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Students' experiences of seeing the whole of a clinical situation

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STUDENTS' EXPERIENCES OF SEEING THE WHOLE OF A CLINICAL SITUATION

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ABSTRACT

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Nurses are the largest group of health care professionals. Their ability to think critically and communicate effectively even in ambiguous and uncertain situations has a direct effect on the quality, safety, and cost-effectiveness of health care. Nurses must be able to utilize critical thinking to move beyond seeing individual pieces or components of patients' clinical pictures to seeing the whole, with an appreciation of how the pieces connect and interrelate. Graduate nurses have reported difficulty in seeing the whole of a clinical situation. This qualitative study used descriptive phenomenology to describe how senior nursing students came to see the whole of a clinical situation. Eleven nursing students were interviewed. The results revealed five themes important to the experience: build a solid foundation, see the patient, connect the dots, trust oneself, and relationship with faculty/preceptors. The results were reviewed in the context of existing literature. Recommendations for nursing education were made and opportunities for future research were discussed.

ACKNOWLEDGEMENTS

A project of this scope cannot be completed in isolation, and this dissertation is no exception. First, I extend my thanks to my family who believed in me when I doubted myself and provided me with much needed balance. My siblings, Gail and Skip, Sally and Jerry, Cheryl and Bob, and Mark and Susan, provided constant support and encouragement to persevere. My nieces and nephews, Stacy and Scott, Wendy and Steve, Jenny and Drew, Stacie and Steve, Kim and Dan, Christine and Joel, and Amy and Tony bring pure joy to my life and their children light up the world. All would be gray without any one of them.

I must thank my colleagues and friends Ellen, Sarah, Kathy, and Lori for celebrating my successes and lifting me up during the challenges. Our lunch and laugh sessions are therapy for the soul.

I will always be grateful to the 11 nursing students who stepped forward to participate in this study. My confidence in the future of the profession was renewed listening to each of you.

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DEDICATION

This dissertation is dedicated to the memory of my parents, Eleanor and Gerhard Rolloff. They provided unwavering love and support regardless of the endeavor. Through every adventure they reveled in each success and cushioned each failure. Through them I came to value formal and informal education and developed a thirst for learning. Above all else, they modeled what is most important. They are in my heart, and I know are smiling from heaven above.

"For I know the plans I have for you, declares the Lord, plans to prosper you and not to harm you, plans to give you hope and a future." Jeremiah 29:11

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CHAPTER I

INTRODUCTION

Nurses represent the largest group of health care professionals and are the backbone of the healthcare system. Nurses must be able to think critically and communicate effectively even in ambiguous and uncertain situations (Valiga, 2009). Their ability to carry out these responsibilities efficiently and effectively has a direct effect on the quality, safety, and cost-effectiveness of health care (Institute of Medicine, 2010). It is the responsibility of nursing academia to prepare students for the nursing role, including the ability to think critically. Critical thinking is one of the intrinsic attributes identified by Joseph (2007) that influences patient outcomes. It is critical thinking that directly influences clinical judgment, which in turn impacts decision-making. While the terms critical thinking and clinical judgment are often used interchangeably, they are distinct processes. Critical thinking includes "all or part of the process of questioning, analysis, synthesis, interpretation, inference, inductive and deductive reasoning, intuition, application, and creativity" (American Association of Colleges of Nursing [AACN], 2008, p. 36). Critical thinking is the foundation for the decision-making process. Nurses use critical thinking to identify and synthesize significant assessment findings and form decisions about the most appropriate courses of treatment to meet the desired patient care goals. Clinical judgment is the process used to

interpret the meaning of the findings to develop action plans (Tanner, 2006). Decision-making flows from the clinical judgment process.

While critical thinking is essential to effective clinical decisions, it remains an abstract concept. Oermann (1997) describes indicators of critical thinking in nursing students in practice:

> In assessing clients, the student needs to differentiate relevant from irrelevant data, to identify cues in the data and cluster them, and to identify nursing diagnoses based on this analysis of data. Making decisions about competing diagnoses, judging when additional data are needed to arrive at a diagnosis, and generating alternate nursing diagnoses with supporting rationale require critical thinking. Critical thinking also is reflected in a student's ability to critique relevant nursing interventions, weigh the consequences of varied decisions possible, and consider multiple perspectives to care. As that care is provided, students evaluate client responses and the effectiveness of their nursing management. (p. 26)

Tanner (2006) further advanced our understanding by delineating the role of critical thinking in clinical judgment. Clinical judgment involves the "interpretation or conclusion about a patient's needs, concerns, or health problems, and / or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response" (Tanner, 2006, p. 204). Clinical judgment involves more than an understanding of policies or procedures, and moves beyond the implementation of standing orders. In order to develop clinical judgment, one must understand the pathophysiology and diagnostic presentation of the patient, and then synthesize that with the patient and family's experience of the illness, personal preferences as well as their physical, social, and emotional strengths.

The ability of nurses to make decisions based on critical thought processes is a core component of nursing practice. In order to do so, nurses must be able to utilize critical thinking to move beyond seeing individual pieces or components of patients'

clinical pictures to seeing the whole, with an appreciation of how the pieces connect and interrelate. While the profession has identified the nursing certification licensing exam as the objective measure of competence to enter the profession as a registered nurse, the process of how students come to make critical decisions in clinical practice remains less defined.

New graduates report the transition to practice as challenging, with one of the primary adjustments being the ability to form clinical judgments in ambiguous situations (Etheridge, 2007). Learning to think like a nurse was the overall theme identified in a qualitative study following nurses at varied points during their first year of employment. As one participant stated, "Patients do not always fit into the clinical picture that you get in school. That is the biggest thing--putting information together and knowing what it means" (Etheridge, 2007, p. 27). Yet, anecdotal evidence from clinical instructors indicates that at times, nursing students do "think like nurses" when individual concepts come together to form complete pictures. Speakman (2009) identifies this as transformative learning, "where learners can see themselves as successful and capable, which can lead to enhanced learning" (p. 44). Students often describe it as a light bulb turning on, when suddenly they can tie apparently unrelated pieces of data together, or anticipate a situation based on their assessment findings. Instructors and students alike celebrate these moments as signs of the higher order thinking skills of analysis, synthesis and evaluation.

The question remains, however, as to how these experiences come to be. Benner (2001) studied the development of clinical expertise and identified five levels of clinical competence. Experience is the foundation for progression to clinical expertise in

Benner's model. Yet not all nurses will become experts, regardless of experience. Tanner (2006) developed a model of clinical judgment synthesized from the literature. The model starts with noticing, in which the nurse implicitly or explicitly applies his/her expectations about a situation to what is assessed. The expectations are drawn from personal experience and/or theoretical knowledge. The nurse then interprets the data and determines a plan of action. The interpretation and determination of a plan is influenced by a variety of patterns of reasoning, including analytic processes, intuition, or narrative, in which one tries to understand the concerns, intent, and motives of an individual. Once an action is determined, the model proceeds to reflection, both in-action as to how the patient is responding to the intervention, as well as on-action. On-action reflection completes the cycle, as the nurse reflects on the experience and its contribution to clinical knowledge. The experience gained from the process increases the nurse's ability to make clinical judgments in the future. Tanner notes that the model describes the experience of experienced nurses, but asserts that the overall process applies to students as well.

Baxter and Boblin (2008) used a qualitative case study design to assess the differences in decision-making in nursing students as they progressed through a baccalaureate curriculum. While the focus of the study was on the type of decisions made rather than how decisions are made, the authors did identify that decision-making does evolve over time. A beginning student was more likely to have a narrow focus with attention to the immediate task on hand whereas a more advanced student integrated information from the broader clinical picture. Certainly increasing experience provides a greater depth of knowledge for a student to draw from. However, the authors also

identified that the increased complexity of the clinical presentations often had a negative impact on the student's confidence, resulting in a hesitancy to act on decisions.

White (2003) identifies confidence as a key component in clinical practice for novice nurses. Other studies have suggested that perception of competence is essential to the perception of confidence and vice versa. Students who lack competence tend to be coupled with a lack of confidence (Clark & Holmes, 2007; Etheridge, 2007; Wangensteen, Johansson, & Nordstrom, 2008). It is difficult to know which precedes which. Certainly there must be foundational knowledge and skills on which to make decisions. However, nurses who are confident in their knowledge and skills are more likely to accept challenging experiences, which can lead to increased confidence.

While these studies suggest pieces to the process, a focused exploration of the approach leading to the formation of clinical judgments for student nurses is missing. Appreciating the whole of a clinical situation is critical to the achievement of clinical judgments. Good judgments require a comprehensive assessment. The purpose of this study was to describe how senior nursing students come to understand the whole of a clinical situation. What supported the thought process, what questions were raised, how decisions were validated, and ultimately, what was learned are all questions subsumed within the experience. A better understanding of the experience of these transformative learning moments may assist educators in appreciating clinical practice from a student's perspective. Doing so lays a foundation for supporting student development.

Research Purpose

The purpose of this study was to describe how senior nursing students came to see the whole of a clinical situation.

Research Question

The primary research question for this study was as follows:

Q1 How do senior nursing students come to see the whole of a clinical situation?

Areas to be explored within the research question include

1. What process is described by students in seeing the whole of a clinical situation?
2. What supports the students in this process?
3. What hinders the students in this process?
4. What personal insights did the student gain from the process?

Research Goal

The goal of the study was to describe the process by which senior nursing students came to see the whole of clinical situations in order to make clinical judgments. With greater insights into the experiences students identified as successful examples of decision making in practice, faculty may be better able to appreciate the challenges of students as they develop into professional nurses as well as to identify the types of experiences that support and advance students' thinking processes. Transformative learning does not happen by chance. It is the result of environments and practices that are designed to be student-centered, interactive and innovative (Speakman, 2009). However, there is no one formula for transformative learning that can be applied to all students. Therefore, seeing the process through the eyes of students may assist faculty in structuring clinical experiences, guiding students through clinical situations, and advising preceptors on strategies to support learning. Describing the phenomenon of students

coming to see the whole of a clinical situation is the first step and foundational for future studies.

Research Design

Naturalistic inquiry recognizes the multiple realities that exist among individuals and promotes research measures designed to hear the voice of those closest to the experience. The research design most appropriate for the investigation of the lived experience is phenomenology. This study used a phenomenological design to address the question of how senior nursing students came to see the whole of a clinical situation. A better understanding of the phenomena might give instructors and preceptors a better appreciation of the student experience, providing a foundation for exploring what supports as well as what limits student development.

Summary

The application of critical thinking through clinical judgments is an essential skill for professional nurses. Instructors use a variety of techniques to enhance critical thinking, but not all students progress in the same manner. New graduates report learning to think like nurses is one of the more difficult challenges in making the transition from students to practitioners. The ability to see the whole clinical picture, including the patient's values, beliefs, and preferences, is an essential element in the practice of expert nurses. Yet, nursing students report experiencing "ah-ha" moments in which apparently separate concepts come together to form a whole picture. Little data exist on how this experience comes to be.

The study fit within the naturalistic paradigm, using a qualitative research design with a phenomenological approach to answer the question. The purpose of qualitative

research is not to prove one outcome as better than another, but rather is to gain an in-depth understanding of an experience (Creswell, 2007). Before interventions can be tested to determine effectiveness of methods, we must first describe the issue at hand.

CHAPTER II

REVIEW OF LITERATURE

Critical Thinking in Nursing

Quality health care is dependent on well educated nurses (American Association of Colleges of Nursing [AACN], 2010). As the largest group of healthcare professionals, nurses provide the care that is the primary reason for which most patients are hospitalized (Benner, 2001). In 2003, the American Nurses Association (ANA) defined nursing as "the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response and advocacy in the care of individuals, families, communities, and populations" (p. 6). Inherent to the definition is the ability to think critically, as demonstrated by systematically and continually assessing, interpreting, and developing a plan of action in a complex situation. A nurse's ability to think critically is one of the intrinsic attributes identified by Joseph (2007) that influences patient outcomes. It is critical thinking that directly influences clinical judgment, which in turn impacts decision-making. While the terms critical thinking, clinical judgment, and decision-making are often used interchangeably, they are distinct processes. Critical thinking includes "all or part of the process of questioning, analysis, synthesis, interpretation, inference, inductive and deductive reasoning, intuition, application, and creativity"

(AACN, 2008, p. 36). Critical thinking is the foundation for the decision-making process. The nurse uses critical thinking to identify and synthesize significant assessment findings and forms decisions about the most appropriate course of treatment to meet the desired patient care goals. Clinical judgment is used to interpret the meaning of the findings to develop an action plan. Decision-making flows from clinical judgment.

The development of clinical judgment is extremely complex. In order to make such judgments, a nurse must understand the physiological and psychological aspects of a patient's disease or clinical presentation, diagnostic and pharmacologic components, as well as the personal meaning of the experience for the patient and family (Tanner, 2006). Tanner (2006) equated clinical judgment as "thinking like a nurse" (p. 209). This comprehensive assessment and integration into a whole clinical picture is a challenge for novice nurses (Ellerton & Gregor, 2003; Etheridge, 2007; White, 2003). The ability to systematically and continually assess, interpret, and develop a plan of action in a complex situation is consistent with the practice of critical thinking. In predicting competencies needed by health professionals for the 21st century, the Pew Health Professions Commission listed demonstration of critical thinking, reflection, and problem-solving skills as critical competencies (O'Neil et al., 1998). The National League for Nursing (2008) and the Commission on Collegiate Nursing Education (Association of American Colleges of Nursing, 2008) include the development of critical thinking as an essential component for nursing programs.

The ability to form clinical judgments requires unique knowledge. In 1978, Carper published her landmark article defining the fundamental patterns of knowing. Identified were four types of nursing knowledge: "(a) empirics, the science of nursing;

(b) aesthetics, the art of nursing; (c) the component of a personal knowledge in nursing; and (d) ethics, the component of moral knowledge in nursing" (Carper, 2004, p. 221). The components of critical thinking identified by AACN (2008) fit nicely within the patterns of knowing. Certainly components such as analysis, logical reasoning, and application of standards fit within the empirical area of knowing. Intuition reflects personal knowing, while creativity is a component of aesthetic knowing. One could argue that intellectual integrity and open-mindedness are inherent in ethical knowing.

Chinn and Kramer (2004) constructed a model depicting the four patterns of knowing with each of the knowledge types serving as a quadrant of a whole. In 2008, emancipatory knowing was added as a fifth pattern (Chinn & Kramer, 2008). Emancipatory knowing reflects social justice as the nurse identifies inequities and works to create fair and equitable care for all. Each category points to a center sphere without quadrant boundaries, designed to represent nursing practice as a whole. The model clearly captures the five components of knowing and represents them as equal parts of a whole. Figure 1 provides the author's interpretation of the patterns of knowing model. The sphere accurately depicts nursing as a holistic profession, combining art and science. While the patterns of knowing are described individually, no one area is sufficient for nursing knowledge. "Each pattern may be conceived as necessary for achieving mastery in the discipline, but none of them alone should be considered sufficient" (Carper, 2004, p. 227). The patterns are in continual interplay with one another. Ongoing knowledge development comes from the interaction of the five patterns of knowing (Chinn & Kramer, 2008). As a nurse draws knowledge from any of the areas and applies it to

patient care, he/she observes the effect of the care and adds that to his/her body of knowledge. Thus, knowledge builds.

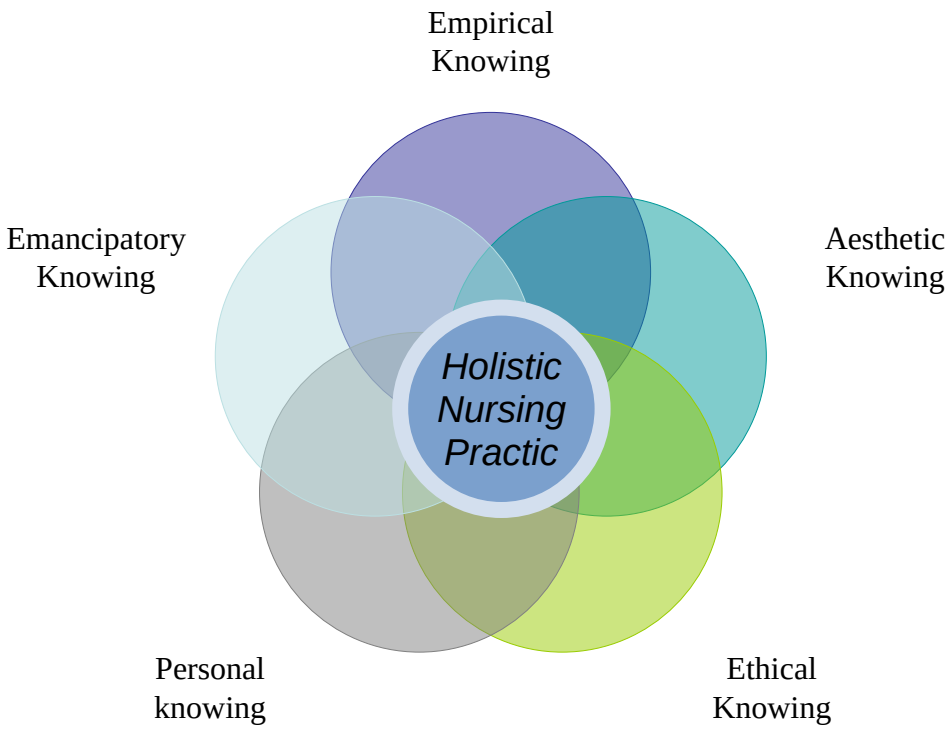

Figure 1. Patterns of knowing model.

In her seminal work on the development of clinical expertise, Benner (2001) expanded our understanding of the impact of personal knowing on a nurse's ability to form clinical judgments. Benner studied nurses' clinical judgment and decision-making processes through the interpretation of clinical practice exemplars. She identified five levels of clinical competence. Those with no experience enter at the novice stage.

Because novices have no experience to draw on, their practice is based on context-free rules designed to guide actions. All actions or "rules" are essentially equal, so novices have difficulty prioritizing tasks. Nursing students entering new clinical areas do so as novices. Stage two is the advanced beginner, where nurses have enough clinical experience to begin identification of recurring situations. While performance is "marginally acceptable" (Benner, 2001, p. 22), advanced beginners are challenged by competing priorities and identifying discrete differences in assessments. Competence marks the third stage of development and is characterized by appreciation of how one's actions fit within the long-range patient care plans. Typically, nurses reach the competence level after two to three years of experience with similar situations. In the fourth stage, proficient nurses now see situations as wholes rather than in parts. These nurses appreciate the end goals and can distinguish the irrelevant, extraneous details from the important. The last stage of development is the expert--nurses who have such depth of experience that they are guided by intuition rather than procedural rules. Without the constraints of rules, experts are able to efficiently and effectively focus in on the core of an issue.

New graduate nurses tend to enter practice as advanced beginners (Benner, 2001). They have enough exposure to patient situations from their clinical rotations to have a rudimentary level of experience yet struggle with setting priorities, identifying subtle changes, and seeing the whole picture of the patients' plans of care. Etheridge (2007) interviewed new graduates at various points during their first year of employment. Learning to think critically and forming clinical judgments were significant challenges for the new nurses. Ellerton and Gregor (2003) identified similar concerns. New

graduates were interviewed at three months post graduation to assess the graduates' perceptions of preparation for practice. At this point in time, the graduates did not feel confident in their clinical abilities and expressed frustration with their perceived lack of knowledge and skills to manage safely and independently. Some of the new nurses felt competent to perform clinical skills, yet admitted not understanding the significance of their findings. Interestingly, when asked to rate themselves on a scale of 1 to 10 on readiness for practice, the average rating was seven. While the new nurses may not have felt confident in their ability to practice independently, they clearly saw themselves as prepared for the role of the nurse. As one participant acknowledged, her frustration was not solely related to patient care. Organizational skills and unfamiliarity with unit and hospital systems added to the frustration.

Critical Thinking in Nursing Students

The ability of nurses to form clinical judgments based on critical thought processes is a core component of nursing practice. In order to do so, nurses must be able to utilize critical thinking to move beyond seeing individual pieces or components of patients' clinical pictures to seeing the whole, with an appreciation of how the pieces connect and interrelate. The ability to recognize the whole has challenged new nurses. Nursing students have described situations in which they were able to synthesize multiple pieces of information to form a whole; however, the process of how this comes to happen is not well understood.

Lasater (2007) used Tanner's (2006) model for clinical judgment as the foundation for a rubric designed to assess clinical judgment development during simulation experiences. The rubric assesses students' abilities in clinical judgment on a

scale graded as exemplary, accomplished, developing, and beginning levels. In a study of 26 second semester, junior level students, the mean score placed the students in the developing stage with a range from the low end of the beginning level to the higher end of the accomplished level. While the rubric seemed to work well in discriminating behaviors in simulation, it has not been tested in assessing clinical practice.

White (2003) used a phenomenological research design to assess how senior nursing students learn clinical decision-making. She interviewed 17 students during their final clinical rotations. Data analysis revealed five themes associated with the nursing students' decision-making processes: gaining confidence in their skills, building relationships with staff, connecting with patients, gaining comfort in self as a nurse, and understanding the clinical picture. The majority of students identified the importance of feeling confident in their nursing skills. A positive progression in confidence allowed the students to direct attention to other care needs, whereas a lack of confidence resulted in increased anxiety and a focus on one's own fears of making a mistake rather than seeing the patient's needs. With increasing confidence, the students began to see themselves as nurses and assumed more of the roles of nurses. The relationship between confidence and clinical judgment was also identified by Ellerton and Gregor (2003). Lundberg (2008) emphasized the role of confidence in learning by stating "confident students will engage in challenging goals, whereas their less confident peers will avoid the same tasks" (p. 86).

