicated, as learners grapple with the problem (Saylor, 2015). Implementing PBL may require teams of educators to work together to provide learners with recurring opportunities to engage in problem-solving.

**Implications for Students and New Nurses**

The findings from this study shed light on meaningful learning experiences from the former students’ perspectives. This information is useful in informing teaching strategies that should be employed to promote deep learning in nursing education. As with work, education should be enjoyable for the learners. As faculty are armed with new knowledge of powerful teaching strategies, students should experience more enjoyable and memorable learning, that promotes knowledge retention and deep learning.
Nursing students and new nurses can benefit from the needed changes in nursing education and learning environments. Students and new nurses need to learn from the beginning of their education that they are not only encouraged but expected to become innovative problem solvers (Mylopoulos & Regehr, 2009). This explicit knowledge of what it takes to become an adaptive expert will help students better understand the purpose and benefits of engaging in role-play, simulation, and problem-based learning. As students engage in role-play of critical conversations, personal communications, and appropriate patient interactions, they are better prepared to handle these situations in clinical practice settings with actual patients.

**Implications for Clinical Practice Sites**

The graduate nurse participants’ stories shed light on potential barriers to implementing or even sharing innovative ideas in the work place. Although all the participants used their journals to record potential solutions to existing problems, none of them felt comfortable in speaking with someone in their workplace. Explanations for their behavior revolved around a sense of being too new, feeling unsure of whom to speak to, or feeling their contribution would not be well received. I detected they felt unsure how to proceed with their ideas, so they did nothing.

**Remove Barriers.** One implication for clinical practice sites is the need to remove or reduce environmental barriers to nursing innovation. It was clear from my findings that environmental practices can stifle the voices of novice nurses. Nursing practice needs to explore the breadth of causes, and potential solutions to any barriers to innovation, and take measured steps to eliminate them. The graduate nurses in this study cited newness as a partial explanation for not sharing their ideas. This sense of newness was found among both cohorts, those within ninety days of graduation as well as those who had graduated one year ago. Administrators,
supervisors, mentors, and preceptors all need to support and encourage the ideas and contributions of all employees, regardless of the level of experience. Innovativeness knows no age limit. Why should we marginalize anyone with an innovative idea just because they are new nurses?

**Acclimation.** In addition to feeling too new to speak out, the lack of awareness of appropriate communication channels was identified as another source of frustration. The graduate nurses sometimes struggled to know whom they could trust, whom they could approach with their questions and feel confident about the feedback they would receive. Several of the graduate nurses identified less than ideal experiences with their preceptors. They reported having to work with multiple preceptors over short periods of time, and often receiving conflicting guidance. It is essential that clinical institutions provide well organized mentoring for new nurses. It is preferable for new nurses to have a single preceptor with whom he or she can develop a trusting relationship. Preceptors need to be well-trained, and fully aware of their role not only in mentoring for clinical practice, but also facilitating new nurses’ adjustments into the culture of nursing (Strouse, Nickerson & McCloskey, 2018). Additionally. They need to see themselves as adaptive experts and be able to explicitly point to moments when they are bringing these skills into play. Clear lines of communication and mentoring help facilitate professional development and personal growth of the new nurse (Eller, Lev & Feurer, 2014).

**Communicate.** Unit meetings, committee service, brain-storming activities, and suggestion programs are some examples of consistent means of communication within an organization. A few participants shared stories of communication systems on their units, such as daily debriefings and an idea board. However, other participants could not identify existing mechanisms on their units to share their new ideas. It was difficult for me to determine if those
communication channels did not exist, or if they did exist but the graduates were just not aware of them. Neither of these situations is desirable for employees, and neither situation is representative of an organization that supports innovation.

