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Learner Anxiety and Professional Practice Self-efficacy in Nursing Education

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A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Education

UNDERSTANDING LEARNER ANXIETY AND PROFESSIONAL PRACTICE SELF-EFFICACY IN NURSING EDUCATION

By

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ABSTRACT

The purpose of this study was to examine the affective component of learner engagement (Linnenbrink & Printrich, 2003); more specifically students' perceptions of learner anxiety and self-efficacy for professional practice in clinical nursing education. This study identified the factors in clinical learning contexts that contribute to learner anxiety, the differences among these factors in real and simulated learning contexts, and finally, the teaching and learning strategies that minimize learner anxiety and positively enhance self-efficacy for professional nursing practice. A convenience sample of 186 students from three university nursing programs in Ontario participated in a two-phased mixed methods study, reflecting a response rate of 72%. In phase one, participants were asked to respond to four self-report instruments: the *State-Trait Anxiety Inventory* (STAI) (Spielberger, 1983), the *Factors Contributing to Anxiety in Clinical Learning* (researcher developed), the *Teaching and Learning Strategies that Enhance Professional Practice Self-Efficacy in Clinical Learning* (researcher developed) and a demographic questionnaire requesting gender and age. In phase two, a total of 31 participants participated in one of three focus groups.

The results of the study confirm that nursing students do experience feelings of anxiety during clinical learning in both real and simulated contexts, although their state and trait anxiety is similar to the average college student. The participants identified specific factors that contribute to feelings of learner anxiety in both real and simulated learning contexts. Findings reveal that in both contexts, nursing students perceive preparation for patient care as the first subscale of factors most likely to contribute to perceptions of anxiety. Following this, patient acuity in real contexts and learning processes in simulated contexts was the second subscale of factors. In terms of single factor ranking, three of the top five

factors for both contexts were the same: feeling unsure about my ability; making a mistake in patient care; and being watched by others as I provide care. Making a mistake while caring for patients was the factor contributing most to anxiety in real clinical contexts, whereas being watched by others contributed most to anxiety in simulated contexts.

In terms of themes describing teaching and learning strategies to enhance professional practice self-efficacy in situations of anxiety, there were both similar and unique differences between the two learning contexts. The teaching strategy identified by students as contributing to their self-efficacy in both contexts was the teachers' interaction with the student, specifically positive encouragement, constructive feedback and challenges critical thinking. Distinct differences in teaching strategies for both contexts were related to specific elements of the learning process within each context. Learner strategies on the other-hand revealed similar themes in both learning contexts, although being self-directed and looking for new learning opportunities seemed to be more prevalent in real clinical contexts. The findings in this study have implications for nursing educators by contributing to a better understanding of affective learner engagement in clinical education and ensuring safe patient care during the learning process.

Keywords: nursing education, professional practice, clinical learning, anxiety, affective learner engagement, self-efficacy, self-efficacy for professional nursing practice, teaching and learning strategies, mixed methods

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CHAPTER 1

INTRODUCTION

Background

In health profession programs such as nursing, students acquire knowledge, skills and values to manage patient care in a variety of health care contexts. During formal education at the baccalaureate level, students integrate a theoretical foundation in nursing and science with a professional practice exposure in a variety of healthcare settings. The balance of both theoretical and practice components of learning varies depending on the philosophical beliefs and values within nursing curricula at each university. Despite this variation, all baccalaureate nursing programs in Ontario share a common goal in preparing students to become registered nurses and complete a licensure examination at the end of their formal education.

The professional practice component of learning, more specifically clinical nursing education, provides an essential foundation for nursing students as they acquire knowledge and expertise to manage clinical situations and care for patients (Benner, 1984). The term clinical learning has been used interchangeably in the literature with professional practice and refers to learning to enact the nursing role and to care for patients, families or other clients in a variety of practice settings. It has been noted that learning experiences in professional programs such as nursing, contribute to the process of knowing, acting, being and becoming a professional (Benner, Tanner, & Chesla, 2009; Dall'Alba, 2009). For nursing students, this process involves a variety of experiential learning encounters, whereby students learn specific skills, competencies, and processes of professional nursing practice. In clinical nursing education, these learning encounters occur in both real and simulated learning contexts (Jeffries, 2007; Oermann & Gaberson, 2009).

Real learning contexts occur when students interact and care for patients and families in practice settings such as hospitals, clinics, and public health contexts. Simulated learning contexts on the other hand, occur when students interact with human-like manikins, standardized patients (individuals trained to act out patient scenarios) or other teaching and learning tools within the laboratory or classroom setting. Today, the use of high-fidelity clinical simulations with human-like manikins is receiving greater attention in nursing education (Cant & Cooper, 2009). These simulated learning experiences are developed with a high level of realism so students can actually role-play caring for an unwell patient. In this study, real learning contexts are those occurring in settings with real patients and families, primarily hospitals, whereas simulated learning contexts are those that involve high fidelity clinical simulations with human-like manikins.

Thesis Rationale

A successful learning experience for nursing students may contribute to both learning and achievement (Linnenbrink & Pintrich, 2003) in the healthcare context. As a teacher, I recognize students' experience significant worry with feelings of anxiety in preparation for or during clinical learning. The literature on this topic suggests that this type of anxiety in learning has been an ongoing concern for nursing students in real clinical settings for years (Decarlo, Collingridge, Grant, & Ventre, 2008; Kleehammer, Hart, & Keck, 1990; Lundberg, 2008). More recently, the same concerns have been raised in reference to simulated learning experiences, more specifically high fidelity clinical simulations using human-like manikins (Bremner, Aduddell, Bennett, & VanGeest, 2006; Brimble, 2008; McCaughey & Trauynor, 2010; Shepherd, McCunnis, Brown & Hair, 2010). The evidence alludes to the fact that students feel overwhelmed in these high fidelity learning contexts and worry about making mistakes, particularly when caring for the patient (human-like

manikin) for the first time. As students engage in clinical learning, they feel unable to manage multiple care demands while enacting the role of the nurse (Benner, Tanner, & Chesla, 2009). These perceptions of challenge contribute to students' feelings of inadequacy, anxiousness, and inability to safely care for patients (Alinier, Hunt, Gordon, & Harwood, 2006; Leigh, 2008; Haskvitz & Koop, 2004; Heinrich, Rule, Grady & Ellis, 2002).

To facilitate safe patient care while nursing students are learning, it is important for teachers to understand students' experiences of anxiety in clinical learning and identify the factors that contribute to this negative affective response. Affect is an important aspect of students' motivation to engage in learning. If students experience positive affective responses to learning, they are more likely to be motivationally engaged. According to Linnenbrink and Pintrich (2003) and Zeidner (1998), learner anxiety, general worry, or other negative affective responses to learning seriously detract from students' motivational engagement. Students who are anxious may experience cognitive difficulties with recall, memory or misinterpretation of information (Spielberger, 1970; Suliman & Halabi, 2007). These processes are very important for nursing students' clinical judgment and ultimately their provision of safe patient care.

Over the last two decades, there are studies that have explored nursing students' anxiety in real clinical learning contexts, including the factors that may contribute to this affective response (Carlson, Kootze & Van Rooyen, 2003; Cook, 2005; Kim, 2003; Levett-Jones, Higgins & McMillan, 2009; Melincavage, 2011; Reid-Searl, Moxham, Walker & Happell, 2009; Zupiria et al, 2003). Unfortunately, an exploration of nursing students' perceptions of the factors that enhance their self-efficacy in clinical learning, including the role of the teacher, has not been extensively explored in the context of learner anxiety. There have

been studies that have examined teachers' use of empowering teaching behaviors in acute care clinical settings and the positive impact on students' self-efficacy for professional practice (Babenko-Mould, 2010, 2012), although these have not addressed situations of learner anxiety or simulated contexts . As such, the affective response in high fidelity learning contexts with human like manikins has not been well-investigated. Considering simulation technology has become increasingly popular as a teaching and learning strategy, it is important to understand its impact in clinical education.

In clinical learning, nursing educators play an important role in responding to students' affective responses such as stress and anxiety. In this teacher-learner relationship, teachers assess and positively intervene to enhance the learning experience. If students' affective response to learning is positive, they are more likely to be motivationally engaged. If students' affective response to learning is negative, they would be less motivated to engage in the experience and their learning outcome and achievement will be less favorable (Linnenbrink & Pintrich, 2003; Zeidner, 1998). According to several authors (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Meece, Wigfield & Eccles, 1990; Pintrich & DeGroot, 1990; Pintrich, Roeser & DeGroot,1994), there is a relationship between a learners' self-efficacy and their affective response to learning. Students who have a high level of self-efficacy will likely experience positive emotions in clinical learning, while those with lower levels will experience negative emotions such as anxiety or stress (Harter, 1992). While it appears nursing students' anxieties in clinical learning have been a concern for many years, students' perceptions of the teaching and learning strategies that may positively impact students' affective response in clinical learning and enhance their self-efficacy for professional practice in anxiety-provoking situations has not been well-investigated. Given that a large component of nursing

education consists of clinical learning, it is important to understand these relationships in both real and high fidelity clinical contexts and identify the strategies that positively enhance the learning experience.

Research Questions

In summary of the above rationale, the purpose of this study was to examine the affective component of learner engagement (Linnenbrink & Printrich, 2003), specifically students' perceptions of learner anxiety and self-efficacy for professional practice in clinical nursing education. More specifically, the following questions were investigated: 1) what are the current factors in real and high fidelity clinical contexts that contribute to nursing students' feelings of anxiety; 2) are there differences between the factors reported to cause anxiety in high fidelity clinical contexts and those reported in real clinical contexts; and 3) what are the teaching and learning strategies that may minimize nursing students' feelings of anxiety in clinical learning and positively enhance their self-efficacy for professional nursing practice. The following report will provide an overview of this study in five chapters, including relevant implications for nurse educators and recommendations for future research.

CHAPTER 2

LITERATURE REVIEW

Clinical learning in nursing education

Similar to other professional practice programs, nursing is complex and utilizes expert knowledge and skill in technology, science and theory coupled with the application of this in practical clinical situations (Benner, 1984; Benner, Tanner & Chesla 2009; Gaberson & Oermann, 2010). Nursing curricula varies depending on the curricular philosophy of the nursing program (Iwasiw, Goldenberg & Andrusyszyn, 2009). As such, the practice of clinical nursing education, particularly in terms of clinical exposure, teaching methodology and progression of concepts across the four years of formal baccalaureate education will also vary. Despite this, the clinical component of nursing education commonly involves active learning experiences in hospital and community practice settings, caring for an individual, a family, or a group. Nursing students are guided by clinical faculty or instructors who support, motivate and facilitate learning about professional competencies in nursing practice (College of Nurses, 2010; Gaberson & Oermann, 2010).

Clinical learning activities provide real-life experiences and opportunities for the transfer of learning to common practice situations (Oerman & Gaberson, 2009). Over the last decade, the use of simulation technology has proliferated (Jeffries, 2007) and nurse educators are creating clinical scenarios representing situations that occur in real practice. According to Gaba (2004), simulation is an educational technique in which elements of the real world are appropriately integrated to achieve specific goals related to learning or evaluation. This teaching and learning strategy may include the use of a number of simulation typologies such as standardized patients, computer-based virtual programs, simulation board games, audiovisual teaching aids, partial task trainers for psychomotor

skills, and human-like manikins (Durham & Aiden, 2008; Galloway, 2009). In the last few years, the later technology has become increasingly popular as a strategy for enhancing nursing students' clinical judgment, problem-solving, team collaboration, and effective communication skills (Bambini, Washburn & Perkins, 2009; Burns, O'Donnell, & Artman, 2010; Kardon-Edgren, Starkweather, & Ward, 2008; Kiat, Mei, Nagammal, & Jonnie, 2007; Lasater, 2007; Nehring, Lashley, & Ellis, 2001). Each simulation typology has a specific purpose for learning in nursing education (Decker, Sportsman, Puetz, & Billings, 2008). The greater the level of fidelity, as in human-like manikins, the closer the learning experience is representative of the real clinical environment. In this study, the focus will be the experience of learning in real clinical settings such as the hospital, and in simulated settings such as the clinical lab with human-like manikins.

Learner anxiety in clinical learning

Clinical learning is an important component of formal nursing education. Students participate in clinical learning activities very early in their education. A review of the literature in this area reveals both research evidence and anecdotal notations that identify concerns relating to nursing students' feelings of anxiety and stress prior to and during placements in professional practice courses. Much of the literature describes elements of anxiety within real practice settings, and most recently, there has been mention of student anxiety in simulated learning contexts with human-like manikins (Bremner, Aduddell, Bennett, & VanGeest, 2006; Lasater, 2007; McCaughey & Trauynor, 2010). When nursing students are in their hospital placements, they engage in caring for patients with varying levels of acuity and their attendant families. In these settings, students work with other members of the healthcare team and provide care to address the health care needs of the patient. Importantly, patient care needs vary from one setting to the next. As such,

students' responsibilities for providing care would also vary depending on prior learning experiences and their individual learning goals.

Anxiety in the context of learning has been described as a vague, highly unpleasant feeling of fear and apprehension (Santrock, Woloshyn, Gallagher, Di Petta, & Marini, 2010). According to Spielberger (1970), anxiety is both a psychological and physical response to a threat to self-concept which is characterized by subjective, consciously perceived feelings of tension. As a construct, Spielberger (1983) differentiates anxiety as state or trait. State anxiety refers to an individual's reaction to a situation at a given time whereas trait anxiety refers to an individual's inherent proneness to anxiety. As students experience feelings of tension in a learning situation, their response to learning and their sense of believing they can achieve particular learning goals may be impacted. In addition, they may be more prone to cognitive deficits such as difficulty with memory, recall and interpretation of information (Suliman & Halabi, 2007). Although feelings of anxiety may present as a challenge to learning, according to the Yerkes-Dodson Law (Grover & Smith, 1981; Halvor Teigen, 1994; Yerkes & Dodson, 1908), not all anxiety is considered negative. In fact, a certain amount of cognitive arousal must exist to motivate a learner to perform. It is in those situations where learning is challenging and tasks are too difficult to attain that learners experience greater levels of tension (Edmunds & Edmunds, 2010). In clinical learning, nursing students encounter a variety of clinical situations, some of which may be unpredictable and highly acute in nature. The students' degree of state and trait anxiety will contribute to their response to clinical learning and their ability to engage in the caring activity.

The presence of learner anxiety in real clinical learning has been described in several studies. In the following paragraphs, I will provide a synthesized review of the findings as

they relate to nursing students' anxiety. In several of the studies, the practice settings for learning are within acute care environments such as hospitals. In one study by Chikaumaura, Iida, Ishizakj, Abi, and Kobayashi, Kataoka (2008), nursing students' anxiety scores were significantly increased when the students were completing their clinical practicum. In addition, biological responses to stress were more evident, including a decreased level of estrogen in the body during the practicum. Jimenez, Navia-Osorio, and Diaz (2010) investigated the impact of stress on health for novice and experienced nursing students. The outcomes described clinical stressors as more intense than any other academic or external stressor. In studies by Sharif and Armitage (2004) and Mun (2010), nursing students' anxiety was found to be a predominant theme in the narratives written by the students' during their clinical practicum. Finally, in a study by Melo, Williams and Rose (2010), nursing students in both problem-based and traditional lecture-based curricula experienced anxiety in clinical learning. The anxiety scores did not differ significantly between the two curricular approaches to teaching.

In other studies, the type of clinical supervision and clinical context also contributed to nursing students' perceptions of anxiety. Inadequate supervision, lack of supportive relationships, and teacher inaccessibility were described by nursing students as circumstances where anxiety and stress were increased in clinical learning (Carlson, Kotze, & Van Rooyen, 2003; Cook, 2005; Levett-Jones, Lathlean, Higgins and McMillan, 2009; Reid-Sear, Moxham, Walker, and Happell, 2009). Furthermore, the specific type of clinical situation where student anxiety seemed to be more prevalent included mental health or acute care situations where students felt unprepared (Happell & Hayman-White, 2009), sexual health (Kong, Wu, & Loke, 2009), situations of patient death (Chen, Del Ben, Fortson and Lewis, 2006) and maternal-child contexts for male students (Patterson and

Morin, 2001). In these studies, real clinical learning experiences perceived as socially uncomfortable or where nursing students felt unprepared, seemed to cause the greatest anxiety and stress.

A small number of qualitative studies have also provided some understanding of what may contribute to feelings of anxiety in real clinical contexts. A phenomenological study by Melincavage (2011) revealed the following themes relating to student anxiety: experiencing inexperience, being demeaned, being exposed, unrealistic expectations, being abandoned, sensing difference and being uncertain about ability. Kim (2003) found the following situations contributed to student anxiety: arriving late, being observed by instructors, responding to initial experiences, fear of making mistakes and talking to physicians. Finally, Zupiria et al (2003) identified the following contributors to feelings of anxiety: lack of competence, contact with suffering patients, relationships with tutors, classmates and workmates, uncertainty in the clinical setting, lack of control in relationships with patients, and feeling overworked. While these studies may contribute to a better understanding of some of the factors that cause anxiety for nursing students in real clinical settings, there is minimal evidence identifying teaching and learning strategies to manage these concerns and positively enhance nursing students' affective engagement in learning and their self-efficacy for professional practice. For this reason, these descriptions need to be better delineated.

The affective response of anxiety in clinical nursing education has for the most been discussed in the context of real learning experiences with patients and families. In the last five years however, there has been an exponential increase in the use of human-like manikins to re-create high fidelity clinical learning experiences. Although we know that student anxiety is a concern within real learning environments, we are just beginning to see

a body of literature that has raised concerns that learning in simulated settings with the use of high fidelity manikins may also provoke feelings of anxiety (Brimble, 2008; Cato, 2013; McCaughey & Traynor, 2010; Shepherd, McCunnis, Brown, & Hair, 2010). When nursing students engage in high fidelity clinical simulations and care for these manikins, it has been noted that unpleasant feelings of anxiety and stress may occur. It is suggested, there is a strong emphasis on performing when the teacher and/or peers are assessing or observing the interaction with the patient. The pressure to 'perform' contributes to students' feeling inadequate and unable to successfully provide patient care (Alinier, Hunt, Gordon, & Harwood, 2006; Leigh, 2008; Haskvitz & Koop, 2004; Heinrich, Rule, Grady, & Ellis, 2002). In addition, students also feel their performance is being critiqued and compared to other students. In fact, being observed or video recorded has been identified as contributing to student anxiety in simulated contexts (Cordeau, 2010; Ganley &Linnard-Palmer, 2012; Horsley, 2012). Interestingly, two studies reported videotaping was actually a positive experience and provided the opportunity to identify areas needing further development (Gordon & Buckly, 2009; Megel, Bailey, Schnell, Whiteaker & Vogel, 2013).

A recent study by Cato (2013) also confirmed the presence of nursing students' anxiety in high fidelity contexts. This study was one of the first that identified anxiety in simulated contexts was related to the patient's clinical situation, equipment difficulties in the simulation room, being videotaped, and being observed by fellow peers. Cato also identified preliminary strategies to manage this anxiety, although these were not specifically identified by students in the context of enhancing professional practice self-efficacy.

At present, there little substantive evidence exploring learner anxiety and student perceptions of the factors contributing to this emotion in simulated contexts. It is also not

clear whether the factors that cause anxiety in real clinical experiences are the same or different than those that cause anxiety in simulated clinical experiences. This knowledge is important for nursing educators when developing and teaching curricula with both real and simulated clinical learning activities. Students need to feel comfortable and engaged in both these contexts, particularly since the later is becoming increasing popular. If nursing teachers understand the factors that contribute to learner anxiety in both contexts, teaching and learning strategies may be better structured and utilized to positively enhance students' learning experience.

Self-efficacy

Self-efficacy has been described by Bandura (1977, 1986) as an individual's belief in their ability to perform well on a specific task or behavior. It is a judgment of one's capability to carry out a course of action required to deal with a situation. Self-efficacy affects how a person thinks, feels and acts. According to Bandura, an individual's perception of self-efficacy is made up of two components: efficacy expectations and outcome expectations. An efficacy expectation is the belief that one can successfully perform the behavior required to achieve an outcome, whereas an outcome expectation is a person's estimate that the behavior will lead to a specific outcome. For an individual to successfully perform a task, both components of self-efficacy must be present.