Students identified the relationship between themselves and the nurses as "critical for students to make clinical decisions" (White, 2003, p. 115). A supportive, mentoring relationship with the unit staff and preceptor has been studied further as well. Levett-

Jones, Lathlean, McMillan, and Higgins (2007) used in-depth interviews to assess students' perceptions of the factors that impact a sense of belonging and the consequences of belonging within clinical environments. Eighteen students provided their insights into the experience of belongingness or alienation. The participants reported that supportive environments in which they were accepted, valued, and included enhanced emotional well-being and learning. Key to the environment is the student-mentor relationship. Students who were in a positive relationship found their confidence increased, which led to an increase in empowerment and self-directed learning. In contrast, overt exclusion and rejection leads to a sense of powerlessness and helplessness. The importance of a positive student-preceptor relationship was also identified in a study of senior nursing students participating in a precepted practicum. "Adaptation to the units was facilitated by preceptors and enhanced by their commitment to learning" (Wieland, Altmiller, Dorr, & Wolf, 2007, p. 319). Gillespie (2005) emphasized the value of a connected relationship between student and teacher, identifying that a positive, trusting relationship increases learning, including the development of clinical judgment, communication and organizational skills, as well as synthesis and utilization of nursing knowledge.

The theme of connecting with patients refers to getting to know the patient (White, 2003). Students described the individualization of care as learning the unique characteristics and needs of the patients. Patient-centered care is one of the quality and safety competencies identified in the Quality and Safety Education for Nurses project (QSEN, 2010). Patient-centered care recognizes the patient as a partner in care, with clinical decisions made with respect for patient's preferences, values, and needs. Patient-

centered care is consistent with nursing's holistic approach to care, and is a component of evidence-based practice, defined as the combination of scientific knowledge, personal experience, and patient preferences (Houser, 2008).

The last theme identified by White (2003) was understanding the clinical picture. As students gained knowledge, confidence, and experience, they also demonstrated a greater sense of appreciating the whole clinical picture rather than separate pieces. The students described beginning to recognize the more significant pieces of information and patterns of patient responses. White proposed that confidence in skills, relationship with staff, and connection with patients are prerequisites in supporting the students' abilities to understand the clinical picture and individualize care. While the participants in this study identified how this understanding supported clinical decision-making, the details of how they came to see the clinical picture were not explored.

The importance of understanding the clinical picture is of critical importance. "Until students are able to understand the clinical picture, their clinical decision making capabilities are limited" (White, 2003, p. 119). The ability to put the clinical picture together has challenged new graduate nurses (Ellerton & Gregor, 2003; Etheridge, 2007). Gaining a better understanding of how students come to form this clinical picture is important for understanding the overall development of critical thinking and decision making in nursing. The purpose of this study was to describe how senior nursing students came to see the whole of a clinical situation. This question is best explored through naturalistic inquiry, in which the focus is on the exploration of the lived experience. Phenomenology emphasizes the study of what people experience and the meaning of that experience (Flood, 2010).

Research Paradigm

Paradigms are scientific perspectives that frame one's view of the world (Polit & Beck, 2008). The worldview shapes the philosophic approach of the researcher and drives the characteristics of the research methods. Broadly, there are two prevailing paradigms for nursing inquiry: the positivist paradigm and the naturalistic paradigm.

The positivist paradigm is most commonly associated with the scientific method and traditional research designs. The fundamental assumption in positivism is that objective reality exists and can be defined and studied. The goal of research within a positivist paradigm is to predict and control. Research methods emphasize objectivity with the researcher disassociated from the data collection process. Analysis uses a deductive process for the purpose of generalization of results (Polit & Beck, 2008). Quantitative research designs are driven by the positivist paradigm. The objective, rational approach to inquiry, is valuable and has resulted in many contributions to science. It falls short, however, when a phenomenon has not been fully described or understood. Before a study can be designed to predict outcomes for generalization, the concepts inherent to the phenomenon of interest must be developed and described. The objective detached approach inherent to the positivist paradigm is unable to capture the depth and details desired for understanding.

The naturalistic paradigm has emerged in response to the limitations of the positivist paradigm. The ontologic assumption within the naturalistic paradigm is that reality is subjective and unique to the individual, hence multiple realities exist (Polit & Beck, 2008). The goal of the research is to gain understanding of the lived experience. Understanding can only come through an emic, or insider, view of the experience; hence

the research methods are inherently subjective with intimate involvement of the researcher with participants. Data analysis comes through an inductive process as the researcher strives to grasp the complexity of the experience through in-depth analysis of the participants' stories. Researchers holding a naturalistic paradigm use qualitative research methods to answer questions.

Neither method is inherently right or wrong; both paradigms provide unique perspectives that contribute to nursing knowledge. In 2003, the American Nurses Association (ANA) defined nursing as

> the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response and advocacy in the care of individuals, families, communities, and populations. (p. 6)

Inherent within the definition is the need for evidence that can predict improved outcomes and be generalized to broad populations. Also included in the definition is the need to address the human response. To do so, we must appreciate and understand the experiences of those with whom we interact and work. Clearly, both paradigms are needed in developing the science of nursing.

The same holds true in developing the science of nursing education. The National League for Nursing (2005) and the American Association for Colleges of Nursing (2008) advocate for evidence-based nursing education. In identifying priorities in nursing education, the National League for Nursing lists 25 focus areas (Gresley, 2009). These priorities range from economics in education to new pedagogies for learning. Both quantitative and qualitative data are needed to address the multitude of issues inherent within nursing education.

Ultimately, then, it is the research question that drives the paradigm. This study set out to describe how nursing students came to see the whole of the clinical picture. The purpose was to understand the phenomenon, not to predict or control; thus, the naturalistic paradigm with a qualitative design was appropriate for this study.

Tenets of Naturalistic Inquiry

Lincoln and Guba (1985) identify five basic beliefs characterizing naturalistic inquiry. The first is that realities are multiple, constructed, and holistic. Naturalistic inquiry recognizes the relationship and influence of the world on the individual and vice versa. We are all as much products of our environment as we are of our genetic make-up. As such, each person is unique and creates their view of reality within their own social context. This individually constructed view of reality suggests that "each one's way of making sense of the world is as valid and worthy of respect as any other" (Crotty, 1998, p. 58). Therefore, the reality of the experience can only be perceived within the meaning assigned by the individual.

A second tenet is that the researcher and participant are interactive, influencing each other in the process (Lincoln & Guba, 1985). To gain the desired emic perspective, a researcher strives to get as close to the participants as possible. The researcher is the research instrument in qualitative studies. It is important for the researcher to grasp the complexity of the experience, thus emphasizing the holistic view of the experience. However, this relationship is not one-sided. Qualitative research gives voice to silent individuals, empowering them in the process (Munhall, 2007). The "research subjects" become participants and partners in the process of discovery. Interpretations by the

researcher are validated by the participants, as they are the only ones who truly can identify the truth.

While this relationship holds many advantages, there are also potential risks. It is essential that the researcher hear the story of the participants as intended without filter. It is imperative that the researcher "keep a focus on learning the meaning that the participants hold about the problem or issue, not the meaning that the researchers bring to the research or writers from the literature" (Creswell, 2007, p. 39). Moustakas (1994) refers to this as Epoche, the Greek word meaning to refrain from judgment. "In the Epoche, the everyday understandings, judgments, and knowings are set aside, and phenomena are revisited, freshly, naively, in a wide open sense, from the vantage point of a pure or transcendental ego" (Moustakas, 1994, p. 33). This is not to suggest that the researchers try to forget or ignore their own values and beliefs. That would not only be impossible, but also detrimental. Naturalistic inquiry does involve an interactional process. However, researchers can make an effort to recognize their beliefs and biases so they become part of their conscious awareness and thus monitored for influence. Munhall (2004) identifies this process as "unknowing," in which biases, prejudices, preconceptions, stereotypes, and assumptions are held at bay. Unknowing involves being "authentically present" to a person so that one is open to truly hear, see, and experience what is being shared. As researchers "unknow" their own biases, they are open to hear and know the perspective of others. The process of unknowing is also referred to as bracketing, as the researchers work to bracket and set aside their personal experiences (Polit & Beck, 2008). The process of bracketing continues throughout a study. Initially, researchers may write out their values and biases to make them overt. Throughout the

study, reflective journaling encourages introspection. In addition, peer mentors can provide an outside perspective for objective clarity.

A third tenet of naturalistic inquiry is that the end result of studies is not data to be generalized to larger populations, but rather time- and context-bound hypotheses that may be transferable (Lincoln & Guba, 1985). Transferability is the likelihood that study findings are applicable in similar situations. Because human beings are unique in their own right, objective generalization of conclusions is not realistic. However, findings may fit in similar situations and with similar participants. Lincoln and Guba (1985) identify this as "fittingness," defined as "the degree of congruence between sending and receiving contexts" (p. 124). To determine the degree of fittingness, it is important that the research process be clearly identified for future critiques. Details outlining the context in which the study is carried out are referred to as thick descriptions. While qualitative research studies are inherently subjective, they are still scientific inquiries and must hold up to rigorous evaluation.

A fourth component of naturalistic inquiry is mutual simultaneous shaping, replacing the concept of causality found within the positivist paradigm. Mutual, simultaneous shaping recognizes that everything influences everything else, creating an environment in which "all elements in a situation are in mutual and continual interaction" (Lincoln & Guba, 1985, p. 155). The result of mutual simultaneous shaping is that one cannot predict future responses or outcomes based on past evaluations. Similar experiences may yield similar outcomes, but because of the continual interplay and influences between the participants, the experiences, and the context of the experience, the results may be different. Mutual simultaneous shaping is consistent with the concept

of transferability. The same unique characteristics of human behavior that make generalizability impossible also limit assignment of causality. Individuals may respond to actions, resulting in cause and effect or in different circumstances they may anticipate actions, thus influencing the action by their anticipated behaviors. Therefore, we can never be certain of similar responses in similar circumstances. Educators recognize the need to individualize teaching to meet the needs of diverse learners. While educators strive to develop learning opportunities for students, it remains the students themselves who ultimately determine what knowledge is internalized for future use and how that knowledge is used (Driscoll, 2005). The same teaching strategies used for a class of students will result in a different level of learning for each individual student.

The last tenet identified by Lincoln and Guba (1985) is that naturalistic inquiries are value laden. While positivist research strives for objectivity, those using a naturalistic approach recognize values are an innate part of inquiry. The researcher's values influence the lens with which the entire area of inquiry is viewed and analyzed. Recognition of the roles of values in the research process is counter to the traditional view of objective science; however, an honest appraisal would suggest that it is at best very difficult, and more likely impossible, for one to be totally value free in designing and implementing a study. By contrast, acknowledgment of one's values allows for a more complete appraisal by reviewers. In addition, recognition of the ideological foundation for studies advances social justice. While Creswell (2007) challenges Lincoln and Guba's assertion that naturalistic inquiry always serves some social agenda, he agrees that such issues should be acknowledged and recognized as part of all inquiry. In discussing the significance and power of qualitative research, Munhall (2007) also asserts

that that the researcher's interpretation of the meaning of experiences needs to go beyond simple description. Rather, it should include "implications and recommendations for political, social, cultural, health care, family, and other social systems" (Munhall, 2007, p. 26).

Characteristics of Naturalistic Studies

The principles of naturalistic inquiry identified above lead to several implications for conducting qualitative research. First, the study is carried out in a natural environment, comfortable to the participants (Lincoln & Guba, 1985). Given that all knowledge is contextual, insights are best discovered within the context of the experience. Collecting data in the field provides an up-close experience in which the researcher talks directly with individuals and observes behaviors within the context it occurs.

A second implication involves the role of the researcher him- or herself. In naturalistic inquiry, the researcher is the key instrument for data collection (Creswell, 2007). The researcher may use guides or protocols for the data collection process but does not depend on instruments or questionnaires developed by others. The quality of the data, however, is dependent on the depth and intimacy of the participants' experiences with the area of inquiry. Therefore, it makes sense that sampling would be purposeful rather than random (Lincoln & Guba, 1985).

Data analysis also takes a different form in naturalistic studies. To better identify the multiple realities likely found in the data, inductive reasoning is a preferred method. "Qualitative researchers build their patterns, categories, and themes from the 'bottom-up', by organizing the data into increasingly more abstract units of information"

(Creswell, 2007, p. 38). Rather than reducing data to separate parts, inductive reasoning focuses on holism, another characteristic of naturalistic inquiry (Munhall, 2007). Inductive reasoning allows for continual interaction and collaboration with participants to identify and shape emerging themes. As such, outcomes of qualitative studies are best negotiated with the participants of the study (Lincoln & Guba, 1985). The focus of the process is always on learning the meaning that participants place on or hold about an issue. Therefore, it is logical that the participants themselves would be the best able to understand and validate patterns.

Given the assumption of multiple realities, it would be inappropriate for the researcher to attempt to anticipate all the possible directions a line of inquiry might take. For this reason, those ascribing to naturalistic inquiry believe in emergent designs, in which the research design unfolds in response to the data (Creswell, 2007; Lincoln & Guba, 1985). The focus is on obtaining truth rather than maintaining a tightly prescribed format.

Trustworthiness of Data

Ultimately, the quality of a study is judged on how reasonable or justifiable the results are. In other words, can we trust the data? The subjective nature of naturalistic inquiry does not lend itself to traditional measures of reliability and validity. Instead, the qualitative researcher takes measures to ensure the trustworthiness of the data (Lincoln & Guba, 1985). Trustworthiness consists of evaluation of the credibility or truth of the data, transferability or application of results, dependability or consistency, and confirmability, also identified as neutrality. While these steps cannot assure trustworthiness, used collectively they do provide a reasonable assurance of the adequacy of the results.

Credibility

Credibility is enhanced through the use of prolonged engagement, persistent observation, triangulation, peer and/or member debriefing, negative case analysis, and referential adequacy. Prolonged engagement is achieved by spending sufficient time in the environment to learn the culture, test for misinformation of data, and build trust with the participants (Lincoln & Guba, 1985). The amount of time needed to achieve prolonged engagement is variable, depending on the culture and context studied. One tool useful for assessment of prolonged engagement is the concept of theoretical saturation (Polit & Beck, 2008). Saturation occurs when no new data are retrieved through additional sampling. Prolonged engagement can also be enhanced by the researcher becoming acclimated and familiar with the context of the situation and phenomena under investigation. A third component of credibility is trust. Respondents must be confident that confidentiality will be maintained and their status as participants in a study will not negatively impact any other aspect of their lives. In this case, students need to be assured that participation in the study is completely voluntary, confidential, and will not positively or negatively affect their status within the nursing program. Triangulation is the use of more than one data source, method, or investigator to validate information. Triangulation enhances credibility through confirmation of information, thus enhancing objectivity.

Peer checks also work to enhance objectivity and accuracy by exposing the data and analysis to outside review (Lincoln & Guba, 1985). The debriefer probes for biases, explores meanings, and clarifies interpretations. The debriefer also serves as a support for the researcher, allowing the researcher to verbalize emotions that may be interfering

with the analysis process. Member checks involve taking the analysis and conclusions back to the participants for review and critique (Lincoln & Guba, 1985). Member checking is consistent with the philosophical assumption of multiple realities, in which only the participants who have experienced a phenomenon can adequately explain it. Validating results with participants places the participants in a co-researcher role and empowers them in the process (Creswell, 2007). It should be noted that not all phenomenologists support member checking. Descriptive phenomenologists identify member checking as a mechanism to support a study's credibility. Colaizzi (1978) identifies member checking as the final validating step in the data analysis process. Lincoln and Guba (1985) identify it as "the most crucial technique establishing credibility" (p. 314). However, others find member checking inappropriate and prefer the use of either expert judges or the researchers themselves to validate findings (Polit & Beck, 2008). Interpretive phenomenologists strive to "transform lived experience into a textual expression of its essence" (Van Manen, 1990, p. 36). Researchers have expressed concern that asking participants to evaluate the researcher's interpretations of their lived experience may be beyond the scope of participants (Polit & Beck, 2008).

Negative case analysis is the continual refinement of a hypothesis until it accounts for all cases (Polit & Beck, 2008). The process of accounting for all cases forces the researcher to think beyond the obvious, searching for deeper meaning and alternative connections. As competing hypotheses are generated to include previously conflicting data, the new hypothesis is applied to previous and subsequent interviews to assure adequacy of fit. Lincoln and Guba (1985) acknowledge it may not be possible to account

for every exception; however, the greater the degree of fit, the stronger the credibility of the analysis.

Referential adequacy involves setting aside a portion of data prior to analysis and then later comparing the set aside data to whatever categories have emerged (Lincoln & Guba, 1985). Referential adequacy supports the validity of the conclusions and enhances reliability when the incorporation of raw data fits within the prior interpretation. Referential adequacy can be difficult to accomplish when resources are limited; however, the comparison and fit of raw data into interpreted results does enhance credibility.

Transferability

Transferability refers to the ability to apply the study findings to other populations or settings. While the subjective nature of qualitative research negates the concept of external validity, it is possible to apply research findings to like populations in similar situations. To do so requires detailed description of the concept under investigation, the context of the experience, and the characteristics of the participants. Lincoln and Guba (1985) refer to this as thick description. It is the responsibility of the researcher to provide sufficient detail so that outside reviewers can determine if the study fits their circumstances (Polit & Beck, 2008).

Dependability

Dependability refers to the stability of the data. A study that is credible is also going to be dependable (Polit & Beck, 2008). In addition to assessing the credibility of a study, one can also use stepwise replication to determine dependability (Lincoln & Guba, 1985). Stepwise replication requires at least two researchers to conduct the study simultaneously, then later comparing their independent results for consistency. The

evolving nature of qualitative designs can make stepwise replication challenging. Lincoln and Guba (1985) also suggest inquiry audits as a mechanism for assessing dependability. Inquiry audits involve the authentication of the process and product of the study. The process is reviewed to assess dependability of the study while assessment of the product indicates that the results are supported by the data. To support the audit inquiry, the researcher must keep detailed records of each step in the research process.

Confirmability

Confirmability reflects the objectivity of data. The goal of confirmability is to assure that the data accurately represent the information provided and that interpretations are drawn from the data and not the researcher's biases or perspectives. The same inquiry audit used to assess dependability can also assess confirmability (Lincoln & Guba, 1985). Triangulation also supports confirmability through identification of consistent results from more than one source. A researcher's reflective journal also supports confirmability by bringing to light potential biases, motives, and perspectives. Reflective journals can be used throughout the research process to support bracketing and enhance methodological decision-making (Wall, Glenn, Mitchinson, & Poole, 2004). Bracketing works to assure the participants are not influenced in their view of the phenomenon of interest and enhances the objectivity of the data analysis. Wall et al. (2004) recommend journaling throughout the research process. Pre-action bracketing allows the researcher to consider his/her own experiences with the phenomenon of interest. Bracketing in-action allows for reflection on unanticipated issues that present during data collection. Bracketing on-action relates to reviewing the methodological progression, what assumptions were made related to the process, methods, progression,

and interview process. The enhanced awareness resulting from the journaling process increases rigor and objectivity of the study.

Research Designs

There are a variety of approaches that can be used to design a study using naturalistic inquiry. Phenomenology describes the "meaning for several individuals of their lived experiences of a concept or a phenomenon" (Creswell, 2007, p. 57). Within phenomenology are two main philosophical approaches--interpretative or descriptive phenomenology.

Van Manen (1990) identifies phenomenology as the study of the world as we immediately experience it, so that we can gain a deeper understanding of the meanings of our routine experiences. This interpretation of meanings is commonly referred to as hermeneutic phenomenology or hermeneutics. The process and methods of hermeneutics are designed to make visible what is normally hidden in human experience (Lopez & Willis, 2004). The focus of hermeneutics is ontological, with emphasis on how human beings exist, act or are involved in the world (Van Manen, 1990). The primary method of data collection is in-depth interviews with individuals who have experience with the phenomenon of interest. Analysis in interpretive phenomenology is supported by the researcher's preexisting knowledge on the phenomenon of interest; thus, bracketing is not a component of a hermeneutic study.

By comparison, descriptive phenomenology is focused on what is known by using careful descriptions of ordinary experiences to create understanding (Polit & Beck, 2008). The goal is epistemological by focusing study on what is (Dowling, 2005).

Husserl (1954/1970), the founding father of descriptive phenomenology, took issue with the predominant goal of objective understanding:

> The point is not to secure objectivity but to understand it. One must finally achieve the insight that no objective science, no matter how exact, explains or ever can explain anything in a serious sense. To deduce is not to explain. To predict, or to recognize the objective forms of the composition of physical or chemical bodies and to predict accordingly – all this explains nothing but is in need of explanation. The only true way to explain is to make transcendentally understandable. (p. 189)

An underlying assumption of descriptive phenomenology is that there are commonalities to any experience shared by those individuals who have experienced the phenomenon being studied. Once the commonalities are identified, a generalized description of the event can be created (Lopez & Willis, 2004).

Descriptive phenomenology typically involves four steps. The first is bracketing. In order to obtain an unbiased description of the phenomenon and to open oneself to seeing things from a fresh perspective, researchers engage in bracketing to set aside preconceptions and biases. The second step is intuiting, in which the researcher allows the phenomenon to present itself in a free and unprejudiced way (Dowling, 2005). Intuiting occurs when the researcher remains open to the meanings ascribed to the phenomenon by the participants. Data analysis is the third step, in which the essential structures of the experience are identified. The final step is description, in which the experience is understood and defined (Polit & Beck, 2008).