**Idea Teams.** Having innovative ideas but not having the knowledge of when and how to share those ideas, stifles the expression of innovation. Clinical environments could address this issue by creating a type of think tank or idea team. Whether it is affiliated with the education department or the research department, nurses need to know there is a point of contact with whom they can share their innovative ideas, privately and not publicly. Clinical sites need to provide that supportive, non-threatening, non-judgmental work environment workers need to practice as adaptive experts. When employees are protected from intimidation, there is more freedom to take risks, solve problems and be innovative practitioners.

**Recommendations for Future Research**

This study begins to address the area of meaningful learning among nursing students, and the impetus behind facilitating nurses to become adaptive experts. Certainly, more work needs to be done in these areas. The following topics include suggested areas for future research.

**Innovation**

One approach may be to examine learners’ memories of innovative pedagogy closer to the time of the learning. Perhaps a longitudinal case study that follows a variety of learners through the learning process and into clinical practice can better capture the effects of specific teaching strategies. It would be beneficial to explicitly delineate the innovative teaching strategies of interest.

Looking at innovation retroactively would be another useful approach. Locating nurses in the clinical area who have already implemented innovations, and then investigating their
previous exposure to innovation in their educational experiences would provide additional insight if relationships exist. This retroactive approach could also help to examine the impact of environmental factors that either stifled or enhanced innovation of nurses, and their responses to such environmental factors. Of great interest and relevance, the American Nurses Association (ANA), a leading professional nursing organization with great influence, recently announced a contest for clinical innovation, with significant monetary awards. This is the first such national contest to encourage nursing innovation.

**Barriers**

Barriers to innovative practices, ideas and problem solving must be explored. There needs to be better identification of what the barriers are and why they exist. If we are to move forward with innovation in clinical practice, we need to understand what is preventing nurses from cultivating and sharing their innovations. This may require an exploration of organizational attitudes and behaviors toward supporting and rewarding innovation.

**Workplace Attitudes**

Further exploration is needed to uncover the nuances of the clinical work environment that potentially demonstrates disrespect for novice nurses. We need a better understanding of what lies at the heart of attitudes and behaviors of experienced nurses, and other members of the health care team who do not support novice nurses.

**Relationships**

Evidence demonstrated the powerful influence that relationships play in helping students to make connections. As such, further study needs to be done in the area of human connectedness and how it enhances professional development of innovative adaptive experts. Since role-modeling proved to be such a powerful teaching tool, this too needs to be explored in greater
depth in nursing education. We need to be more intentional about how we implement role modeling with learners, to promote more than clinical skills acquisition. In their study with nursing faculty and students in Tehran, Mokhtari Nouri, Ebadi, Alhani, and Rejeh, (2014) documented essential qualities desired of nurse faculty role-models to facilitate professional development of nursing students. Some of these included honest, respectful communication, integrity, consistency in feedback, and having a sense of humor. We need to examine the powerful influence of role-models both within the faculty and clinical nurse preceptors and be selective in who should serve as a role-model for future nurses.

The Lived Experience of Being New

A phenomenological study into what it means to be a new nurse would provide great insight for the nursing profession. Of particular interest is understanding what it means to be new, and how that newness influences novice nurses in finding their voice. Novice nurses have been studied from the perspective of developing patient care skills over time. Davis and Maisano (2016) remind us of the 1980’s work of Patricia Benner, in her text *Novice to Expert*, where she described phases of professional development of the novice nurse, which occur over consistent time frames. Her work primarily focused on predictable improvement in skill performance and competency over time, as well as decision-making skills related to leadership readiness.

Identity Formation

Another area of potential study pertains to how identity is formed among new nurses, and the role of faculty and mentors in shaping identity. In their work discussing teacher identity formation, Rogers and Scott (2008) elucidate the multi-factorial interplay of relationships, emotions, and internal awareness that contributes to identity formation. This makes sense for the new nurse as well. Nursing students and new nurses look to their role-models and emulate their
practice. At the same time, they internalize constructive feedback, and reflect on their personal performance as they begin to shape their own professional identity as an RN. More exploration is needed to fully understand the complex formation of a nurse’s professional identity.

