A GROUNDED THEORY MODEL FOR FACULTY EVALUATION OF NURSING
STUDENT PERFORMANCE DURING A SIMULATION

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ABSTRACT

This qualitative grounded theory study explored the process of faculty evaluation of student performance during simulation in the southern United States. In the last decade, simulation experiences have been found to be useful in nursing education as a teaching methodology and as a potential method for evaluation of student performance. While clinical experiences are limited, unpredictable, and difficult to truly evaluate, simulation experiences provide an opportunity for students to manage care through pre-planned patient scenarios without potential harm to real patients. This allows faculty to observe students making decisions and caring for simulated patients in a context designed to elicit specific behaviors for evaluation. However, currently available simulation evaluation tools are limited and are administered inconsistently. The nursing education community must work diligently to provide increased and improved faculty training and tools for the evaluation of nursing students’ performance in simulation.

The purpose of this qualitative study was to explore the process by which nursing faculty in the southern United States evaluate a student performance in simulation, considering the influential factors that affect the approach as well as strategies implemented in the evaluation process.

The results of the study showed nursing faculty vary in their evaluation processes. Perceived expectations of nursing faculty drive the evaluation process and ultimately the outcomes of decision on performance, decision on curriculum revision, and reliable
evaluation. Influences that shape the evaluation process included: faculty past experiences, nursing standards of practice, programmatic values and norms, and level of learner. Strategies used by nursing faculty when evaluating student performance included use of models, use of pre-existing tools, internalized criteria, or a combination. Although study results clearly identify the importance of a systematic approach to evaluation, the literature yields little information regarding a step-by-step approach for faculty evaluation.

Keywords: evaluation, nursing, faculty, student performance, grounded theory
DEDICATION

This study is dedicated to my family and work friends who have supported me over the past years as I have devoted so much of my time to the doctoral program. Most importantly, I want to dedicate this to my grandfather, Harry M. Burke, who raised me from birth and instilled in me a life-long love of learning and a strong work ethic. He worked hard to ensure I received my education and would be very proud of the work I have accomplished. I would not be where I am today without him. While he is not physically here, I know he would be extremely proud.
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CHAPTER 1
INTRODUCTION

Statement of the Research Problem

In the nursing clinical simulation community there has been a push to develop and use standardized measurement tools that have been tested for validity and reliability (Kardong-Edgren, Adamson, & Fitzgerald, 2010). These psychometric evaluation tools are designed to measure the attributes of the concept of interest. In clinical simulation, tools have been developed to measure concepts including satisfaction, anxiety, and efficacy (Adamson, Kardong-Edgren, & Willhaus, 2013). While these concepts are important aspects of student learning, they are not measures of student clinical performance (Mikasa, Cicero, & Adamson, 2013). In fact, clinical performance is not a concept that has been clearly explicated (Wolf et al., 2011). Although frequently associated with concepts such as teamwork, assessment, communication, safety, and skills acquisition, there is no accepted set of attributes that define clinical performance.

Nursing faculty have been judging clinical performance in nursing students for over 100 years. However, the frameworks, criteria, and processes nursing faculty use to judge clinical performance are not clear.

Clinical simulation is increasingly being used to evaluate student clinical performance (Kardong-Edgren et al., 2010), and multiple frameworks have been employed to develop evaluation tools to guide this appraisal. Simulation offers replications of patient clinical situations in which nursing students can manage care of a
patient and make clinical decisions without harm to patients (Ulrich & Mancini, 2014). Simulation has been proposed to be an effective teaching methodology through experiential learning and reflection with debriefing (Blum, Borglund, & Parcells, 2010) and has more recently been noted as a potential evaluation method (Adamson et al., 2013).

Frameworks used in simulation events include, for example, the nursing process, Benner’s Novice to Expert (Benner, 1984) and Quality and Safety Education for Nurses (QSEN) competencies (Brady, 2011). To the researcher’s knowledge, the use of these frameworks and others in the evaluation of student performance in simulation has not been based on any research that validates that these frameworks are related to how students can actually care for patients in practice. Most faculty members believe they have been graduating safe practitioners, yet it remains unclear how they actually judge readiness for clinical practice (DeYoung, 2009; Weidman, 2013). In fact, research shows that students are often evaluated inconsistently, leading to difficulties in a fair and equitable assessment of their skills (Ard & Valiga, 2009; Cockerham, 2015; DeYoung, 2009). This lack of consistency occurs across instructional settings but is especially notable in new learning environments such as the simulated clinical experience (Ashcraft et al., 2013; Manz, Hercinger, Todd, Hawkins, & Parsons, 2012). Possible related factors include failure to determine behaviors deemed to portray competence, evaluator subjectivity, and variable expectations of instructors (Manz et al., 2012).

In clinical simulation and other settings, faculty often employ varying frameworks when evaluating students, leading to variations in judgment of acceptable performance. Surprisingly, the phenomenon of clinical simulation performance evaluation is just
recently being explored in the nursing literature (Larsen & Schultz, 2014). This makes it difficult for faculty to have confidence in existing evaluation tools or to feel empowered to design new and improved tools that align with the goals of clinical simulation (Davis & Kimble, 2011). Individual variations in faculty evaluation of student performance may in part be due to previous clinical and educational experiences impacting the formation of a model or framework of their own concept of safe care delivery (Isaacson & Stacey, 2008). Faculty have various approaches to the evaluation of student performance (Larsen & Schultz, 2014). Nursing faculty come to the simulation experience with an internal standard of expectations that are difficult to capture on a checklist or written documentation form (Larsen & Schultz, 2014). Understanding how faculty judge and appraise students’ performance during simulation and what factors influence the process may lead to more consistent and effective outcomes.