The primary research question for this study was "How senior nursing students came to see the whole of a clinical situation?" The focus was on description to gain understanding; therefore, a descriptive phenomenological design was appropriate for the study.

Summary

This study used a descriptive, phenomenologic research design to explore how students came to see the whole of a clinical situation. Knowledge gained from this study will further our understanding of the development of clinical judgment in nursing students.

CHAPTER III

METHODOLOGY

The purpose of this study was to describe how senior nursing students came to think like nurses by first seeing the whole of clinical situations. The primary research question for this study was as follows:

Q1 How do senior nursing students come to see the whole of a clinical situation?

Phenomenon of Interest

Thinking like a nurse includes the ability to make clinical judgments in the face of conflicting and complex situations. The process of making clinical judgments starts with an in-depth and comprehensive assessment. A comprehensive assessment includes consideration of the patient's disease or clinical presentation integrated with diagnostic and pharmacologic components, along with incorporation of patient and family beliefs (Tanner, 2006). Once this assessment is made, a nurse interprets the findings and develops a plan of action. The assessment and interpretation of meaning supports the nurse's ability to see the whole of the patient's clinical picture. Lasater (2007) summarized the process: "the nurse must be cognizant of the patient's need through data or evidence, prioritize and make sense of the data surrounding the event, and come to some conclusion about the best course of action and respond to the event" (p. 497). This

process is supported by previous experience, but a nurse who is thinking critically is able to apply prior learning to a conceptually similar, though slightly different presentation.

Research Design

This study fit within the naturalistic paradigm, having used a qualitative research design with a phenomenological approach to answer the question. The purpose of qualitative research is not to prove one outcome as better than another, but rather is to gain an in-depth understanding of an issue (Creswell, 2007). Descriptive phenomenology is focused on what is known, using detailed descriptions of ordinary experiences to create understanding (Polit & Beck, 2008).

Bracketing

The first step in descriptive phenomonology is bracketing, in which the researcher makes explicit personal beliefs and biases related to the phenomenon of interest (Polit & Beck, 2008). Qualitative studies are inherently value laden, as the researcher serves as the research instrument (Lincoln & Guba, 1985). The entire process is filtered through the values and beliefs of the researcher. While it is not possible for the researcher to be completely value free, bracketing does allow for increased objectivity by bringing beliefs, values, and biases to the forefront. To successfully bracket, one must reflect on the values and interest that may influence the research effort. This reflection process is referred to as reflexivity and is a skill to be developed (Ahern, 1999). For this study, the researcher acknowledged the following:

- As an educator, I believe the ability to make clinical judgments is an evolving process;

- Educators can support students in the process, and place them in situations to be successful, but ultimately students are responsible for their own learning;
- While experience is invaluable for learning, I believe students who are skilled in pattern recognition as well as conceptual learning will ultimately be more successful in forming clinical judgments in unfamiliar situations;
- My experience as a former manager working with many new graduates has led me to believe the challenge in transition to practice is less related to knowledge or skills than to the new appreciation of responsibility in the RN role compared to the student role. The increased sense of responsibility coupled with the unfamiliarity of unit routines and procedures, as well as clinical variations from school leads to a questioning of confidence.
- Students who feel supported in their clinical experiences are more likely to be confident and willing to challenge themselves in forming judgments;
- As a novice researcher, I recognize my limitations in active listening skills; and
- My personality is such that I tend to look for quick answers. I recognize the need to let the process unfold so the patterns emerge.

Wall et al. (2004) identified the importance of bracketing before and during a study. To enhance objectivity, this list was reviewed and reflected on prior to participant interviews. A reflective journal was maintained throughout the research study to record impressions and any factors that might have had an influence on the research study. An important component of the journaling process is reflection for learning. The process of detailing experiences and beliefs allows for analysis that can then influence other

situations. Periodically pausing to reflect on the research process can provide insights into the strengths or limitations of the methodology as it is progressing. Ahern (1999) states that reflection during the study may allow for break-throughs when analysis appears stalled or not going as planned. Reflecting on one's biases may provide insights into unconscious barriers blocking progress.

Sample

Participants in this study were senior level students in a baccalaureate nursing program. The researcher drew participants from two baccalaureate programs located in different areas of the country. One program is a private college located in the Midwest. The college offers a traditional nursing curriculum, in which students complete four years of study, including liberal education and nursing courses. The college also offers a 15-month curriculum to which students are admitted after completing all liberal education courses. The nursing courses are completed within the 15 months. Participants were drawn from both the traditional and the 15-month programs. The second baccalaureate program is housed in a Western public university. The nursing program offers a traditional nursing program, as well as an RN completion program. Students were recruited solely from the traditional nursing program. Both programs are credentialed through the Commission on Collegiate Nursing Education (CCNE), which includes critical thinking as one of the essential outcomes for baccalaureate education (American Association of Colleges of Nursing, 2008).

Students were initially recruited through electronic mail (email) communication (see Appendices A and B). The email described the phenomenon of interest, seeing the whole of a clinical situation, as situations when pieces of unrelated data come together, or

when one is able to anticipate a situation based on assessment findings. Students who believed they had had this experience and believed they could describe it were asked to contact the researcher for further information. Recognition of the phenomenon was an eligibility criterion. The response to the initial communication was less than desired. Subsequent recruitment included a follow-up email, as well as an in-person announcement by the researcher at the start of a class period. Copies of the email explaining the study as well as researcher contact information were made available to the students.

Twelve students expressed an initial interest in the study. One student did not respond to requests to schedule an interview, resulting in a final sample of 11 students, 10 females and 1 male. Participants came from both baccalaureate programs and included traditional as well as 15-month students. The average age of participants was 26 years, with a range of 21 to 35. Nine of the 11 participants were employed during school, the majority working part-time as certified nursing assistants. Two of the participants had prior baccalaureate degrees, with one holding a master's degree.

Polit and Beck (2008) list three measures for assessing the adequacy of a study's sample. Requiring that all participants are able to speak to the phenomenon assists in assuring the appropriateness of the sampling plan. All participants identified themselves as having experienced the phenomenon of interest. The interviews confirmed their ability to address the topic.

Adequacy of the sample is the second criterion and refers to the sufficiency and quality of the data provided. Theoretical saturation assures adequacy of the data. Saturation is obtained when sampling continues to the point of information redundancy

(Lincoln & Guba, 1985). Factors influencing the sample size include the breadth of the scope of the study as well as the quality of the data (Polit & Beck, 2008). The relatively narrow scope of this study supported a smaller sample size. Consistent with the concept of theoretical saturation, sample size was determined by information redundancy rather than being predetermined. Saturation of data was first considered during interview five and then confirmed by interview seven. However, the remaining four interviews were already scheduled and were completed to further enhance the depth of data.

Fittingness is the third criterion and reflects the degree of congruence between the study sample and another group to which the findings might be applied. Fittingness supports the concept of transferability, the ability to apply the study findings to other populations or settings. Generalizability is not a goal of qualitative research. However, the researcher can assist those considering applying the findings by providing details on the group of participants and context of the interviews. The interviews were conducted at locations of the participants' choosing. When the interviews were scheduled, suggested locations included such public areas as coffee shops, a library, or a private meeting room. Eight of the participants requested to meet in the researcher's private office. One interview occurred in a participant's home. Two interviews occurred in public coffee shop locations. The interviews occurred near the end of the participants' baccalaureate programs, on average 19.7 days from graduation, with a range of 44 days prior to 23 days post graduation.

Data Collection Procedures

All interviews occurred in person. Prior to the initiation of the interviews, all participants signed an informed consent and agreed to the audio-taping of the interviews.

Audio-taping allowed for verbatim transcription to ensure completeness and enhance credibility of data as well as allowed the researcher to focus on active listening, rather than transcribing details of the conversation at the time (Lincoln & Guba, 1985; Polit & Beck, 2008). The researcher collected field notes, paying particular attention to non-verbal cues that would be missed on an audio-tape.

Consistent with phenomenological design, participants were asked to recount an experience in which they believed they were able to see the whole of a clinical situation. Such a broad, open-ended question is designed to encourage free discourse on the phenomenon of interest (Creswell, 2007). All of the participants responded to this initial inquiry by recounting a specific clinical situation. Creswell (2007) recommends the use of an interview protocol to allow the researcher to take notes during the interview as well as to organize the process to avoid missing a component. The interview protocol used for this study is found in Appendix C. All interviews concluded with a general question asking if there was anything else the participant would like to share, thus allowing the participant to clear their mind of points important to him/her.

In qualitative research, the research design serves as a general approach to the study. As the study evolves, the design may be modified to accommodate emerging issues (Creswell, 2007). As the data analysis process evolved, the concept of clinical preparation was identified as a potentially important issue. Further information was prompted on the concept in two interviews. Similarly, the use of an organizing tool was consistently identified in the first three interviews. When the fourth participant did not initially mention this, a question was posed, resulting in a detailed discussion. No other

modifications were made in the interview guide. The interviews averaged approximately 50 minutes in length, with a range of 40 to 75 minutes.

Data Analysis

Data analysis includes both data management and analysis. Data management began with meticulous verbatim transcription of interviews. A professional transcription service was used to enhance the accuracy and timeliness of transcription. Any concerns with the transcriptions, such as inaudible sections, sound alike words, etc. were noted by the service. The researcher was able to correct these concerns during the verification process. While audio-taping was attempted in all 11 interviews, mechanical errors occurred with the audio-tapes for interviews 9 and 10, rendering the tapes useless. The researcher's field notes were transcribed and used for the data analysis for these two interviews. These interviews occurred after theoretical saturation had been reached.

Data were analyzed using the seven-step process outlined by Colaizzi (1978). The first step was to read all of the participant interviews to gain a general feel for the content. The transcripts were read several times during the data analysis process. First, the transcripts were read while simultaneously listening to the audio-tapes. During this time, any corrections in the transcripts were made. The transcripts were then read a second time for familiarity. Once the transcripts were verified and reviewed, the transcripts were read again, line by line, looking for key phrases that provided insight into the experience of seeing the whole of a clinical situation. This marked the second step in the analysis process. Colaizzi identifies this as "extracting significant statements" (p. 59). After completing this process with the first interview, the researcher began a running list of key phrases. Each subsequent interview was reviewed individually and

then compared to each previous interview. New key phrases were noted until saturation was reached.

Once these significant statements were identified, the next step was to formulate meanings. The intent was to "discover and illuminate those meanings hidden in the various contexts and horizons of the investigated phenomenon" (Colaizzi, 1978, p. 59). While searching for meaning, the researcher must guard against moving too far away from the original statements. This process was facilitated through the use of NVivo 9, a computerized software program designed to assist in the organization and classification of unstructured data, such as interviews (QSR International, 2011). Direct quotations from the participants were identified and entered into NVivo 9 to exemplify the experience. During this process, many quotations were placed under several meanings to be sure to capture the essence of the experience.

The fourth step was to review the transcripts to organize the identified meanings into themes common to the participants. These themes emerged from the running list of key phrases along with a review of the selected quotations. The original transcripts were reviewed again with themes noted in the margins. Quotations exemplifying each theme were clustered within NVivo and transferred into groupings within Microsoft Word. Duplications of quotations among themes were scrutinized to determine the most appropriate placement. As needed, the original transcripts were referenced for validation of placement within themes. This process went through several iterations to assure that all significant statements were accounted for.

Five themes critical to the participants' experiences of seeing the whole of a clinical situation emerged: build a solid foundation, see the patient, connect the dots,

relationships with faculty and preceptors, and trust oneself. These five themes were consistent among all 11 participants. In addition to the initial query asking each participant to talk about a clinical situation in which he/she believed they were able to see the whole of a clinical situation, all participants were asked what they thought helped them bring the pieces of a clinical picture together to form a whole picture. These participants placed great value on the developmental building process in coming to see the whole of a clinical situation during their initial response. Conversely, participants were also asked if there were any factors that negatively influenced their experience. Overwhelmingly, participants recounted negative experiences with staff nurses. All participants were also asked what they learned from the process. Universally, the response was an increase in confidence in themselves and their abilities to be a nurse.

The fifth step was to integrate all the information into a detailed description of the topic. Once a description of the phenomenon was formed, the next step was to attempt to develop a statement identifying the fundamental structure of the phenomenon. Creswell (2007) identifies this as creating the essence of the experience. Steps five and six are outlined in detail within Chapter IV--Data Analysis Results.

The final step was to return to the participants, sharing the findings with as many participants as possible. The purpose of this member-checking was to validate the findings to date as well as to identify any aspects of the experience that may have been omitted. Participants received the complete data analysis found in Chapter IV. Nine participants responded affirmatively that the experience was accurate and reflected their personal experience. These participants were from both university programs.

Unfortunately, the remaining two participants were lost to follow-up. No changes were made in the data analysis as a result of member checking.

While listed as separate steps, it is important to note that data collection and analysis are not a linear process. Indeed, data analysis began with the review of the first interview and continued with each subsequent interview. Lincoln and Guba (1985) stated that data collection might be potentially altered to allow for member checking on details identified in previous interviews. While no alterations in the interview process were needed, the review of previous interviews did allow the researcher to "member check" emerging themes with subsequent participants. For example, the use of an organizing tool was a significant theme in the first three interviews. The fourth participant did not initially mention this, but then elaborated in depth when questioned.

Trustworthiness of Data

Trustworthiness is the degree of confidence readers can put in the results of the study, or as Guba and Lincoln (2005) state,

> How do we know when we have specific social inquiries that are faithful enough to some human construction that we may feel safe in acting on them, or, more important, that members of the community in which the research is conducted may act on them? (p. 207)

In 1985, Lincoln and Guba identified four criteria for developing trustworthiness of qualitative study: credibility, dependability, confirmability, and transferability. The authors later added authenticity as a fifth component of trustworthiness (Guba & Lincoln, 2005).

Credibility is the confidence one can place in the data and in the interpretation of the data (Polit & Beck, 2008). The following strategies were implemented to enhance the credibility of this study's findings: reflexive journaling, sampling to the point of

saturation, audio-taping with verbatim transcription, and member checking. Reflexive journaling assisted the researcher in keeping an unbiased view of the data. Sampling to the point of saturation increased one's confidence that all salient points had been addressed by the participants. Audio-taping assured a complete transcript while verbatim transcription ensured an accurate record of each participant's experience. Ultimately, member checking is intended to provide reassurance that the researcher had not distorted the words or intent of the participants. Disagreements with the researcher's description of the phenomenon allow for further clarification and insight.

Dependability refers to the stability or reliability of the data. Credibility requires dependability (Polit & Beck, 2008). In this study, dependability was supported through member checking and space triangulation. Member checking allowed participants to reflect on what was said and confirm or disconfirm their support of the researcher's interpretation of their expressed beliefs. In essence, member checking serves as a replication tool with the same participants. Space triangulation involves collecting data at more than one site, thus increasing dependability through cross-site consistency (Polit and Beck, 2008). This study recruited participants from two separate schools of nursing from different geographic locations in support of space triangulation.

Confirmability reflects the objectivity of the data. While qualitative study is inherently subjective, the goal is an objective description of the participants' experiences, free of any biases of the researcher (Polit & Beck, 2008). Confirmability was built into this study through the keeping of a reflexive journal and peer checking. The reflexive journal assists the researcher in making his/her biases visible, thus heightening awareness toward potential contamination of the data and/or interpretation. The documentation of

decisions creates visibility into the process. A doctoral student peer unfamiliar with the study reviewed the manuscript for clarity and consistency of thought. No modifications were made in the manuscript as a result of the review.

Transferability reflects the degree to which the results may be applicable to other settings or groups. Transferability is less a function of the study design as it is the similarity of the desired setting or group to the study components. As Lincoln and Guba (1985) state,

> The naturalist cannot specify the external validity of an inquiry: he or she can provide only the thick description necessary to enable someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a possibility. (p. 316)

To that end, this researcher maintained detailed field notes, sampled to the point of saturation, and used thick, vivid descriptions to support transferability. Field notes and thick descriptions paint a picture by which comparisons to potential areas of transfer can be made. Saturation assures major concepts are captured for analysis, thus providing a complete picture of the phenomenon of interest.

Authenticity reflects an accurate description of the participants' experiences so that the reader can live vicariously through the transcript (Polit & Beck, 2008). The goal of authenticity is inclusion of all participant views, perspectives, and concerns (Guba & Lincoln, 2005). Authenticity was supported through the use of audio taping with verbatim transcription and thick description. Audio-taping with verbatim transcription assures a complete, honest transcript and thick description brings to life the words of the participants by letting their own words paint the picture of the phenomenon of interest.

While these steps cannot assure trustworthiness of the study, used collectively they add rigor to a subjective process and increase confidence in the results of the study.

Protection of Human Subjects

Protection of human rights is of paramount importance in any research study. Prior to the initiation of the study, approval was sought from the Vice President for Academic Affairs (see Appendix F) and the Director of the School of Nursing (see Appendix G) at the respective colleges for permission to conduct the study within the schools of nursing. Approval to access students was received from both leaders (see Appendices H and I). The study was reviewed by the Institutional Review Board for the University of Northern Colorado (see Appendix J) and the Corporate Institutional Review Board for Bellin Health (see Appendix K). The Institutional Review Board for the University of Northern Colorado approved the study (see Appendix L) as did the Corporate Institutional Review Board for Bellin Health (see Appendix M). Recruitment of participants began immediately following these approvals.

When participant recruitment did not yield the desired response, amended protocols (see Appendices N and O) were submitted to each review board for permission to expand sample recruitment methods to include an in-person announcement to all seniors as well as the inclusion of the 15-month program seniors in one program. The amended protocols were approved (see Appendices P and Q). Participant recruitment proceeded without further modification.

The Belmont Report identified three primary principles on which the protections of human subjects are based: beneficence, respect for human dignity, and justice (Office for Human Research Protections, 1979). Strategies were built into the study design to meet the intent of these principles.

Beneficence is the responsibility to minimize harm and maximize benefits (Polit & Beck, 2008). While the study design and research questions were unlikely to cause harm to any individual, participants still had the right to choose to participate and to withdraw from participation at any time. The greatest risk to participants in this study was a perception of having their time wasted. None of the participants identified this as a concern; conversely, participants expressed appreciation and excitement to share their experiences. Some participants were familiar with the researcher as a previous instructor within their course of studies. However, at the time of the research project, the researcher had no involvement in the students' academic careers. The researcher was not assigned to teach any courses during the senior year and was not involved with any of the students in extra-curricular activities. The only potential involvement was voting on graduation as a member of the faculty of the whole. The researcher abstained from the vote for the academic year of the research study to avoid any appearance of potential risk to participants.

Respect for human dignity includes the right to self-determination as well as the right to full disclosure (Polit & Beck, 2008). Students chose to participate in the study. As noted, all participants had the right to withdraw their participation at any time should they so desire. One potential participant did make an initial inquiry, but then opted to not respond to subsequent communications. The remaining 11 participants completed the interviews as scheduled. The right to self-determination also protects participants from coercion. The researcher did thank participants for their time and efforts with a small gift certificate worth $10. The gift certificate was sent to participants at the completion of the study as a thank you, not prior as an incentive. Respect for human dignity also includes

full disclosure. The purpose of the study, participant's right to participate and withdraw, risks and benefits were all specified in the informed consent (see Appendices D and E). All participants received a signed copy of the consent form. No covert data collection or deception occurred.

Justice involves the participants' right to fair treatment and the right to privacy (Polit & Beck, 2008). Considered within the right to fair treatment is that participant selection is fair and equitable without exploitation or discrimination. Communication regarding the study was provided to all senior-level students, thus eliminating any bias in participant selection. Interviews were scheduled on a first-come first-serve basis based on a mutually acceptable schedule. Each participant chose the location for the interview. In addition, the potential participants had no organized contact with the researcher if they chose not to participate; thus, students should have felt no untoward pressure to participate. As senior level students, the potential participants were adults, able to make decisions in their own best interests. Should participants have had any concerns regarding the study, they had access to a member of the university institutional review board. The name and contact information were on the consent form for participant reference.

Any research participant must be assured that their privacy will be maintained throughout the study. The relationship between researcher and participant as interviewer and interviewee negates anonymity; however, confidentiality is paramount. Interviews were conducted at locations comfortable to the participants. To assure confidentiality, pseudonyms were assigned to participants for transcription. The use of multiple sites for data collection also decreased the likelihood of a participant being identified simply

through association. All audiotapes were destroyed following verification of the accuracy of the transcription. Until that time, audiotapes were kept secured within the researcher's personal residence. Transcripts were kept secured on the researcher's personal computer in a password protected file. Paper copies and computer jump drives were secured in a locked file within the researcher's residence.

Summary

This research study sought to describe the experience of senior nursing students as they came to see the whole of a clinical situation. The study used descriptive phenomenology as the research design. Strategies were used to enhance trustworthiness of data as outlined by Lincoln and Guba (1985). Data analysis followed the steps defined by Colaizzi (1978). Throughout the study, attention was paid to maintenance of research ethics.

The results of this study advanced the science of nursing education through better appreciation of the student experience, thus laying the foundation for further exploration of what supports or limits student development.