Every individual approaches a new situation or task differently, particularly in learning contexts. Some may display strength in their personal self-efficacy and approach specific tasks with confidence. Others fear and avoid threatening situations they believe will be difficult to manage. The uniqueness of each person is determined by the strength of four sources of efficacy expectations and how the individual processes them (Bandura, 1977, 1986):

1. Mastery experiences, often called performance accomplishments in the early literature, represent those behaviors that an individual is able to perform. Successful experiences will raise efficacy expectations, while repeated failures will lower them. In addition, the mastery of simple behaviors will encourage a person to proceed with more complex ones. In nursing, students would progress their clinical learning from simple to more complex psychomotor skills. When a student is successful with a particular skill level, they may advance to the next skill level. For example, early in clinical learning, nursing students learn how to safely administer medications using different routes. Students would first begin with oral medications and then when successful, proceed to subcutaneous and intramuscular injections and finally, intravenous administration. A student would not progress if mastery of the previous level had not been achieved in this experience. Each level of success encourages progression to the next level of medication administration.

2. Vicarious experiences occur by observing a credible role model perform the task or behavior. Seeing another person succeed in a situation can create expectations in the observer that they too will eventually succeed. This type of learning minimizes the need for trial and error, especially in situations where the consequences are more costly or hazardous. For nursing students, vicarious learning occurs at several points during their baccalaureate education. For example, in the final year of nursing education, students are assigned to one role model known as the clinical nursing preceptor. This particular role assists students to enact all components of the nursing role and begin the transition to a practicing nurse.

3. Verbal or social persuasion is when other credible people provide comments or suggestions that encourage an individual to feel capable of performing a task or behavior. These persuasive boosts improve a person's self-doubt and help to increase perceived self-

efficacy expectations. For nursing students, an example of this may occur when one peer provides feedback to another peer. Peer assessments are an integral component of formal nursing education and a mandatory requirement of our regulating body, the College of Nurses of Ontario. When a student is persuaded verbally by a peer that s/he is doing well with a certain task, the student's self-efficacy may be strengthened.

4. Physiological and emotional states refer to the physical cues or expressions of anxiety that may influence an individual's confidence in performing a task. Feelings of nervousness and vulnerability to stress may debilitate performance and discourage further participation in similar behaviors. Mood and affective states, particularly if they are positive, will enhance self-efficacy. This fourth source of efficacy expectation is an important area of investigation for this study because it is not well-understood.

According to Bandura's (1977) theoretical principles, learner self-efficacy is formed by the efficacy expectations described above and their outcome expectations. As a motivational construct, self-efficacy enhances students' behavioral, cognitive and affective engagement in learning (Linnenbrink & Pintrich, 2003) and contributes to their overall learning and achievement. As teachers engage with learners, it is important to understand these relationships and the factors that positively impact students' self-efficacy. In the educational literature, a number of teaching and learning factors have been found to enhance student self-efficacy: encourage students to set short-term goals and assess progress, provide opportunities for students to evaluate learning progress, provide student feedback and link successes to effort and ability, have students work on progress goals that involve skill acquisition, have students self-monitor and record their progress, and finally, link rewards to their level of performance (Schunk, 1995; Schunk & Ertmer, 2000; Schunk & Zimmerman, 2006).

The relationship between the teacher and the student in a learning encounter is important. Thoonen et al, (2011) discuss the relationship between teacher self-efficacy and student self-efficacy. Teachers with high self-efficacy have a more positive impact on student learning and achievement. Santrock, Wolshyn, Gallagher, DiPetta and Marini (2010) explore the role of the teacher in motivating young students. They provide examples of teaching strategies that can enhance students' self-efficacy in learning: encourage discussion about goals with parents, role-model, provide performance contingent rewards, teach explicit strategies for attaining goals, provide positive support and reflection, provide appropriate mentors and models, model positive coping strategies, and let students tell their success stories and explain how they mastered certain tasks. Although this study explores the role of the teacher with younger students, it does highlight the relevance of the teacher-student encounter and importance of the teacher in motivating learners and positively enhancing their self-efficacy. In the proposed study, these same relationships will be explored, although the learners will be nursing students in clinical learning.

Self-efficacy for Professional Nursing Practice

Professional nursing practice is a concept that receives considerable attention in the nursing literature. Clear articulation of the behaviors and activities associated with nursing practice is difficult to synthesize, although there have been several attempts to do this over the years. One classic piece of literature in nursing that cannot go unmentioned in this discussion of professional practice is the work of Patricia Benner (1984). Benner describes the domains and competencies that characterize professional nursing practice from novice to expert: the helping role, the teaching-coaching function, the diagnostic and monitoring function, effective management of rapidly changing situations, administering and monitoring therapeutic interventions and regimens, monitoring and ensuring quality of

health care practices, and organizational and work-role competencies. Some of these characteristics are still very appropriate today, while others, require further refining to capture today's health care challenges, societal influences and growth in the nursing profession.

Professional nursing practice is also defined by nursing regulatory bodies. The College of Nurses of Ontario (2010) for example describes the following categories for the professional role of the registered nurse: professional accountability, knowledge-based practice, knowledge application, ethical practice, service to the public, and self-regulation. Within each of these categories, a number of specific competencies are described. As nurse educators develop curricula for baccalaureate nursing programs, these competencies are carefully considered to ensure that the content addressed in formal education will assist students to master the national competencies for the nursing profession. Although Ontario has well-established competencies describing the role of the professional nurse, schools of nursing differ in their curricular philosophies of nursing education. As such, the process for achieving knowledge, skill and values related to professional practice will vary from one program to the next.

Today, in nursing education, students learn about professional practice in both theoretical and practice courses. Generally, the classroom context provides the theoretical foundation, while the enactment of professional practice is usually completed within clinical learning experiences. Clinical learning occurs in both real and simulated learning environments and includes a variety of activities to practice professional nursing competencies. In any practice settings, these competencies may include assessment, psychomotor skill(s), interpretation of findings, collaboration with a team, and responding to manage a heath care situation. This process has been referred to as clinical reasoning or

judgment (Lasater, 2007; Tanner, 2006). As students engage in the learning process, they acquire knowledge and expertise to care for individuals, families, groups, or communities. Although professional nursing practice may consist of many skills and competencies, in this study, I am interested in understanding the teaching and learning strategies that enhance students' perceptions of self-efficacy for professional nursing practice.

In reviewing the literature, there are no specific definitions or synthesized descriptions of the construct of self-efficacy for professional nursing practice. However, several studies were found to have examined specific elements of self-efficacy for professional practice. Some of these elements include, student caring self-efficacy (Livsey, 2009; Madorin & Iwasiw, 1999), student self-efficacy in providing culturally competent care (Rudnick, 2005), patient teaching self-efficacy (Goldenberg, Andrusyszyn, & Iwasiw, 2005), self-efficacy for practice (Babenko Mould, 2004; Babenko-Mould, 2004, 2010, 2012; Sinclair & Ferguson, 2009), self-efficacy for health promotion counseling (Laschinger, McWilliam, & Weston, 1999), self-efficacy in responding to emergent clinical situations in high fidelity simulation (Leigh, 2008), senior nursing students' self-efficacy during preceptorship (Goldenberg, Iwasiw, & MacMaster, 1997), and finally, self-efficacy for community-based family nursing practice (Ford-Gilboe, Laschinger, Laforet-Fliesser, Ward-Griffin, & Foran, 1997). In the simulation literature, a number of studies have investigated nursing students' self-efficacy and confidence in some aspect of clinical nursing practice. These studies have shown an increase in self-efficacy in nursing students' after participating in high-fidelity simulation (Bantz, Dancer, Hodson-Carlton & Van Hove, 2007; Beyea, von Reyn & Slattery, 2007; Bremner, Aduddell, Bennett, & VanGeest, 2006; Eaves & Flagg, 2001; Henneman & Cunningham, 2005; Henrichs, Rule, Grady, & Ellis, 2002; Kuznar, 2009;

Lasater, 2007; Leigh, 2008; McCausland, Curran, & Cataldi, 2004; Reilly & Spratt, 2007; Schoening, Sittner, & Todd, 2006).

Although studies have examined elements of self-efficacy for professional nursing practice in acute care contexts and some have even attempted to understand self-efficacy as an outcome of learning in a simulated context, we do not have one conceptual definition of the construct. Furthermore, the concept has not been well-investigated in the context of learner anxiety. In this study, professional practice will be described as enacting nursing practice competencies as a student nurse. To achieve some level of understanding of these competencies, the National Competencies for entry-level registered nurses in Ontario (CNO, 2010) will be used as a reference point for defining professional practice. Although baccalaureate nursing programs may differ in curricular philosophies and use of learning activities, all programs recognize the same goal of preparing students to achieve these national competencies. As such, self-efficacy for professional nursing practice will be described as a belief in one's ability to successfully enact the nursing competencies within a student role. In this study, the researcher is interested in understanding the specific factors that affect nursing students' perceptions of professional practice self-efficacy.

Nursing students' self-efficacy or belief in their ability to perform (Bandura, 1977) activities, behaviors, and processes that are relevant to professional nursing practice will impact how successful they care for a patient. Self-efficacy may affect how students think, feel and act. As such, if a nursing student is self-efficacious, s/he will be more likely to believe s/he can successfully perform the role. Nursing students learn about professional practice in both real and simulated learning environments. These environments include a variety of health care professionals, families, and patient situations of varying complexities. As students engage in these learning experiences, they self-assess their ability to perform in

clinical practice. If this self-assessment, as well as students' perceived self-efficacy are low, their affective response to learning may be negative. Low self-efficacy appears to be associated with elements of depression, anxiety and helplessness (Bandura, 2000, 2009; Santrock, Woloshyn, Gallagher, DiPetta, & Marini, 2010). Anxiety has been identified as an emotional response to clinical learning in nursing education. In this study, this affective response will be examined in greater detail, specifically identifying factors that contribute to this response in both real and simulated learning environments. Furthermore, teaching and leaning strategies that may minimize student anxiety and positively enhance students' self-efficacy for professional practice will also be explored.

Learner Engagement

For almost two decades, learner engagement has been a construct of interest in understanding student involvement in learning (Appleton, Christenson & Furlong, 2008). The term has been widely explored in the psychology and educational psychology literature. Unfortunately, in the nursing literature, learner engagement has not been examined as a theoretical lens. Learner engagement has been referred to as a student's active involvement in a learning task or activity (Reeve, Jang, Carrell, Jeon & Barch, 2004) or "energy in action", a connection between an individual and an activity (Russell, Ainley & Frydenberg, 2005). A review of the literature has revealed variation in conceptual clarity and definitions of learner engagement. Despite the lack of consensus, one similarity is the idea that motivational theory is foundational to understanding how this construct unfolds and that there are factors in the learning encounter that may either engage or disengage the learner.

To understand learner engagement as a construct in clinical nursing education, particularly with respect to how it may relate to this research, I have considered relevant

studies in the literature. Frederick, Blumenfeld and Paris (2004) discuss learner engagement as a metaconstruct which brings together research related to motivation, belonging, and school climate and examining how these constructs interact with one another. Juvonen (2006) in the Handbook of Educational Psychology (Alexander & Winnie, 2006) discusses the importance of belonging and student connectedness within their learning environment. As part of this, the student's relationships with friends, family and teachers are pivotal to creating a sense of belonging necessary for learner engagement. Interactions with teachers, particularly if they are supportive yet academically stimulating with high expectations and 'deep' learning, positively impact learner engagement (Baker, Clark, Maier, & Viger, 2008; Bryson & Hand, 2007; Laird & Kuh, 2005; Reason, Terenzini & Domingo, 2006). A recently published paper by Zepke and Leach (2010) further supports this understanding. The importance of teacher and peer relationships as predictors of student engagement and learning outcomes are described in their synthesis.

Although there are many conceptualizations of learner engagement from a descriptive perspective, specific dimensions of learner engagement including behavioral, cognitive, and emotional or affective engagement have been further delineated in research (Appleton, Christenson, & Furlong, 2008; Furrer, Skinner, Marchand, & Kindermann, 2006; Harris, 2011). The behavioral dimension has been a focus of educational research, particularly in terms of investigating factors related to both academic and behavioral engagement (Appleton, Christenson & Furlong, 2008). Unfortunately, there has been less research on the cognitive and affective components of learner engagement. These two aspects have been recognized as important constructs for student success and achievement, although more evidence is needed.

The work of Linnenbrink and Pintrich (2003) presents a well-articulated theoretical

framework that not only examines specific dimensions of learner engagement, including affect, but also proposes relationships among the constructs of student self-efficacy, learning and achievement. The dimensions of learner engagement in this model include behavioral, cognitive, and motivational engagement. The later includes elements of learner interest, value and affect. Affect, specifically the emotion of learner anxiety, is the response I was interested in exploring in this study. Figure 1 on the following page provides a visual of the constructs of self-efficacy, learner engagement and learning (Linnenbrink & Pintrich, 2003).

In the first dimension of engagement (behavioral), it has been demonstrated that students who are more self-efficacious are more likely to exert effort when in difficulty or to persist in a task knowing s/he has the requisite skills (Linnenbrink & Pintrich, 2003; Pintrich & Schunk, 1996). Students who have weaker perceptions of self-efficacy would more likely give up on a task even if they have the skills to do it. This can be seen in students who know the material they are learning and have the skills to do it but lack the confidence that they can actually use their knowledge or skills. In addition, there are students who feel they have no control over their work performance and there is no relationship between what they do and learning outcomes. As such, a weaker self-efficacy would also make them less likely to seek help from others including the teacher (Ryan & Pintrich, 1997). According to Linnenbrink and Pintrich's framework, engaging in help-seeking behavior is a component of positive behavioral engagement.

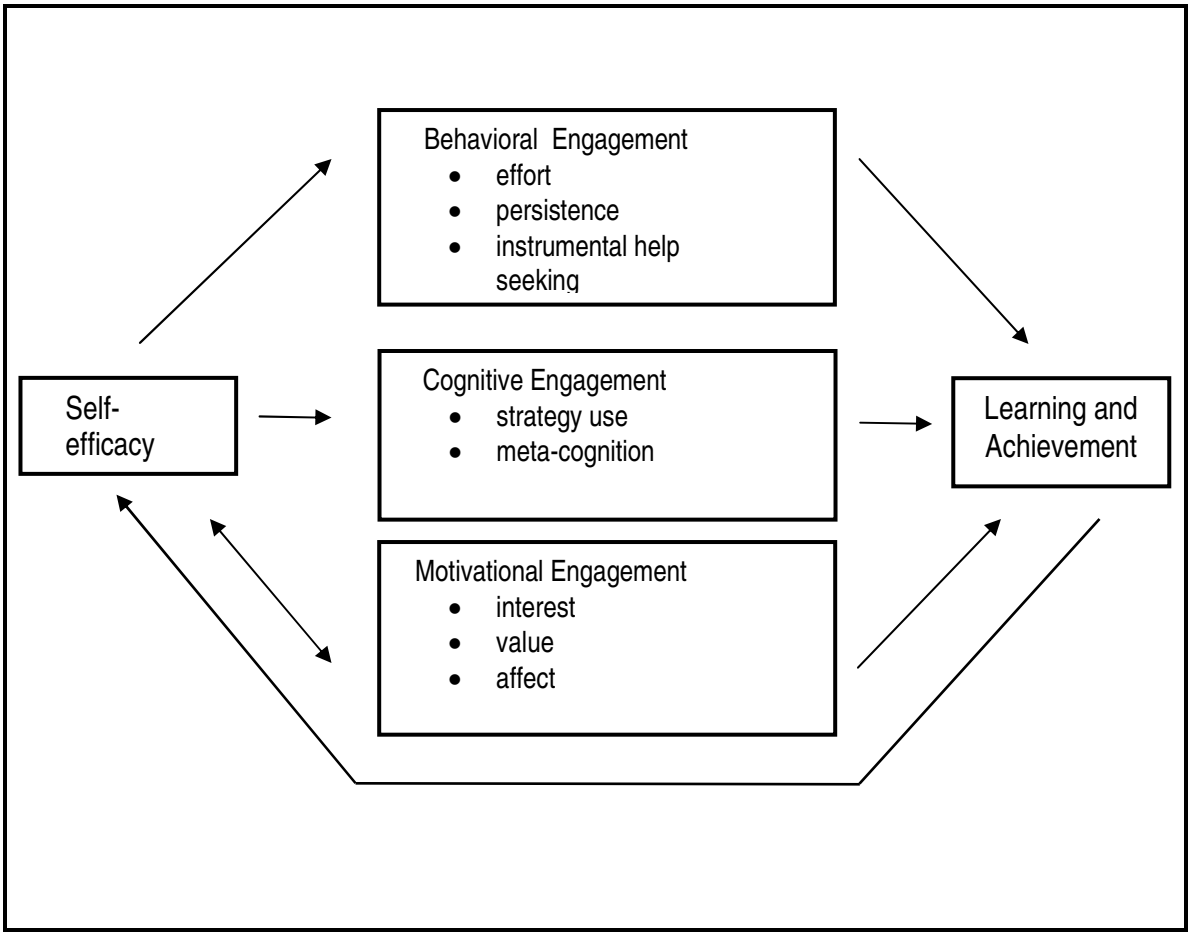

Figure 1 Conceptual framework for self-efficacy, learner engagement and learning achievement (Linnenbrink & Pintrich, 2003)

The second dimension of cognitive engagement includes cognitive strategy use and components of meta-cognitive processes. Students who are self-efficacious are more likely to report using various cognitive strategies, including metacognitive learning strategies. These students use deeper processing strategies such as elaboration, organization and reflection and are more likely to plan, monitor and regulate themselves when they did their homework. This same relational outcome was also supported in earlier studies of different cohorts, including high school and college students (Pintrich, 1999; Wolters and Pintrich, 1998).

Finally, the motivational dimension of learner engagement refers to interest, value, and affect. Personal interest refers to the student's intrinsic interest in the content and tasks. Utility value refers to how useful the student believes the content or task is to them. Affect refers to the student's emotional experience with the learning. According to Linnenbrink and Pintrich (2003), affect has not been examined as well as the other constructs, but it does play an important role in how students engage in learning. They assert that positive emotions such as pride and happiness in one's work contribute to students' motivational engagement, while negative emotions such as frustration, anger, and anxiety detract from students' motivational engagement and negatively impact learning and achievement. In addition, within the framework there is a reciprocal relationship between motivational engagement (affect) and self-efficacy. In other words, a learner's affective engagement in a learning context will impact their overall self-efficacy.

In this theoretical framework of learner engagement (Linnenbrink & Pintrich, 2003), initial explanations of the relationship between affective responses such as anxiety, learner self-efficacy, and learning are delineated. Further, the model utilizes directional arrows to display where one construct may relate to another. In addition, there is a feedback loop from students' learning and achievement to self-efficacy. When students successfully engage in learning (behavioral, cognitive or motivational), they are able to successfully learn and achieve positive outcomes. These outcomes then feed back to the learner's self-efficacy, thereby contributing positively to enhance the original state of learner self-efficacy. At this point, it is important to note this theoretical conceptualization has evolved as a result of research with school-age learners and has not yet been well-explored in higher education or with adult learners. In addition, the factors that impact students' affective responses to learning (anxiety) and the teaching and learning strategies that positively

influence students' affect and enhance their self-efficacy in situations of anxiety have not yet been addressed.

Summary of Literature

The purpose of this study is to examine the affective component of learner engagement in clinical learning, specifically the emotion of learner anxiety in real and simulated clinical learning contexts. In understanding this emotional response to learning, students' perceptions of the factors in clinical learning that contribute to this anxiety and the teaching and learning strategies that impact this emotion and enhance students' self-efficacy for professional nursing practice will be explored. As described by Linnenbrink and Pintrich (2003), anxiety is a negative emotional response to learning. More specifically, this emotion may have a direct impact on nursing students' clinical learning, achievement and self-efficacy. The students' degree of trait anxiety will influence their reaction to a learning situation and their overall ability to be successful in the encounter. In real learning environments, students are caring for patients and their attendant families and so it becomes even more important that learning outcomes are successful and patient safety is maintained.