**Nurses as Adaptive Experts**

Finally, more research is needed to explore how nurses develop into adaptive experts. Longitudinal case studies that examine professional development over time would shed some light on how nurses transition from routine expertise to adaptive expertise and engage in innovative problem solving. This area of study would overlap clinical practice with nursing education. Mylopoulos and Regehr (2009) describe the importance of including a focus on adaptive expertise in medical school education to promote an innovative approach to problem solving. Innovative problem solving is not needed in times when an evidence-based solution is readily known (Mylopoulos & Woods, 2017) but it is essential when clinicians are faced with novel challenges. It is just as vital for nurses, as it is for physicians, to develop into adaptive experts. Exploration is needed into the best strategies to apply in nursing education, and the best environments necessary to promote nurses becoming adaptive experts.

**Summary**

This study was designed to explore the relationship between innovation in nursing education and innovation in nursing clinical practice. I used the theoretical framework of adaptive expertise to guide the aspects of study design and data analysis. To understand the potential relationship, I sought answers to two main questions. One, what perspectives do new nurses hold regarding the influence of their education on their clinical practice; and two, what environmental factors impact a new nurse’s ability to innovate. The data revealed several themes that indicate a relationship does exist. Immersive clinical experiences, and making personal
connections were the key influences of nursing education among the graduate nurses. They demonstrated the ability to be innovative in idea generation, which they captured in their journals. However, none of these ideas bore fruit.

There were environmental factors that became impediments to the new nurses. Their inability to make significant connections with a trusted mentor with whom they could communicate, impeded their innovation. Their sense of newness created a vulnerability that stifled their voices instead of empowering them to act on their ideas. My findings have led me to believe there is a relationship between innovation in nursing education and the potential to be innovative in clinical practice. However, I ponder how much of a deficit in healthcare is created when the voices of potential innovators are silenced.

Beyond addressing the question of relationship with innovation, the components of the theory of adaptive expertise transitioned from a lens through which to view the data, to an idea for restructuring nursing education. Twenty-first century healthcare practice drives a need for innovative nurses. One approach to achieve this is creating learning environments and work environments that foster the formation of nurses as adaptive experts.
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Appendix A

Introductory Letter to Program Chair

Francia I. Reed, MS RN, FNP-C, Doctoral Candidate,
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Dr. __________________
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Dear Dr. ________________
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I am Francia Reed, a doctoral candidate at the University at Albany/SUNY, in the Education Theory and Practice Department, pursuing a PhD in Curriculum and Instruction. I am in the process of conducting an empirical study for my dissertation.

The focus of my study, Exploring the Relationship Between Innovation in Nursing Education and Clinical Practice, is to explore innovation within the curriculum and pedagogy of a pre-licensure nursing program that has earned the distinction as a National League for Nursing Center of Excellence. My plan is to conduct a case study to explore the relationship between innovation within nursing education and nursing clinical practice. This includes exploring the educational program, perspectives of program faculty, and perspectives of graduate nurses as they enter into clinical practice. I would like to conduct my research at your college of nursing. I request your permission and assistance in contacting potential faculty and program graduates that I may recruit to participate in this study.

It is my hope that the knowledge gained from this empirical study will further the cause of transforming nursing education.

If you have any questions regarding this study you may direct them to me or my Doctoral Committee Chair, Dr. Carol Rodgers, at (518) 442-5024 or via email at CRodgers@albany.edu
I look forward to hearing from you.

Sincerely,

Francia I. Reed, MS RN, FNP-C, CNE
PhD Candidate
freed@albany.edu
315-542-4546
Appendix B

Consent to Participate in a Research Study

Title of Study: Exploring the Relationship Between Innovation in Nursing Education and Clinical Practice

Principle Investigator: Francia Reed  freed@albany.edu  315-542-4546 (cell)

Introduction:
You are being asked to participate in a research study because you are either a recent graduate of a pre-licensure nursing program and you have entered into clinical practice; or you are a faculty member currently teaching in the program under study. I ask that you read this form and seek answers to any questions you may have prior to consenting to be in the study.