CHAPTER IV

DATA ANALYSIS RESULTS

The fifth step in Colaizzi's (1978) process for data analysis is the integration of information into a detailed description of the topic. Data analysis revealed that the experience of seeing the whole of a clinical picture was much more of a process than an experience. All participants spoke of a developmental process, expanding and developing from their first clinical experiences and then culminating with their senior capstone clinical. Within that process, five themes critical to their experience of seeing the whole of a clinical situation emerged: build a solid foundation, see the patient, connect the dots, relationships with faculty and preceptors, and trust oneself. These five themes were consistent to all 11 participants. This chapter provides a detailed description of the five themes.

Pseudonyms were assigned to each participant to protect confidentiality. Quotations are used liberally throughout this chapter to provide detailed substantiation for the identified theme. The quotations are drawn from the transcripts that were transcribed verbatim. The participants were encouraged to talk freely during the interviews, resulting in a think aloud approach. As such, the transcripts contained frequent stop and start thoughts, as well as such unconscious utterances as "like, uhm, you know," etc. The quotations were modified for punctuation and removal of unconscious speech patterns. This denaturalized approach to transcription allows the

reader to focus on the meaning of the message without the distraction of fractured sentences (Glesne, 2011; Oliver, Serovich, & Mason, 2005). Denaturalization increases the risk of misinterpretation of data. To address this concern, participants were provided a copy of both the verbatim and denaturalized quotations. Verbatim quotes were used from 9 of the 11 participants. No modifications were made in the quotes from one participant. Of the remaining eight, seven responded affirmatively that the denaturalized quotations accurately reflected their intent. One participant did not respond to follow-up. Several of the participants expressed appreciation for the grammar modifications.

Theme: Build a Solid Foundation

All the participants spontaneously identified the importance of having a solid foundation on which to anchor their skills and knowledge. Cheryl (all names are pseudonyms) identified the importance of understanding the pathophysiology of a disease, equating pathophysiology to the roots of a tree. As Cheryl explained, if the roots are strong, the tree will flourish and branch out, but if the roots aren't deep, the tree will wither. She saw a strong knowledge base in pathophsyiology as essential in providing the depth needed to understand complex diseases.

Seeing the whole of a clinical situation requires the nurse to make numerous connections between data that at first glance may appear unrelated. Cheryl's point was that connections cannot be made between multi-organ issues, drug interactions, laboratory variations, etc. if the knowledge required to support the connections is superficial. Without a solid base, decisions are likely going to be superficial.

These participants recalled the challenge of completing the detailed paperwork required in early clinical experiences, not always appreciating at the time the value of the

activity. Upon reflection, however, the importance emerged. Chandler described working with one clinical faculty member in an early clinical course:

> She made us do a lot of paperwork, made us think a lot, which at that time was a little stressful. . . . Doing the whole clinical picture when you're that early on and understanding you have to put the extra work in [was difficult]. But after everything clicks, and you get that like "ah-ha" moment and [realize] "oh, that's why this and that goes with that; that's why they're on this medication for that." Writing it all out . . . gave me my first good feeling while I was in clinical and I actually understood my patient's disease process and what they were doing.

Amy also spoke of appreciating the value of the detail needed in paperwork during early clinical experiences, stating:

> I think that's what you realize as a senior is that if you look back on your sophomore year you're like, how could they have made us do all that time-consuming, not pointless, but tedious paperwork and then you realize it all just builds, but you have to do that before you can grasp that whole picture - before you can expand beyond the small details.

Krista also discussed how lessons learned in fundamentals were not fully appreciated at the time, but later she recognized how important providing basic nursing care was to the overall clinical picture. When asked what she took away from her experience in an intensive care unit, she stated:

> So, you know, you're doing coughing and deep breathing, and it seems ridiculous to us in the beginning . . . But all of these little pieces that you do [fit] together. This woman who was in there long term, she went in for something [at a community hospital and]got transferred down here from there because she picked up pneumonia there because she wasn't doing coughing and deep breathing. So simple things matter in the long run. I think that's a lot of the putting it together, so all these little things that I can do as a nurse really make a difference.

While the clinical preparation certainly played a part in challenging students to see the whole of a clinical picture, so did faculty modeling assessment of the whole. Christine recounted how her clinical instructor helped shape her assessment process:

> A lot of it I can attribute at least to my clinical instructors that I've had and them reinforcing all the time, "Okay, I see your assessment data but now what is your

> patient telling you? What is their verbalization of how they're feeling" and things like that because you always need to take that into consideration. So I think after a while it just almost became second nature, after constantly hearing it from every clinical instructor in every anecdotal. You know they're going to ask so you might as well just know it (laughs).

All participants recognized the building process in their knowledge development.

When asked how she came to see the whole of a clinical situation, Krista responded:

> I think that it happened a little bit in each clinical. I don't think it was an all-in-one thing for me. At the beginning of every clinical . . . there were nerves, and . . . you don't want to hurt anybody and you want to be good, and I like to be prepared. But the little bit at a time is great. I liked that. So then you get comfortable with one thing and then you can move on to the next.

In reflecting back on her growth from earlier clinical experiences to now, Emily noted:

> I was more focused on . . . listen to these lung sounds; what am I hearing here, or you know . . . oh, I didn't check their pulses, and that kind of stuff. [It] kind of prevents you from getting to those higher levels of thinking. But I think . . . as you get more comfortable with all the basic skills you can move beyond that.

Jenny recounted how each of her clinical rotations provided pieces that eventually allowed her to see the whole.

> So when I do my assessments on my moms, [they] are clearly very different from the assessments I did on the ortho patients, and I think those are building blocks into being able to do an assessment and look at a patient and say, well what about [this] system, because you've practiced all different systems.

The building process was not always easy or comfortable, but students recognized the need to push through and persevere. Scott reflected on his experience:

> I think it's just through clinical, pushing myself to build upon that base. . . . If something's going on you've got to go, yeah, I might not be the most comfortable doing it but at the same time you just have to go and do stuff because it's the only way you're going to learn.

With additional time and experiences, the participants could appreciate their practice evolving and found themselves increasingly comfortable in patient care without extensive preparation. Christine shared:

> I found that as a senior I've definitely noticed . . . I can pick up on conditions, I understand processes, I understand what to assess for, like with the really common ones - heart failure, COPD, emphysema, things like that. I've definitely picked up on that more, so the prepping isn't quite as necessary.

Cheryl equated it to the development of muscle memory. The more one does it, the more a process is repeated, the more automatic it becomes. Scott agreed, stating: "As time went on, I . . . got quicker, I was able to pick up on things quicker just because of learning how to research things better, learning how to look things up and learning how things are meshing together." Similarly, Chandler stated:

> After you do it so often it just comes natural. You go in there, you have your system, you're going to look at why they're here, what they're on; kind of put it together while you're reading through their Kardex. . . . It's more second nature now.

While the need to write out extensive preparation lessened over time, the students did identify that the thought processes developed early on stayed with them. Chandler shared:

> As I went on, I didn't need [to] look up this much on my meds. I didn't have to think about it as much, but I still had that framework and I still use it today. . . . I think, okay, this is what they have going on and I think back to some of the questions I would ask myself.

Emily, too, recognized that patient care required at least mental preparation, if not written, stating:

> I guess my routine kind of was, I would sit down and look over the chart for a good amount of time and that was a big help, just preparing mentally and trying to get to know them. . . . Then I would usually sit down and kind of write out what I thought my top three priorities for that patient were. So just trying to mentally think through all those steps instead of just assuming that it'll come naturally as you go through the day.

Typically, students cared for one patient during their early clinical experiences, but advanced to increasing patient caseloads in their senior year. Coordination of

multiple patients created a challenge for students, as noted by Jenny: "That was the part that I was always struggling with so it's . . . keeping track and knowing which thing to do when." All of the participants identified the need to develop some type of organizing system to help them keep track of all the pieces of care required. The students stated that using these organizational tools facilitated their view of the big picture. Jenny shared:

> I was able to sort of map out the shift and obviously things changed, but that made me feel like I remembered all the pieces that I needed to do – not just meds, not just assessments, but I was able to go through patient by patient with my sheets and say ok – this patient needs these things and put it on my chart and this patient needs these things and put it on my chart, and then I had a big picture.

The tool also assisted the students in fine-tuning their developing organizational skills. Stacie exemplified this in stating:

> And I actually created . . . an organizational sheet and I changed it to what floor I'm on so this one has a whole section for just wounds and drains, and ostomies, and, whereas in Ortho that wasn't such a big deal. And I had it set up so I had to spell out all my information so everything's there. I made a little packet with my sheet of their highlighted information and added my other profile stapled to it. So now when I give report I just read it top to bottom. This is who my patient is, this is what they're there for. It helps me stay organized.

Sally believed that organization led to increased confidence. Emily concurred, stating:

> Because otherwise you go through the day always scared of the thing that you're missing. So once I was able to get myself to write everything down then I would use that as my double check. . . . Then once I looked and saw, no I really have done everything. It's kind of that peace of mind like I did everything I was supposed to do.

In summary, these participants placed great value on the foundational knowledge and skills that served as the anchors for future growth. One area of growth critical to seeing the whole of a clinical situation was seeing the patient from a holistic perspective.

Theme: See the Patient

The second theme that emerged from the data was looking and listening to the patients. All the participants highlighted the importance of incorporating the patient's perspective in their overall data collection. For these students, incorporating the patient and/or family into the plan of care was simply common sense. Scott shared:

> Start off by asking what *they* [emphasis added] think is the problem, because I mean, nobody knows your body like you do. You know, asking them, okay, what do *you* [emphasis added] think is wrong and then looking at vitals, looking at your assessment data, focusing in what they're complaining on and seeing if, okay maybe there is something there, focusing on that type of a deal.

Christine concurred, stating:

> Who understands their body better than the person themselves, what's abnormal, I mean, they're going to be able to tell you what's normal and what's not normal versus me just looking at a chart, reading lab values and saying, okay, yeah this is abnormal but is it maybe normal for the patient, do they normally experience these symptoms? I mean, you're so focused I think on the intricate details when you first start out that you just don't look at . . . what's the patient actually telling me.

Others mentioned situations that confirmed the value of the patient's input into their care. The incorporation of what the patient and/or family was saying or feeling led to some very powerful experiences, in which listening to and seeing the patient changed the clinical picture. Stacie recounted accompanying a wound nurse into a patient's room to complete teaching for a patient with complex ostomies. As the wound nurse began her assessment, the patient reached out to Stacie, grabbed her hand, looked at her, and sobbed. At the same time, the wound nurse was oblivious to the patient's response. This behavior was out of the norm for this patient, yet the significance of the patient's emotional status to the overall care was not lost on Stacie.

> I'm like the whole picture just kind of came to me, because you can't go on with that stuff. I could teach her how to do the ostomy and how to clean the bag and

> everything, but that would, it would never retain for her so . . . and the light bulb just went on and I'm just kind of like, okay, all this has to come to a stop. I need to focus on this because I have to help her get to a place where she's comfortable with it. . . . The more she verbalized it, it got better. . . . I'm like, you know, you have to talk her through that, not just teach and you're out the door.

Krista recounted how listening to her patient ready to receive dialysis led to the prevention of a potential medication error.

> The woman is like, "I don't use those bags at home." But these are the bags we have here and she's like – "I don't trust this, we can't do this." And she refused treatment and then the nurse is like, well, we need to do something. I'm like, I'll talk to her . . . and so, . . . she was a patient that . . . they dreaded taking care of, because she was so lonely and sad and would grab at nurses to stay in there. . . . And she knew what all her meds were and what they were all for, and she was okay with that, but she didn't [recognize these bags], that's not how it was for her so she's not okay with that. I talked to her, and the more I talked to her the more information I got from her. Well, it turns out that that's *not* [emphasis added] what she was supposed to be having. Those were the wrong bags. . . . The order was wrong. . . and she was grabby because "nobody listens to me, everybody makes the decisions for me." [Having] someone to sit down and listen to her really helped her care. Because she knows what she's supposed to have. Just because she's not totally cognitively [at the] level of everybody else doesn't mean she doesn't know what's going on. And having everybody just do her stuff and decide stuff for her, she panicked.

Wendy recounted how listening to the patient gave her cues into identifying anemia that was not being treated: "You just listen to patients. You find the time and listen, because a person can say, 'hey, I don't have [the] strength to talk to you.' This is already a sign and a mark. You want [to] question why, why [do] you feel sleepy?"

These students realized the patients and/or their families could fill in pieces to the clinical picture that would otherwise be missing. As Christine noted:

> I think sometimes it's nice to have family there because they can almost be . . .a second set of eyes, especially if the patient maybe is not cognitively there, um, Alzheimer's, dementia. They're just not completely with it. The family generally is a very good set of eyes and they interact with that person on a pretty regular basis, so they're going to know if something's not right.

Amy discussed how understanding the personality of a patient with a significant head injury influenced the care.

> The CT actually didn't look bad, the patient did. It was one of those where sometimes you see an awful CT, the patient's awake and good; opposite here. He was responsive, he wasn't [cooperative], and his wife actually, after a day of this we were like – "why can't we get him to just cooperate?" And his wife ended up telling us, "you know, he's a very, very stubborn person as it is." And as the days progressed he did end up sitting up in the chair and he would respond to us very softly. . . . It became very evident that that was exactly[it]. . . . If we wanted him to get up and he didn't want to get up, he was not getting up.

Similarly, Emily gained a critical piece to the clinical picture when collaborating with a pediatric patient's mother.

> Every time we would come in the room . . . our sirens would go off and this is wrong but mom was right there and she was like, no, this is normal, . . . that's why we're here is because this has been his baseline for the past couple weeks. But then the same patient started throwing up, and so we're . . . treating that, . . . looking to mom. . . . "Does he throw up a lot?" . . . At that point we mentioned that it was like red tinged, that there could possibly be blood, and then you saw mom's lights go on and it'd be "*No* [emphasis added], this is not normal."

While incorporating the patient into the overall assessment was important to seeing the overall clinical picture, these participants recognized that learning to do so was also a developmental process. Christine elaborated:

> I remember my sophomore year walking in a patient's room to take my first health assessment. It was like, you're so focused on what does the heart sound like, what do the lungs sound like, what are they like neurologically. You're not . . . taking into consideration what are they saying, what are they feeling.

Jenny came to appreciate this in the simulation lab during a scenario involving a "patient" experiencing cardiac arrest.

> I had done . . . what [the faculty] had said in preparing us. She keeps saying you have to *look* [emphasis added] at your patient. That just because the monitor says whatever it does, *look* [emphasis added] at your patient. So I think in that moment, I saw the monitor and so I checked the equipment. I looked at my patient, well he's a mannequin, but is he breathing? Is he really coding or is something wrong with the equipment? So I think for me that was a situational

> assessment rather than standing there studying the EKG or whatever. . . . I was trying to figure out the whole picture.

The addition of the patient's perspective into the overall clinical picture resulted in holistic approaches that reinforced the participants' philosophies of nursing practice. As Stacie reflected on what she took away from her experiences, she stated:

> I feel like I'm being a better nurse because of what I've experienced. Like, I pay attention to those feelings, to those non-verbals, to how the family reacts to their concern. I just think part of being a nurse is being a people person and I'm not taking care of your wound, I'm taking care of you as a patient. You are the whole person, and that includes how you feel about this, what you're eating for lunch today, you know, all of your assessments: the whole picture.

As Emily considered what she gained from her experiences, she came to appreciate that she didn't need to know everything, but could rely on the knowledge and skills that she did have, emphasizing that caring transcends all.

> I think that #1 that I don't know everything, but I know how to do the nursing skills and caring, and that is what is important. . . . [It is] learning that as long as you have compassion for your patients and you're willing to help them, you can find the other knowledge.

In summary, each participant found that actively incorporating patients into the nursing process led to a more complete clinical picture, as well as the provision of holistic and family-centered care.

Theme: Connect the Dots

With the support of the solid foundation and the influence of the patient's perspective, the participants were able to identify the salient pieces of information and problem-solve the clinical picture. Wendy recounts putting pieces of information together on an elderly patient whose clinical picture just didn't seem right:

> I had clinical in a nursing home, so he was looking kind of pale, really was altered mental status, and heart rate was speeding a bit, you know? I knew that he had atrial fib, but still, I went back to check his lab values for hemoglobin and

> hematocrit because I knew that he had [an] issue with that in the past. He had [a] history of anemia and also he had some recent surgeries and also he had some gastric ulcers. So, I just wanted to make sure that he was not, that he [didn't] bleed, and then I went and checked his lab values. I saw that the values were being a little bit low so I had to pull lab values for last week so I can compare and see how his progress, and he definitely was over time losing.

Wendy brought her assessment to the attention of the registered nurse and received positive reinforcement on her assessment when she noted a new order for iron supplementation the next morning. When asked what brought her to her conclusion, Wendy stated:

> You start from observation. You make a physical assessment and you feel that the pulse [is] not that strong. You know that he had heart problems but still, it's not what you really want to see. I mean, it's . . . suspicious, and to validate your findings, you go back to the lab value . . . for proof to make sure that you are on the right track.

In another case, Wendy integrated information from several theory courses, as well as the patient's clinical picture to reach a conclusion.

> I had a patient, a lady in her 80's, and upon nursing report, just said that she is very confused. [The nurse] thinks she had dementia. I'm like, mmm, okay, and then I go to assess [the] patient and actually I don't see that she's that confused, that she's demented. . . . I make again my assessment and I felt that she had [a] drug which caused retention, urine retention. Then I start asking well, does this patient have UTI? And nurse said no. [However a urine sample was then sent to lab for evaluation.] And result came back she's like, yeah, she has UTI and I'm like okay, this might explain her confusion state because I remember from adult health, that older people they have different symptoms for UTI.

Putting these various pieces together evolved over time, supported with practice and faculty guidance. Amy reflected on how her ability to connect pieces had evolved from her early clinical experiences, stating, "When you're so caught up in those small details, your junior or your freshman and sophomore year, you don't have time to get a big picture. You have 100 small pictures of your one single patient." She went on to

explain how seeing the connections between pieces of assessment data wasn't intuitive, but rather a learned skill.

> And you don't realize it until you actually start sitting down and [try] to find [the connections], and then you can realize that even if you don't think they connect it probably does. So if you can't come up with it on your own you might as well look it up because it does; everything in there connects. And I think by [the instructor] not forcing us, but you know making it a requirement that we [find the connections], in your future clinical you really take the time. Even if it's not required, you take that time to recognize it and eventually it just [becomes second nature]. You don't have to write it down anymore.

Scott also appreciated how faculty guided his development in putting pieces together, stating:

> Having teachers that did know how all that stuff is together, and then . . . you come in for clinical, you'd have all your work done and whatnot, you'd have an idea but maybe you weren't 100% sure. They start quizzing you, and they start asking, not giving you answers, but start asking those leading questions to get you to think, oh yeah, now I get it.

These participants learned to incorporate pieces from the patient's history to add meaning to the clinical picture. However, they also learned how to filter the information to separate the salient details from those irrelevant to the current issue. Emily recognized that for her to get a good clinical picture, she would review the patient's summary, history and physical (H&P), recent orders, lab work, medications and then move on from there. She learned this from experience, recounting:

> Doing all those care plans for the first couple years and realizing I just spent like an hour looking up . . . their most recent doctor's visit and that was not helpful for me so I'm going to, you know, not do that again [laughs] and start looking at the H&P.

Amy compared her thought process now as a senior in an intensive care unit to her clinical experiences earlier in her curriculum, recognizing that some specific details may not be important, but the overarching concept was.

> That's the beautiful thing about being a senior is that you don't need the details. . . . I felt comfortable enough that, yes, I asked questions, I asked a ton of questions, especially the first day or two because it was somewhat new. . . . But all the processes behind it are things that you see in non-critical patients. You want to look at your patient history, then you want to look at how those things interact, and do they matter, you know, some of them, their hysterectomy 10 years ago. When you're a sophomore, you spend an hour trying to figure out how they're connected. When you're a senior you say, nope, she just wanted the hysterectomy, doesn't matter anymore. You stop trying to make connections about that, but at the same time you make a lot of generalized [connections]. Well she had that [hysterectomy, therefore] she has had anesthesia before.

Christine, too, recognized the initial feeling of being overwhelmed when first encountering a critically ill patient, but articulated how after the initial shock, she was able to sort through the pieces to appreciate the whole.

> It was in the ICU and I had a patient, that at first when I initially walked into the room it was kind of like stimulation overload. I mean because there were different IV drips hanging and they were on a ventilator and it was tubings and everything, and I just kind of stood there and I'm like whoa, (laughs) this is different than what I've ever seen. But after the initial shock of it, I was able to look at the patient and I think that was probably the first time where it's like the medications and the patient's condition all finally clicked. It was like, okay, I understand why they're on this . . . I get why all these drips are on and I finally started to understand the big clinical picture and the weeping and everything that was finally going on with this patient.

Each participant's ability to draw on their foundational knowledge, incorporate what the patient was telling him/her, along with putting the myriad of pieces of information together led to the fourth theme, trusting oneself.

Theme: Trust Oneself

Participants were asked what they took away from their experiences in seeing the whole of a clinical picture. All responded with increases in confidence, knowing they could trust their judgments. As Amy stated, "I take away that I am so ready to graduate, and I just want to not be dumb being a student nurse, but I just want to be able to be autonomous." Christine expanded on this readiness, verbalizing the thoughts of others:

> I mean everyone gets so nervous about graduation because it's almost like a fear of the unknown I guess you could say. But it's slightly comforting in knowing that I've walked into these clinical situations before and understood what was going on.