In reviewing the literature in nursing education, it is unclear what factors contribute to nursing students' perceptions of learner anxiety in simulated learning contexts, although in real contexts, there has been some understanding of this. In addition, we do not know whether there are differences in factors that contribute to anxiety in real and simulated contexts which is important for teachers to understand while planning instruction. Since the learning goals in each context are similarly connected to advancing clinical reasoning and providing safe, quality patient care, there may not be distinct differences between the two. In both contexts, students learn about all elements of patient care and are exposed to varying degrees of patient decision-making. Importantly, what is known is that there are

logistical and organizational differences between the contexts, with simulated settings relying heavily on technology and on the utilization of props to create a sense of clinical realism. In this way, the factors that negatively impact students' affective responses and contribute to anxiety in simulated learning activities may be somewhat different.

Further to understanding the factors that contribute to nursing students' anxiety, it is also important to understand the sources that may enhance professional practice self-efficacy in situations of anxiety. According to Bandura (1977, 1986), there are four sources that contribute to self-efficacy. In this study, it is hypothesized that the teaching and learning strategies identified by nursing students may be somewhat explained with the four sources of efficacy expectations (mastery experiences; vicarious experiences; verbal or social persuasion; physiological and emotional states). At present, there is limited knowledge to adequately understand these relationships. If we can better understand the interactive effects of these sources, nursing educators may be better prepared to provide effective instruction and modify the factors that negatively impact learners' affective engagement in real and simulated learning contexts.

CHAPTER 3

METHODOLOGY

The purpose of this study was to examine the affective component of learner engagement, (Linnenbrink & Pintrich, 2003) more specifically, students' perceptions of learner anxiety and professional practice self-efficacy in clinical nursing education. In understanding this inquiry, students' perceptions of the factors in clinical nursing education that contribute to anxiety, and the teaching and learning strategies that positively enhance professional practice self-efficacy in situations of anxiety were explored. This chapter provides an overview of the research design, sample, data collection and data analysis procedures.

Design

To fully examine the research questions in this study, a mixed methods design was used. Mixed methods is a research design where there may be a mixing of philosophical assumptions and methodological approaches within the research process (Creswell & Piano-Clark, 2007). The literature pertaining to philosophical assumptions has been unclear with noted debate regarding the choice of multiple or singular paradigms to guide mixed methods research (Creswell & Piano-Clark, 2007; Mackenzie & Knipe, 2006; Smith, 2006; Sale, Lohfeld, & Brazil, 2002; Tashakkori, & Teddlie, 2003). According Hall (2013), a researcher may adopt a single paradigm approach and integrate both quantitative and qualitative methods. In doing so, the researcher must articulate the ontological and epistemological beliefs guiding the inquiry.

In this study, the philosophical assumptions guiding the research inquiry is more closely aligned to the paradigm of constructivism. Within this paradigm, the research ontology is pluralistic wherein there is a belief in multiple realities which are created by the participants

in the study (Creswell & Clark, 2007). The following is a summary of the philosophical assumptions for this study: 1) the nature of reality (ontology) is not singular as in post-positivism and there is an interest in the views of multiple participants, 2) the relationship between the researcher and the participant (epistemology) is not distant as in post-positivism, but one of closeness (i.e., the researcher visits the participants at their site to interact and collect data), 3) the data collection process evolves from the participants rather than solely deductively as in post-positivism, and 4) the participants share their own views and feelings and from this, potential patterns and themes emerge (Creswell & Clark, 2007; Pickard & Dixon, 2004).

The type of mixed methods design in this study was a sequential explanatory research design (Creswell, Piano Clark, Gutmann, & Hanson, 2003; Creswell & Clark, 2007; Tashakkori, & Teddlie, 2003). This design is characterized by the collection and analysis of quantitative data followed by the collection and analysis of qualitative data. Typically, in this type of design, the qualitative results assist in further explaining and interpreting the quantitative findings. This is an important methodological consideration as one method alone may not have appropriately addressed the research questions. Since the research inquiry was complex, the process for data collection was completed in two phases and included both quantitative and qualitative methods. The integration of both methodologies facilitated a richer depth of exploration and allowed the researcher to adequately investigate the research questions.

Briefly, in the first phase of this study, three self-report instruments were used to determine learner anxiety: factors in clinical nursing education that contribute to learner anxiety; differences in factors identified in real and simulated clinical contexts, and finally, teaching and learning strategies that positively enhanced self-efficacy for professional

nursing practice. Each of these self-report instruments, including development will be described in greater detail in the section noted as data collection instruments.

In the second phase of this study, three focus groups were conducted with a convenience sample of participants who volunteered to discuss in greater depth the variables in phase one. Focus group interviews were chosen by the researcher for a couple of reasons: to bring together students who were genuinely interested in sharing more about their experiences with anxiety in clinical learning, to gather a group of individuals who could share their diverse opinions and provide explicit examples, and finally to achieve some level of consensus with the facilitator's guidance in order to draw conclusions about the variables. The format of the focus groups was a combined qualitative interview approach as described by Patton (2002), which included both an interview guide and a conversational interview style. The interview guide provided some structure to ensure specific topics explored in phase one were discussed in greater detail. The content of the interview guide is addressed in greater detail in the section noted as data collection instruments. The use of a conversational interview offered the flexibility to pursue information shared by the participants and ask additional questions that flowed from the immediate context or phase one data (Patton, 2002).

Sample

In this study, a convenience sample of nursing students in their final year of baccalaureate education at an Ontario University were invited to participate. By the fourth and final year of a baccalaureate nursing program, students would have had exposure to both real and simulated learning activities and as such, would be better able to reflect on their overall clinical learning experience. The students considered for recruitment were from a pool of 14 university schools of nursing in Ontario that offered a baccalaureate

nursing program approved by the Canadian Association of Schools of Nursing Accreditation Program (College of Nurses of Ontario, 2011). These schools are fully accredited for their preparation of nursing students for professional licensure in Ontario as Registered Nurses. Of the 14 universities considered in the sampling decision, the following inclusion criteria were applied for selection of appropriate schools of nursing: 1) students have participated in both real and simulated learning activities in each level of their baccalaureate program in order to provide adequate exposure to assess affective responses to learning; 2) students have had more than two simulated learning experiences per year in order to have some sense of impact on their affective response to learning and their self-efficacy for professional nursing practice; and finally, 3) the school of nursing has utilized simulation-based learning for longer than one year to ensure appropriate faculty use and delivery of this teaching methodology. An important exclusion criteria in selecting the possible universities for recruitment included the university where the researcher was teaching. At the time of the study, the researcher was the Simulation Faculty Lead for the integration of high-fidelity simulation in the undergraduate nursing curriculum, and was actively involved in teaching both theoretical and clinical courses in level four of the baccalaureate program.

Once the inclusion and exclusion criteria were applied, the researcher rank ordered the schools in terms of the number of hours in simulation exposure for clinical learning. From this list, the three schools that had the greatest number of hours in simulation exposure were asked to participate. Since no studies were found to have investigated the questions in this study, an appropriate sample size for this study was calculated using Cohen's (1988) effect size convention. For an alpha significance level of 0.05 and a power level of 0.80 (Cohen, 1988), a moderate effect size (r =.40) was used to calculate the number of participants

needed to detect a significant correlation. Using a power table for the Pearson Correlation for a one tailed t-test, a moderate effect size would be detected with a sample of 113 students.

All nursing students (*n*=260) in year four of the three schools of nursing were invited to participate. Of the 260 survey packages distributed in phase one of the study, 186 were returned for a response rate of 72%. The nursing students in the study were mostly female (87%) with a mean age of 23.5 years of age (*SD*=4.9). In phase two of the study, 31 students provided consent to participate in a focus group interview. All but one student was female. The following table illustrates the distribution according to gender and age of the nursing students.

Table 1
Gender and Age Distribution of the Nursing Students

Characteristic		*n*	Percent	*M (SD)*
Gender (Phase 1)	Female	162	87.1	
	Male	23	12.4	
	Missing	1	0.5	
	Total	186	100.0	
Gender (Phase 2)	Female	30		
	Male	1		
	Total	31		
Age	Total	183		23.5 (4.93)

Data Collection Instruments

In phase one of the study, nursing students were invited to complete three self-report instruments (Appendix A) and respond to two demographic questions. The *State-Trait Anxiety Inventory* (STAI) (Spielberger, 1983) was used to measure students' levels of state and trait anxiety. The *Factors Contributing to Anxiety in Clinical Learning* was developed by the researcher to measure students' rankings of factors contributing to perceptions of anxiety in clinical learning. The *Teaching and Learning Strategies that Enhance Professional Practice Self-Efficacy in Clinical Learning* (researcher developed), also developed by the researcher, was used to gather qualitative comments from the nursing students who described teaching and learning strategies that they perceived enhanced their self-efficacy for professional practice. Finally, two demographic factors, age and gender, were attained to provide a more detailed description of the sample group of participants.

In phase two of the study, nursing students were invited to participate in a focus group. The consent to participate was included at the end of the third researcher-developed instrument in phase one, *Teaching and Learning Strategies that Enhance Professional Practice Self-Efficacy in Clinical Learning* (researcher developed). The focus groups at each of the three universities were facilitated by the researcher using a researcher developed interview guide *Perceptions of Anxiety and Self-efficacy in Clinical Learning* (researcher developed).

State-Trait Anxiety Inventory

The State Trait Anxiety Inventory (STAI) (Spielberger, 1983) is a well-validated tool for measuring state and trait anxiety and has been utilized in both research, as well as clinical practice with patients. State anxiety has been described as a transitional response to a stressor, whereas trait anxiety refers to a personality characteristic. The S-Anxiety (State

Anxiety) scale measures how participants feel 'right now' and the T-Anxiety (Trait Anxiety) scale measures how participants 'generally' feel. The inventory consists of a 20-item self-reporting assessment that measures state and trait anxiety on a 4-point modified Likert-type scale. A rating of 4 indicates the presence of a higher level of anxiety for ten S-Anxiety items and eleven T-Anxiety items (Spielberger, 1983). In addition, a higher rating indicates the absence of anxiety for the remaining ten S-Anxiety items and nine T-Anxiety items. To obtain the scores for each scale, the weighted scores are added for each of the 20 items. The scores for the scales can vary from a minimum of 20 to a maximum of 80.

According to Spielberger (1983), the mean scores for college students has been reported as 36.47 for male and 38.76 for female on the S-Anxiety scale, and 38.30 for males and 40.40 for females on the T-Anxiety scale. The Chronbach's alpha coefficient as a measure of internal consistency and validity of individual items specific to college students has been reported as 0.91 for male college students and 0.93 for female on the State Scale, and 0.90 for male college students and 0.91 for female students on the Trait Scale (Spielberger, 1983; Spielberger, Gorsuch, Lushene, Vagg & Jacobs, 1983).

In phase one of this study, nursing students' level of state and trait anxiety was measured to determine if there was a tendency for a greater level of anxiety in this group of learners when compared to the typical student in higher education. The data analyzed in this study was comprised of a complete set for 186 students. The mean scores for nursing students are reported as 37.96 for males and 40.78 for females on the S-Anxiety scale, and 39.57 for males and 40.12 for females on the T-Anxiety scale. The Chronbach's alpha coefficient for the State Scale was calculated as 0.93 for male nursing students and 0.92 for female students. The Chronbach's alpha coefficient for the Trait Scale was 0.90 for male and 0.93 for female nursing students. It would appear the data indicate nursing students are

consistent with other college students in terms of state and trait anxiety. In addition, female nursing students scored slightly higher in both state and trait anxiety which is also consistent with other college students (Spielberger, 1983). A comparison of Chronbach's reliability coefficient is included in Table 2 on the following page.

Factors Contributing to Anxiety in Clinical Learning

The first researcher-developed instrument in phase one was the *Factors Contributing to Anxiety in Clinical Learning* (researcher developed). This quantitative survey was used to rate the factors in real and simulated learning experiences that contribute to nursing students' feelings of anxiety while providing patient care. This survey was developed using a thematic analysis of 20 years of literature identifying nursing students' anxiety in clinical learning environments. Both anecdotal and research-based literature within these decades were reviewed by the researcher in order to collate a survey of potential factors that may contribute to anxiety in both real and simulated learning environments. The response format for this survey was a 4-point descending modified Likert scale measuring how often each factor contributed to students' perception of anxiety in real and simulated learning environments: 4 (all the time), 3 (some of the time), 2 (infrequently) and 1 (never). The results were summed and averaged. At the conclusion of this survey, students were asked to complete a final rank order of the top six factors contributing to anxiety in clinical learning.

Table 2
Cronbach Reliability Coefficients for STAI (State Trait Anxiety Inventory):
A comparison

State and Trait Anxiety		Male	Female
College Students S-Anxiety (Spielberger, 1983)	*n*	324	531
	M	36.47	38.76
	SD	10.02	11.95
	Alpha Coefficient	0.91	0.93
College Students T-Anxiety (Spielberger, 1983)	*n*	324	531
	M	38.30	40.40
	SD	9.18	10.15
	Alpha Coefficient	0.90	0.91
Nursing Students S-Anxiety (researcher developed)	*n*	23	162
	M	37.96	40.78
	SD	10.55	10.22
	Alpha Coefficient	0.93	0.92
Nursing Students S-Anxiety (researcher developed)	*n*	23	162
	M	39.57	40.12
	SD	9.40	9.89
	Alpha Coefficient	0.90	0.93

Teaching and Learning Strategies that Enhance Self-Efficacy

The second researcher-developed instrument used in phase one was a brief qualitative survey asking students to identify the *Teaching and Learning Strategies that Enhance Professional Practice Self-Efficacy in Clinical Learning* (researcher developed). Students were asked to identify 4-6 things the teacher does in the clinical setting that makes them

feel confident in their abilities as a nurse, as well as 4-6 things the learner does in the clinical setting that makes them feel confident in their abilities as a nurse. The goal of this survey was to assist the researcher to identify both teacher and learner strategies that positively enhance students' self-efficacy for professional nursing practice in the presence of anxiety. A theme analysis of these responses provided a baseline for further discussion in the focus groups in phase two of the study.

Prior to collecting the data, a pilot test of the two researcher-developed surveys, *Factors Contributing to Anxiety in Clinical Learning* (researcher developed) and *Teaching and Learning Strategies that Enhance Professional Practice Self-Efficacy in Clinical Learning* (researcher developed) was conducted with a convenience sample of 12 senior nursing students. This was done to ensure usability and content validity (Polit & Beck, 2008), with specific emphasis on ensuring clarity in wording and relevancy of each item to clinical nursing education. In addition, the pilot test provided an estimate of the time needed for students to complete all three tools, an important consideration for communication in recruitment. The average time was approximately 25 minutes. Further to these measures of validity, a Cronbach's alpha coefficient, a measure of reliability was also calculated for the survey *Factors Contributing to Anxiety in Clinical Learning* (researcher developed). The result was 0.89 for the pilot test and 0.93 for the study. The survey represented a good index of reliability and an indication the survey elicited consistent and reliable responses for the variable that was being measured (Tavakol & Dennick, 2011).

Perceptions of anxiety and self-efficacy

In phase two of this study, a researcher developed facilitator interview guide, *Perceptions of Learner Anxiety and Self-efficacy in Clinical Practice* (researcher developed) was used to conduct three focus group interviews. The purpose of the focus

groups was to explore in greater depth the details examined in phase one of this study and achieve some level of consensus (Fontana & Frey, 2000) in the explanations and responses to the questions. Since baseline data had already been attained in phase one, each focus group consisted of a semi-structured group interview. The interview guide was organized to explore main topics related to the research questions: perceptions of learner anxiety, including examples that contribute to this emotion; differences between real and simulated learning experiences in terms of anxiety; learner strategies to overcome anxiety in both learning contexts; and finally, teaching strategies that may assist in managing anxiety and enhancing self-efficacy for professional practice. The guide provided enough flexibility in the phrasing and ordering of the questions to allow the participants to lead the discussion in unanticipated directions (King & Horrocks, 2010).

Data Collection Procedure

Following approval by Western University Faculty of Education Use of Human Subjects Review Board (see Appendix B), permission was also attained from an ethics board at each of three universities involved in this study. Once the ethics process had been completed, it was important to attain permission to access the students by consulting with formal undergraduate leadership roles in each School of Nursing. These roles, including the process to communicate and attain permission to recruit students varied within each School of Nursing. Within a period of four months, all approvals and permissions at each of the three universities were successfully attained to conduct this study.

Shortly after approvals were attained, the researcher collaborated with an identified nursing professor in level four of the baccalaureate program in each School of Nursing. Each professor negotiated a suitable time for the researcher to attend a level four class and recruit the nursing students. In class, the researcher distributed a package containing the

Letter of Information (Appendix C) and the phase one surveys (Appendix A) to each student. Students who were present in class were invited to participate by reviewing the letter of information. Those interested completed the surveys and returned the package to the researcher. If any nursing student was interested in participating in phase two, he or she would complete the additional consent to participate (Appendix C) which was also included in the survey package. For student convenience, the focus groups were organized on site after their level four nursing class.

Data Analysis

Analyzing data in a mixed methods study consists of using an appropriate method of analysis depending on whether the data were collected quantitatively or qualitatively (Creswell & Clark, 2007). In this study, once each data set was prepared for analysis, the data were then examined using a sequential data analysis process (Creswell & Clark, 2007). This involved using the results from phase one of the study to inform phase two of the study. According to Johnson and Turner (2003), "when conducting mixed methods research, methods should be mixed in a way that has complementary strengths and non-overlapping weaknesses" (p.299). The quantitative data in this study were examined first and then in combination with the qualitative data to provide a richer interpretation and greater understanding of the variables. In essence, although each data set was analyzed separately, the data from phase one of the study were fully explored within the focus group interviews in phase two of the study.

Using the Statistical Package for the Social Sciences (SPSS) computer program, statistical analyses were completed for the first two research questions in this study. The data collected from each instrument, the *State-Trait Anxiety Inventory* (STAI) (Spielberger, 1983) and the survey, *Factors Contributing to Anxiety in Clinical Learning* (researcher

developed) was combined and entered to maintain anonymity of site and confidentiality of the participants. Descriptive and basic inferential statistics were used to analyze the data. Averages and frequency distributions were calculated for each set of factors in real and simulated clinical learning experiences. The factors that students perceived as most and least anxiety provoking were identified. To further test differences and relationships in the second research question, an analysis of variance and t-tests were completed. This analysis was done to explore significant relationships between group means, and anxiety and factor subscale scores.

To address the third research question, the qualitative responses from the *Teaching and Learning Strategies that Enhance Professional Practice Self-Efficacy in Clinical Learning* (researcher developed) in phase one, as well as the interview data from the three focus groups in phase two were each transcribed separately. Once this was complete, the following procedural steps were followed for each qualitative data set (Creswell & Clark, 2007): 1) explore the data using a thematic analysis process; divide the transcribed text into smaller units, assign labels to each unit and use color to identify repeated units; 2) review coded data and group similar units of data, and finally, 3) represent the grouped data using themes, categories, or other presenting visual models, figures or tables.

To further enhance the validity of the research findings, analyzed data in each phase of the study were interpreted and synthesized using a convergence model of triangulation (Creswell & Clark, 2007; Erzberger & Kelle, 2003). In this approach, the data from phase one were compared and contrasted in phase two for similar interpretation and understanding. Related themes were further synthesized and unrelated themes remained as separate entities for reporting. According to Streubert, Speziale, and Carpenter (2011), this approach to data triangulation contributes to strengthening the findings, while overcoming

the limitations of using a single strategy for interpretation. In addition, there is greater completeness in understanding and describing the phenomena being explored.