Purpose of Study:
The purpose of this research is to conduct a qualitative exploration of the relationship between innovation in nursing education and innovation in the clinical practice of nurses.

Description of Study
The study will consist of a brief demographic survey, journal entries by graduates, and focus group interviews of graduates and faculty members.

Description of Participant Role:
Your role in this study, if you agree to participate, is to engage in the focus-group interview and share your thoughts and answers to the questions. Prior to the start of the interview you will be asked to complete a basic demographic survey tool and to sign this consent form. If you are a graduate nurse you will also be given a journal and asked to keep the journal for three weeks prior to the interview. You will receive instructions on keeping your journal. You are being asked to record any new ideas you have, or solutions to new problems that you encounter in clinical practice. At the time of the focus-group interview the journal will be collected. Among other questions, you will be asked to share a story from your journal. This audiotaped interview should last approximately 45 minutes to one hour. During the interview, you will be asked questions about your nursing education program and correlating stories about clinical practice. At any stage in the study, you will be given the opportunity to ask questions. Your responses, comments and examples will be kept as confidential as possible. You are being asked to keep the comments and stories of other group members private and limited to the discussions within the focus group. You will be given the opportunity to select a pseudonym to be used for the final report of the data.

Risks:
There are no foreseeable risks to you in engaging in this study.
Benefits:
There is no monetary benefit to you for participating in this study. Potential benefits surround the personal satisfaction of knowing you are contributing to nursing education research. Another potential benefit may include enhanced self-knowledge that stems from personal reflection on learning experiences, and the opportunity to reflect on your education and practice.

Confidentiality:
Your identity will be maintained by the principle investigator for the purposes of tracking and recording your responses only. This information will be maintained and secured in accordance with academic research standards and only for the time necessary to conclude the study and defend the dissertation. You will be assigned or you may choose a pseudonym for the purposes of analyzing the data and describing the narrative.

Right to Refuse or Withdraw
The decision to participate in the study is up to you. You may opt to withdraw from the study at any time without penalty or harm to you. Withdrawal from the study will exempt your responses and comments from being included in the study.

Right to ask questions or express concerns
You have the right to ask questions before the onset of the study and at any time during the study. You may contact the principal investigator of the study to have your questions addressed. If you have concerns about this study you may contact the Committee Chair, Dr. Carol Rodgers via email at crodgers@albany.edu, or by contacting the IRB at the University at Albany Research Compliance Officer, Adrienne D. Bonilla, at 1-866-857-5459 or send an email to RCO@albany.edu.

Consent
Your signature on this consent constitutes your agreement to participate in the aspects of this study. You will receive a copy of this consent for your own records.

I, _______________________________ have read this consent and agree to participate in this study. _______________________________.

(Printed Name) (Signature) (Date)
Appendix C

Participant Demographic Survey

Instructions:
Please complete the following questionnaire. This information will be used to enhance the data collection via the interview process.

Name _____________________________ Age ____________ Gender__________________
Race/Ethnicity __________________________
Preferred pseudonym Choice 1 _________________ Choice 2 _________________
Basic Nursing program _____________________________ Date of Graduation_________
Current RN employment area of clinical focus _____________________________ (unit/floor/area)
Onset of employment as RN ________________ (date)
Institution of Employment _____________________________ (hospital/clinic/facility)

Please Review the following list of personal character traits. Please mark each character trait with a 1-5 score, where 1 indicates you strongly disagree and 5 indicates you strongly agree.