These students were not inherently confident individuals. As Krista shared, "At the beginning of every clinical, I was freaked, to the point, you know . . . overly so and unnecessarily so, and at the end I felt great." They nurtured and developed confidence through a variety of means. Amy and Wendy spoke of being able to fall back on success in theory courses to support them in clinical. Amy stated:

> Well I think succeeding in your classes . . . is obviously a big one too. Just [knowing] I'm getting an A in this class; I know this content. . . . Even if you can't recall it at the snap of a finger, you can sit in that confidence that I'm succeeding in my classes, now I just need to apply it. . . . And then you get to senior year and you're like, why am I so worried about this, you know the content, just do it.

Wendy added, "I think the quality of study matters too, and the degree of effort you put into the study. Because even unconsciously, all those pieces, what you recall, it's because of knowledge you've got."

Chandler emphasized the importance of preparation in the development of confidence, stating:

> I would be up until God knows when at night finishing this paperwork. But then when I went in the next day, I knew why my patient was there. I knew that I was prepared for clinical and I never wanted to be that person that went in and didn't know.

Repetition was also identified as a key component in enhancing confidence. Stacie recounted the self-talk she went through in preparing to insert a catheter in a patient.

> I know I know how to do this; I've done it 10 times before. . . . On the inside, [I'm thinking] "Oh my God am I doing this right? Do I really like put this here and then do this", . . . But you know, I'm going to do it and I'm just going to kind of rely on myself and what I know, and I'm just going to go for it. When

> you do it and it's successful, it's like, yes, I didn't have to be handheld to get to that point.

Scott also drew from past success, adding: "I'm not always the greatest with my self-confidence so as I've got that going on, I'm able to look back and say, 'hey, you know what? You've done this before, you can do this' - it's that confidence factor, [which] for me is particularly big." Wendy emphasized the value of repetition, adding, "For example, you do your assessment, you do the same assessment from head to toe on each patient. You're confident because you repeat, repeat, repeat."

While much of the repetition occurred in clinical, lab time, specifically the simulation lab, was identified as helpful in developing that solid foundation on which to draw. Christine elaborated:

> I know one thing that really helped me reinforce that, "hey I actually know what I'm doing", was . . . simulations, being down in the Sim Lab. . . . being able to go through a simulation without really making a major mistake. At the end of it, [it] is a confidence booster I guess you could say because it's like "oh hey, I know what I'm doing. I have the confidence; I know the skills; stop second guessing yourself."

Ultimately, these participants appreciated the need to do the work necessary to have success. As Krista noted:

> And that's what it is with everything, it's with studying, it's with parenting, it's with driving, it's with cooking, it's anything that you want to do something well. It takes practice and you need to understand that you're going to make mistakes, but you can get better from that.

Sally concurred, identifying that what she took away from the process of successful patient care experiences was an increase in confidence in her skills and abilities. As Amy stated:

> I think it's all about comfort levels. I think if you're not comfortable, you're never going to be good in an area, because if you don't feel comfortable you're not going to be willing to, not take risks, but ask questions.

Several of the participants worked in health related fields while in school. They found their work experiences added to their confidence. Chandler shared how her prior learning supported her development as a professional nurse.

> Another thing that I think really helped was going to school to be an aide. I was more comfortable with the basic nursing skills, and then when I went into clinical I didn't have to think about how to do a bed bath, how to turn a patient, how to you know, do those fundamental nursing types of things. I could focus on the medications and doing the nursing kind of care.

Those students who worked outside of health care also drew on their work experiences and applied principles to nursing. Krista found similarities between a customer service industry and nursing, sharing, "So it's all about the customer, right? It's all about the client, it's all about the patient." Jenny drew on her prior work experience with young children as well as parenting to assist her in the nurse's nurturing role.

While these students relied on practice and experience to enhance their confidence, they also took an active role in identifying and bringing about what they needed to be successful. Chandler and Christine highlighted the continuation of practices from earlier clinical experiences even when they were no longer required. Chandler stated, "I continued to take that approach throughout most of my clinicals even if I wasn't required to do all the research or writing. I still did a lot of that because for me, that's how I learned." Christine found it important to come in early for her clinical shift to prepare herself.

> I think one way to compensate for that is I came in . . . 45 minutes early to clinical just to be able to go through the lab work, go through the meds. I found I knew more meds than what I actually thought I knew. [laugh] I mean going through the med list, I was like, "okay, I know what this one is, this one is, this one is. I've never seen that one before. I should probably look [laugh] that up." But I think the initial coming in for the extra 45 minutes, though, was something that I needed at least just to get my thoughts organized.

Stacie, completing her final clinical on a busy medical-surgical unit, also chose to arrive 30 minutes early to do some preparation work before the clinical began. As she explained:

> I don't know these drugs well enough and the floor well enough to go with that speed so I allow myself a little extra time . . . and I'm like, holy cow, you can get every specialty in almost every day. I need time to look at the whole picture.

These participants also took the lead in bringing to light what they were not confident with, and sought out the support needed. Primarily this came through asking questions, as Krista highlighted:

> I'm not afraid to admit I'm wrong, or . . . ask for help, and I think that that has a lot to do with confidence. You don't have to know everything and everything is a learning experience if you look at it that way. It's okay to ask questions but if you go in expecting to be the master of everything, you're not going to have that confidence you need because no one's the master of everything.

The participants shared insights into their personal learning styles with faculty to assist their learning. Jenny elaborated:

> I don't know if everybody is that self aware and is comfortable in saying, "I need to be pushed even if I'm not comfortable being pushed." You know, it would be easy to be hands off and observe, but that may not be the best thing.

Jenny expanded, identifying the importance of working in partnership with the faculty or preceptor.

> I think that partnership with the teacher and the student and really being able to know what your style is and are you hands on or hands off [is important.]. For some students they get so nervous when the faculty are there that [they] are worse off, and for someone like me, I need that moral support, because I can do it. I just need that person saying "You're fine, just do it" and so I think for me to be able to articulate that to my faculty really helped and I don't know if everybody can do that.

Scott also reflected on his personal characteristics and shared those with faculty to help move him beyond his comfort zone.

> And I think with the passiveness, I know that's my personality so at times it's been a struggle for me but having teachers that understand, okay, you know, this person is kind of passive. I have to push them a little bit more to go out and get some of this stuff. Whereas you've had your other ones that maybe, okay, I've got to tone them back a little bit.

Krista, too, looked to her clinical instructor for validation of her emerging confidence. When the instructor was not following Krista as closely as she had expected, Krista asked why.

> I had to ask [my instructor], "are you leaving me alone because you've totally given up on me or are you leaving me alone because you have faith in what I'm doing?" She's like, "I'm leaving you alone because I have faith in what you're doing."

The reassurance provided Krista with the confidence to further develop her independence in practice and decision making.

Theme: Relationships with Faculty or Preceptors

The value of working collaboratively with faculty and preceptors to meet learning goals emerged as the fifth theme. All participants described teaching strategies employed by faculty that supported their learning. The participants readily discussed how advice offered during the early formative clinical experiences influenced their growth and development. As Christine noted:

> Their feedback always provides an insight into, okay maybe I missed something or what could I have done better type things. I've always found [faculty feedback] to be very helpful to me because it always gives me a little reminder in the back of my head for the next time I encounter a situation like this; so I can always do better, I guess with my future patients.

The idea of filing feedback for future use was taken to heart by Scott as well.

> One of my instructors that I had . . . always said, you know if you have a certain patient . . . take and file that away in a specific set of knowledge. Okay, I saw this with a CHF patient, file that away in that CHF knowledge, not in the diabetes knowledge not in everything else. File it in that specific spot.

Christine and Wendy discussed how their instructors challenged them to seek out information and connections beyond the superficial. Christine credits a clinical instructor in pushing her to include the patient in her assessment data.

> A lot of it I can attribute . . . to my clinical instructors that I've had and then reinforcing all the time, "okay, I see your assessment data but now what is your patient telling you. What is their verbalization of how they're feeling" and things like that because you need always to take that into consideration. So I think after a while it just almost became second nature. After constantly hearing it from every clinical instructor in every anecdotal,[laughs] you know they're going to ask so you might as well just know it.

Wendy, too, acknowledged the advice of being encouraged to dig deeper and search for connections between pieces of data.

> I remember [my instructor] would say, "Look [at] everything closely, share assessments, see if it's proved by lab values. See how the current assessment information supports each other, share that, so don't keep any small details." She told us to look [at] everything in detail and . . . ask why. What are you going to do about that? What is [your] rationale . . . for doing something, . . . should it be reported, or know what you can do, to avoid something or make it better. She always would question us during clinical. And you always felt confused because "oh, I wasn't thinking about that." But now you really truly appreciate all that.

Scott, too, found Socratic questioning particularly helpful, stating, "Getting to see that big picture, I think for me was really helpful. The real, I don't want to say leading questioning that would go on during clinical, but that really helped me."

Faculty members who challenged and pushed the participants were recognized as playing a significant role in the students' development. Amy shared, "I always reference my one clinical instructor who, really I hated the clinicals at times, but then you get done and you're like, I've never learned so much." Similarly, Chandler reflected on the influence a faculty member had on her development during an early clinical experience.

> She made us do a lot of paperwork, made us think a lot, which at that time was a little stressful, but um, she, that doing the whole clinical picture when you're that early on and understanding, you know, you have to put the extra work in but after

> everything clicks, and you get that like "ah-ha" moment and like "oh, that's why this and that goes with that; that's why they're on this medication for that."

Stacie appreciated the effort that went into the selection of assignments designed to help her fill gaps in her skill and knowledge development.

> I think I had a lot of faculty that were super supportive and really challenged me and picked patients that . . . not only needed a lot of skills but needed a lot of support, like holistic type things and challenged me in that way.

As the students moved into their final precepted clinical experiences, the staff nurses with whom they were paired became influential to the students. The participants found most helpful behaviors and attitudes demonstrated by the preceptors that supported the students' emerging sense of autonomy. As Krista noted:

> So, they all pushed me enough where I felt challenged but were supportive enough where if I didn't know anything, I did not feel uncomfortable saying – "I've never done suction except in the lab." I think that's a good thing also because I need to learn on my own. I can't be hand-held the whole way. I just need a good start.

Stacie and Emily acknowledged the value of preceptors who were able to take on the role of guide. Stacie stated,

> But there's a handful of nurses in particular who are like, "okay, here's our load, where do you want to start? Who do you want to see first? Why? Where do you want to go next? Who do you give meds to first?" You know, based on this person goes to surgery at this time, this person wants to go home at this time. I make those decisions and they're my backup. . . . I think some of the most helpful nurses are the ones that say, "you're the nurse today, I'm your wing man."

Emily added, "I think a lot of it is if you're lucky enough to get a good preceptor and have nurses that really foster your independence . . . and your confidence in yourself."

A positive relationship with the preceptors enhanced the students' confidence levels, which then encouraged them to take on additional challenges. Krista discussed

her experience in an intensive care unit, where she was encouraged to become part of the team.

> The most phenomenal experience and I felt competent. . . . Maybe it was the staff that was much more supportive. . . . They don't use gait belts, right? So I'm like we have to do this because this is a safety thing and I didn't feel uncomfortable suggesting it at all.

Krista's preceptor acknowledged this practice deficiency and modified his practice based on Krista's recommendation. The power of the positive experience was not lost on her, stating, "I encouraged him to re-get into safety and so every day when I worked with him we made sure there was a gait belt and then I was okay mentioning it to other people."

While the primary preceptor had the most significant influence on the participants, other nurses working on the unit also influenced the learning experience. As Christine discussed:

> I've had some nurses where they've been fantastic, and they really strive to give you the best learning opportunity they can. They'll work with each other and say, "oh hey, this nurse has a Foley start, would you like to go do it", or "this nurse, this patient needs an IV, do you want to go do it?"

Emily shared how experiences can change based on the attitude of the staff nurses.

> With the other nurses . . . they would make such a difference when we'd be at a unit and people would be like, "oh you're a student, let me show you things, because you don't know that," and that would always be super helpful. Whereas people would kind of look at me and be like, you're wearing weird blue scrubs, and then just never really acknowledge me. . . . So that would mean that I'm on my own kind of a deal where I'm just going to talk to my preceptor.

Unfortunately, as Emily alluded, not all interactions with nurses were positive. While positive experiences enhanced the development of confidence, negative interactions suppressed it. Christine shared one such experience.

> I can remember a specific nurse who made it very clear that she did not like students. That really just . . . sets the mood for the day and a tempo for the day where . . . I felt very discouraged. I felt like I didn't know anything, and it was

> my sophomore year, one of my very first clinicals [laugh] in the hospital. So it kind of sets the tone of, well, do I really know what I'm doing? Should I be here?

The participants recognized the importance of their final clinical in preparing them for professional practice, so behaviors by nurses that limited the scope of practice for students were especially frustrating. Stacie discussed:

> It's great to have people there to support me and help me build my confidence that way but I'm like I don't need you to sit there and do it with me, I can do it (laughs). Because you know, six months from now when I have a job you're not going to be able to come with me.

Emily expressed the frustration of others when recounting experiences where nurses may have thought they were helping, but in fact, diminished the learning opportunities.

> I wanted to take three patients that day and it was kind of a big deal for me taking three patients. So I was getting everything organized and ready and wanted to know how to lay out my day, and then I would be in the room giving meds and doing an assessment. My nurse would leave, might come back and be like, "oh I just gave the other patient their meds." And I was kind of like, well, *that's not the point!* [emphasis added] I had that all planned. I would have done that! That's not helpful because then I don't get that experience. I know I have to give meds to this patient while I'm in here, so I need to hurry this up or, you know, prioritizing that time.

Ultimately, these participants most appreciated nurses who not only were sound clinicians, but also knew how to teach, challenging them in how they thought, while supporting them at the same time. Krista mirrored the comments of others in recognizing the impact positive preceptors had on her development:

> And the preceptors I had really were interested in teaching. They wanted to teach me, and they asked me what I knew. They asked my opinions on things and, "how would you deal with this," and then I'm like, I don't know, or I would say, this is how I would deal with it. And they're just like, "okay that's good. Well how about, you know, what do you think about this?" And they wouldn't tell me answers, they directed me to the correct answer. I'd have to come up with [it] myself which is way better learning, as opposed to just telling me.

Summary

The sixth step in the data analysis process is defining the essence of the experience (Creswell, 2007). The answer to the research question for how senior nursing students came to see the whole of a clinical situation suggests that the experience of seeing the whole of a clinical situation is a *process* that develops and builds over time. Critical to that process is the formation of a solid foundation of knowledge and skills. The incorporation of the patient and family perspectives enhances assessments, resulting in a holistic view. This comprehensive assessment yields multiple pieces of data. Experience and practice *support* the student in connecting the dots into a whole clinical picture. Confidence increases as proficiency develops and the student experiences success. Actions and attitudes of the faculty and preceptors can support the learning process, thus increasing confidence, leading to the student challenging him/herself further. Conversely, negative attitudes or actions toward students *hinder* learning and undermine confidence. Finally, students *gain personal insights* on their readiness for professional practice as they reflect on their clinical experiences. Success in problem solving clinical situations results in an increase in confidence, which spurs the students to further challenge themselves with differing clinical situations. Their knowledge base grows as they seek out answers to new situations, resulting in further development and additional growth.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The process of how nursing students came to see the whole of a clinical situation was captured in five themes: build a solid foundation, see the patient, connect the dots, relationships with faculty and preceptors, and trust oneself. With this understanding, academicians gain not only an appreciation of the process, but can consider strategies to support this developing skill. This chapter discusses how these research findings fit within the existing body of nursing literature and theory, the contribution of this study to nursing science and education, the limitations of this study, and opportunities for further research.

Relationship of Results to Existing Literature

The literature review in a qualitative study is done to evaluate how the findings of the study fit within existing knowledge (Streubert & Carpenter, 2011). A review of the literature revealed consistency with five themes. In addition, the learning process described by participants was consistent with principles from several learning theories.

Build a Solid Foundation

All participants emphasized a developmental process in their learning to see the whole of a clinical situation. In her seminal study of the development of clinical expertise, Benner (2001) determined that expertise develops over time, as the nurse is exposed to a wider variety of scenarios and appreciates the diverse responses to care.

Benner's study applied the Dreyfus and Dreyfus (1980) model of skill acquisition to nursing practice. Dreyfus and Dreyfus outlined a five stage model of skill acquisition based on the study of chess players and airline pilots. Their model emphasized the role of experience in achieving higher levels of performance, stating "only experience with concrete cases can account for higher levels of performance" (Dreyfus & Dreyfus, 1980, p.5). The participants in the current study acknowledged the value of experience and repetition in cementing their skills. As they gained confidence in fundamental skills, they were able to advance their thinking to higher level issues. In time, they could incorporate more assessment data, such as the patient's perspective, into their plan.

Botti and Reeve (2003) studied how decision-making skills varied between second and third year nursing students, comparing academic ability as well as experience. Participants were presented case studies with varying degrees of complexity. No difference was found between the groups in low-level complexity cases. However, with more difficult case studies, experience rather than academic ability differentiated between those students able to discriminate more disconfirming items. Similarly, in a qualitative study on clinical-decision making, senior nursing students noted that the ability to integrate all of the information in a clinical environment increased with experience (White, 2003). As Amy stated in this study, "Your junior or your freshman and sophomore year, you don't have time to get a big picture. You have 100 small pictures of your one single patient." White (2003) concluded that "as students gained knowledge, experience, and self-confidence, they demonstrated a greater understanding of the clinical picture" (p.117).

See the Patient

The confidence gained through success in patient situations as well as the belief in their foundational knowledge and skills allowed the students to move beyond focusing on skills and procedures to a more holistic approach to patient care. An important result of this study was the consistent incorporation of patients and families into the plans of care. Incorporating the patient resulted in increased safety through early identification of a potential medication error, fine-tuned assessment through the recognition of unique patient characteristics, and patient advocacy through identifying and addressing the patient's primary concern before focusing on the agenda of the health care professional. These actions reflected the knowledge, skills, and attitudes outlined in the Quality and Safety Education for Nurses (QSEN) competencies related to patient-centered care (Cronenwett et al., 2007). The QSEN competencies list the expectations necessary for nurses to advance safety and quality care within health care systems. Educators are encouraged to incorporate teaching strategies to enhance development of the six competencies in new graduates. These participants found that faculty consistently challenging them early in their clinical experiences to consider the patient perspective was instrumental to their incorporating this as a routine part of their practice.

Connect the Dots

Connecting the dots involved identifying the key pieces of information from a clinical situation and then problem-solving to identify the clinical problem. This process is consistent with clinical judgment, defined as "interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the

patient's response" (Tanner, 2006, p. 204). Three different reasoning processes are used by experienced nurses to make clinical judgments. The first is analytical processes in which the situation is broken down into elements, allowing for the identification of alternatives with systematic weighing of pros and cons of each option. The analysis component of critical thinking involves the careful review of the whole through the examination of the parts. The participants in the current study discussed looking at clinical situations with an unbiased eye; seeing pieces of a clinical situation, putting those pieces together, and forming a new whole.

A second influence on clinical judgment is intuition (Tanner, 2006). Intuition draws from finely tuned perceptions not consciously recognized without detailed probing. Prior experiences are the primary source in the development of intuition; however, senior nursing students have identified intuitive experiences (Smith, Thurkettle, & dela Cruz, 2004). With each clinical experience, students add to their personal knowing and begin to see predictable patterns emerge. The participants in this study did not specifically discuss intuitive experiences; however, they did discuss how they were able to respond instinctively as they gained experience and confidence.

The third reasoning process supporting clinical judgment is narrative thinking, or thinking through the telling and interpreting of stories (Tanner, 2006). Narrative thinking involves focusing on the specific case rather than general principles. The depth of thought and reflection inherent within narrative thinking enhances the development of nursing knowledge through internalizing the experience into one's professional repertoire. The participants in this study recounted how sharing their clinical experiences with experienced faculty helped them to see where their decision making was sound and

where there were gaps in their reasoning. The students filed the feedback away for future use with similar patients.

The collective use of these reasoning processes reflects the holistic approach that defines nursing and is consistent with the patterns of knowing in nursing first defined by Carper (2004). When the individual themes of this study were viewed as whole, the patterns of knowing emerged. Carper listed four ways of knowing: empirical, personal, aesthetic, and ethical. A fifth pattern, emancipatory knowing, was later added by Chin and Kramer (2008). Figure 1 provided an illustration of the model. The students discussed the empirical pattern through the use of evidence, the solid foundation, as critical to their seeing the whole of the clinical picture. They drew on their personal and professional experiences, reflecting personal knowing. The participants did not rest on the status quo. They challenged previous assessments to consider alternative explanations and listened to the patients and families as they provided care. These behaviors are consistent with ethical knowing. Aesthetic knowing, the art of nursing, was reflected in the sensitivity, empathy, and caring interactions described by the participants. Emancipatory knowing reflects social justice, advocating a better environment for all. Participants described experiences in which they advocated for individual patients as well as unit populations. While outlined separately, Carper noted that each pattern is critical to the whole. Nursing knowledge is not complete without all patterns in play. These participants demonstrated utilization of all patterns in their practice.

Relationship with Faculty/Preceptors

This learning process did not occur in a vacuum. Participants readily acknowledged the support and guidance they received from their instructors and

preceptors. Numerous studies have reported the benefits of positive student–faculty/ preceptor relationships (Gillespie, 2005; Levett-Jones et al., 2007; White, 2003; Wieland et al., 2007). However, these participants were quite specific in listing teaching strategies they found most helpful from their instructors. First, a part of the solid foundation was the expectation that the students would start looking at the whole of the clinical picture early in their clinical experiences. The students found this difficult and time-consuming, but in retrospect identified that expectation as critical to their developing a pattern of thinking that they referred back to in ongoing clinical experiences. As the students progressed, they also appreciated how assignments were modified to provide them with greater autonomy and responsibility. The students noted how early in their clinical experiences there was greater emphasis on written preparation. As time went on, greater emphasis was placed on mental preparation. The expectations for preparation were the same; but the shift reflected a model mirroring what they would experience after graduation and moved them one step closer to professional practice.