Once all data were triangulated, the resulting themes underwent a peer review process to confirm that each theme was distinct and different from the others and to assess clarity in the meaning of words describing each theme. If reviewers identified an unclear use of words or an overlap between themes, a few minor word adjustments were made to ensure clarity and meaning were explicit. In addition to peer review, there was consideration for the curricular philosophies of each school of nursing where participants were recruited. This only occurred if the data revealed important differences between the three schools that would impact understanding of the research inquiry. This was an intentional decision made by the researcher, as no study aim was set to compare university schools of nursing. Analyzing differences and engaging in a comparative process would require a critique of pedagogical values and philosophies underlying the development of learning activities within each school. As a faculty member in one university school of nursing in Ontario, comparing schools of nursing in terms of these qualities would be ethically challenging for the researcher. As such, data analysis was focused on understanding the overall student experience in clinical nursing education and advancing knowledge related to effective nursing instruction, regardless of the school in which they learn.

CHAPTER 4

RESULTS

In this chapter, the findings attained in this mixed methods study will be shared. This will include both phases one and two data, gathered from self-report instruments and focus groups. The results will be organized in three sections according to each of the research questions: 1) what are the current factors in real and simulated clinical learning experiences that contribute to nursing students' feelings of anxiety? 2) are there differences between the factors reported to cause anxiety in simulated clinical learning contexts and those reported in real clinical learning experiences? and 3) what are the teaching and learning strategies that may minimize nursing students' feelings of anxiety in clinical learning and positively enhance their self-efficacy for professional nursing practice? Both quantitative and qualitative results will be included in the reporting of overall patterns and themes.

Research Question One

The first question in this study was: what are the current factors in real and simulated clinical learning experiences that contribute to nursing students' feelings of anxiety? To address this question, means and standard deviations were calculated for subscale scores on *The Factors Contributing to Anxiety in Clinical Learning* (researcher developed) instrument. According to the students' ratings in phase one of this study, preparing for patient care was the subscale of factors rated as contributing most to learner anxiety in both real (M=8.08) and simulated (M=7.80) clinical learning experiences. The second subscale of factors contributing most to learner anxiety was different in each of the two contexts, with the subscale of patient acuity (M=7.96) rating second in the real clinical learning context and the subscale of learning process (M=7.14) rating second in the simulated

learning context. The third subscale of factors most contributing to learner anxiety was also different between the two learning contexts, with the subscale of learning process (*M*= 7.84) rating third in the real clinical learning context and the subscale of patient acuity (*M*=6.94) rating third in the simulated learning context. Following this, the remaining order of subscales contributing to learner anxiety was the same for both real and simulated learning experiences. The summary rank ordering at the conclusion of the survey was not completed by the students and so was not included in the above ratings. The following tables 3 and 4 summarize the descriptive results for each subscale of factors in the two learning contexts with means rank ordered from most to least contribution to learner anxiety. In phase two of the study, each of these subscales of factors were further explored to attain a deeper understanding from students' perceptions. These data will be integrated in the discussion in chapter five.

Table 3
Subscales of Factors Contributing to Anxiety in Real Clinical Contexts (RCC): Means rank ordered from most to least contributing

Subscale	*n*	*M (SD)*	Rank
Preparing for patient care	185	8.081 (2.303)	1
Patient acuity	185	7.957 (2.336)	2
Learning process	185	7.838 (2.007)	3
Teacher characteristics	185	7.038 (2.737)	4
Qualities of self	186	6.973 (1.575)	5
Making mistakes	185	4.873 (1.541)	6
Team communication	186	4.473 (1.690)	7

Table 4
Subscale of Factors Contributing to Anxiety in High Fidelity Clinical Contexts (HFC): Means rank ordered from most to least contributing

Subscale	*n*	*M (SD)*	Rank
Preparing for patient care	182	7.802 (2.328)	1
Learning process	182	7.143 (2.250)	2
Patient acuity	182	6.940 (3.422)	3
Teacher characteristics	182	6.637 (2.592)	4
Qualities of self	182	6.236 (1.513)	5
Making mistakes	182	5.132 (1.776)	6
Team communication	182	3.456 (1.428)	7

To further understand the subscale of factors in relation to students' state and trait mean anxiety scores, an analysis of variance was completed. This analysis compared the means between subscales of factors and determined if they were significantly different from each other. Each subscale consisted of two to three levels (see appendix A.03). Since the average college students is considered to be below 40 on mean anxiety scores for the STAI, students above 40 would be considered to have greater anxiety than the average college student (Spielberger, 1993). The analysis of variance was completed for two groups: students who scored 40 and below on their state and trait anxiety and students who scored greater than 40 on their state and trait anxiety. After completing the analysis for state anxiety, it appears that in the group of students who scored above 40 on their state, there is a significant relationship between state anxiety and two of the subscales in real clinical contexts that students perceive as contributing to anxiety: 1. preparing for patient care and 2. team communication. In this same group of students, there is a significant relationship between state anxiety and four of the subscales in high fidelity clinical contexts:

1. qualities of self, 2. patient acuity, 3. preparing for patient care, and 4. learning process. The same analysis was completed for trait anxiety. The findings reveal there is a significant relationship between trait anxiety and four of the subscales of factors for real clinical contexts: 1. qualities of self, 2. preparing for patient care, 3. team communication and 4. learning process. In addition, there is a significant relationship between trait anxiety and one of the subscales for high fidelity clinical contexts: team communication. The following tables 5 and 6 provide a summary of the findings.

Table 5
Mean State Anxiety scores > 40 and Subscale of Factors Contributing to Anxiety in Real (RCC) and High Fidelity (HFC) Clinical Contexts

Subscale of Factors	Context	*n*	*M (SD)*	df	F	Sig.
Qualities of self	RCC	110	7.13 (1.620)	1	2.602	.108
Patient Acuity	RCC	109	8.14 (2.440)	1	1.596	.208
Preparing for patient care	RCC	109	8.42 (2.270)	1	5.973	.015 *
Team communication	RCC	110	4.68 (1.670)	1	4.176	.042 *
Teacher characteristics	RCC	109	7.05 (2.807)	1	.002	.962
Making mistakes	RCC	109	5.02 (1.557)	1	2.470	.118
Learning process	RCC	109	8.03 (2.088)	1	2.388	.124
Qualities of self	HFC	107	6.50(1.604)	1	6.918	.009 *
Patient acuity subscale	HFC	107	7.47 (3.893)	1	6.356	.013 *
Preparing for patient care	HFC	107	8.16 (2.344)	1	6.273	.013 *
Team communication	HFC	107	3.59 1.485)	1	2.259	.135
Teacher characteristics	HFC	107	6.92 (2.610)	1	3.032	.083
Making mistakes	HFC	107	5.29 (1.888)	1	2.063	.153
Learning process	HFC	107	7.52 (2.312)	1	7.701	.006 *

* Significant at the p< .05 level

Table 6
Mean Trait Anxiety scores >40 and Subscale of Factors Contributing to Anxiety for Real (RCC) and High Fidelity (HFC) Clinical Contexts

Subscale of Factors	Context	*n*	*M (SD)*	df	F	Sig.
Qualities of self	RCC	108	7.35 (1.442)	1	16.110	.000 *
Patient Acuity	RCC	108	7.95 (2.533)	1	0.000	.983
Preparing for patient care	RCC	108	8.49 (2.125)	1	8.548	.004 *
Team communication	RCC	108	4.69 (1.597)	1	4.501	.035 *
Teacher characteristics	RCC	108	6.98 (2.707)	1	.109	.741
Making mistakes	RCC	108	4.88 (1.445)	1	.010	.922
Learning process	RCC	108	8.11 (1.973)	1	4.913	.028 *
Qualities of self	HFC	106	6.38 (1.612)	1	1.953	.164
Patient acuity subscale	HFC	106	7.31 (3.880)	1	3.028	.084
Preparing for patient care	HFC	106	8.06 (2.259)	1	3.066	.082
Team communication	HFC	106	3.67 (1.432)	1	5.840	.017 *
Teacher characteristics	HFC	106	6.61 (2.539)	1	.022	.882
Making mistakes	HFC	106	5.18 (1.809)	1	.180	.672
Learning process	HFC	106	7.25 (2.296)	1	2.663	.470

* Significant at the p< .05 level

Finally, a test of paired t-tests was conducted to further understand the factors in each learning context contributing to anxiety. The analysis highlighted differences between real and simulated clinical contexts in terms of each of subscale of factors contributing to

anxiety. The findings demonstrate significant differences in 4 subscale scores with a Bonferroni correction for p<.007. It appears the subscale scores were higher in the real clinical contexts for the following factors: 1. qualities of self, 2. patient acuity, 3. team communication, and 4. learning process. The remaining subscales did not reveal significant differences in mean. Table 7 provides a summary of the paired t-tests.

Table 7
Paired t-tests of Real (RCC) and High Fidelity (HFC) Clinical Context Subscales with Bonferroni adjustment (p<.007)

Paired subscale of factors	*n*	*95% CI* [LL, UL]	*t*	*df*	Sig.
Pair 1 RCC: Qualities of self subscale HFS: Qualities of self subscale	182	[.514, 1.025]	5.941	181	.000 *
Pair 2 RCC: Patient acuity subscale HFS: Patient acuity subscale	182	[.530, 1.569]	3.983	181	.000 *
Pair 3 RCC: Preparing for patient care HFS: Preparing for patient care	182	[-.013, .629]	1.890	181	.60
Pair 4: RCC: Team communication HFS: Team communication	182	[.841, 1.280]	9.548	181	.000 *
Pair 5 RCC: Teacher characteristics HFS: Teacher characteristics	182	[.107, .761]	2.616	181	.010
Pair 6 RCC: Making mistakes HFS: Making mistakes	182	[-.444, -.029]	-2.245	181	.026
Pair 7 RCC: Learning process HFS: Learning process	182	[.432, 1.019]	4.878	181	.000 *

* Significant at the p< .007 level

Research Question Two

The second question in this study was: are there differences between the factors reported to contribute to anxiety in simulated clinical learning contexts and those reported in real clinical learning contexts? To fully address this question, data will be presented from both phases of this study as it relates to this question. Firstly in phase one, the means and standard deviations were calculated for each factor on *The Factors Contributing to Anxiety in Clinical Learning* (researcher developed) instrument. According to the students' perceptions in this study, the five factors rated as contributing the most anxiety for students in real clinical contexts were: making a mistake in patient care (M=3.04), not having enough clinical practice (M=2.83), performing CPR (M=2.82), feeling unsure about my ability (M=2.79) and being watched by others as I provide care (M=2.76). The single factor causing the most anxiety in real contexts was making a mistake in patient care (M=3.04) and the least anxiety was being embarrassed when I provide care (M=1.97). Table 8 illustrates the descriptive results in phase one for each factor in the real clinical context. The factors are listed in order of most contributing to learner anxiety.

In terms of the simulated clinical contexts, the means and standard deviations were also calculated in phase one for each factor on *The Factors Contributing to Anxiety in Clinical Learning* (researcher developed) instrument. The five factors students perceive as contributing the most to anxiety were: being watched by others as I provide care (M=2.75), my teacher's response if I make a mistake (M=2.74), feeling unsure about my ability (M=2.70), not having a good knowledge base (M=2.66) and making a mistake in patient care (M=2.65). The single factor contributing to the most anxiety in simulated contexts was being watched by others while I provide care (M=2.75) and the least anxiety was getting

emotionally attached to my patient (*M*=1.39). Table 9 illustrates the descriptive results in phase one for each factor in the simulated learning context in the order of most contributing to learner anxiety.

Table 8
Individual Factors Contributing to Anxiety in Real Clinical Contexts (RCC)

Individual Factor	*n*	*M (SD)*	Rank
Making a mistake in patient care	185	3.04 (0.875)	1
Not having enough clinical practice	185	2.83 (0.846)	2
Performing CPR	182	2.82 (1.128)	3
Feeling unsure about my ability	185	2.79 (0.646)	4
Being watched by others as I provide care	183	2.76 (0.900)	5
My teacher's response if I make a mistake	183	2.69 (0.881)	6
Not having a good knowledge base	185	2.68 (0.874)	7
My patient is dying	182	2.64 (0.904)	8
My patient is becoming more ill	184	2.60 (0.747)	0
Being unprepared to provide patient care	185	2.57 (0.953)	10
My teacher not being supportive of me	184	2.48 (0.977)	11
My teacher not providing good supervision	185	2.32 (0.973)	12
Talking to other members of the team	185	2.28 (0.858)	13
My teacher not being a good role model	184	2.26 (0.979)	14
Getting emotionally attached to my patient	185	2.25 (0.836)	15
Talking to other nurses in the placement	184	2.23 (0.870)	16
My peers' response if I make a mistake	184	2.22 (0.816)	17
Being left alone to care for my patient	183	2.09 (0.817)	18
Being embarrassed when I provide care	185	1.97 (0.703)	19

Table 9
Individual Factors Contributing to Anxiety in High Fidelity Clinical Contexts (HFC)

Individual Factor	*n*	*M (SD)*	Rank
Being watched by others as I provide care	181	2.75 (0.999)	1
My teacher's response if I make a mistake	182	2.74 (1.000)	2
Feeling unsure about my ability	178	2.70 (0.750)	3
Not having a good knowledge base	182	2.66 (0.913)	4
Making a mistake in patient care	182	2.65 (0.962)	5
Not having enough clinical practice	182	2.61(0.839)	6
Being unprepared to provide patient care	181	2.55 (0.891)	7
My teacher not being supportive of me	181	2.44 (0.968)	8
My peers' response if I make a mistake	182	2.39 (0.938)	9
My patient is dying	182	2.32 (1.034)	10
Performing CPR	181	2.29 (1.036)	11
Being embarrassed when I provide care	181	2.23 (0.864)	12
My patient is becoming more ill	181	2.20 (0.933)	13
My teacher not providing good supervision	182	2.12 (0.967)	14
My teacher not being a good role model	182	2.09 (0.936)	15
Being left alone to care for my patient	181	1.77 (0.817)	16
Talking to other members of the team	182	1.76 (0.770)	17
Talking to other nurses in the placement	182	1.70 (0.745)	18
Getting emotionally attached to my patient	180	1.39 (0.673)	19

In phase two of this study, the qualitative data from the focus groups were compared and contrasted with the descriptive results in phase one. In terms of the second research question, this triangulated approach validated several similar findings with the following additional factors briefly mentioned by the students as contributing to anxiety in real contexts: 1. unclear and high teacher expectations, 2. lack of feedback, 3. unsupportive nurses with a potential for horizontal violence, and 4. a lack of experience and knowledge in the earlier years of the program. In simulated contexts, the following two additional factors were identified by the students as contributing to anxiety in simulated contexts: 1. using simulation as an evaluation measure (i.e., Objective Structured Clinical Examination) and 2. taking on a leadership role during a team simulation.

In addition to understanding the differences in factors contributing to anxiety in real and simulated contexts, a two way ANOVA was completed to further examine factor differences across the three sites. The findings reveal significant site two differences in four of the factors in real clinical contexts and eight factors in simulated clinical context. The site where these significant differences occurred was the smallest of the three schools of nursing with noted concerns expressed by the students in the focus group related to changes in nurse educator roles. The following tables 10 and 11 provide a summary of the significant group (site) differences in real and simulated clinical contexts.

Table 10
Group (Site) Differences in Real Clinical Contexts (RCC)

Individual Factor	Site One		Site Two		Site Three		*df*	*F*	Sig.
	n	*M (SD)*	*n*	*M (SD)*	*n*	*M (SD)*			
Feeling unsure about my ability	89	2.71(.694)	53	2.92(.583)	43	2.79(.600)	2	1.887	.155
Being embarrassed when I provide care	89	1.90(.739)	53	2.02(.665)	43	2.07(.669)	2	1.016	.364
Getting emotionally attached to my patient	89	2.38(.860)	53	2.09(.838)	43	2.16(.754)	2	2.295	.104
My patient becoming more ill	89	2.58(.751)	53	2.64(.736)	42	2.57(.770)	2	.130	.878
My patient dying	88	2.61(.903)	53	2.66(.898)	41	2.66(.938)	2	.058	.944
Performing CPR	87	2.53(1.19)	53	3.23(1.05)	42	2.93(0.92)	2	.962	.001 *
Not having good knowledge base	89	2.46(.854)	53	3.04(.854)	43	2.67(.808)	2	7.774	.001 *
Not having enough practice	89	2.79(.846)	53	2.94(.886)	43	2.79(.804)	2	.636	.530
Being unprepared to provide care	89	2.39(.961)	53	2.85(.886)	43	2.60(.955)	2	3.949	.021 *
Talking to other nurses	89	2.36(.895)	52	2.17(.857)	43	2.02(.801)	2	2.348	.099
Talking to other team members	89	2.42(.877)	53	2.19(.900)	43	2.12(.731)	2	2.227	.111
My teacher not being supportive	88	2.39(.976)	53	2.68(1.09)	43	2.44(.908)	2	1.484	.229
My teacher not being a good role model	88	2.10(.935)	53	2.57(1.07)	43	2.21(0.89)	2	3.908	.022 *
My teacher not providing good supervision	89	2.26(.924)	53	2.55(1.05)	43	2.16(.949)	2	2.213	.112
My teacher's response if I make a mistake	87	2.59(.896)	53	2.83(.826)	43	2.72(.908)	2	1.306	.274
My peers' response if I make a mistake	88	2.25(.820)	53	2.19(.761)	43	2.21(.888)	2	.100	.905
Being watched by others as I provide care	87	2.74(.895)	53	2.94(.886)	43	2.58(.906)	2	2.001	.1398
Being left alone to care for patient	87	2.11(.841)	53	2.17(.871)	43	1.95(.688)	2	.892	.412
Making a mistake in patient care	89	2.93(.876)	53	3.17(.826)	43	3.09(.921)	2	1.338	.265

* Significant at the p< .05 level

Table 11
Group (Site) Differences in High Fidelity Contexts (HFC)

Individual Factor	Site One		Site Two		Site Three		*df*	*F*	Sig.
	n	*M (SD)*	*n*	*M (SD)*	*n*	*M (SD)*			
Feeling unsure about my ability	86	2.51(.808)	51	3.02(.583)	41	2.68(.687)	2	7.923	.001 *
Being embarrassed when I provide care	88	2.08(.820)	53	2.45(.952)	40	2.28(.784)	2	3.232	.042 *
Getting emotionally attached to my patient	87	1.47(.713)	53	1.26(.560)	40	1.40(.709)	2	1.573	.210
My patient becoming more ill	87	2.20(.938)	53	2.19(.982)	41	2.22(.881)	2	.014	.986
My patient dying	88	2.33(1.069)	53	2.38(1.06)	41	2.22(.936)	2	.277	.759
Performing CPR	87	2.53(1.19)	53	3.23(1.05)	42	2.93(0.92)	2	1.652	.195
Not having good knowledge base	88	2.41(0.930)	53	3.08(.829)	41	2.66(.794)	2	9.653	.000 *
Not having enough practice	88	2.55(.883)	53	2.81(.761)	41	2.49(.810)	2	2.254	.108
Being unprepared to provide care	87	2.40(.933)	53	2.83(.802)	41	2.49(.840)	2	4.049	.019 *
Talking to other nurses	88	1.83(.834)	53	1.57(.636)	41	1.59(.631)	2	2.725	.068
Talking to other team members	88	1.89(.823)	53	1.62(.740)	41	1.66(.656)	2	2.420	.092
My teacher not being supportive	87	2.18(.922)	53	2.83(.975)	41	2.49(.898)	2	7.974	.000 *
My teacher not being a good role model	88	1.92(.874)	53	2.32(.956)	41	2.15(0.989)	2	3.204	.043 *
My teacher not providing good supervision	88	2.03(.964)	53	2.26(.944)	41	2.12(.967)	2	.935	.394
My teacher's response if I make a mistake	88	2.59(.967)	53	3.09(.946)	41	2.61(1.046)	2	4.855	.009 *
My peers' response if I make a mistake	88	2.32(.941)	53	2.49(.933)	41	2.41(.948)	2	.574	.564
Being watched by others as I provide care	87	2.47(1.021)	53	3.19(.878)	41	2.78(.909)	2	9.291	.000 *
Being left alone to care for patient	88	1.68(.781)	52	1.88(.900)	41	1.80(.782)	2	1.061	.348
Making a mistake in patient care	88	2.50(.922)	53	2.89(.993)	41	2.66(.965)	2	2.728	.068

* Significant at the p< .05 level

Research Question Three

The third question in this study was: What are the teaching and learning strategies that minimize nursing student' feelings of anxiety in clinical learning and positively enhance their self-efficacy for professional nursing practice. To fully address this question, a thematic analysis of the qualitative data from each phase of the study was completed. The data from *The Teaching and Learning Strategies that Enhance Professional Practice Self-Efficacy in Clinical Learning* (researcher developed) survey and the three focus groups were synthesized and compared to determine a summary list of teacher and learner strategies. The number of occurrences for each theme was also determined to provide a rank ordering of those strategies most commonly identified. The most frequently mentioned teaching strategy for both real and simulated contexts was related to the teacher's interaction with the student. Students articulated the importance of positive, encouraging approaches from their teachers, particularly in situations where they were unsure and needed praise from their teacher to feel they had the ability to continue. In addition to providing positive encouragement, the teacher's ability to give constructive feedback was also identified as a common teaching strategy in both contexts. The remaining teaching strategies identified by the students were related to elements of the learning process within each context. The following tables 12 and 13 summarize the teaching strategy themes, including the total number of occurrences for words describing the themes. The student narratives for each of the themes will be integrated in the discussion in chapter 5 to better illustrate data interpretation.