1-Strongly disagree 2- disagree 3- more agree than disagree 4- agree 5-strongly agree

I enjoy my job 1 2 3 4 5
I would describe myself as a risk taker 1 2 3 4 5
I tend to be a creative thinker in problem solving 1 2 3 4 5
I enjoy a good challenge 1 2 3 4 5
I believe I am good at problem solving 1 2 3 4 5
I am a person who craves change 1 2 3 4 5
I would describe myself as having a good imagination 1 2 3 4 5
I appreciate having a high level of autonomy 1 2 3 4 5
Appendix D

Journal Instructions

Overview: As a key part of this research study, I am asking you to keep a reflective journal during your clinical work hours for the duration of the study.

Instructions:

1. At the time you consent to participate in the study, I will provide you with a journal and a set of index cards.

2. I am asking you to use the journal to record any thoughts and experiences you have related to new ideas, new processes, or new solutions to problems you encounter in the workplace. Although there is no right or wrong way to record your thoughts, please try to capture as many details as possible. This includes the date, time, situation, idea and the subsequent events related to your idea. Please DO NOT include any detail that may be construed as a HIPAA violation. In other words if your ideas pertain to a patient situation, please do not record any personal identifiable patient information.

Carrying the journal with you may not be practical. I recommend you keep index cards in your pocket, to easily capture your ideas in the moment they occur. As soon as possible, please transfer the information from the index cards to your journal.

3. I will collect your journal at the time we meet for your interview.

Uses

I intend to use the journal entries to add to the data I collect during the interviews. During the interviews, I will also ask you to share a story of your choice from your journal entries.

Questions

As with any aspect of this study if you have any questions about this tool, please contact the primary investigator, using the information in the consent form.
Appendix E

Interview Guide Faculty

<table>
<thead>
<tr>
<th>Basic Information:</th>
<th>Memos/Reflections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>Time:</td>
</tr>
</tbody>
</table>

| Interviewee Name and demographics: |

<table>
<thead>
<tr>
<th>Purpose:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The purpose of this research is to conduct a qualitative exploration of the relationship between innovation in nursing education and innovation in the clinical practice of nurses.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overview:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any new approach, idea, activity, technique, or tool can be considered an innovation that you employ to address an issue, problem or unknown situation. As a nurse educator it is likely that you face situations in which there may not be specific concrete answers. These interview questions address your teaching experience and how you approach those situations within your work environment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interview Questions</th>
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</thead>
</table>

1. When you reflect on your teaching, what relevant experience comes to mind as something that impacts your practice today? What makes this experience stand out for you? How does it impact you as a nurse educator?

2. When you reflect on your work in nursing education, can you recall a specific lesson, classroom or learning activity that has become foundational in your teaching practice?

3. Can you share an example with me of a particular lesson, or instance in you teaching that enables you to help learners to bridge theory into clinical practice?

4. Which teaching experiences do you most enjoy? What makes the experience so memorable for you?
<table>
<thead>
<tr>
<th>Interview Components</th>
<th>Memos/Reflections</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Can you share an example of institutional commitments to innovation and how these commitments are realized?</td>
<td></td>
</tr>
<tr>
<td>6. Can you share another example of a time in which you helped your learners resolve an issue? Can you identify a specific component from nursing education that helped the learners arrive at a resolution?</td>
<td></td>
</tr>
<tr>
<td>Follow-up or probing questions, as indicated will include:</td>
<td></td>
</tr>
<tr>
<td>a) Can you explain what you mean?</td>
<td></td>
</tr>
<tr>
<td>b) Please tell me a little more about the circumstances?</td>
<td></td>
</tr>
<tr>
<td>c) Can you provide an example?</td>
<td></td>
</tr>
<tr>
<td>d) Can you clarify what you are saying?</td>
<td></td>
</tr>
<tr>
<td>e) How does this impact your role as a nurse?</td>
<td></td>
</tr>
<tr>
<td><strong>Thank you:</strong> Thank you for participating in this study.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix F

Interview Guide Graduates

<table>
<thead>
<tr>
<th>Interview Components</th>
<th>Memos/Reflections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic Information:</strong></td>
<td></td>
</tr>
<tr>
<td>Date:</td>
<td></td>
</tr>
<tr>
<td>Time:</td>
<td></td>
</tr>
<tr>
<td>Interview Method:</td>
<td></td>
</tr>
</tbody>
</table>

| **Interviewee Name and demographics:**       |                   |
| Age:                                         |                   |
| Gender:                                      |                   |
| Ethnic group:                                |                   |

**Purpose:**
The purpose of this research is to conduct a qualitative exploration of the relationship between innovation in nursing education and innovation in the clinical practice of nurses.