Also benefiting the students was developing a relationship with the instructors. Gillespie (2005) viewed the student-teacher connection as one that has powerful implications for student development. Four qualities are inherent to the connection: knowing the person as a whole, trust, respect, and acknowledgement of commonalities and differences. These participants appreciated being able to share their perceived weaknesses openly with their faculty, who then worked collaboratively with the students to overcome the concerns. Trust and respect was also reflected in the value participants found in specific feedback. These students appreciated hearing what they were doing well, but felt they learned more from the comments encouraging them to consider an

alternate view or identifying an area needing further assessment or detail. Lasater (2007) found similar results from students participating in focus groups following simulation scenarios. The students requested more feedback on their clinical judgments, what could have been done differently, and how different decisions could influence patient outcomes. Bransford, Brown, and Cocking (2000) stated that frequent feedback is critical for students to gain insights into their learning. In the current study, some participants discussed how these discussions often occurred in post-clinical conferences. The participants found most helpful structured conferences designed to further explore cases in depth rather than simply reviewing what was done. Baldwin (2007) shared how an unfolding case study was used to promote clinical reasoning. Students were provided an initial clinical scenario, questioned on what they thought was going on, what additional information was needed, etc. The process was continued with incremental sharing of additional pieces to the clinical picture and repeating of the questions. Participants found the exercise valuable in helping them to identify key pieces of information and prioritizing actions.

Several of the participants specified the use of Socratic questioning in the development of their thinking processes. Socratic questioning is "systematic, disciplined, and deep" (Paul & Elder, 2007, p. 36), used to probe student thinking and distinguish what is known versus what is not. The participants expressed being skillfully led down a clinical path with focused questions that provoked their thinking. The students came to the answers themselves, but did so in a guided manner. This is consistent with active learning, as the students made the connections for themselves, rather than having the answers given to them (Maclellen, 2005). The questioning process allows students to

reflect on their decisions and actions and increases confidence as students gain depth of understanding in their decision-making processes (Weber, 2005). The participants most often discussed this questioning process as interactive discussions with either their faculty or preceptor, though some did acknowledge the pointed questions provided in feedback on written careplans or clinical preparatory work as encouraging further thought and review. Haider (2007) presented how reflective questions can be worked into case studies for further development.

Interestingly, the same behaviors that participants appreciated in their instructors extended to their clinical preceptors. The participants spoke of valuing preceptors who were not only solid clinicians but also knew how to teach. The greatest value was placed in preceptors who served as a guide and support while allowing the student to assume a primary care role. In constructivism, the ideal preceptor would be someone with not only advanced knowledge and skills but an appreciation of where the student is currently in their learning process as well as the desired outcome. Driscoll (2005) compared this to scaffolding where the instructor or preceptor serves as a support, allowing the student to extend themselves to a level not otherwise possible. Conversely, participants expressed frustration with preceptors who tried to "help" by taking over activities for the student. The participants reflected how this thwarted their learning goals and prevented them from challenging themselves with either more complex patients or coordination of care. Most staff nurses are not educated in the principles of active learning. Preceptor and general staff development is an area of opportunity within health care systems.

The participants also shared how the unit culture influenced their learning. On units where staff nurses were welcoming and sought the students out for opportunities,

the students felt valued and experienced an increase in confidence as being part of the team. Conversely, in units where students perceived they were an annoyance rather than a member of the team, the students withdrew internally and limited their interactions. Negative interactions actually left one participant questioning her choice of nursing as a career. These results were consistent with previous studies designed to explore student nurses' perceptions of the clinical experiences (Koontz, Mallory, Burns, & Chapman, 2010; Levett-Jones et al., 2007).

Trust Oneself

The end result of the students' positive clinical experiences and preceptor relationships was an increase in confidence and a perceived readiness for practice. In a concept analysis of self-confidence, White (2009) identified knowledge and support as precursors to the attainment of confidence. Knowledge can be attained through formal or informal means, and can be reinforced through direct performance of skills or vicarious reinforcement. Regardless of how it is obtained, knowledge "is essential as a precursor to self-confidence" (White, 2009, p. 109). Likewise, support is essential to the development of self-confidence. The support may come from an external source such as an instructor or preceptor or through internal self-talk. Gaining confidence in skills was a theme identified in a qualitative study assessing how senior nursing students came to make clinical decisions (White, 2003). Lundburg (2008) suggested that confident students are more likely to challenge themselves. With confidence, students are more likely to place themselves in situations where they are more likely to obtain new knowledge and master new skills. Nurses have identified a cyclic relationship between increasing confidence in making appropriate decisions which further increases confidence, which leads to tackling

greater challenges, and on and on (Duchscher, 2008; Etheridge, 2007). Interestingly, the confidence reported by these participants was quite fragile. Negative experiences with preceptors or staff nurses seemed to have a significant impact in creating self-doubt.

Relationship to Learning Theory

While these participants acknowledged the benefits of experience and repetition in their progression, they appeared to draw from a broader base than solely experience to further their development. The learning process described by participants reflected components from a number of learning theories. The participants spoke of being challenged early in their clinical experiences to make connections in a clinical picture beyond what was apparent. Often they were guided in the process by their instructors, but were not given answers. They needed to search or problem-solve for themselves. The process they described is consistent with constructivist learning theory. Constructivism assumes that learners construct knowledge as they work to make sense of and integrate their experiences. Rather than focusing on rules, learners focus on connections that bring meaning to experiences. Constructivist goals include critical thinking, collaboration, and development of personal inquiry skills, all essential skills for professional nurses (American Association of Colleges of Nursing, 2008).

Vygotsky, a Russian psychologist, is identified as the founding father of constructivism. He proposed determining two levels of development when assessing developmental levels (Vygotsky, 1978). The first is actual development--the level established through the completion of developmental cycles. Actual development is the level commonly assessed with standardized testing. The second level, however, moves beyond the actual to the potential. This level identifies what can be accomplished with

assistance or guidance. The difference between the two levels is identified as the zone of proximal development, "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). Functions are broken into three areas: those the learner can do independently, those skills in development, and those that are still undeveloped. As the student progresses, the area of developed skills becomes greater, as does the area of developing skills. Theoretically, the undeveloped area shrinks in relation to the other two.

Benner (2001) stated that nursing students enter new clinical areas as novices with little contextual experience to give meaning to theoretical knowledge. The participants in this study acknowledged a brief period of being overwhelmed when confronted with new experiences. However, the fact that they had never been in an intensive care unit, never coordinated care for multiple patients, etc., did not stymie them. They were able to quickly regain their equilibrium and draw from their theoretical base, fundamental practice skills, and personal experiences to provide patient care. The participants were able to use existing knowledge, identify similar concepts, and apply these to the new situation. Bransford et al. (2000) state:

> To develop competence in an area of inquiry, students must: (a) have a deep foundation of factual knowledge, (b) understand facts and ideas in the context of a conceptual framework, and (c) organize knowledge in ways that facilitate retrieval and application. (p. 16)

The participants in this study did emphasize the importance of a sound theoretical foundation of knowledge and recognized how their curricula developed their knowledge bases by consistently building content from one course to the next. This building process

reflects cognitive organization, in which data are organized into specific bodies of knowledge (Driscoll, 2005). Scott referenced this when discussing how he was advised to mentally file information by patient types. Foundational courses such as pathophysiology, pharmacology, and fundamental skills served as anchors for new knowledge. Anchors are specific, relevant data that provide connection points on which new information can attach (Driscoll, 2005).

Anchoring and cognitive organization are concepts found in meaningful learning. "Meaningful learning occurs when learners actively interpret their experiences using certain internal, cognitive operations" (Driscoll, 2005, p. 115). With meaningful learning, students interpret and incorporate new information with existing information and then apply it in problem solving new situations (Lujan & DiCarlo, 2006). Meaningful learning results when the list of random facts becomes usable knowledge (Bransford et al., 2000). As students learn how to examine and refine their thinking, they then convert "information to knowledge and knowledge into wisdom" (Brady, 2008, p. 66). Meaningful learning is enhanced when students can see the relevancy of the information (Driscoll, 2005). The themes of build a solid foundation, see the patient, and connect the dots reflected the impact of meaningful learning. These participants acknowledged that at times they did not appreciate the relevancy when initially learning content; however, once they started applying information to practice, they quickly came to realize how learning mattered.

The process participants in this study used in approaching clinical situations was consistent with the clinical judgment model developed by Tanner (2006). Clinical judgment is the process by which nurses make an interpretation or conclusion about a

patient's needs, concerns or health problems, and/or the decision to take action (or not, use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response). The ability to form clinical judgments requires knowledge, is influenced by knowing the patient's typical responses and by the context in which the situation occurs, as well as the culture of the nursing unit. The results of this study reflected these principles. The participants in the current study emphasized the importance of knowledge, both theoretical and experiential, in the theme of build a solid foundation. The theme of see the patient reflected how knowing the patient as a unique individual influenced the care process. In relationship with faculty/preceptors, the participants spoke of the influence the unit culture had on not only their learning, but their willingness to speak up, take risks, and offer alternative opinions.

The model developed by Tanner (2006) begins with noticing, in which the nurse assesses the situation drawing from experience, prior knowledge of the patient, and textbook knowledge. The nurse then interprets the data, seeking out additional information as needed to confirm or rule out hypotheses. A plan of action is then put into place. The last step is reflection, during which the nurse reflects on the patient's response to the interventions as well as on the process as a whole. Reflection on the process allows the nurse to gain insights that add to their personal knowing, thus increasing their capacity for clinical judgment in the future. As the participants in the current study described clinical situations, they often mirrored the process outlined in the model. The participants spoke of seeking out information from a variety of sources. They did not allow assumptions shared in report to influence their noticing of subtle patterns. They formed their own hypotheses on the clinical situation, developed a plan, and acted on it.

As they evaluated the impact of their actions, they could see the success of their plan. Many of the participants volunteered how their experiences provided them with insights to consider in future interactions, indicating the reflection on the overall process.

In summary, the results of this study were consistent with previous literature and added support to the principles of meaningful learning and constructivism. This consistency with existing knowledge added further credibility to the results of the study.

Contributions to Nursing Science and Nursing Education

Learning to think like a nurse is complex, with seeing the whole of the clinical situation essential to the thought process. While other studies have discussed the importance of seeing the whole of a clinical situation, this was the first study to look at the experience through the eyes of the students. The results emphasized a building process. The students identified that they had a greater focus on skills early in their clinical experiences but appreciated the expectation of clinical instructors to broaden their view to the whole of the clinical situation. This expectation taught them how to think, a skill that they fine-tuned and carried through into more complex clinical situations.

Instructors might wish to consider these results when planning curricula as well as clinical instruction. The need for a solid foundation of pathophysiology, pharmacology, and fundamental skills was critical to the success of these students. Emphasis on how these concepts relate to the patient's disease and clinical presentation should start early in the student's academic career and continue to be reinforced throughout the curriculum. The integration of theory with clinical experience was identified as a powerful learning experience in the Carnegie report on nursing education (Benner, Sutphen, Leonard, & Day, 2010).

Certainly clinical instructors are in an ideal place to facilitate the integration of theoretical concepts into practice. However, not all application needs to occur at the patient's bedside. Teaching strategies such as case studies, simulation, and guided reflection offer non-clinical opportunities as well.

Well-designed case studies can provide students with models for how expert practitioners might approach a clinical issue, add to the students' skills in problem solving, and provide faculty insight into students' thought processes (Dowd & Davidhizar, 1999). As in clinical practice, there might well be more than one "right" answer and multiple paths to it. Baldwin (2007) used an unfolding case study in which students assumed the role of the triage nurse in an emergency room caring for six patients. Additional information on each patient was provided at intervals, at which time the students identified a likely problem or diagnosis, what other information they would want to know, what interventions were called for, and which patient should be seen first. The overwhelming majority of students enjoyed the exercise and found it insightful in helping them identify how they made judgments and what information was essential versus extraneous.

Human patient simulators offer a number of possibilities in nursing education. Results of a multi-site national study revealed that students who participated in human simulator scenarios reported a greater sense of reality than students using paper and pencil case studies (Jeffries, 2007). The human simulator students also reported more opportunities to problem-solve and make decisions. Lasater (2007) developed a rubric based on Tanner's (2006) model of clinical judgment. The rubric was used to evaluate students' behaviors during simulation scenarios. Focus group evaluations revealed

students valued how the simulation experience forced them to think in greater detail about the patient care needs. A key component of the simulation experience was debriefing and reflection about the experience.

Reflection involves the purposeful review of an experience, defining the meanings within the experience, and then using the knowledge gained to enhance self awareness and build one's personal knowing (Murphy, 2004). The self-evaluation inherent within reflection encourages the development of critical thinking and clinical judgment skills (Kuiper & Pesut, 2004). In Tanner's (2006) model, reflection completed the clinical judgment cycle. Lasater (2007) found many participants valued the debriefing and reflection process as it allowed them to learn from others ideas and priorities, thus expanding their own thought processes. Croke (2004) used reflective journals with first-semester nursing students to determine if the process of reflection on clinical experiences could enhance clinical judgment abilities. Six structured journal questions that focused on the nursing process were used to guide the students' reflections. Both students and faculty reported growth in clinical decision-making abilities.

Case studies, simulation, and reflection all include components of constructivist learning. In each, students are active participants in the learning process. Answers are not automatic and more than one option may be correct. While nothing can totally replace direct patient care, alternative teaching strategies that reflect active learning principles and focus on the clinical judgment process are valuable tools to enhance learning.

Not to be overlooked was the early expectation of patient-centered care. The students acknowledged this was not their highest priority early on but appreciated the

attention paid to it. By being encouraged to consider the patient perspective early, the framework was laid for how to conduct a holistic assessment and provide holistic care.

Developing a relationship with the clinical instructor and/or preceptor was also important to student development. Instructors might wish to query students as to their learning style, personal strengths and areas for development, and how faculty can best support the student to meet mutually agreed on goals. Throughout, the faculty role needs to focus on facilitating learning. These students were clear in appreciating instructors who challenged them and then served as a guide and support. The behaviors valued by these students are consistent with active learning principles. The use of teaching strategies based in educational theory and evidence-based practices is one of the core competencies for nurse educators identified by the National League for Nursing (Halstead, 2007). Historically, academicians have been drawn from the ranks of expert clinicians. This holds value as nursing is a practice-based profession. However, the best nurses may not be the best teachers. Nursing education now needs educators skilled in practice *and* educational principles (Benner et al., 2010; Halstead, 2007). Fortunately, nurse educator programs are increasing due to the faculty shortage. Continuing education programs need to be offered for faculty currently teaching who may not be skilled in active learning principles. Faculty can benefit from the use of peer review of their teaching practices as a quality improvement initiative. Peer review provides instructors with the additional benefit of demonstrating the scholarship of teaching (Billings & Halstead, 2005).

Likewise, staff nurses functioning as preceptors would benefit from educational programs on effective teaching strategies. Students' evaluations of their precepted clinical experiences might also provide valuable feedback to the nurses.

Limitations of This Study

Invitations to participate in this study were extended to over 120 students. Less than 10% came forward as volunteers. Additionally, 8 of the 11 participants graduated with honors, seven of those eight with high or highest honors. The honor students represented both schools; however, the over-representation of honor students limited the transferability of results. While it is certainly possible that the timing of the data collection shortly before graduation resulted in scheduling problems or lack of interest for some potential participants, consideration needs to be given to the possibility that numerous students might graduate without having experienced seeing the whole of a clinical situation. It is also important to note that the experiences described solely reflected the perceptions of the participants. No attempt was made to validate or confirm these experiences.

Participants were drawn from baccalaureate programs only. While the need to think like a nurse in seeing the whole of a clinical situation is not a unique expectation of baccalaureate nurses, the lack of representation of associate degree students might be a limitation to transferability. Lastly, the final sample was weighted toward female Caucasian students. Although the literature did not suggest differences between genders or ethnic groups in terms of thinking like a nurse, a more diverse sample would lend greater support to transferability of results.

Opportunities for Future Research

Seeing the whole of a clinical situation is a critical component of clinical judgment (Tanner, 2006). The majority of research studies assessing clinical judgment are qualitative in nature. While these studies are valuable for gaining insight and understanding, they lack opportunities for generalization of quantitative designs. One of the challenges in conducting research related to critical thinking is the lack of standardized reliable instruments. The two most commonly used standardized tests for assessment of critical thinking are the Watson-Glaser Critical Thinking Appraisal (TalentLens, 2008) and the California Critical Thinking Skills Test (Insight Assessment, 2009). While both tools have been used extensively in nursing studies, the results have been inconsistent (Daly, 2001; Rogal & Young, 2008; Stone, Davidson, Evans, & Hansen, 2001; Walsh & Seldonridge, 2006). The mixed results in assessing critical thinking lead one to question as to whether standardized tests for general critical thinking abilities are able to capture the nuances of forming discipline-specific clinical judgments. Students must transfer "theoretical knowledge and psychomotor skill development from the classroom to the clinical setting, [while] making applications to a variety of health care problems manifested by the patient" (Bowles, 2000, p. 373).

Lasater (2007) developed a rubric for assessment of clinical judgment during simulations based on Tanner's (2006) model for clinical judgment. The five themes that emerged from the current study fit within the clinical judgment model and appear to link with some components of the rubric. For example, Lasater described making sense out of data as the ability to sense patterns in the patient data, compare them with known patterns, and develop plans for interventions. The theme of connect the dots correlated

with these behaviors. Trust oneself was reflected in the rubric category of effective responding. Build on a solid foundation and see the patient were implied within the effective noticing sections. While the rubric has shown promise in evaluating students' clinical judgment abilities in simulation, the rubric has not been tested in clinical practice. The rubric might be strengthened by explicitly drawing out the use of the solid foundation of knowledge and skills in the clinical judgment process. Likewise, incorporation of the patient's values and beliefs is an important aspect of patient-centered care and should be reflected in the evaluation tool if used in clinical practice.

The challenges reported by new graduates and employers in transitioning new graduates to the RN role lead one to question how many students experience seeing the whole of a clinical situation prior to graduation. It would be beneficial to determine the prevalence of the experience among senior nursing students. This type of data could be collected in a variety of methods. Evaluations from the senior level clinical courses could be analyzed for evidence of seeing the whole of a clinical situation. The five themes identified from the current study could be used as a guide for analysis. Lasater's (2007) rubric for clinical judgment also holds promise as an evaluation tool. Alternatively, exit interviews prior to graduation would serve as another option for data collection. The interviews could be structured using a survey designed around the components of clinical judgment or could be designed as open-ended discussions.

If the data indicate that the majority of students do experience seeing the whole of clinical situations, then one must question what happens between graduation and employment as a graduate nurse. As health care systems become increasingly complex and admitted patients become more acutely ill, it might be that traditional orientation

methods are no longer the best way for transitioning new graduates to practice. The American Association of Colleges of Nursing and the University HealthSystem Consortium (UHC) joined forces in developing a curriculum for nurse residency programs for new graduates (American Association of Colleges of Nursing, 2011). Currently 65 practice sites offer a yearlong residency program. Outcome data indicate significantly improved retention rates as well as positive perceptions by residents in their competence, ability to communicate, and overall satisfaction with their work as a nurse. The residency programs involve a number of components. It would be beneficial to evaluate the pieces of the program to determine what specifically makes the programs successful. This knowledge could assist educators in preparing graduates for the transition to practice.

It is also possible that many students do not have this experience. If this is the case, nursing education programs need to evaluate their curricula as well as teaching methods for effectiveness. Benner et al. (2010) found U.S. nursing programs are not as effective as desired in teaching nursing science, natural sciences, social sciences, technology, and humanities. In evaluating how content was taught, Benner et al. found an over-reliance on passive lectures with little active interaction. The participants in this study emphasized the value of active learning. While clinical experiences lend themselves to active teaching strategies, further research is needed on how these same principles can be brought into the classroom as well as the effectiveness of the methods in teaching theory.

Ultimately, practice sites and academia would be best served through collaborative research to test different models of transition for new graduates. The

partnership between AACN and the University HealthSystem Consortium provides one example of a collaborative model (American Association of Colleges of Nursing, 2011). Partnerships on a local level could test pilot programs and provide valuable data for further review.

Finally, nursing curricula are already overloaded with content and students frequently complain about the volume of information to memorize. Memorization only addresses surface learning. Research is needed on how to not only teach concepts effectively but, as importantly, how to help students to learn conceptually to enhance meaningful learning. With meaningful learning, facts become usable knowledge. Students who are able to transfer experiential learning to like situations are more likely to succeed in facing the multitude of variations presented in patient care. One would expect that students who are able to think conceptually would be better able to connect the dots in a clinical picture. With greater emphasis on conceptual learning, outcome research is needed to ensure that students are able to make the critical connections in patient care.

Conclusion

Learning to think like a nurse is a complex process and challenges students throughout their academic career. A key component of the process is seeing the whole of a clinical situation so that decisions are made from a complete clinical picture. The results of this study indicated that nursing students were able to see the whole of a clinical situation. The participants identified a building process supported by solid theoretical knowledge and incorporation of the patient perspective. The result was a comprehensive assessment with multitudes of data. The clinical picture formed when those dots were connected. Influencing the students were their relationships with

instructors and staff nurses, as well as their own levels of confidence. The successful experiences left the students with a sense of being ready--ready to graduate and ready to move into professional practice. These results are affirming to educators who strive to develop the knowledge, skills, and attitudes of professional practice in their students. Understanding the experience of these participants provides instructors with insights into how clinical education might be structured to better support this skill in future students.