Table 12
Themes: Teacher Strategies that Enhance Self-efficacy in Real Clinical Contexts (RCC)

Teaching Strategy	Number of total occurrences
1. provides positive encouragement during the learning process	148
2. guides me and shows me before I perform on my own	92
3. is receptive to my questions and my requests for assistance	82
4. gives specific, constructive feedback	70
5. trusts in my ability to be autonomous in patient care	55
6. challenges critical thinking with questions and new learning situations	41

Table 13
Themes: Teacher Strategies that Enhance Self-efficacy in Simulated Contexts

Teaching Strategy	Number of total occurrences
1. provides positive encouragement during the learning process	94
2. guides the debriefing process and provides constructive feedback	64
3. prompts me during simulation without taking over	43
4. stimulates my critical thinking and understanding of the scenario	37
5. provides preparatory work pre-simulation	34
6. ensures a safe learning environment to make mistakes	27

In terms of learner strategies to enhance self-efficacy for professional practice, the themes in both learning contexts as well as rank ordering according to occurrences were similar. The only unique theme was being self-directed and looking for new learning opportunities which was identified as a learning theme in real clinical contexts. The most common strategy identified by learners in both contexts was preparation prior to their clinical day or simulation activity. Students felt the more time they spent preparing and researching all elements of the patient's care, the more self-efficacious they felt when they were in the clinical context. In addition to preparation, the students also identified talking with others (nurses, team, peers), asking questions or practicing in the lab beforehand as positive strategies to also enhance self-efficacy. The following tables 14 and 15 summarize the learning strategy themes, including the total number of occurrences. The student narratives for each of the themes will be integrated in the discussion in chapter 5 to better illustrate data interpretation.

Table 14
Themes: Learner Strategies that Enhance Self-efficacy in Real Clinical Contexts

Learner Strategy	Number of total occurrences
1. prepare by researching well the night before clinical (ie. diagnosis, medications, interventions, current issues)	125
2. talk with other nurses, team members or my peers	68
3. ask questions when I am unclear about something	50
4. engage in positive self-talk, self-care and self-reflection	44
5. practice skills in the simulation lab beforehand (repetition)	29
6. be self-directed and look for new opportunities	27

Table 15
Themes: Learner Strategies that Enhance Self-efficacy in Simulated Clinical Contexts

Learner Strategy	Number of total occurrences
1. prepare for simulation by completing preparatory work	103
2. learn from other peers and work with them as a team	60
3. ask questions when I am unclear about something	42
4. engage in positive self-talk, self-care and self-reflection	36
5. practice in the simulation lab beforehand (repetition)	30

In summary, this chapter reported on the findings for each research question in phase one and two of this study. Although there are similarities in understanding learner anxiety in real and simulated clinical contexts, there are important and distinct differences that contribute to the learner's experience and more specifically, to the role of instruction within these two contexts. These findings will be shared in further detail within the discussion in chapter 5.

CHAPTER 5

DISCUSSION

The purpose of this study was to examine the affective component of learner engagement in clinical nursing education, specifically the emotion of learner anxiety in real and simulated clinical learning contexts. In understanding this emotional response to learning, students' perceptions of the factors in clinical learning that contribute to this anxiety, and the teaching and learning strategies that impact this emotion and enhance students' self-efficacy for professional nursing practice was explored. Specific factors that contribute to perceptions of learner anxiety in real and simulated learning contexts have been identified in this study. There appear to be both similarities and differences between both learning contexts, some of which are related to logistical and organizational factors of the learning activity. Students have identified similarities in teaching strategies that contribute to their self-efficacy in professional practice, although in this regard, there were distinct differences related to elements of the learning process within each context. Interestingly, in terms of learner strategies, elements of being self-directed and actively seeking new learning opportunities were more prevalent in real clinical contexts.

In this chapter, the findings of the study will be discussed in relation to the literature review presented in chapter two, and where applicable to theoretical constructs within theories of self-efficacy (Bandura, 1977, 1986) and learner engagement (Linnenbrink & Pintrich, 2003). As each theme is presented, samples of student narratives will be integrated to further enhance interpretation. These narratives represent a blending of mixed sources of data in phase one and two to better illustrate the meaning of each theme. Following this, the implications for nurse educators and learners will be identified. In

addition, the limitations of the study and recommendations for future research will be addressed. Finally, concluding remarks will be presented at the end of the chapter.

Discussion of Research Question One

The first question in this study was: what are the current factors in real and simulated clinical learning experiences that contribute to nursing students' feelings of anxiety? To begin, the findings in this study confirmed nursing students do experience feelings of anxiety during clinical learning in both real and simulated contexts. This predominant theme was shared by the students who participated in the focus groups (n=31) and was supported in the literature presented in chapter two (Bremner, Aduddell, Bennett & VanGeest, 2006; Lasater, 2007, McCaughey & Trauynor, 2010; Mun, 2010; Sharif & Armitage, 2004). Collectively, the students described feelings of anxiety predominantly in clinical situations where patient care was unpredictable and difficult to respond to, particularly if they did not have prior preparation or felt unready to manage the situation. The following narratives from the focus groups summarize this affective response of learner anxiety in student nurses related to both clinical contexts: "there are so many things going on with your patient…I was so nervous all the time and had to really pull from my preparation and things I learned over the years"; "I feel like anxious all the time in clinical; I find I draw a blank and easily forget where to go with things…I find there is a lot of pressure in clinical to do things perfect"; "simulations are so terrifying, especially when I am being evaluated and I am not sure what is going to happen to the patient…I get so anxious with this activity"; and finally, "the night before clinical, I usually can't sleep at all. I feel like this because I don't know what I was getting myself into and what my patient would be like the next day. If my patient is really sick, this makes me feel even more nervous."

The samples of student narratives reinforce the presence of anxiety in nursing students when they engage in learning in both real and simulated contexts. Students described feelings of anxiety either the night before clinical while preparing and anticipating patient care or during the day while they were providing care. The emotion seemed to vary in intensity depending on what was happening in the practice setting with the patient and how the student felt about their preparation to engage in care. Although some students described feeling quite overwhelmed and not being able to focus, others seemed to carry on with their daily care and to manage. According to Yerkes & Dodson, 1908), not all anxiety is considered negative. In fact, a certain amount of cognitive arousal must exist to motivate a learner to perform. It is in those situations where learning is challenging and tasks are too difficult to attain that learners experience more stress (Edmunds & Edmunds, 2010). In this study, nursing students described varying degrees of anxiety, including situations where they were unable to focus and participate in patient care. As such, it would be important for the nurse educator to assess students' affective readiness to engage in learning and monitor this response in both learning contexts.

In addition to validating an overall perception of anxiety in clinical nursing education in both real and simulated learning contexts, the elements of gender and age as gathered in the demographic data did not play a role in differentiating this affective response as being more prevalent for females than males or specific to a particular age group. This is similar to the findings in the literature which do not reveal any relationship between perceptions of anxiety and gender or age. In this study, the majority of students were female (87%) and the mean age was 23.5 years old.

Further to gender and age, the results of the STAI (Spielberger, 1983) also support this sample of nursing students being similar in their state and trait levels of anxiety when

compared to other college students (Spielberger, 1983). As such, nursing students were not any different than other college students who experienced anxiety, and so their perceptions of anxiety could not be explained by state and trait anxiety levels. Nursing students' feelings of anxiety in clinical learning are real and this cohort is not uniquely different in their tendency to feel anxious when compared to other college students. In addition, the trend for female versus male nursing students scoring slightly higher in both state (female *M*=40.78, male *M*=37.98) and trait anxiety (female *M*=40.12, male *M*=39.57) was also quite consistent with relevant literature (Spielberger, 1983).

In the following several sections, the findings related to the subscale of factors (Factors Contributing to Anxiety in Clinical Learning Survey, researcher developed, 2012) will be discussed in relation to research question one. The purpose of the following discussion is to describe the factors contributing to anxiety in clinical learning.

Preparing for Patient Care

Further to validating perceptions of anxiety in clinical learning, the participants identified current factors in real and simulated clinical contexts that contributed to these feelings of anxiety. According to the students' ratings in this study, not feeling prepared for patient care was the subscale of factors rated as contributing the most to learner anxiety in both real (*M*=8.08) and simulated (*M*=7.80) contexts. The factors in this subscale (Factors Contributing to Anxiety in Clinical Learning Survey, researcher developed, 2012) included: not having a good knowledge base, not having enough clinical practice, and being unprepared to provide patient care. Students who did not adequately review patient material and attended the learning context without appropriate knowledge and understanding were more likely to feel anxious in the learning process. This finding was further reinforced by those students who scored above 40 on their state and trait anxiety

scores which is considered to be higher than the average score for the college student (Spielberger, 1983). In fact there was a significant relationship between these students and the subscale preparing for patient care in real clinical contexts. This finding reinforces the idea that students who are generally more anxious, either because of a situation or as a component of their personality were more likely to identify not being prepared for patient care as a factor contributing to anxiety in real contexts. In comparison, in simulated clinical contexts students who had greater situational anxiety also perceived preparing for patient care as contributing to their anxiety. In summary, when students do not feel prepared to manage a patient situation in either learning contexts, they will likely experience greater anxiety.

Typically, nursing students in each of the three nursing programs in this study would participate in clinical learning each year of their program. Clinical learning would consist of a semester-long practicum in a healthcare setting, many of which were acute in nature, while others were in community or in other population health settings. During the clinical practicum, each school integrated both real and simulated learning activities. Preparing for patient care was usually completed once the student received their clinical assignment or simulation scenario. Students would utilize this information, including such things as a medical diagnosis, current course in hospital, medications, and consultations to begin their preparation for the following day. Despite planning and preparation, acute care situations, whether in real or simulated contexts cannot be predicted and so the clinical picture of the patent may be very different by the time the student arrives to the health setting. When this happens, it is likely the student requires more guidance from the nursing teacher to better understand the patient's care. In addition, the student may need to complete additional research to feel prepared to provide patient care.

The following qualitative comments illustrate perceptions of anxiety in preparing for patient care in both learning contexts: "I have felt so anxious when the patient is different and I haven't prepared for what I see. If I haven't done something before, I like a bit of handholding to help me to get through this first experience."; "when I am not fully prepared to care for the patient, it makes me feel nervous…I am so scared to be a real nurse and I sometimes wonder if I will be ready."; and finally, "I feel a fear of the unknown the first time I meet the patient….I am not sure if I am prepared, for example, I don't know how the patient ambulates, how to feed them or what to expect on this first day." Overall, students felt being unprepared for patient care contributed to their perceptions of anxiety in both contexts. When this happened, they were not ready to care for the patient or to participate in the simulation scenario. They described needing more assistance from their teacher or other nurses on the unit.

The findings related to preparing for patient care are supported in the literature discussing real learning contexts (Ganley & Linnard-Palmer, 2012; Melincavage, 2011; Zupiria et al, 2003), although there is limited evidence for comparison in simulated contexts. This study reinforces that being prepared for patient care is also important in simulated contexts. Students need to feel they have enough knowledge to understand their patient's care. Since learning in the simulated environment is managed by a technologist who operates the manikin, the teacher can carefully control the amount of guidance s/he provides so the student can make better connections to their preparation. In addition, as the scenario unfolds, if a student displays visible signs of anxiety and is unable to care for the patient, the teacher could intervene by entering the simulation room and providing guided teaching. In these instances, the teacher would be able to ensure learner anxiety is manageable and the student is still able to learn.

Patient Acuity and Learning Process

The second subscale of factors contributing most to learner anxiety was different in each of the two learning contexts, real and simulated. The subscale of patient acuity contributed more to perceptions of anxiety in real contexts and the subscale of learning process contributed more to perceptions of anxiety in simulated contexts. Each of these two findings will be discussed separately in this section in relation to the literature synthesized in chapter two. Importantly, conclusions will be raised specific to potential differences between the two clinical contexts.

The subscale of patient acuity contributed to perceptions of anxiety in real contexts (M=7.96) more than in simulated contexts (M=6.94). In addition, paired t-tests (table 7), corrected for chance findings also demonstrated significant differences with this subscale contributing to more anxiety in real contexts. Students felt more nervous about caring for live patients who became acutely ill and had multiple care needs in real contexts. This type of situation can be quite challenging for a novice nurse, particularly since the progression of illness may worsen and could potentially lead to patient death. According to Chen, Del Ben, Fortson and Lewis (2006) and Happell & Hayman-White (2009), anxiety has been reported in situations of increased patient acuity and death. In these situations, there is a greater need for clinical reasoning and decision-making, particularly in a timely fashion. As such, the student nurse may not have the knowledge and skill to intervene and continue to manage patient care.

Patient acuity as a subscale included the following sub-components (Factors Contributing to Anxiety in Clinical Learning Survey): my patient is becoming more ill, my patient is dying, and performing CPR. Each of these components refer to a patient becoming more ill with the potential for complex care interventions, including CPR. In

real clinical contexts, this is quite evident as the patient is 'real' and the student is immersed in the health situation, likely observing visible clinical signs as the patient becomes more acutely ill. Two of the students shared the following examples of patient acuity during the focus group interviews: "when I was in first year, I had a patient pass away…I felt so anxious about what happened. I thought I made a mistake and I had not assessed the patient properly and so something terrible happened; " and "when I had a patient who was being given codeine and Tylenol and there were some clinical changes that I didn't pick up on, I first felt nervous and then guilty about the whole thing." It is evident, nursing students' perceptions of anxiety increased as they perceived an inability to manage an acutely changing clinical situation. Interestingly, the feelings of guilt were also mentioned as students felt responsible for the patient's clinical change.

The subscale of learning process was the second group of factors contributing to perceptions of anxiety in simulated contexts. In fact, students rated this subscale of factors as contributing to more anxiety in simulated contexts (M=7.96) than in real contexts (M=6.94). In addition, there was a significant relationship between those students who scored above 40 on their state anxiety which is considered to be above the average college student (Spielberger, 1983) and the subscale of learning process (M=7.52, SD=2.31, p=.006). The factors in this subscale included (Factors Contributing to Anxiety in Clinical Learning Survey): being watched by others as I provide care; being left along to care for my patient; and making a mistake in patient care. In the focus groups, students described feeling very nervous when their performance was videotaped and then replayed for everyone to watch in the debriefing period post-simulation. In addition, most students commented on the presence of the teacher or other faculty behind the viewing window while they were performing in the simulation room. The notion of being watched was

described in one student's words: "I went into the lab not knowing any of the students I was grouped with in teams. This was hard and then the thought of the teacher watching us behind a two-way mirror and judging us on how we were doing made me feel nervous". Students also felt they were left alone to work through the simulation scenario. When they were unsure of what to do, this led to a fear of making mistakes. One student shared, "…I was on my own to care for the patient and it seemed that if I made a mistake it was a really bad thing. I didn't feel this was right for my learning, as it should be ok to learn from my mistakes in lab."

The findings related to learning process in the simulated context were similar to a recent study by Cato (2013) where nursing students (n=73) reported more anxiety in simulated contexts as a result of the following factors: possibility of making mistakes, being 'on camera', performing in front of peers, and performing in front of faculty. In fact, these factors were ranked in Cato's study in the top four in terms of mean anxiety scores. Students perceived greater anxiety when thinking about the possibility of making a mistake while caring for the patient in a simulation. Since the simulated learning experience often replicates a situation in real contexts, the patient may become quite acute as the scenario unfolds. This can be a challenging experience for the student nurse, leaving the student worried about not doing things right and being observed by others. Similar findings have also been reported in other studies (Cordeau, 2010; Ganley & Linnard-Palmer, 2012). In summary, both the current study and Cato's study contribute to a similar understanding of learner anxiety in the simulated environment, specific to the variable of learning process.

Teacher Characteristics

In addition to the three subscales already discussed, students also identified a fourth subscale of factors that contributed to their perceptions of anxiety in clinical learning. This

subscale was labeled as teacher characteristics and consisted of the following sub-factors (Factors Contributing to Anxiety in Clinical Learning Survey): my teacher is not being supportive of me, my teacher is not a good role model, and my teacher does not provide good supervision. As a subscale, this set of factors was ranked fourth by the students in both real and simulated learning contexts. The students did not feel there was a difference between these two contexts in terms of the teacher role and their affective response to learning. Interestingly, upon further analysis using Anova, findings did not reveal any significant relationship between state and trait scores and the subscale of teacher characteristics, including students who had higher anxiety scores. Despite this, the quantitative ranking of anxiety factors did identify teacher characteristics as the fourth subscale contributing to learner anxiety. More importantly, the qualitative data from the focus groups at each site was heavily concentrated on the role of the teacher and the impact of this role on students' clinical learning experiences. Students spent a significant amount of time discussing the relationship between their teacher and perceptions of anxiety.

In the qualitative comments, students reported feeling their emotional response to learning in both contexts depended on the teacher and how this individual interacted with them. There was a sense of power difference which at times was not always positive, particularly in relation to evaluation, "I was too intimidated by the teacher with a constant feeling that she would fail me if I did something wrong…this blocked my learning and made it more difficult for me to cope"; and "I wish my teacher would have come in to help me when I was struggling in a simulation…I just feel they judge you as they are watching and evaluating what you are doing." Students also discussed what it felt like when they were unsure of a patient situation. They felt the teacher added a lot of pressure on their learning, expecting things to be 'perfect' all the time. There was a sense that students

should 'easily' transfer what they had learned from the lab to the practice setting. In fact, for all students in the focus groups, this was not an easy transition for them to make and they felt they needed time to build-up to the experiences in real contexts. Some even described the teacher was not being open to this pace of learning and expected a direct transfer of learning to the real setting. Two students shared the following comments: "the teacher seems to expect me to do everything right. We learn a lot of our skills for the first time in a lab setting so it is hard to transfer perfectly to the real world. I need more time…"; and "I wish we had more time to build-up to things; students don't just want one time of learning…we want to learn over time; throwing us in the simulation one time doesn't help us learn…"

The supportive nature of the teacher, particularly the first time a student needs to complete a skill or an intervention was voiced several times in the focus groups. The students wanted the teacher to be present and walk them through the experience for the first time. Often, there wasn't much time spent on transferring the learning from the lab setting and the students felt an expectation they must know everything and do it well since it was already learned in the lab. The students described needing time for learning and for their teacher to immerse themselves in teaching, prior to evaluating performance, "I want my teacher to be available to me for teaching, yet they focus on evaluation right away when we start our clinical rotation. If they role-modeled, I wouldn't feel such pressure." The literature in chapter two supports many of these findings specific to real contexts for clinical learning. In these studies, the lack of supportive teacher-learner relationships, teacher accessibility, the feeling of being intimidated with unrealistic expectations placed on them, and the feeling of uncertainty in the clinical setting contributed to feelings of

anxiety (Carlson, Kotze & Van Rooyen, 2003; Cook, 2005; Kim, 2003; Melincavage, 2011; Reid-Searl, Moxham, Walker, & Happel, 2009; and Zupiria et al, 2003).