**Overview:** Any new approach, idea, activity, technique, or tool can be considered an innovation that you employ to address an issue, problem or unknown situation. As a new RN it is likely that you face situations in which there may not be specific concrete answers. These interview questions address your educational experience and how you approach those situations within your clinical work environment.

**Interview Questions**

1. When you reflect on your nursing education, what relevant experience comes to mind as something that impacts your practice today? What makes this experience stand out for you? How has it changed you as a nurse?

2. When you reflect on your nursing education, can you recall a specific lesson, classroom or learning activity that has become foundational in your nursing practice? Can you give me an idea of how you integrated this into your practice?
<table>
<thead>
<tr>
<th>Interview Components</th>
<th>Memos/Reflections</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Can you share an example with me of a particular lesson, or instance in your</td>
<td></td>
</tr>
<tr>
<td>education that has prepared you to bridge theory into clinical practice? How is</td>
<td></td>
</tr>
<tr>
<td>this different from what you shared previously?</td>
<td></td>
</tr>
<tr>
<td>4. Which course experiences did you most enjoy? What makes that experience so</td>
<td></td>
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<tr>
<td>memorable for you? How has that experience impacted what you do in your clinical</td>
<td></td>
</tr>
<tr>
<td>practice?</td>
<td></td>
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<tr>
<td>5. What do you wish you had experienced in school, but perhaps did not have</td>
<td></td>
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<tr>
<td>sufficient opportunity for it? How do you feel that impacts your nursing practice</td>
<td></td>
</tr>
<tr>
<td>now?</td>
<td></td>
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<tr>
<td>6. Can you share a story with me about a time when you were faced with a clinical</td>
<td></td>
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<tr>
<td>issue or situation that you were uncertain about, and describe how you dealt with</td>
<td></td>
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<tr>
<td>it? What were the results of your actions?</td>
<td></td>
</tr>
<tr>
<td>7. Can you share another example of a time in which you resolved an issue; how did</td>
<td></td>
</tr>
<tr>
<td>you deal with the issue? What did you learn from the experience? Can you identify a</td>
<td></td>
</tr>
<tr>
<td>specific component from nursing education that helped you to arrive at a resolution?</td>
<td></td>
</tr>
<tr>
<td>8. Can you tell me about a time when you suggested a workplace improvement in your</td>
<td></td>
</tr>
<tr>
<td>area of clinical practice? What happened, and how did you approach the situation? If</td>
<td></td>
</tr>
<tr>
<td>not, why not? Follow-up or probing questions, as indicated will include:</td>
<td></td>
</tr>
<tr>
<td>a) Can you explain what you mean?</td>
<td></td>
</tr>
<tr>
<td>b) Please tell me a little more about the circumstances?</td>
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<td>e) How does this impact your role as a nurse?</td>
<td></td>
</tr>
</tbody>
</table>

**Thank you:** Thank you for participating in this study.
Appendix G: Thematic Concept Mapping

- Reflection
- Advocacy
- Technology
- Teamwork
- Empathy
- Visual aids
- Critical Conversations
- Narrative Pedagogy
- Humor
- Mindfulness

Making Connections

- Growth
- Being New
- Role-play
- Work Enjoyment

Immersion

- Seeking Help
- Innovation

- Seeking Answers

- Theory to practice

- Innovation

- Reflection
- Role Modeling

- Making Connections