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APPENDIX A

EMAIL COMMUNICATION TO NON-BELLIN COLLEGE SENIOR LEVEL NURSING STUDENTS

Greetings,

I am a doctoral student in the University of Northern Colorado's Nursing Education program. The area of interest for my dissertation is describing the process by which nursing students come to think like nurses. The ability to see the whole of a patient's clinical picture and form clinical judgments in complex situations is an area identified by new graduate nurses as one of the most challenging as they transition to practice. Yet, some students have identified situations when they can tie apparently unrelated pieces of data together, or anticipate a situation based on their assessment findings.

If you believe you have experienced times when you could see the whole clinical picture and are able and willing to discuss it, I would love to talk with you. If you agree to participate in the study, I will schedule a time to meet with you at a location that protects your privacy. With your permission, our conversation will be audio-taped so that I can accurately capture your experience, however, any identifiers will be removed to protect your confidentiality. Should you decide you would rather not proceed even after starting the study, you can withdraw at any point without penalty.

Please respond to maryrolloff@att.net with your name and contact information to receive additional information about the study. Your participation in helping to identify the experience of thinking like a nurse will be greatly appreciated.

Thank you,

Mary Rolloff
University of Northern Colorado Doctoral Student
Email: maryrolloff@att.net; Phone: 920-433-6669

APPENDIX B

EMAIL COMMUNICATION TO BELLIN COLLEGE SENIOR LEVEL NURSING STUDENTS

Greetings,

I am a doctoral student in the University of Northern Colorado's Nursing Education program. The area of interest for my dissertation is describing the process by which nursing students come to think like nurses. The ability to see the whole of a patient's clinical picture and form clinical judgments in complex situations is an area identified by new graduate nurses as one of the most challenging as they transition to practice. Yet, some students have identified situations when they can tie apparently unrelated pieces of data together, or anticipate a situation based on their assessment findings.

If you believe you have experienced times when you could see the whole clinical picture and are able and willing to discuss it, I would love to talk with you. If you agree to participate in the study, I will schedule a time to meet with you at a location that protects your privacy. With your permission, our conversation will be audio-taped so that I can accurately capture your experience; however, any identifiers will be removed to protect your confidentiality. Should you decide you would rather not proceed even after starting the study, you can withdraw at any point without penalty. Please know that I have no influence on the grades you earn in your senior classes, and I will abstain from voting when the list of students considered ready to graduate is considered.

Please respond to maryrolloff@att.net with your name and contact information to receive additional information about the study. Your participation in helping to identify the experience of thinking like a nurse will be greatly appreciated.

Thank you,

Mary Rolloff

University of Northern Colorado Doctoral Student
Email: maryrolloff@att.net
Phone: 920-433-6669

APPENDIX C

INTERVIEW PROTOCOL

Interview Protocol: Learning to Think Like a Nurse

Participant Pseudonym:

Date:

Time:

Place:

Description of setting:

Position of participants:

1. Briefly describe project
2. Obtain informed consent
3. Request permission to audio-tape
   i. Confirmation of permission included on tape

The goal of the interview is to allow for free-flowing conversation. If needed, the prompts may be used to stimulate conversation.

Interview Question:

1. Please describe one nursing situation in which you believe you were able to see the whole of a clinical picture.
2. Have you had other experiences in which you realized you saw the whole picture? If so, please describe.
   a. What was similar between the two experiences?
   b. What was different between this time and the first one you described?
3. Repeat questioning for previous experiences until no more are identified.
4. Is there anything else you would like to share that would help me better understand how students come to see the whole of a clinical situation?

Prompts:

a. What do you think supported you in obtaining that clinical picture?

b. What influence did the staff nurses have on your experience?

c. What influence did your faculty have on your experience?

d. What influence did your clinical preparation have on your experience?

e. How did the patient or family impact your thought process?

f. How did you validate your assessments?

g. What do you think brought the pieces together to form the whole picture?

h. What did you learn from the process?

i. Were there any factors that negatively influenced your experience?

Demographic Information:

1. Sex
2. Age
3. Anticipated graduation date
4. Employment
5. Previous degree

Thank participant. Reassure him / her of confidentiality of responses. Request permission to contact participant if clarification is needed and for member checking during analysis of data.

APPENDIX D

CONSENT FORM FOR UNIVERSITY OF NORTHERN COLORADO STUDENTS

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

Primary Investigator
Mary Rolloff, RN, MSN
Bellin College
Office: 920-433-6669
e-mail: maryrolloff@att.net
carol.roehrs@unco.edu

Faculty Advisor
Carol Roehrs PhD, RN, CNE
UNC School of Nursing
Office: 970-351-1699
e-mail:

Students' Experiences of Seeing the Whole of a Clinical Situation

Greetings,

I am a doctoral student at the University of Northern Colorado studying how senior nursing students come to see the whole of a clinical situation, in other words, to think like nurses. Previous studies have indicated that new graduates find the ability to think like nurses as one of the more challenging processes to grasp in the transition into practice. Understanding your experience of thinking like a nurse will help educators see the progression to professional nursing. A better appreciation of your experience may help us develop strategies that support student development. Results may be disseminated through submission for poster or podium presentations as well as publication in a peer-reviewed nursing journal.

If you consent to participate, I will interview you in a private location of your choosing. During the interview, I will ask you to recount in detail a situation in which you believe you were able to see the whole of a patient situation by making sense of the various individual pieces of data. I will audiotape the interview so I can accurately identify your ideas and perceptions of thinking like a nurse. I anticipate the interview to take approximately one hour of your time. Possible benefits to you include the opportunity to discuss your thoughts, knowing you may be able to benefit the education

of future nurses. A possible risk is you may feel the interview is a waste of your time. Your decision to not participate or withdraw from the study will not affect any course grade or standing within the school of nursing.

If we cannot agree on a mutually beneficial time to meet face-to-face, the interview may be conducted by telephone. If a telephone interview is required, you will be provided with a copy of the consent form electronically; we will review the consent by phone, and proceed following your consent. With your permission the interview will be audio-taped for accuracy.

Your choice of whether or not to participate in this study is voluntary. Your responses to the questions will be treated confidentially. The interviews will be coded and pseudonyms assigned to protect your identity. The audiotape will be erased immediately following verification of the accuracy of the transcription. The transcribed records and any notes taken during the interview will be secured in a password protected file on my personal computer. Any identifying information will be removed from the transcript to protect your confidentiality as well as the confidentiality of any person or agency you may mention in the course of the interview. Faculty from UNC will not be aware of your decision to participate until well past your graduation from UNC if at all. Supervising faculty from the University of Northern Colorado will have a copy of this consent form on file in a sealed envelope and will have access to the transcribed de-identified information.

Your participation is entirely voluntary. You may decide not to participate at all or you may decide to begin participation and then choose to not answer a question or stop and withdraw entirely. Your decision to not participate or withdraw after beginning will

be respected. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. The Institutional Review Board of the University of Northern Colorado has reviewed and approved this project. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Sponsored Programs, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-2161.

_____

Participant's Signature Date

_____

Researcher's Signature Date

APPENDIX E

CONSENT FORM FOR BELLIN COLLEGE STUDENTS

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

Primary Investigator
Mary Rolloff, RN, MSN
Bellin College
Office: 920-433-6669
e-mail: maryrolloff@att.net
carol.roehrs@unco.edu

Faculty Advisor
Carol Roehrs PhD, RN, CNE
UNC School of Nursing
Office: 970-351-1699
e-mail:

Students' Experiences of Seeing the Whole of a Clinical Situation

Greetings,

I am a doctoral student at the University of Northern Colorado studying how senior nursing students come to see the whole of a clinical situation, in other words, to think like nurses. Previous studies have indicated that new graduates find the ability to think like nurses as one of the more challenging processes to grasp in the transition into practice. Understanding your experience of thinking like a nurse will help educators see the progression to professional nursing. A better appreciation of your experience may help us develop strategies that support student development. Results may be disseminated through submission for poster or podium presentations as well as publication in a peer-reviewed nursing journal.

If you consent to participate, I will interview you in a private location of your choosing. During the interview, I will ask you to recount in detail a situation in which you believe you were able to see the whole of a patient situation by making sense of the various individual pieces of data. I will audiotape the interview so I can accurately identify your ideas and perceptions of thinking like a nurse. I anticipate the interview to take approximately one hour of your time. Possible benefits to you include the opportunity to discuss your thoughts, knowing you may be able to benefit the education

of future nurses. A possible risk is you may feel the interview is a waste of your time. Your decision to not participate or withdraw from the study will not affect any course grade or standing within the school of nursing.

If we cannot agree on a mutually beneficial time to meet face-to-face, the interview may be conducted by telephone. If a telephone interview is required, you will be provided with a copy of the consent form electronically; we will review the consent by phone, and proceed following your consent. With your permission the interview will be audio-taped for accuracy.

As a student at Bellin College, please know that I have no influence on the grades you earn in your senior classes, and I will abstain from voting when the list of students considered ready to graduate is considered.

Your choice of whether or not to participate in this study is voluntary. Your responses to the questions will be treated confidentially. The interviews will be coded and pseudonyms assigned to protect your identity. The audiotape will be erased immediately following verification of the accuracy of the transcription. The transcribed records and any notes taken during the interview will be secured in a password protected file on my personal computer. Any identifying information will be removed from the transcript to protect your confidentiality as well as the confidentiality of any person or agency you may mention in the course of the interview. Faculty from Bellin College will not be aware of your decision to participate. Supervising faculty from the University of Northern Colorado will have a copy of this consent form on file in a sealed envelope and will have access to the transcribed de-identified information.

Your participation is entirely voluntary. You may decide not to participate at all or you may decide to begin participation and then choose to not answer a question or stop and withdraw entirely. Your decision to not participate or withdraw after beginning will be respected. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. The Institutional Review Board of the University of Northern Colorado has reviewed and approved this project. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Sponsored Programs, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-2161.

_____

Participant's Signature Date

_____

Researcher's Signature Date

APPENDIX F

COMMUNICATION TO BELLIN COLLEGE
REQUESTING STUDENT ACCESS

January 11, 2011

Dear Dr. Boerst,

I am writing to request access to the traditional nursing senior class at Bellin College as potential participants for my dissertation through the University of Northern Colorado nursing education Ph.D. program. The purpose of this qualitative study is to describe how senior nursing students come to see the whole of a clinical situation. My hope is that an increased understanding of the phenomenon from the student perspective may assist faculty in appreciating the challenges of students as they develop into professional nurses as well as to identify the types of experiences that support and advance students' thinking processes.

The study involves in-depth interviews with students who identify having experienced at least one of these moments. Students will identify themselves as potential participants. All students who choose to participate in the study will sign the informed consent. Interviews will be scheduled at times convenient to the student. It is estimated the interviews will last approximately one hour. Follow-up contact with participants will be attempted as part of the data analysis process for member checking. This contact may occur by phone or in person. Meetings would again be scheduled at the student's convenience.

To complete this study, I am requesting the following:

1. Access to the traditional nursing students during the spring 2011 sessions.
2. Assistance from one school of nursing secretary to send out an electronic communication to all senior nursing students announcing the study. Potentially one reminder email will be requested.

The email communication will instruct students to contact me at my personal email address. From that point on, no additional school of nursing resources will be needed. I would be happy to provide you with a copy of the proposal if you so desire.

If you support the study, I would appreciate a brief letter affirming your approval for inclusion in the IRB packets. Please do not hesitate to contact me if you have any questions or need any additional information.

Thank you,

Mary Rolloff

Mary Rolloff, MSN, RN, CNE
Assistant Professor
Bellin College
920-433-6669
email: mary.rolloff@bellincollege.edu

APPENDIX G

COMMUNICATION TO UNIVERSITY OF NORTHERN COLORADO REQUESTING STUDENT ACCESS

January 11, 2011

Dear Dr. LaSalle,

I am writing to request access to the traditional nursing senior class as potential participants for my dissertation through the UNC nursing education PhD program. The purpose of this qualitative study is to describe how senior nursing students come to see the whole of a clinical situation. My hope is that an increased understanding of the phenomenon from the student perspective may assist faculty in appreciating the challenges of students as they develop into professional nurses as well as to identify the types of experiences that support and advance students' thinking processes.

The study involves in-depth interviews with students who identify having experienced at least one of these moments. Students will self-identify themselves as potential participants. All students who choose to participate in the study will sign the informed consent. Interviews will be scheduled at times convenient to the student. It is estimated the interviews will last approximately one hour. Follow-up contact with participants will be attempted as part of the data analysis process for member checking. This contact may occur by phone or in person. Meetings would again be scheduled at the student's convenience.

To complete this study, I am requesting the following:

1. Access to the traditional nursing students during semesters 4 and 5 during the spring and potentially summer 2011 sessions.
2. Assistance from one school of nursing secretary to send out an electronic communication to all senior nursing students announcing the study. Potentially one reminder email will be requested.

The email communication will instruct students to contact me at my personal email address. From that point on, no additional school of nursing resources will be needed. I have included a copy of my proposal as well as the consent form for your review.

I would be happy to answer any questions you may have. I can be reached at maryrolloff@att.net or by phone at (920) 433-6669. I look forward to hearing your response.

Sincerely,
Mary Rolloff, RN, MSN
University of Northern Colorado Doctoral Student

APPENDIX H

BELLIN COLLEGE VICE PRESIDENT
LETTER OF SUPPORT

Bellin College
Shopko Campus

January 24, 2011

Mary K. Rolloff, MSN, RN
Assistant Professor
Bellin College
3201 Eaton Rd
Green Bay, WI 54311

Dear Mary,

My correspondence serves to inform you that Bellin College has granted you permission to access the BSN Program's Traditional Option senior class as potential voluntary interview participants for the sole purpose of completing your dissertation through the University of Northern Colorado nursing education PhD program. In addition, you may secure assistance, as you requested, from one Academic Affairs support personnel to aid you in your student solicitation via e-mail.

The College requires your assurances that your activity will involve only the strictest of discretion on your behalf and that you will adhere to permission parameters, stipulated below:

1. The sole purpose is for the completion of your doctoral dissertation as outlined in your request dated January 11, 2011.
2. The time period of access begins January 25, 2011 through May 31, 2011 as you have specifically requested student access for the spring 2011 semester. Throughout this time period, you must be an employee in good standing of the College.
3. Confidentiality and anonymity of all individuals for which data is recorded will be maintained at all times in accordance with federal regulations. Interviews must and will follow CIRB protocol through Bellin Health System.
4. Data and research must and will be made available by you to Bellin College at any time upon request of its Administration.
5. Upon conclusion finalization of the research results and dissertation, a copy must be provided to the Bellin College Academic Affairs Office.
6. Access may be revoked by Bellin College at any time breech of confidentially, anonymity, or unethical action is suspected.

The College is fully supportive of, and has the fullest confidence in, your scholarly efforts including that to achieve your doctorate. We trust that the officials of the University of Northern Colorado will look favorably upon your study. Should your dissertation committee or University of Northern Colorado Institutional Review Board have questions, concerns, or need for additional information, please have them contact me directly.

In addition, if you have questions, concerns, or need for additional information, please contact me. I may be reached by telephone at (920) 433-6622 or by e-mail at connie.boerst@bellincollege.edu .

Sincerely,

Connie J. Boerst

Connie J. Boerst, EdD, RN-BC
Associate Professor
Vice President of Academic Affairs

cc: V. Jane Muhl, President/CEO

3201 Eaton Road • Green Bay, WI 54311 • www.bellincollege.edu
PH 920-433-6699 • FX 920-433-1922

APPENDIX I

UNIVERSITY OF NORTHERN COLORADO DIRECTOR OF SCHOOL OF NURSING LETTER OF SUPPORT

Dissertation Request

LaSala, Kathleen [Kathleen.LaSala@unco.edu] Actions

Monday, February 07, 2011 9:42 AM

To: Mary Rolloff

Mary,

I give my permission for you to access senior level nursing students at UNC for your qualitative study. Students are not on campus much after week 7 though, as they go to preceptor sites the second half of the semester. Accessing those students in Level IV now might be more fruitful.

Kathy

APPENDIX J

UNIVERSITY OF NORTHERN COLORADO INSTITUTIONAL REVIEW BOARD PROPOSAL

Narrative: UNC IRB Application

A. Purpose

1. Research Purpose and Rationale

The purpose of this qualitative study is to describe how senior nursing students come to understand the whole of a clinical situation. Nurses must be able to think critically and communicate effectively even in ambiguous and uncertain situations (Valiga, 2009). Critical thinking is the foundation for the decision-making process. Nurses use critical thinking to identify and synthesize significant assessment findings and form decisions about the most appropriate courses of treatment to meet the desired patient care goals. In order to form decisions, nurses must be able to move beyond seeing individual pieces or components of patients' clinical pictures to seeing the whole, with an appreciation of how the pieces connect and interrelate.

New graduates report the transition to practice as challenging, with one of the primary adjustments being the ability to form clinical judgments in ambiguous situations (Ellerton and Gregor, 2003; Etheridge, 2007). The importance of understanding the clinical picture is of critical importance. "Until students are able to understand the clinical picture, their clinical decision making capabilities are limited" (White, 2003, p. 119). Nursing students have described situations in which they were able to synthesize multiple pieces of information to form a whole, however the process of how this comes to happen is not well understood.

It is the responsibility of nursing academia to prepare students for the nursing role, including the ability to think critically. The two accrediting bodies for nursing education programs include the development of critical thinking as an

essential component for nursing programs (National League for Nursing, 2008; American Association of Colleges of Nursing, 2008). Instructors use a variety of techniques to enhance critical thinking, but not all students progress in the same manner. Gaining a better understanding of how students come to form this clinical picture is important for understanding the overall development of critical thinking and decision making in nursing. With greater insights into the experiences students identify as successful examples of decision making in practice, faculty may be better able to appreciate the challenges of students as they develop into professional nurses as well as to identify the types of experiences that support and advance students' thinking processes. Describing the phenomenon of how students come to see the whole of a clinical situation is the first step and foundational for future studies.

2. Justification for Exempt Status

The proposed research study qualifies for exempt status because of the minimal level of risk involved to participants. All potential participants are adults, capable of making informed choices for themselves. The participants will be invited to participate through electronic communication. Those that choose not to participate may simply delete the communication. No further contact from the researcher will occur. Data collection consists of audio-taped interviews, requesting the participants to reflect on an experience when they felt successful in nursing practice. It is extremely unlikely that such a conversation would elicit any negative emotions. More likely, the participants will gain confidence through sharing their success and may appreciate the opportunity to help future students.

Potentially, participants could feel that their time has been wasted, but that is unlikely given the general interest of nursing students in the topic of learning to think like nurses. The interview will be scheduled at a time and location convenient to the participant. It is anticipated each interview will last approximately one hour. Participants are free to terminate the interview at any time for any reason.

Use of Audio-Taping with Exempt Status

The proposed study meets all the requirements for exempt status. The topic is non-threatening to participants, and should not cause any more risk than potentially a perception of having their time wasted. Confidentiality of participants will be maintained through the use of pseudonyms in the tape transcriptions and modifying any other potentially identifying information. The use of multiple sites for sampling also assists in maintaining participant confidentiality.

Only the researcher and transcriptionist will have access to the recordings. All audiotapes will be destroyed following verification of the accuracy of the transcription. Transcriptions will be kept secured on the researcher's personal computer in a password protected file. Any paper copies or computer jump drives will be secured in a locked file within the researcher's residence.

Based on the above, I believe the study meets the exempt criteria and request exempt review for this research study.

B. Methods

1. Participants

Potential participants include all senior level nursing students in a traditional baccalaureate of nursing curriculum. The potential participants are adults over the age of 18 and are not part of a vulnerable population. The sample will be drawn from two different universities, one private and one public at different geographic locales within the United States. Potential university programs must be credentialed through the Commission on Collegiate Nursing Education (AACN, 2008). Letters of permission to access students will be received from the directors of both nursing programs.

Potential participants will be contacted through electronic communication sent from a university secretary. The communication will include information about the research study, with an invitation to contact the researcher for further information. All participants who express an interest will be contacted by the researcher. The final sample will be determined by scheduling availability. The sample size will be dictated by the completeness of the data collection. When saturation of data becomes apparent, the sampling will be considered complete. It is estimated the sample size will be within the 10-15 participants range, but the final sample size will be determined by saturation.

2. Data Collection Procedures

Data will be collected through interviews. Following informed consent, participants will be asked to recount an experience when they believe they were able to see the whole of a clinical situation. Participants will then be allowed to share the experience with minimal interruptions. An interview guide will be used for consistency. If necessary, prompting questions will be

used to solicit further information. With permission of participants the interviews will be audio-taped to ensure accuracy. The tapes will be destroyed following transcription.

In rare cases, interviews may be conducted by telephone in order to complete interviews not otherwise able to be scheduled. While telephone interviews lose the non-verbal information available from face-to-face interviews, there may be instances when the need for data will outweigh the loss of non-verbal data. In such a case, the same process for protection of human subjects will apply. Participants will be offered an electronic copy of the informed consent to review. Informed consent will be completed verbally by the researcher reading the consent to the participant if needed. With permission of participants, the interviews will be audio-taped and then transcribed verbatim to ensure completeness and enhance credibility of data.