In simulated settings, learner anxiety and the teacher role has not been well-explored. Horsley's study (2012) provided evidence that the presence of the teacher in the simulation room during a summative evaluation resulted in a significant rise in state anxiety scores. Horsley recommended the teacher stand behind the viewing window or in the control room and provide the students with some time to think through the patient's situation. In the current study, it appears the teacher role in simulated contexts is similar to real contexts in that students tend to feel better when teachers are supportive and engage in teaching, particularly when students are struggling. When students are in the simulation room, it is important for the teacher to find opportunities to intervene in a teaching role and provide guidance and role-modeling to manage the patient's care. This point will be discussed in more detail with research question three as specific teacher strategies in both real and simulated contexts will be identified.

Qualities of Self

This subscale of factors was rank ordered as fifth in contributing to learner anxiety in both real (M=6.973) and simulated (M=6.236) contexts. Paired t-tests, corrected for chance findings also demonstrated significant differences with this subscale contributing to more anxiety in real clinical contexts. This subscale of factors included the following sub-components (Factors Contributing to Anxiety in Clinical Learning Survey): feeling unsure about my ability, being embarrassed when I provide care, and getting emotionally attached to my patient. Upon further analysis using an Anova percentile ranking, there was a significant relationship between students who scored greater (>40) than the average college student on their state and trait anxiety and this subscale of factors in simulated contexts

(*M*=5.50, *SD*=1.60, *p*=.009). Whereas, a significant relationship was found between those students who scored greater than 40 on their trait anxiety and this subscale of factors in real contexts (*M*=7.35, *SD*=1.442, *p*=0.000). It appears those students who had greater situational anxiety perceived this subscale of factors contributed more to their anxiety in simulated contexts. In addition, those students who had more trait anxiety perceived this group of factors as contributing more to anxiety in real contexts. The qualitative narratives in the focus groups explained some of these findings.

To begin, when students participated in a simulation scenario, it was very difficult for the student to perceive where the scenario would go and what would happen to the patient. The idea of participating in this unpredictable activity was a situational stressor for a number of students. When students shared their reflections, most felt that in these situations, they did not have the ability to adequately provide nursing care. One student shared, "…I went blank as soon as I walked in the simulation room…I didn't feel I could do care for the patient. No one was helping me and I just started to cry..." and "one of our instructors created a simulation where the patient was going to die…it was just a bad outcome for all of us…we didn't have the ability to manage…we didn't even feel hope." The findings in this study are similar to those in the literature, reinforcing that students feel unable to provide care when they are anxious (Alinier, Hun, Gordon & Harwood, 2006; Leigh, 2008; Haskvitz &Koop, 2004; Heninrich, Rule, Grady & Ellis, 2002).

Students also described insecurities related to their abilities in real contexts, "My feelings all stem from my confidence in myself…I don't know sometimes if I know what I am suppose to know to care for the patient or if I have been taught everything…this causes me to feel anxious"; and "I don't feel good about my abilities if I don't know what nursing care I need to provide…I try to do my best to prepare for my patient…" Students seemed

to experience greater insecurity when they did not prepare well or when their patient's health changed. This seemed to contribute to a perceived decrease in self-confidence and students became more concerned about whether they would be successful in caring for the patient. In chapter 2's review of literature, students' feelings of uncertainty related to ability were also identified in real learning contexts (Melincavage, 2011, Zupiria et al, 2003). In fact, perceptions of anxiety were more prevalent when students felt uncertain about the care they needed to provide and were unsure about their ability to manage the clinical situation.

In addition to feeling unsure of one's ability, the subscale qualities of self also included students' feelings of embarrassment or emotional attachment to the patient. In this study, students experienced feelings of embarrassment when they did know the answer or when they were having trouble providing appropriate nursing care. This sense of embarrassment was much greater in the simulated context (M=2.23) than in the real context (M=1.97). On the other hand, getting emotionally attached to the patient or even the thought of this contributed more to perceptions of anxiety when they entered real clinical contexts (M=2.25) than in the simulated contexts (M=1.39). These individual differences will be further discussed with research question two, although as a preemptive point, it is important to reinforce that students interact with live patients in real settings versus manikins in simulated settings. This difference likely contributes to emotional connectedness.

Making Mistakes

The subscale of factors labeled as making mistakes was ranked fifth in terms of contributing to anxiety in clinical learning for both real and simulated learning contexts. This subscale integrates two sub-components (Factors Contributing to Anxiety in Clinical Learning Survey): my teacher's response if I make a mistake and my peers' response if I

make a mistake. The subscale mean was slightly greater in simulated contexts (*M*=5.132) versus real contexts (*M*=4.870). Upon further analysis Anova, findings did not reveal any significant relationship between state and trait scores and this subscale of making mistakes. In the focus groups, students commented about making mistakes more in terms of their own learning and how they feared making a mistake when they cared for patients. The details of these perceptions as a factor of learner anxiety were shared earlier in the discussion of learning process. In this subscale however, the focus is more on the response of the peer group or the teacher when a student makes a mistake. It is likely the student's mistake will be discussed in the post-simulation debrief with peers, thus contributing to more anxiety. In real contexts, students worry less about their peer response since the peer is not present at the bedside. In this situation, mistakes are generally discussed with the student while the peer group is not involved.

In reviewing the qualitative comments, the peer response seemed to be less of a concern in this study and was only briefly mentioned a few times in the focus group discussions. For the most part, students were more comfortable with their peer group and worried less about how they would react in comparison to the teacher. Some of the students shared, "If I am afraid to talk to my clinical teacher about something I don't know or if I do something wrong, I find my peers help me a lot. Having a peer there is good thing as they will not judge you like the teacher does." The response of the teacher seems to be linked to the fear of making a mistake as students described worry when they talked about the teacher, "When I am the first person going into the simulation, especially if it might be a code blue, I feel more pressure….especially if I make a mistake…" and "I worry about making mistakes and how my teacher is going to respond to what I do; I don't think that many of them are supportive as I feel everything I do at the bedside has to be perfect."

In the literature, the role of the peer group has not been well-investigated, although the teacher has been identified as a stressor for nursing students. It appears this later stress is dependent on the teacher-learner relationship and how the teacher shares feedback during the learning process, particularly when an error is made (Carlson, Kotze, & Van Rooyen, 2003; Cook, 2005; Kim, 2003; Levett-Jones, Lathlean, Higgins & McMillan, 2009; Melincavage, 2011; Reid-Sear, Moxham, Walker, & Happell, 2009; and Zupiria et al, 2003). In simulated contexts, the peer group has been mentioned in terms of watching the scenario behind a two-way mirror or afterwards while the videotape is reviewed (Cato, 2013; McCaughey & Traynor, 2010; Shepherd, McCunnis, Brown & Hair, 2010). Students did not appreciate their mistakes being highlighted during the post-simulation debrief often finding this was difficult to listen to, especially if the teacher did not share feedback positively or constructively. The results of the current study provide evidence that the response of peers and teachers when a mistake is made can contribute to perceptions of anxiety. Importantly, students perceive greater anxiety with the teacher's response to a mistake in real contexts, whereas the peer group has been noted to provide positive support in these situations.

Team Communication

As a final point of discussion in relation to identifying the factors in real and simulated contexts that contribute to nursing students' perceptions of anxiety, the subscale of team communication will be discussed. This subscale included the following sub-components (Factors Contributing to Anxiety in Clinical Learning Survey): talking to other nurses in the placement and talking to other members of the team. The mean score on this subscale was greater in real clinical contexts (M=4.47) than in simulated clinical contexts (M=3.46). Paired t-tests demonstrated significant differences with this subscale contributing to more

anxiety in real contexts. Also, there was a significant relationship between students who scored greater than 40 on their state anxiety (n=110) and the subscale of team communication in real contexts (M=4.68, SD=1.67, p=.04). Students who scored higher in their situational anxiety were more likely to perceive team communication as a stressor when they cared for patients in real learning contexts. In real contexts, collaborating with members of the health care team is a common activity that a student would participate in everyday. These novice nursing students would need to regularly dialogue with physicians and other allied health professionals. In order to do this, the students would need a good understanding of the patient situation, including health issues and potential concerns.

In simulated contexts, there was a significant relationship between those students who scored greater than 40 on their trait anxiety (n=106) and the subscale of team communication in simulated contexts (M=3.67, SD=1.43, p=.017). Students who were more anxious because of an inherent personality trait likely considered team communication a stressor in simulated contexts. In these settings, most team scenarios would involve patients who become acutely ill with the possibility of a code blue or death. This change in patient status would require a calm presence in order to effectively manage the situation. In this study, students who were generally more anxious would likely experience greater anxiety with team communication.

In the review of literature in chapter two, Lovett-Jones, Lathlean, Higgins and McMillan's (2009) qualitative study examined nursing students' relationship with other staff in real contexts and how this relationship impacted the students' sense of belongingness in the clinical setting. When students felt deprived of belongingness within a team, they experienced increased levels of stress and anxiety. In the current study, there were similar findings. Students commented on the importance of the nurses accepting them

while they were learning, “As a nursing student, the nurses don’t always respect me. They didn’t appreciate me as a student and I felt that I was always in the way. We talk about identifying horizontal violence in class, but I use to see it all the time in my hospital.”; “When I first started in year one, I was afraid to talk to the nurses about my patient. I could tell the ones who didn’t want to work with us…the more experience I gained, the more comfortable I was approaching them with a question.”; and “I really appreciated those teachers who advocated for us…the nurses are not always accepting of our questions and sometimes I feel like I am bothering them.”

Most of the discussion about team communication in the focus groups centered around nurses interacting with students. Some students shared it was difficult to talk to other members of the health team and most of the time they did not have the opportunity as a student. They also felt that nursing teachers should spend more time role-modeling and teaching them how to communicate with different members of the team, rather than immersing them in stressful team simulations in the clinical lab. Students commented on wanting more preparation and guidance in developing their team communication skills. Although most had participated in team simulations, few students actually felt there was guided learning about team communication in real settings, “I wish the program would allow us to build our team working skills…most of the time I feel I have to figure this out on my own. They put us in team simulations, but I can’t develop my skill by talking to a manikin…they get us to do group assignments, but then that doesn’t help me learn how to communicate with a team…why doesn’t the teacher just role model team communication.”

Discussion of Research Question Two

The second question in this study was: are there differences between the factors reported to contribute to anxiety in simulated clinical contexts and those reported in real

clinical learning contexts. As discussed in chapter four, the findings from phases one and two of this study were used to address this question. In this section, the discussion will attempt to address individual factor differences between the two learning contexts, whereas in research question one, the broader set of subscales were explored with highlighted differences between the contexts.

Individual Factor Differences

To begin, the 19 individual factors (Factors Contributing to Anxiety in Clinical Learning Survey) contributing to anxiety examined in this study were rank ordered according to their means (tables 7 and 8). This was done for both real and simulated contexts. With this analysis, three of the top five factors for both contexts were exactly the same: feeling unsure about my ability, making a mistake in patient care, and being watched by others as I provide care. In terms of the first two factors, students were concerned in both contexts about their abilities and shared feelings of insecurity during the focus group interviews. All students in the focus groups described a fear of making mistakes. One student said, "I wasn't sure if I was doing it correctly or if I make a mistake in my clinical placement, what was going to happen…I am fearful about mistakes, but I just try to keep doing what I am suppose to do." The fear of making mistakes was greater in real contexts (M=3.04) than in simulated contexts (M=2.65). In fact, it was the number one factor contributing to anxiety in the real context. In the interviews, the students described this stressor and the impact it would have on a live patient versus a human-like manikin. The third common factor contributing to anxiety in both settings was being watched by others. Importantly, this contributed to more anxiety in the simulated context, particularly with videotaping and being observed in the post-simulation debrief.

Additional mean differences were noted between the two learning contexts. The following provides a summary of the factors contributing to anxiety with a plausible explanation: 1. getting emotionally attached to my patient was greater in real contexts (*M*=2.25) than simulated contexts (*M*=1.39) as the patients are real and students described the importance of forming a therapeutic relationship with these patients; 2. talking to other members of the team or nurses was greater in real contexts (*M*=2.28, 2.23) than in simulated contexts (*M*=1.76, 1.70) as the presence of an inter-professional team was an everyday occurrence in real contexts and infrequent in simulated contexts unless integrated in the curriculum; 3. my patient is dying, my patient is becoming more ill and performing CPR were greater in real contexts (*M*=2.64, 2.60, 2.82) than in simulated contexts (*M*=2.32, 2.20, 2.29) as the patient is a live person rather than a human-like manikin; 4. my teacher is not providing good supervision or being a good role mode was slightly greater in real contexts (*M*=2.32, 2.26) than in simulated contexts (*M*=2.12, 2.09). This was likely related to the teacher being actively at the bedside in real contexts, rather than an observer in simulated contexts; and finally, 5. being embarrassed when I provide care was greater in simulated contexts (*M*=2.23) than real contexts (*M*=1.97). This later difference is more difficult to explain as there were no clear explanations in the focus groups. It may be hypothesized that for some students caring for a manikin was more difficult and if they were unable to role-play patient care, they may have felt embarrassed in being watched.

Individual Factor Differences Between Schools

In addition to exploring individual factor differences between clinical contexts, further analysis of findings related to research question two also revealed significant group differences between schools of nursing which has been highlighted in table 9 and 10. At this time, it is important to reinforce that the goal of this study was not to examine

individual differences between the three schools of nursing, unless the findings impacted understanding of the research inquiry. The rationale and details for this decision was described in chapter 3. Research question two was aimed at understanding differences between the two clinical contexts. The fact that there were significant group differences with one school (Site two) for 4 of the factors contributing to anxiety in real contexts and 8 of the factors contributing to anxiety in high fidelity simulated contexts, led the researcher to deduce it was an important issue to explore. Site two is a relatively newer school of nursing with a smaller cohort of students in level 4. The school is committed to similar curricular threads as the other two schools, including elements of the health care continuum, role of the nurse in various domains of practice, and principles of research and policy. Upon careful review of the data, it was found that Site 2 also reported greater state and trait anxiety scores than the other two schools. The qualitative comments for Site 2 revealed slightly greater student frustration and unhappiness with their current experience of clinical learning. The students collectively (n=16) were not pleased with their educational journey in the program.

Although the findings in one school of nursing demonstrated a negative affective response to the program, there were no specific curricular differences noted to explain this school's response. In addition, the group differences did not differentiate specific factors that contributed more to anxiety in real and simulated contexts which was the focus for this second research inquiry.

Discussion of Research Question Three

The third question in this study was: what are the teaching and learning strategies that minimize nursing student' feelings of anxiety in clinical learning and positively enhance their self-efficacy for professional nursing practice? As discussed in chapter 4, a thematic

analysis of the qualitative data from each phase of the study was completed. The data from *The Teaching and Learning Strategies that Enhance Professional Practice Self-Efficacy in Clinical Learning* (researcher developed) survey and the three focus groups were synthesized and compared to determine a list of themes for this inquiry. The findings for teaching strategies will be presented first, followed by learner strategies.

Teacher Strategies Common to both Contexts

The first section of this discussion will report on teaching strategies that were common in both real and simulated contexts. These included: positive encouragement, constructive feedback, and challenges critical thinking.

Positive Encouragement

In this study, the most commonly mentioned teaching strategy for both real and simulated learning contexts was positive encouragement from the clinical teacher during the learning process. The number of occurrences within the data was 148 for real clinical contexts and 94 for simulated clinical contexts. The students discussed the importance of receiving praise and hearing the things they did well in their learning. One student said, "when my teacher shares that I did well on something, I feel she has trust in me. This helps me to feel good about my abilities as a student and that I can care for the patient." Another student summarized this topic in the focus group by describing, "my teacher's positive encouragement assists me to validate that I have the ability to be a nurse." In terms of simulated contexts, students discussed the importance of positive verbal feedback during debriefing and how this inspired their confidence and reinforced they were on the right path in caring for the patient. Although difficult to quantify, this supportive encouragement provided a sense of strength for the student to continue to perform in simulation. According to the studies discussed in chapter two, interactions with teachers, particularly if

they are supportive yet academically stimulating, positively impact learner engagement (Baker, Clark, Maier, & Viger, 2008; Bryson & Hand, 2007; Laird & Kuh, 2005; Reason, Terenzini & Domingo, 2006). A recently published paper by Zepke and Leach (2010) further supports this understanding. Teacher relationships are described as predictors of student engagement as well as learning outcomes.

In addition to enhancing learner engagement, the relationship between the teacher and the student may positively impact student self-efficacy. During these interactions, both sources of efficacy expectations as well as outcome expectations contribute to the students' self-efficacy (Bandura, 1977, 1986). In both real and simulated contexts, nursing students learn about professional practice and the various elements of behavior and skill associated with the role of a registered nurse. According to Bandura, verbal or social persuasion by credible people encourages an individual to feel capable of performing. When students hear persuasive boosts and positive comments about their nursing care, they begin to feel more confident in their own abilities. In both clinical contexts, the teacher is able to interact with the student and in doing so, demonstrate support for their learning through communication. As clinical teachers recognize the importance of positive comments when students are learning in these contexts, they are more likely to be instrumental in enhancing the students' level of self-efficacy. This would be especially important for students who may already perceive negative emotions such as stress and anxiety prior to entering the practice setting. It is possible these students are beginning with a relatively low sense of self-efficacy and so would benefit from an encouraging teaching style.

According to the theoretical framework of learner engagement, efficacy beliefs influence the emotions of the learner (Linnenbrink & Pintrich, 2003; Bandura, Barbaranelli, Caprara & pastorelli, 1996) and contribute to learning and achievement. If teachers understand the

importance of their relationship with students and most importantly, the relevance of positive encouragement, there is potential for better management of the students' emotion of anxiety. When students feel positive in their affective responses to learning, the outcome will more likely be an achievement in learning. According to Linnenbrink and Pintrich (2003), a successful outcome to learning will positively impact students' self-efficacy in the learning context.

Constructive Feedback

Another commonly mentioned teaching strategy for both real and simulated contexts was constructive feedback from the clinical teacher. This theme was actually the second most common teaching strategy mentioned by the students in relation to simulated contexts. The number of occurrences within the data was 70 for real clinical contexts and 64 for simulated clinical contexts. The themes for each context are as follows: 'giving specific, constructive feedback' in real contexts and 'guiding the debriefing process and providing constructive feedback' in the simulated context. In both these themes, the students shared a number of comments that reflect the value of hearing timely, specific information about their progress from the teacher. The students wanted clarity and clinical examples to support the teacher's assessment so they may be better able to develop learning goals and focus their growth.

In relation to real contexts, the students shared, "when my teacher provides me feedback immediately after I complete a skill or perform patient care…this really helps me to focus on my learning; I need to hear both the positive and the things I need to improve on;" "I had a really hard term in second year…my teacher wouldn't give me any feedback until midterm. Then I had a teacher who always communicated with me about everything…I felt so much better with this constant feedback and I knew what I was suppose to change.

Having little feedback was really hard for me …;" and finally, "I wish the teacher would work with me and give me clear feedback about what I need to work on…" Overall, the students felt there needed to be time in real contexts for formative feedback and discussion about progress. Often, they described feeling judged against a pass/fail decision very early in the clinical rotation without any opportunity for growth. They would have liked for their teacher to be more interactive about their progress in relation to professional practice competencies.

In simulated clinical contexts, the students primarily discussed the debriefing process which occurs post-simulation. In the three schools, this debrief occurred after all students had an opportunity to participate in the simulation scenario. The clinical teacher was the facilitator and the videotape that was recorded during the simulation was integrated at various points in the discussion. Most students felt this process was uncomfortable, particularly if the student made a mistake in the simulation and did not manage the patient well. The students described, "my teacher gives us feedback during the debrief right in front of all my peers…I have gotten to tears in front of my peers especially when the teacher told me what I did wrong. It was worse when I saw the video of what I did;" "in one of my simulations, the patient died…the teacher was not supportive and did not talk about the things we did well…we had tried to work as a team, but a lot of people just left the debrief upset. It felt like we were a failure." The process of debriefing as a group is an internationally accepted standard for simulation learning and is widely used (Decker et al, 2013; Gloe et al, 2013). In this study, the use of debriefing was not the issue, but the approach of the teacher in sharing feedback in a constructive manner and creating a climate of mutual respect and safety for the student was the concern.

Theoretically, the use of verbal or social persuasion as a source of developing learner

self-efficacy (Bandura 1977, 1986) has been discussed earlier with the strategy of positive encouragement. Similar to providing supportive encouragement, delivering feedback to a learner requires the same level of skill and expertise. The words, the tone and the manner in which feedback is conveyed by the teacher may contribute to students' self-efficacy and either reinforces for them that they have the capability to be successful or places a level of self-doubt in their clinical competency. According to Linnenbrink and Pintrich (2003), it is important to assist students to maintain high but accurate self-efficacy beliefs in the classroom. Teachers need to facilitate this by providing accurate and specific feedback to students in order for them to develop reasonable efficacy beliefs. Importantly, they should not provide positive feedback and encouragement when it is not deserved. This latter point is very important as the teacher's accuracy with both encouragement and feedback will help students' maintain accurate efficacy judgments of their clinical performance.

Challenges Critical Thinking

The following section will discuss a teaching strategy that was quite similar in both clinical learning contexts. In real contexts, this strategy was labeled 'challenges critical thinking with questions and new learning' with an occurrence of 41 in the qualitative comments. In simulated contexts, this strategy was labeled 'stimulates my critical thinking and understanding of the scenario' with an occurrence of 37. Both clusters of data were similar in meaning in terms of the teacher asking clinical questions that promoted a level of critical reflection or inquiry specific to the clinical context. The following comments were shared by the nursing students, "I like when the teacher asks me questions and challenges my critical thinking…this helps me see that I am capable of nursing care;" and "sometimes if I am working through a clinical situation, I feel I go blank or I forget something…when

the teacher prompts me with questions that make me think, I feel I can keep on going and I can start to piece things together;"

Although asking effective, critical questions was valuable in both learning contexts, in real contexts the students also described their thinking was challenged when their teacher introduced a new learning situation they had not prepared for. In this instance, they describe using knowledge from prior learning experiences and utilizing their cognitive processing skills in order to make sense of the learning challenge they were presented with. For some students, this was more stressful and their feelings of anxiety precipitated, while for others, this strategy challenged their knowledge base and encouraged them to work to the full extent of their abilities. If they were successful, this positively contributed to their self-efficacy. According to Yerkes and Dodson (1908), for some learners, anxiety presents a challenge to learning while for others this emotion is not considered negative and the arousal actually motivates them to learn. In these situations, there is likely just enough anxiety to challenge the student. When tasks become too difficult and the learner is unable to be successful, s/he experiences more stress (Edmunds & Edmunds, 2010). Although the findings in this study seem to support the notion of enhancing students' critical thinking with inquiry, the comments related to introducing students to new learning situations when they have not yet prepared is mixed. Based on this, further exploration is needed before identifying the value of this strategy in terms of nursing students' self-efficacy for professional practice.

Teacher Strategies in Real Contexts

In the following sections, the teaching strategy themes specific for real contexts will be discussed. A synthesized discussion of the data for each of these, including qualitative

comments from the focus groups will be integrated. Where applicable, literature from chapter two will be integrated to further enhance the discussion.

Show me First

In this study, the second most commonly mentioned teaching strategy for real learning contexts with an occurrence of 92 was related to learning new nursing skills or interventions for the first time. Under this theme, the students described the importance of the teacher guiding them through a new experience and actually demonstrating while the students observed. Once the students observed the teacher's performance, they felt they would be more able to perform the new skill or intervention. This theme is described well in the following qualitative comments, "for me if I haven't done something before I feel like I need a bit of handholding…I would like my teacher to talk me through the experience first and show me how it is done; " 'I had a teacher one semester who was always there for me the first time I did a new skill…she walked me through the skill beforehand and came in with me before I was on my own;" and "my best experiences for learning were when my teacher talked to me through step-by-step and was right there to show me the first time…it is so scary when a patient is really sick so this helped me a lot." In these qualitative comments, the element of role modeling a particular skill or intervention, particularly for the students' first exposure was really important in real clinical contexts. According to Bandura (1977, 1986), vicarious experiences that occur when observing a credible role model perform a task or behavior also contributes as a source of efficacy expectation. As discussed in chapter two, seeing another person succeed in a situation can create expectations in the observer that they too will eventually succeed. In this way, the learner is less inclined to fall into a pattern of trial and error, especially in clinical situations where the patient is acutely ill. Based on the findings in this study, students perceive it is

important for the teacher to spend time in a 'show me first' strategy as this approach may positively contribute to students' self-efficacy for professional practice.

Receptive to Inquiries

The third teaching strategy identified by the nursing students in this study as positively enhancing their professional practice self-efficacy was the teacher's receptivity to inquiries. This strategy had an occurrence of 82 in relation to real clinical contexts. The teacher's openness to questions and his/her ability to welcome inquisitive dialogue, particularly in clinical situations that are complex and require the students to piece together a number of concepts related to pathophysiology was important for students' self-efficacy. Students felt they needed to sort through their questions to better understand the clinical picture and safely care for the patient. The following captures some of the key perceptions shared by students, "I feel so much better when I know the teacher is there for me…it feels ok to say I don't know something and ask a question..:" "the teacher who is open to me asking questions and telling her when I don't understand something is better for my learning…there is a lot of pressure in clinical and I can't know it all; I want to feel that I can share what I did to prepare and then tell her I don't understand; and "I came to the realization that I can't know everything…it made me so comfortable when my teacher said the same. She was open to me asking questions and this helped me feel I could care for the patient." In summary, students' perceived the teacher that welcomes this level of inquiry and engages in dialogue to help them sort through an understanding of the clinical situation played an influential role in their professional practice self-efficacy.

Trust in my Ability

This final cluster of data for real contexts with an occurrence of 55 referred to the teacher believing in the student and trusting that s/he has the ability to provide nursing care. The

nursing students in this study described the importance of the teacher demonstrating this trust by allowing the students' to achieve autonomy in patient care. This trust contributed to the students' feeling they had the ability to be successful, "when the teacher believes that I can do it, this also makes me feel that I have the ability to do well." The importance of the teacher verbalizing this trust and providing greater autonomy over time was important for the students. As an experienced clinical teacher, this strategy requires very careful assessment of student progress and timing in terms of when to let go and allow autonomy. This decision-making is closely linked to patient safety and the importance of ensuring that this quality remains intact.

Teacher Strategies in Simulated Contexts

In the following section, the teaching strategy themes specific to simulated contexts will be discussed. A synthesized discussion of the data for each of these, including qualitative comments from the focus groups will be integrated. Where applicable, relevant literature from chapter two will be integrated to further enhance the discussion.

Prompt me without Taking Over

Nursing students at all three schools participated in high fidelity simulations. During a simulation, the students described the role of the teacher primarily as an observer who would prompt the technologist depending on what the students did in the simulation or how they responded to the patient. Students discussed these learning activities involved patients who were acutely ill and would suddenly fluctuate during the simulation. The students often worked in groups of 2 to 3 to manage the patient's care and as a group needed to collectively decide upon a course of action or set of interventions. When the clinical situation became complex, the students felt it was important for the teacher to not allow them to flounder but rather prompt them with cues so they have some recourse to being

successful. Those clinical simulations that ended with a patient death with the student receiving limited prompts and feedback had a tremendous negative impact on the students' self-efficacy. The students described the following, "when I was involved in a code simulation, I just fell apart…I put oxygen on the man and he was still really low…he declined quickly…I was in shock and I couldn't get over this situation…I wish my teacher had prompted us or given us cues…;" and "the teacher should give us hints so we have a chance to think through rather than letting us make mistakes in the simulation and then ruining our confidence."

According to Bandura (1977, 1986), students need to have exposure to mastery experiences during the learning process in order to enhance their self-efficacy. These types of experiences have also been referred to as performance accomplishments where the student has had an opportunity to do well and be successful in the learning activity. In addition, when a student has mastered a less complex situation, they feel more comfortable to advance to a more complex situation. Unfortunately, the experiences described by the students in this study do not reflect this scaffolded approach to learning. Often the highly acute simulations were single episodes of learning and the students had minimal opportunity to repeat the experience and grow in their learning. Based on the findings in this study, it seems important for teachers to be more aware of their role in simulated contexts and perhaps provide students the opportunity to do well a few times before exposing them to an acutely ill situation or death. In this way, a greater focus on mastery within a simulated context may positively enhance the student learning experience.

Provide Preparatory Work

Another strategy discussed by the students included the role of the teacher in preparing them for the simulation. All students felt that teachers needed to provide clear and specific

topics for them to research prior to participating in the simulation. Most times, they felt they entered the simulated context with little understanding of the learning goals or what they were to achieve in the learning activity. Students wanted to feel prepared and if they did not, this would negatively impact their self-efficacy to care for the patient. The students describe the following, "it was terrible going into simulation, we didn't know what to expect and received no instruction from our teacher…we felt like we were set up to fail;" and "we were only second year students and had to manage a patient who was dying in the simulation…we didn't know what to do and on top of that we weren't told to prepare for this; it was a terrible learning experience and the teacher did not help us." Similar to caring for a patient in the real context, the students described the importance of having patient information prior to a simulation. If they were able to research such things as diagnosis, medications, interventions and current issues, they could utilize this information and feel more able to problem-solve during the simulation. In their mind, this preparatory work was a significant component of setting them up to be successful in the simulated context.

Ensure Safe Learning Environment

The final teaching strategy discussed by the students in relation to simulated contexts was the teacher ensuring a safe learning environment. This strategy had the least number of occurrences which was 27, although in the focus groups, it seemed to have a significant weighting on the domain of emotional safety during the debriefing process. As discussed earlier, clinical teachers facilitate a formal debrief after the students participate in a simulation. It was not clear from the students whether each school utilized a specific framework for debriefing which is encouraged in the international best practice standards for nursing simulation (Decker et al, 2013). As the researcher, I did follow-up with the simulation labs and a well-evidenced framework was not utilized in the program. The

students described feeling vulnerable in the debrief and embarrassed if they did not know what to do or even made a mistake. The teacher would share these mistakes during the debrief and this was not always done in a positive manner. "My teacher made a joke about how the first group messed up in the simulation…my friends were in the first group and everyone was laughing….I think it's important to approach debriefing in a better way. I felt so uncomfortable;" and "it was the way the teacher said it; I know I didn't do well, but I was so upset in front of everyone, I just cried…" According Decker et al (2013), it is important for the teacher to create a safe and supportive environment to foster mutual respect within the group and a level of reflection that facilitates learning. The students need to feel the focus is about learning and not a threat to their individual self. Finally, they need to be able to leave the debriefing process feeling they have the ability to participate again and be able to work towards success.

Learner Strategies Common in both Contexts

In the following section, the learner strategies common to both clinical contexts will be discussed. As shared in chapter 4, the findings in this study revealed that students utilized similar strategies in both real and simulated contexts to enhance their self-efficacy for professional nursing practice. Although students perceived the teacher role was different in both these contexts, they felt there was not a significant difference in their own role. The clusters of qualitative comments revealed five common themes of learner strategies: be prepared, learn from others, ask questions, engage in positive self-talk and practice in the lab. Each of these themes will be discussed in the next several paragraphs.

Be Prepared

In both clinical contexts, the students felt the most important learner strategy they utilized to enhance their self-efficacy was being prepared to care for the patient. The

number of occurrences in relation to the real context was 125 and for simulated contexts was 103. Where possible, students would attain their patient assignment or scenario before attending the learning experience. If they researched such things as the diagnosis, medications, nursing interventions and current clinical issues ahead of time, they were more inclined to feel prepared and ready to care for the patient. This level of preparation was important for them and contributed to their overall perception of having the capability to provide nursing care. Some of the qualitative comments for this theme included, "as I progressed in my nursing program, I realized how important it was for me to have prepared for my patient's care. I did my best to review my text, watch videos, go to the lab and try to understand what was happening with my patient…this is what helped me to feel confident that I knew what I was doing;" "I find when my teacher sends me all the pertinent pieces of information I need to understand about my patient, I am able to take the time to mentally prepare myself ahead of time so I know what to expect;" and "we need to have an orientation and more information before we begin a simulation…this would help me feel I am capable of caring for my patient." Most students recognized the benefit of spending time researching and piecing together the patient situation before meeting the patient/scenario for the first time. This level of knowledge and understanding seemed to contribute to a more positive learning experience for the student. Importantly, it was also noted that sometimes, despite how much one prepares, the patient's acuity may fluctuate and so the clinical picture may be entirely different the next day. When this happens, students again feel a level of anxiety and try to problem-solve by seeking resources to enhance their knowledge. This situation was discussed earlier in this chapter with research question one; not feeling prepared for patient care was the subscale of factors rated as

contributing the most to learner anxiety in both real (*M*=8.08) and simulated (*M*=7.80) contexts.

Learn from Others

The second most commonly identified learner strategy was learning from others with an occurrence of 68 for real contexts and 60 for simulated contexts. In this cluster of qualitative comments, students felt that learning from others was an important component of clinical learning in both real and simulated contexts. Because caring for patients is not something nurses do in isolation of others, the students described discussing the clinical situation with other nurses, team members or even their peers. They felt this strategy not only assisted them to validate their understanding but also helped them to further develop their knowledge base. Students described the following, "talking to other nurses about what I would say or do…and they would give me feedback helped me to feel more confident. This was especially important whenever I did something for the first time…talking it over with someone made me feel more ready to do it…;" "my peers help me a lot…sometimes I feel afraid to ask my teacher, although I am sure I know the answer. If I check with my peer then that helps reinforce my understanding and I feel like I am on the right track;" and finally, "I have had really good experiences with the nurses and members of the team…they have helped me talk through my patient situation…I am amazed at how much they know…they are great role models for my learning." This later point is very important as vicarious experiences or having a credible model to observe is an important source of efficacy expectation, contributing to a learner's self-efficacy (Bandura, 1977, 1986).

Ask Questions

The third learner strategy identified by the nursing students in this study as enhancing their self-efficacy for professional practice was asking questions. The occurrence for this was 50 in relation to real contexts and 42 in simulated contexts. Interestingly, while asking questions was identified as a learner strategy, being receptive to questions as discussed in the previous section was identified as an important teaching strategy. Students wanted the opportunity to clarify their understanding and feel they have a good grasp of the patient's clinical situation. They wanted to ask questions throughout the clinical day and while providing patient care. At times, students felt their clinical teacher did not create an environment that was conducive to inquiry and this made it difficult for them to clarify understanding and responsibilities while at the bedside. Students shared, "I need to feel that it is ok to ask any type of question…if I am not sure about something or haven't done something before, I need to ask questions to be sure I am safe at the bedside;" and "one time, I asked my teacher a question that I felt was valid…my teacher gave me a condescending response so I didn't feel she was understanding of what the environment in clinical should be…I need to be able to ask questions when I am learning." These perceptions were applicable to both learning contexts, although the timing for asking questions in simulated contexts presented a challenge and tended to occur during the debriefing process. According to the students, the simulation scenario is rarely interrupted and there is no communication with the teacher until after the scenario is done. Most times, questions are left for discussion in the post-simulation debrief. In summary, students needed to feel that questions were welcomed even by the bedside nurses, "it makes me so upset when nurses treat me badly…I have questions because I want to be sure that what I am doing is correct; I need them to be there for me and be open to my questions."

Positive Self-talk

The fourth learner strategy identified by the nursing students in this study was labeled positive self-talk. In terms of occurrence, this strategy was identified 44 times in relation to real contexts and 36 times in terms of simulated contexts. This theme focused on students helping themselves positively re-focus when they were feeling anxious and losing grip with their perceptions of being successful. They described being self-encouraging and reminding themselves they have the ability to do well as a nurse and safely manage the patient's care. This strategy also included self-care and self-reflection. In regards to the former, students believed clinical learning took a toll on their own health, particularly if they were feeling anxious all the time. They recognized it was important to sleep, eat well and maintain a healthy routine during the clinical rotation, "it is hard for me to sleep the night before clinical, but I try hard to relax and focus on how important it is for me to be healthy when I care for patients. I want to be able to concentrate on what I am doing so I need to stay healthy." The later strategy of self-reflection came into place when something significant happened in the learning process, whether it was positive or negative, it provided an opportunity to pause and reflect on one's performance. This process was introspective and encouraged students' to deeply explore and identify opportunities for additional self-growth and development.

Practice in Lab

The final learning strategy identified by the nursing students was practicing in the lab prior to going to the real or simulated context. In terms of occurrence, this strategy was identified 29 times in relation to real contexts and 30 times in terms of simulated contexts. The students collectively reinforced that it was important for them to have multiple opportunities to perform a particular skill or intervention. They all identified the lab as am

important place to seek additional experience by practicing new skills and assessments before going into the hospital or high fidelity simulation. Some described, "when I do things more than once, I can improve on what I am doing and I gain confidence in applying this learning to new situations…" and "I need repetition in my learning…going into a simulation scenario only once makes it hard for me; the more I am exposed to the experience by practicing, the better I feel about my ability as a nurse." According to Bandura (1977, 1986), mastery experiences or consecutive successful experiences will raise a learner's efficacy expectations. Repeated opportunities to do something well in clinical contexts will enhance students' self-efficacy and provide them with the strength to progress to more complex situations. As such, it is important for nursing students to have mastery experiences in their clinical learning.

Learner Strategies in Real Clinical Contexts

Be Self-directed

In this study, there was one learner strategy that was specific to real learning contexts. This theme was labeled "being self-directed and seeking new learning opportunities while in a health setting". The occurrence for this strategy was 27 times in relation to real contexts. Students knew that each health setting was different and that it was up to them to maximize their learning by seeking learning opportunities. It is often difficult to ensure certain health situations present themselves, so they felt it was important to be as resourceful as possible and search for these experiences. Students also perceived that if they were motivated and self-directed, the teacher and the nurses on the unit recognized this and seemed to be more receptive to them as learners, "I have found over time, my teacher and the nurses appreciate me more as a learner if I can show that I am interested and motivated to learn…every time I begin on a unit, I tell the nurses to let me know if something new

comes up…I find if I do this, they always come get me and my learning is so good." For the nursing students, active learning contributed to feeling more engaged and interested in the learning environment. In addition, multiple learning exposures of nursing skills and assessments contributed to their confidence and reinforced prior learning.

Limitations

The limitations of this study are related to the methodology used to select the setting and the participants. Firstly, the use of convenience samples from only three of the 14 universities that offer baccalaureate nursing programs may limit the ability to generalize findings. In addition, the curricula in these three schools may vary to a greater or lesser extent from other schools in terms of professional practice concepts and percentage of time students spend in real versus simulated learning contexts. However, given the random assignment of applicant acceptances across all 14 nursing programs, it would be fair to state the results of this study could offer some generalization to similar nursing programs.

A second limitation is related to the sample of students who participated in the focus groups. These students were not randomized and again presented as a convenience sample that self-selected whether they would like to participate in the group interview. It may be speculated that these particular students wanted to share their story and so represented those students who had the greatest difficulty with anxiety in clinical learning. On the other hand, these would have also represented very rich stories that contributed to a deeper understanding of the affective response of anxiety in clinical learning.

Thirdly, the level of expertise that has developed at each participant school to deliver clinical teaching in real and simulated contexts may vary. This may contribute to variations in students' experiences, including learning outcomes. More specifically, since there are no schools in Ontario that are affiliated with an accredited simulation center, the process and

delivery of student learning activities in simulated contexts may also vary from one nursing program to another.