3. Data Analysis Procedures

Data analysis begins with meticulous verbatim transcription of interviews. To verify accuracy, transcripts will be read aloud against the audio-tapes. Any concerns with the transcriptions, such as inaudible sections, excessive background noise, etc. will be noted. Any decisions related to transcriptions will be noted in a research code book. Every effort will be made to ensure the quality of the audio-tapes.

Data will be analyzed using the seven-step process outlined by Colaizzi (1978). The first step is to read all of the participant interviews to gain a general feel for the content. Once familiar with the overall sense of the

interviews, the second step is to return to each individual interview and identify the specific phrases or sentences that relate to the phenomenon of interest. Once these significant statements are identified, the next step is to formulate meanings. The use of thick descriptions with quotations from the participants will assist in maintaining the focus on the experience of the participants. The fourth step is to review the transcripts to organize the identified meanings into themes common to all participant interviews. The themes are referenced back to the original transcripts for validation. The fifth step is to integrate all the information into a detailed description of the topic. Once a description of the phenomenon is formed, the next step is to attempt to develop a statement identifying the fundamental structure of the phenomenon. The final step is to return to the participants, sharing the findings with as many participants as possible. If at all possible, member checking will occur in person. Member checking may occur by telephone or electronic communication if the scheduling of in-person meetings is deemed impractical for either the participant or researcher.

4. Data Handling Procedures

Pseudonyms will be used to protect the confidentiality of participants. Locations of the universities will be identified by broad geographic locations (i.e. – Midwest, Western) rather than specific locale. Audio-tapes will be transcribed either by the researcher or a hired transcriptionist. Tapes will be destroyed following verification for accuracy. Computerized data will be maintained in password protected files. Papers, jump drives, etc will be

secured in a locked file within the researcher's personal residence. Per university policy, consent forms will be maintained by the Research Advisor for a three year time period.

To maximize confidentiality, interviews will be conducted off campus at a setting comfortable to the participant. Potential sites include the public library, a restaurant, or hotel lobby. Whenever possible, contact with participants, including interviews and member checking, will occur in person. Telephone or electronic contact will only occur with the participant's permission.

C. Risks, Discomforts and Benefits

There are no foreseeable risks to this study. At most, participants could potentially feel their time has been wasted through participation.

There are no anticipated direct benefits to the participants. However, it is possible that a participant's confidence in their ability will be enhanced through recounting a positive experience of thinking like a nurse. Additionally, a participant may benefit from the reflective process of thinking through and analyzing their actions.

The greatest benefits to the participants are indirect, due to their contribution to enhancing what is known about the formation of clinical judgment in nursing students.

D. Costs and Compensations

There are no anticipated costs to the participants. Participants will be compensated with a $10 gift card for Barnes and Noble as a thank you for their

participation in the study. The card will be offered to participants at the conclusion of the study to avoid any suggestion of coercion.

E. Grant Information

Financial support for the study is being solicited from the Kappa Pi Chapter at Large, a local chapter of Sigma Theta Tau International, the nursing honor society. There are no restrictions imposed as a result of funding through Kappa Pi. Additional support is being solicited from the Natural Health Science grant.

APPENDIX K

BELLIN HEALTH CORPORATE INSTITUTIONAL REVIEW BOARD APPLICATION

Bellin Health Corporate Institutional Review Board Application

Primary Investigator: Mary Rolloff, MSN, RN, CNE

Title of Research Study: Students' Experiences of Seeing the Whole of a Clinical Situation

University Affiliation: University of Northern Colorado

Faculty Mentor / Co-Investigator: Carol Roehrs, PhD, RN, CNE

Review Requested: Expedited review

Bellin Health CIRB Application
Research Purpose and Rationale

The purpose of this qualitative study is to describe how senior nursing students come to understand the whole of a clinical situation. Nurses must be able to think critically and communicate effectively even in ambiguous and uncertain situations (Valiga, 2009). Critical thinking is the foundation for the decision-making process. Nurses use critical thinking to identify and synthesize significant assessment findings and form decisions about the most appropriate courses of treatment to meet the desired patient care goals. In order to form decisions, nurses must be able to move beyond seeing individual pieces or components of patients' clinical pictures to seeing the whole, with an appreciation of how the pieces connect and interrelate.

New graduates report the transition to practice as challenging, with one of the primary adjustments being the ability to form clinical judgments in ambiguous situations (Ellerton & Gregor, 2003; Etheridge, 2007). The importance of understanding the clinical picture is of critical importance. "Until students are able to understand the clinical picture, their clinical decision making capabilities are limited" (White, 2003, p. 119). Nursing students have described situations in which they were able to synthesize

multiple pieces of information to form a whole, however the process of how this comes to happen is not well understood.

It is the responsibility of nursing academia to prepare students for the nursing role, including the ability to think critically. The two accrediting bodies for nursing education programs include the development of critical thinking as an essential component for nursing programs (National League for Nursing, 2008; American Association of Colleges of Nursing, 2008). Instructors use a variety of techniques to enhance critical thinking, but not all students progress in the same manner. Gaining a better understanding of how students come to form this clinical picture is important for understanding the overall development of critical thinking and decision making in nursing. With greater insights into the experiences students identify as successful examples of decision making in practice, faculty may be better able to appreciate the challenges of students as they develop into professional nurses as well as to identify the types of experiences that support and advance students' thinking processes. Describing the phenomenon of how students come to see the whole of a clinical situation is the first step and foundational for future studies.

Justification for Expedited Review

The proposed research study qualifies for expedited status because of the minimal level of risk involved to participants. All potential participants are adults, capable of making informed choices for themselves. The participants will be invited to participate through electronic communication. Those that choose not to participate may simply delete the communication. No further contact from the researcher will occur. Data collection consists of audio-taped interviews, requesting the participants to reflect on an

experience when they felt successful in nursing practice. It is extremely unlikely that such a conversation would elicit any negative emotions. More likely, the participants will gain confidence through sharing their success and may appreciate the opportunity to help future students. Potentially, participants could feel that their time has been wasted, but that is unlikely given the general interest of nursing students in the topic of learning to think like nurses. The interview will be scheduled at a time and location convenient to the participant. It is anticipated each interview will last approximately one hour. Participants are free to terminate the interview at any time for any reason.

Confidentiality of participants will be maintained through the use of pseudonyms in the tape transcriptions and modifying any other potentially identifying information. The use of multiple sites for sampling also assists in maintaining participant confidentiality. Only the researcher and transcriptionist will have access to the recordings. All audiotapes will be kept secured in a locked file within the researchers residence until transcribed, and then destroyed following verification of the accuracy of the transcription. Transcriptions will be kept secured on the researcher's personal computer in a password protected file. Any paper copies or computer jump drives will be secured in a locked file within the researcher's residence.

Based on the above, I believe the study meets the expedited criteria and request expedited review for this research study.

Research Methods

Participants

Potential participants include all senior level nursing students in a traditional baccalaureate of nursing curriculum. The potential participants are adults over the age of

18 and are not part of a vulnerable population. The sample will be drawn from two different universities, one private and one public at different geographic locales within the United States. Potential university programs must be credentialed through the Commission on Collegiate Nursing Education (AACN, 2008). Institutional review board approval has been granted by the public university site. The approval communication is included with this application request. A letter of permission provided by the Vice President of Academic Affairs to access students from Bellin College is also included with this application request.

Potential participants will be contacted through electronic communication sent from a university secretary. The communication will include information about the research study, with an invitation to contact the researcher for further information. All participants who express an interest will be contacted by the researcher. The final sample will be determined by scheduling availability. The sample size will be dictated by the completeness of the data collection. When saturation of data becomes apparent, the sampling will be considered complete. It is estimated the sample size will be within the 10-15 participants range, but the final sample size will be determined by saturation.

Data Collection Procedures

Data will be collected through interviews. Following informed consent, participants will be asked to recount an experience when they believe they were able to see the whole of a clinical situation. Participants will then be allowed to share the experience with minimal interruptions. An interview guide will be used for consistency. If necessary, prompting questions will be used to solicit further information. With

permission of participants the interviews will be audio-taped to ensure accuracy. The tapes will be destroyed following transcription.

In rare cases, interviews may be conducted by telephone in order to complete interviews not otherwise able to be scheduled. While telephone interviews lose the non-verbal information available from face-to-face interviews, there may be instances when the need for data will outweigh the loss of non-verbal data. In such a case, the same process for protection of human subjects will apply. Participants will be offered an electronic copy of the informed consent to review. Informed consent will be completed verbally by the researcher reading the consent to the participant if needed. With permission of participants, the interviews will be audio-taped and then transcribed verbatim to ensure completeness and enhance credibility of data.

Data Analysis Procedures

Data analysis begins with meticulous verbatim transcription of interviews. To verify accuracy, transcripts will be read aloud against the audio-tapes. Any concerns with the transcriptions, such as inaudible sections, excessive background noise, etc. will be noted. Any decisions related to transcriptions will be noted in a research code book. Every effort will be made to ensure the quality of the audio-tapes.

Data will be analyzed using the seven-step process outlined by Colaizzi (1978). The first step is to read all of the participant interviews to gain a general feel for the content. Once familiar with the overall sense of the interviews, the second step is to return to each individual interview and identify the specific phrases or sentences that relate to the phenomenon of interest. Once these significant statements are identified, the next step is to formulate meanings. The use of thick descriptions with quotations from

the participants will assist in maintaining the focus on the experience of the participants. The fourth step is to review the transcripts to organize the identified meanings into themes common to all participant interviews. The themes are referenced back to the original transcripts for validation. The fifth step is to integrate all the information into a detailed description of the topic. Once a description of the phenomenon is formed, the next step is to attempt to develop a statement identifying the fundamental structure of the phenomenon. The final step is to return to the participants, sharing the findings with as many participants as possible. If at all possible, member checking will occur in person. Member checking may occur by telephone or electronic communication if the scheduling of in-person meetings is deemed impractical for either the participant or researcher.

Data Handling Procedures

Pseudonyms will be used to protect the confidentiality of participants. Locations of the universities will be identified by broad geographic locations (i.e. – Midwest, Western) rather than specific locale. Audio-tapes will be transcribed either by the researcher or a hired transcriptionist. Tapes will be secured in a locked file until transcribed and then destroyed following verification for accuracy. Computerized data will be maintained in password protected files. Papers, jump drives, etc will be secured in a locked file within the researcher's personal residence.

To maximize confidentiality, interviews will be conducted off campus at a setting comfortable to the participant. Potential sites include the public library, a restaurant, or hotel lobby. Whenever possible, contact with participants, including interviews and member checking, will occur in person. Telephone or electronic contact will only occur with the participant's permission.

Protection of Human Subjects

The primary investigator is employed as a faculty member of Bellin College. While familiar with all of the undergraduate students through prior class experiences, the investigator has no formal involvement with the senior class. The investigator is not involved as faculty in any of their classes, has no influence over their grades, and plans to abstain from the vote when the list of potential graduates is presented. While students are familiar with the researcher, the measures set up for participant selection put the control over involvement in the study in the hands of the student. Any student choosing not to participate can simply delete the email communication. The researcher will not have any direct communications with the students unless they choose to contact the researcher. In addition, to further protect the confidentiality of the students involved, faculty of Bellin College will not know of any individual student's decision to participate or not.

Informed Consent

All participants will complete informed consent prior to participating in the study. Per University of Northern Colorado policy, consent forms will be maintained by the Research Advisor for a three year time period.

Risks, Discomforts and Benefits

There are no foreseeable risks to this study. At most, participants could potentially feel their time has been wasted through participation. There are no anticipated direct benefits to the participants. However, it is possible that a participant's confidence in their ability will be enhanced through recounting a positive experience of thinking like a nurse. Additionally, a participant may benefit from the reflective process of thinking through and analyzing their actions. The greatest benefits to the participants are indirect,

due to their contribution to enhancing what is known about the formation of clinical judgment in nursing students.

Costs and Compensations

There are no anticipated costs to the participants. Participants will be compensated with a $10 gift card for Barnes and Noble as a thank you for their participation in the study. The card will be offered to participants at the conclusion of the study to avoid any suggestion of coercion.

Research Funding Information

Financial support for the study is being solicited from the Kappa Pi Chapter at Large, a local chapter of Sigma Theta Tau International, the nursing honor society and the Natural Health Sciences Research fund at the University of Northern Colorado. There are no restrictions imposed as a result of funding through either organization. Any costs incurred above and beyond funding support are the sole responsibility of the primary investigator.

APPENDIX L

UNIVERSITY OF NORTHERN COLORADO INSTITUTIONAL REVIEW BOARD APPROVAL

IRB Request

Mary Rolloff Thank you very much. Mary 9:34 AM

Lahman, Maria [Maria.Lahman@unco.edu] Actions

Wednesday, January 26, 2011 8:08 AM

To: Mary Rolloff

Cc: Roehrs, Carol [Carol.Roehrs@unco.edu]

You replied on 1/26/2011 9:34 AM.

Mary- I have approved your study. You my start the research when you send the permisson letter to IRB.

Best Wishes,

Maria K. E. Lahman
Associate Professor
Applied Statistics and
Research Methods
University of Northern Colorado
970-351-1603

APPENDIX M

BELLIN HEALTH CORPORATE INSTITUTIONAL REVIEW BOARD APPROVAL

bellinhealth

Healthcare Partner of
The Green Bay Packers

March 8, 2011

Mary K. Rolloff, MSN, RN
Assistant Professor
Bellin College
3201 Eaton Rd
Green Bay, WI 54311

Dear Ms. Rolloff:

On March 8, 2011 the Bellin Health System Corporate Institutional Review Board (IRB00001405) reviewed and approved your proposed study titled, "**Students' Experiences of Seeing the Whole of a Clinical Situation**." The CIRB has found the study exempt.

Changes to any of the materials you presented must be sent to Bellin's CIRB for a determination relative to the continued exempt status of the study.

Any breach of confidentiality or any other unexpected adverse event related to the study will need to be reported to the IRB in a timely matter.

Please notify the CIRB upon completion of this study.

Thank you for the opportunity to review your study. Please feel free to contact Amy Thompson, CIRB Coordinator, if you have any questions at 433-7856 or asthom@bellin.org

Sincerely,

Kathy Zellner, PhD

Kathy Zellner, PhD, RN-BC, CNE
Chairperson
Bellin Health System Corporate Institutional Review Board

744 South Webster Avenue, P.O. Box 23400, Green Bay, WI 54305-3400 Tel (920) 433-3500 Fax (920) 433-7971

APPENDIX N

AMENDED UNIVERSITY OF NORTHERN COLORADO INSTITUTIONAL REVIEW BOARD PROPOSAL

University of Northern Colorado IRB Protocol Change Request
Investigator: Mary Rolloff, MSN, RN, CNE
Date: April 3, 2011

I am requesting the following changes to the sampling section of my IRB proposal:

1. Solicit participants through a 1 page flyer placed within their mail slot.

   Rationale: It has been brought to the researcher's attention that not all students routinely open email communications, and even when opened, may not open attachments. Given that electronic communication has been the sole method of contact with potential participants, the potential pool of participants is unnecessarily limited. The proposed method provides a vehicle of contacting students who may be interested in the study, while minimizing any undue influence on students.

2. Inform students of study through a brief presentation to a class cohort.

   Rationale: Inviting students directly provides the opportunity for students who don't check their mail (electronically or on-site) to learn of the study. With the permission of course faculty, information presented will take approximately five minutes of time, with students provided contact information for the researcher. Students will not be individually solicited. Given that the researcher has no direct contact with the students, no student should feel any undue influence to participate.

3. Expand potential participants to include the 15-month curriculum students at Bellin College.

   Rationale: At the time of the original IRB proposal, the investigator was directly involved with students in the 15-month cohort. That involvement ended mid-

March. These students will graduate with their traditional curriculum peers. The researcher is already abstaining from the vote on the list of graduates for this graduation cohort. There is a second cohort of students that will graduate in October, 2011. If additional participants are still needed after August, 2011, these students would also be invited to participate. The researcher would again abstain from the vote on graduation candidates for the October graduation.

None of these changes require any modifications in consent forms or other project documents.

The proposed flyer for mail box distribution is attached for review.

I appreciate your attention to these modifications. If you have any questions or require additional information, please do not hesitate to contact me.

APPENDIX O

BELLIN HEALTH AMENDED CORPORATE INSTITUTIONAL REVIEW BOARD PROPOSAL

April 6, 2011

Dear Dr. Zellner,

I am writing to request a change in the IRB protocol previously reviewed and approved (IRB 00001405). In the protocol, my recruitment plan for participants had consisted solely of electronic communication. While this has resulted in some success, it has been brought to my attention that some students do not routinely open their emails, and even those that do may not open attachments. This has unnecessarily limited my potential pool of participants. In addition, I had restricted participants to the traditional cohort of senior students as I was teaching the 15-month cohort at the time. That is no longer the case. I have no further contact with the 15 month students than I do their traditional peers. I would like to invite these students to participate as well. Specifically, I am requesting the following changes to the sampling plan:

1. Solicit participants through a 1 page flyer placed within their mail slot.

   Rationale: This proposed method provides a vehicle of contacting students who may be interested in the study, while minimizing any undue influence on students.

2. Inform students of study through a brief presentation to a class cohort.

   Rationale: Inviting students directly provides the opportunity for students who don't check their mail (electronically or on-site) to learn of the study. With the permission of course faculty, information presented will take approximately five minutes of time, with students provided contact information for the researcher. Students will not be individually solicited. Given that the researcher has no direct contact with the students, no student should feel any undue influence to participate.

3. Expand potential participants to include the 15-month curriculum students at Bellin College.

   Rationale: At the time of the original IRB proposal, the investigator was directly involved with students in the 15-month cohort. That involvement ended mid-March. These students will graduate with their traditional curriculum peers. The researcher is already abstaining from the vote on the list of graduates for this graduation cohort. There is a second cohort of students that will graduate in October, 2011. If additional participants are still needed after August, 2011, these students would also be invited to participate. The researcher would again abstain from the vote on graduation candidates for the October graduation.

None of these changes require any modifications in consent forms or other project documents. The proposed flyer for mail box distribution is attached for review. I appreciate your attention to these modifications. If you have any questions or require additional information, please do not hesitate to contact me at mary.rolloff@bellincollege.edu or at 433-6669.

Sincerely,

Mary Rolloff

APPENDIX P

UNIVERSITY OF NORTHERN COLORADO INSTITUTIONAL REVIEW BOARD APPROVAL FOR AMENDED PROPOSAL

STUDENT'S COPY

Request for IRB Change

Submit this request and all attachments to Sherry May, IRB Administrator, Office of Sponsored Programs, Kepner Hall, Suite #25

UNIVERSITY of NORTHERN COLORADO

Date of Original UNC IRB Approval: 1-26-2011

Project Title: Students' Experiences of Seeing the Whole of a Clinical Situation

Lead Investigator
Name: Mary Rolloff, MSN, RN, CNE
School: University of Northern Colorado
Email: roll5789@bears.unco.edu
Phone: 920-830-7753

Research Advisor (if applicable)
Name: Carol Roehrs, PhD, RN, CNE
School: University of Northern Colorado
Email: carol.roehrs@unco.edu
Phone: 970-351-1699

On a separate page, describe and provide justification for the changes being proposed. Be concise and specific in describing methodological changes that affect the experience of participants and/or relate to the risks/benefits of participation. Explain why these changes are necessary.

○ Yes ◉ No The proposed changes in protocol will necessitate changes in documents such as recruitment flyers, consent forms, debriefing forms, or other project-related documents.

○ Yes ○ No If yes, copies of the revised documents with changes highlighted are attached to this request.

CERTIFICATION OF LEAD INVESTIGATOR
I certify that information contained in this request is complete and accurate.

Mary Rolloff 4-5-11
Signature of Lead Investigator Date

CERTIFICATION OF RESEARCH ADVISOR (If Lead Investigator is a Student)
I certify that information contained in this request is complete and accurate.

Carol Roehrs 4-5-2011
Signature of Research Advisor Date

Approved by:

Chairperson, Institutional Review Board 4-8-11
Date

Clear Form

Date Request Received by OSP: 4/7/11

APPENDIX Q

BELLIN HEALTH CORPORATE INSTITUTIONAL REVIEW BOARD APPROVAL FOR AMENDED PROPOSAL

bellinhealth

Healthcare Partner of
The Green Bay Packers

April 20, 2011

Mary K. Rolloff, MSN, RN
Assistant Professor
Bellin College
3201 Eaton Rd
Green Bay, WI 54311

Dear Ms. Rolloff:

On April 20, 2011 a member of Bellin Health System's Corporate Institutional Review Board (IRB00001405) reviewed and approved your proposed protocol amendment for the following study:

Students' Experiences of Seeing the Whole of a Clinical Situation.

As always, any changes to the materials you presented must be sent to Bellin's CIRB for a determination relative to the continued exempt status of the study.

Any breach of confidentiality or any other unexpected adverse event related to the study will need to be reported to the IRB in a timely matter.

Also, please submit University of Northern Colorado's determinations in regards to this amendment.

Please notify the CIRB upon completion of this study.

Feel free to contact Amy Thompson, CIRB Coordinator, if you have any questions at 433-7856 or asthom@bellin.org

Sincerely,

Kathy Zellner, PhD

Kathy Zellner, PhD, RN-BC, CNE
Chairperson
Bellin Health System Corporate Institutional Review Board

744 South Webster Avenue, P.O. Box 23400, Green Bay, WI 54305-3400 Tel (920) 433-3500 Fax (920) 433-7971