Implications for Nurse Educators

The findings of this study have important implications for nursing educators who are preparing baccalaureate nursing students. As discussed, a successful learning experience for nursing students contributes to both learning and achievement in the healthcare context, particularly when students feel self-efficacious in their learning environment (Linnenbrink & Pintrich, 2003). The findings in this study have confirmed the presence of learner anxiety during clinical learning, whether it be in real or simulated contexts. This is important for nursing teachers to understand as students need to feel in control of their affective responses to learning in order to be successful. As nursing educators become more aware of the student experience as documented in this study, they may feel better equipped to facilitate student coping and provide a more effective learning experience. In addition, those involved in curricular development may be able to more adequately attend to the sequencing of content areas in professional practice and the scaffolding of clinical learning experiences in both real and simulated contexts.

To facilitate safe patient care while nursing students are learning, it would be important for teachers to understand students' experiences of anxiety in clinical learning and identify the factors that contribute to this negative affective response. The findings in this study provide a foundation to better understand these factors in both real and simulated clinical learning contexts. As we have learned, there are similarities and differences in both learning contexts. An understanding of these would assist clinical teachers to better assess the learner and implement interventions to manage feelings of anxiety, particularly when students become so overwhelmed they are unable to focus and provide adequate patient

care. As discussed earlier, students who are anxious may experience cognitive difficulties with recall, memory or misinterpretation of information (Spielberger, 1970; Suliman & Halabi, 2007). These processes are very important for nursing students' clinical judgment and ultimately their provision of safe, patient care.

In clinical learning, nursing educators play an important role in responding to students' affective responses such as stress and anxiety. In this teaching-learning relationship, teachers may assess and positively intervene to enhance the learning experience. If students' affective response to learning is positive, they are more likely to be motivationally engaged. If students' affective response to learning is negative, they would be less motivated to engage in the experience and their learning outcome and achievement will be less favorable (Linnenbrink & Pintrich, 2003; Zeidner, 1998). As noted, an exploration of the factors enhancing students' self-efficacy for professional practice in situations of anxiety, specifically a comparison of teaching and learning strategies in real and simulated settings has not been well-investigated. Considering simulation technology has become increasingly popular as a teaching and learning strategy, it is important to understand its influence in clinical nursing education. The findings in this study provide a foundation to raise awareness and also knowledge for both the clinical teacher and the learner. Several teaching and learning strategies have been identified, each of which could be utilized in practice to enhance the clinical learning experience in situations of anxiety.

Recommendation for Future Research

This study has provided important findings to advance current knowledge related to nursing students' perceptions of anxiety in clinical nursing education in both real and simulated clinical contexts. In addition, it was the first study to identify and explore differences in teaching and learning strategies that contribute to learner self-efficacy in both

real and simulated contexts. Future research should consider the limitations of this study, including additional psychometric development of the survey Factors Contributing to Anxiety in Clinical Learning and replicate it in other schools of learning. This may include consideration for other streams of nursing education such as accelerated second degree entry, post-RN students, international students and RPN to BScN students. This would allow for investigation of nursing students in different educational programs in order to provide a better perspective for the validity of some of the findings and their relevance in other cohorts of nursing students.

Another recommendation for future research relates to using other inquiry designs in order to investigate the effect of teaching and learning strategies in clinical learning on students' levels of anxiety in a variety of real clinical settings. For example, a pre/post study could be conducted to examine students' affective response and self-efficacy before and after a specific strategy is implemented during a clinical rotation. An experimental design could also be used to compare students' responses when they are exposed to other educators such as nursing preceptors or other health care providers. A final recommendation could involve an intervention study to investigate the effect of a specific teaching or learning strategy on a component of student learning within professional nursing practice. This may include such things as therapeutic communication, nursing assessment, clinical reasoning, patient and family teaching, and intra- and inter-professional collaboration and leadership.

Conclusion

The findings in this study have the potential to fill an important gap in our understanding of nursing students' affective response of anxiety to clinical nursing education in real and simulated contexts. An initial understanding of the relationship between theoretical

concepts of affective learner engagement, self-efficacy, and learning achievement has been explored in this study. Having a better understanding of the factors that contribute to the affective response of learner anxiety will contribute to a more effective learning experience for the nursing student and to the provision of safe, patient safe. Finally, the identification of specific teaching and learning strategies to minimize learner anxiety and enhance students' self-efficacy for professional nursing practice has significant implications for nursing educators involved in direct clinical teaching or curricular development.

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APPENDICES

APPENDIX A

Study Instruments

A.01 Demographic data: age and gender

A.02 The State-Trait Anxiety Inventory (STAI) (Spielberger et al, 1983); (copyrighted, permission received for use by researcher in study)

A.03 The Factors Contributing to Anxiety in Clinical Learning (researcher developed)

A.04 The Teaching and Learning Strategies that Enhance Professional Practice Self-Efficacy in Clinical Learning (researcher developed)

A.05 Perceptions of Learner Anxiety and Self-efficacy in Clinical Practice (researcher developed)

A.01 Demographic data: age and gender

Understanding Learner Anxiety and Professional Practice Self-efficacy in Nursing Education

Please complete the following demographic data:

Age: _____

Gender: _____

A.03 Factors Contributing to Anxiety in Clinical Learning Survey (Pierazzo, 2012)

Part A: The following survey is designed to help us understand the factors in **Real Clinical Placements** that may cause you to feel anxiety when you are providing nursing care. **Real Clinical Placements** occur outside the lab such as in the hospital or community. Read each of the following items and circle the appropriate response. If there are other factors that cause you to feel anxious in these settings, please list them as #20 & #21.

Subscales	Factors that may cause me to feel anxious in **Real Clinical Placements**	How often does the factor causes anxiety? **4 (all the time)** **3 (some of the time)** **2 (infrequently)** **1 (never)**			
Qualities of Self	1. feeling unsure about my ability	4	3	2	1
	2. being embarrassed when I provide care	4	3	2	1
	3. getting emotionally attached to my patient	4	3	2	1
Patient Acuity	4. my patient is becoming more ill	4	3	2	1
	5. my patient is dying	4	3	2	1
	6. performing CPR	4	3	2	1
Preparing for Patient Care	7. not having a good knowledge base	4	3	2	1
	8. not having enough clinical practice	4	3	2	1
	9. being unprepared to provide patient care	4	3	2	1
Team Communication	10. talking to other nurses in the placement	4	3	2	1
	11. talking to other member of the team	4	3	2	1
Teacher Characteristics	12. my teacher not being supportive of me	4	3	2	1
	13. my teacher not being a good role model	4	3	2	1
	14. my teacher not providing good supervision	4	3	2	1
Making Mistakes	15. my teacher's response if I make a mistake	4	3	2	1
	16. my peers' response if I make a mistake	4	3	2	1
Learning Process	17. being watched by others as I provide care	4	3	2	1
	18. being left alone to care for my patient	4	3	2	1
	19. making a mistake in patient care	4	3	2	1
	Other: _____ _____	4	3	2	1

In summary, the following 6 factors from the list above cause me the most anxiety in **Real Clinical Placements:** ____ (MOST anxiety causing), ____ (2nd most), ____ (3rd most), ____ (4th most), ____ (5th most), ____ (6th most)

Part B: The following survey is designed to help us understand the factors during **High Fidelity Clinical Simulations** that may cause you to feel anxiety when you are providing nursing care. **High Fidelity Clinical Simulations** occur in the lab with human-like manikins. Read each of the following items and circle the appropriate response. If there are other factors that cause you to feel anxious during simulation, please list them as #20 & #21.

Subscales	Factors that may cause me to feel anxious during **High Fidelity Simulations**	How often does the factor causes anxiety? **4** (all the time) **3** (some of the time) **2** (infrequently) **1** (never)			
Qualities of Self	1. feeling unsure about my ability	4	3	2	1
	2. being embarrassed when I provide care	4	3	2	1
	3. getting emotionally attached to my patient	4	3	2	1
Patient Acuity	4. my patient is becoming more ill	4	3	2	1
	5. my patient is dying	4	3	2	1
	6. performing CPR	4	3	2	1
Preparing for Patient Care	7. not having a good knowledge base	4	3	2	1
	8. not having enough clinical practice	4	3	2	1
	9. being unprepared to provide patient care	4	3	2	1
Team Communication	10. talking to other nurses in the placement	4	3	2	1
	11. talking to other member of the team	4	3	2	1
Teacher Characteristics	12. my teacher not being supportive of me	4	3	2	1
	13. my teacher not being a good role model	4	3	2	1
	14. my teacher not providing good supervision	4	3	2	1
Making Mistakes	15. my teacher's response if I make a mistake	4	3	2	1
	16. my peers' response if I make a mistake	4	3	2	1
Learning Process	17. being watched by others as I provide care	4	3	2	1
	18. being left alone to care for my patient	4	3	2	1
	19. making a mistake in patient care	4	3	2	1
	Other: 20. _____	4	3	2	1
	21. _____	4	3	2	1

In summary, the following 6 factors from the list above cause me the most anxiety in **Simulated Placements:** ____ (MOST anxiety causing), ____ (2nd most), ____ (3rd most), ____ (4th most), ____(5th most), ___ (6th most)

A.04 Teaching & Learning Strategies that Enhance Professional Practice Self-Efficacy (Pierazzo, 2012)
Part A:

1. Please list 4-6 things your teacher does when you are in **Real Clinical Placements** that makes you feel more confident in your ability to be a nurse. Feel free to list specific strategies your teacher(s) uses.

_____
_____
_____
_____
_____
_____

2. Please list 4-6 things your teacher does during **High Fidelity Clinical Simulations** that makes you feel more confident in your ability to be a nurse. Feel free to list specific strategies your teacher(s) uses.

_____
_____
_____
_____
_____
_____

Part B:

1. Please list 4-6 things you do as a learner in your **Real Clinical Placements** that makes you feel more confident in your ability as a nurse.

_____
_____
_____
_____
_____
_____

2. Please list 4-6 things you do as a learner during **High Fidelity Clinical Simulations** that makes you feel more confident in your ability as a nurse.

_____
_____
_____
_____
_____
_____

Consideration for Phase Two Participation:

As the researcher for this study, I am interested in learning more detail about your perception of anxiety and self-efficacy in clinical learning. I would like to invite you to consider participating in phase two of this study.

Please complete the following and indicate if you are able to volunteer an hour of your time to participate in a focus group interview at your site:

O Yes I am interested
O No I am not interested

If yes, provide the following so I may call you to arrange.

Name: _____

Contact Number: _____

A.05 **Perceptions of Anxiety and Self-efficacy in Clinical Learning** (Pierazzo, 2012)
(Facilitator Interview Guide)

1. Welcome

Thank you for taking the time to join our discussion. Today we would like to learn more about your feelings of anxiety in clinical learning. As well, we will also be exploring strategies in teaching and learning that makes you feel more confident in your ability to be a nurse. This is referred to as self-efficacy for professional nursing practice.

To help you better understand what self-efficacy is, here is a definition: self-efficacy is the perception you have of feeling confident that you are capable of carrying out nursing activities and that you will be successful in your role as a student nurse.

2. Guidelines

a. Before we begin, I would like to review the participant letter of consent. If you would like to continue your participation, please sign the consent form.

b. I would like to suggest some ways to help the discussion go smoothly. You will be audio-taped because we don't want to miss any of your important comments. Please be sure you speak loudly enough and only one at a time. If you require any clarification during the interview, please let me know.

c. There are name cards in front of each of you. This will help me remember your names. We will only be using your first name in the discussion today. For my final report, your names will not be used so no one will know who made the comments.

d. My role in this discussion is to ask you questions and listen to your responses. I won't be participating in the discussion, but I want you to feel free to speak to each other as I ask questions. I will be asking about 6-8 questions and moving the discussion from one question to the next. The interview will take about 45 minutes. It is important that I hear from each of you in this group. So, if one of you is sharing a lot, I may ask if others have something to share. And if you aren't saying too much, I may ask if you have something to add.

3. Getting to know each other (approx 5 minutes)

Let's take a few minutes to feel more comfortable talking to one another. Please share your name and tell us about your favorite travel destination and why (each person should participate)

4. **Overview of Topic**

A brief overview of the topic of this study.

5. **Key questions**:

Perceptions of anxiety and factors that impact self-efficacy

Have you ever felt anxious in the clinical setting?

Can you describe this to the group. When did this happen to you? Were you in a real clinical placement or a high fidelity simulation?
How did you feel about yourself and your ability to care for your patient (self-efficacy)?
What contributed to you feeling this way (perceptions and emotions)? (Note: reference to the top 6 anxiety provoking factors from phase one of the study in order to understand in greater depth).

Exploring differences between real and simulated clinical learning experiences

Let's discuss in more detail about the setting where your clinical learning takes place.
Are there any differences in terms of your experiences of anxiety during real clinical placements when compared to high fidelity simulations? If so, can you describe these differences.
Can you share some examples in each of these settings.

Learner strategies to overcome anxiety in clinical learning

What has helped you as a learner overcome negative emotions such as anxiety while you are in the clinical setting?

Teaching and Learning strategies that enhance your self-efficacy for professional nursing practice

Let's now turn our discussion to specific strategies of clinical teaching and learning.
What can teachers do in preventing or helping you manage this emotion of anxiety?
Would these examples work in real practice settings and during high fidelity simulations? Why or why not?
Are there other teaching and learning strategies that have helped you feel more confident in your ability to be a nurse? (Note: reference to some of the strategies in phase one of the study in order to understand in greater depth).

6. **Summary**

Summarize important findings. Review common themes, but recognize individual contributions. Ask, is there anything else you would like to share or that we have not talked about?

APPENDIX B

Approval Letter

B.01 University of Western Ontario Ethics Approval - # 1307-15

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Western Education

WESTERN UNIVERSITY
FACULTY OF EDUCATION
USE OF HUMAN SUBJECTS - ETHICS APPROVAL NOTICE

Review Number:	1307-15
Principal Investigator:	Alan Edmunds
Student Name:	Joanna Pierazzo
Title:	*Understanding Learner Anxiety and Professional Practice Self-Efficacy in Nursing Education*
Expiry Date:	June 30, 2014
Type:	Ph.D. Thesis
Ethics Approval Date:	August 7, 2013.
Revision #:	
Documents Reviewed & Approved:	Western Protocol, Letter of Information & Consent

This is to notify you that the Faculty of Education Sub-Research Ethics Board (REB), which operates under the authority of the Western University Research Ethics Board for Non-Medical Research Involving Human Subjects, according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario has granted approval to the above named research study on the date noted above. The approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the REB's periodic requests for surveillance and monitoring information.

During the course of the research, no deviations from, or changes to, the study or information/consent documents may be initiated without prior written approval from the REB, except for minor administrative aspects. Participants must receive a copy of the signed information/consent documentation. Investigators must promptly report to the Chair of the Faculty Sub-REB any adverse or unexpected experiences or events that are both serious and unexpected, and any new information which may adversely affect the safety of the subjects or the conduct of the study. In the event that any changes require a change in the information/consent documentation and/or recruitment advertisement, newly revised documents must be submitted to the Sub-REB for approval.

for Dr. Alan Edmunds (Chair)

2012-2013 Faculty of Education Sub-Research Ethics Board

Dr. Alan Edmunds	**Faculty of Education (Chair)**
Dr. John Barnett	**Faculty of Education**
Dr. Wayne Martino	**Faculty of Education**
Dr. George Gadanidis	**Faculty of Education**
Dr. Elizabeth Nowicki	**Faculty of Education**
Dr. Julie Byrd Clark	**Faculty of Education**
Dr. Kari Veblen	**Faculty of Music**
Dr. Jason Brown	**Faculty of Education**
Dr. Susan Rodger	**Faculty of Education, Associate Dean, Research *(ex officio)***
Dr. Ruth Wright	**Faculty of Music, Western Non-Medical Research Ethics Board *(ex officio)***
Dr. Kevin Watson	**Faculty of Music, Western Non-Medical Research Ethics Board *(ex officio)***

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APPENDIX C

Correspondence with participants

C.01 Participant letter of consent

C.02 Phase two consent form

Western Education

Understanding Learner Anxiety and Professional Practice Self-efficacy in Nursing Education

LETTER OF INFORMATION

Introduction

My name is Joanna Pierazzo and I am PhD student at the Faculty of Education at Western University. I am currently conducting research to understand nursing students' feelings of anxiety in clinical learning and would like to invite you to participate in this study.

Purpose of the study

The aim of this study is to determine the factors in real and simulated clinical learning experiences during your nursing education that may contribute to feelings of learner anxiety. In addition to identifying these factors, I am also interested in understanding if there are differences between these two learning contexts and what teaching and learning strategies may enhance your self-efficacy to practice as a professional nurse.

If you agree to participate

If you agree to participate in this two-phase study you will be asked in this ***first phase*** to complete 3 surveys which will take approximately 25 minutes of your time in your level 4 nursing class:

1. State-Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg & Jacobs, 1983)
2. Factors Contributing to Anxiety in Clinical Learning (Pierazzo, 2012)
3. Teaching and Learning Strategies that Enhance Professional Practice Self-Efficacy in Clinical Learning (Pierazzo, 2012)

Completion and return of these surveys to the researcher indicates your consent to participate in phase one of the study.

If you are interested in continuing with ***phase two*** of the study, you will participate in a focus group interview at your site with about 7 other peers from your class. The group interview will be audio-taped and last about 60 minutes. The purpose is to explore in greater depth the details examined in phase one. The interview questions will focus on: your perceptions of anxiety in clinical practice, factors you believe contribute to this anxiety, and learner/teaching strategies you believe would help overcome this anxiety and strength your belief in being a good nurse. The data will be transcribed into written format and reported as group data. If you would like to participate in phase two**,** please complete the contact details at the end of the package and I will follow-up with you.

Confidentiality

The information collected will be used for research purposes only, and neither your name nor information which could identify you will be used in any publication or presentation of the study results. All information collected for the study will be kept confidential and stored in a locked file accessible only to the researcher. Once the data is analyzed and the study is complete, the data will be appropriately disposed of to ensure compliance with privacy and confidentiality.

Risks & Benefits

There are no known risks to participating in this study. If you choose to participate, your responses will remain anonymous and only reported as group data and not individual cases.

Voluntary Participation

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time with no affect to your academic status.
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Questions

If you have any questions about the conduct of this study or your rights as a research participant you may contact the Office of Research Ethics, Western University at xxx-xxx-xxxx or email at xxx@uwo.ca. If you have any questions about this study, please contact the researcher Joanna Pierazzo, xxx-xxx-xxxx, ext. xxxxx, xxx@uwo.ca or the faculty advisor, Dr Alan Edmunds, xxx-xxx-xxxx, ext. xxxxx. This letter is yours to keep for future reference.

signature

_____

Joanna Pierazzo

Understanding Learner Anxiety and Professional Practice
Self-efficacy in Nursing Education

Joanna Pierazzo, RN, MScN(ACNP), PhD(c)

PHASE TWO CONSENT FORM

I have read the Letter of Information, have had the nature of the study explained to me and I agree that I will participate in the study. All questions have been answered to my satisfaction.

Name of student (please print): _____

Signature of student: _____

Signature: _____ Date: _____

(Research to complete)

Name of Person Obtaining Informed Consent: _____

Signature of Person Obtaining Informed Consent: _____

Date: _____

CURRICULUM VITAE

NAME: Joanna Avolio-Pierazzo

EDUCATIONAL BACKGROUND:

2010- 2014	PhD in Education, Educational Psychology, University of Western Ontario, London, Ontario
2007-2009	Coursework in PhD in Nursing Transferred to another program, McMaster University, Hamilton, Ontario
1998-2001	Post-Master's Tertiary Care Nurse Practitioner Certificate University of Western Ontario, London, Ontario
1996-1998	Master of Science in Nursing University of Western Ontario, London, Ontario
1992-1993	Bachelor of Education Ontario Teaching Certificate (Primary/Junior) Brock University, St. Catherine, Ontario
1987-1991	Bachelor of Science in Nursing University of Western Ontario, London, Ontario

CURRENT STATUS:

2002-Present	**Assistant Professor**, Teaching Professor, School of Nursing, McMaster University, Hamilton, Ontario