**Purpose of the Study**

The purpose of this qualitative grounded theory study was to explain the process by which faculty evaluate student performance during an adult health clinical simulation.

**Research Questions**

The overall research question that guided this grounded theory study was as follows:

What is the process by which faculty evaluate beginning and advanced nursing students’ clinical performance during an adult health clinical simulation?

Specific sub-questions include the following:
1. How do personal and job-related factors influence the process faculty use in evaluating students’ clinical performance in a clinical simulation?

2. What are the frameworks used by faculty when evaluating students’ performance in a clinical simulation to frame their evaluation?

3. How do nursing faculty establish criteria when evaluating students for successful clinical performance during a clinical simulation?

4. How do nursing faculty control bias when judging students’ performance during a clinical simulation?

5. How does the evaluation of a beginning or advanced student affect the faculty criteria for students’ clinical performance during a clinical simulation?

6. How do organizational and program expectations of students’ clinical performance affect faculty decision-making processes when evaluating students?

7. How do standards of nursing practice affect faculty appraisal of students’ clinical performance?

8. What other factors affect faculty evaluation of nursing students in a clinical simulation?

9. What model can explain the process of faculty evaluation of students’ performance in clinical simulation?

**Background and Significance**

Historically, simulation has been used extensively in areas such as military training and the aviation industry to improve reliability and accuracy in the design and
implementation of safety and standards training (Harder, 2009). What these industries have in common is the processes they build to maintain low failure rates due to the potential dire consequence of error (Gaba, 2007). In high-reliability organizations, such as the military and airline industries, intense individual and team training is essential to prevent errors and complete tasks efficiently, effectively, and most importantly safely (Eaves & Flagg, 2001; Gaba, 2007). Similarly, healthcare organizations are also high-reliability organizations that strive for safe patient care, decreasing medical errors and improving overall care of the patient.

Beginning with the introduction of cardio-pulmonary resuscitation practice mannequins in the 1960s, the use of advanced technologies and computer-based simulators has grown over the intervening decades (Harder, 2009). Educators in anesthesiology have been leaders in initiating and implementing simulations in healthcare as part of their educational process, with other medical specialties following suit (Boulet & Murray, 2010; Gaba, 2007). More recently, healthcare organizations have begun utilizing clinical simulation in the evaluation and ongoing assessment of competencies and abilities of their clinical staff. Nursing educators have also discovered the importance of simulation in the evaluation of nursing students and are working diligently to implement this method in their curricula (Katz, Peifer, & Armstrong, 2010). Evaluation methods are, however, difficult to develop and apply due to many cognitive and affective factors that contribute to clinical performance yet are unwieldy to measure.
Nursing Student Evaluation

Nursing faculty have historically evaluated their students in the clinical setting based upon a range of variables or factors (Benner, Sutphen, Leonard, & Day, 2010; DeYoung, 2009). Many of these are based on accrediting agency standards, while some are passed down from previous generations of nursing faculty as being appropriate evaluation measures for nursing students. Often evaluation methods revolve around the perceptions and view of the particular clinical instructor. For example, an instructor may evaluate students based upon the way they were evaluated in nursing school or even the culture of the nursing unit where they work.

Nursing students often are evaluated in the clinical setting through the utilization of pre-determined clinical evaluation tools. Clinical evaluation tools are often developed to reflect various concepts considered essential by nursing faculty or are developed from previous evaluation documents that have been passed down to newer faculty (Krichbaun, Rowan, Duckett, Ryden, & Savik, 1994). Concepts such as professionalism, safety, and communication may be evaluated using these tools, in addition to the use of the nursing process. These concepts are adopted from various nursing groups, such as the American Association of Colleges of Nursing (AACN, 2010), as well as historically important attributes (use of nursing process) and arranged in a grading format to evaluate nursing students. Observation of performance is the most frequent strategy used in clinical evaluation. Each instructor collects different data to evaluate outcomes and make judgments; therefore, the inferences and conclusions drawn differ for each individual faculty member (Oermann & Gaberson, 2006).
Simulation activities also offer a mechanism for assessment and evaluation of student performance (Bambini, Washburn, & Perkins, 2009). During a simulation, students may be evaluated on basic nursing skills, assessment techniques, and critical thinking in a contextual setting (Meyer, Connors, Hau, & Gajewski, 2011; Nehring & Lashley, 2010). Faculty can utilize simulation to assess student performance in specific high-risk situations such as management of an emergency situation or care of a patient with chest pain (Nehring & Lashley, 2010). Using simulation to assess student progress, faculty can identify areas to remediate or recognize deficits in students’ cognitive processes (Alfes, 2011; Alinier, Hunt, Gordon, & Harwood, 2006; Wolf et al., 2011).

Most often, nursing students are evaluated on basic cognitive nursing skills (knowledge and decision making), as well as psychomotor and affective skills in the clinical laboratory or clinical setting (DeBourgh, 2011). Experienced nurses have learned to integrate these skills and behaviors successfully in clinical practice, while students often learn particular techniques and skills in isolation, gradually working to incorporate them together in practice (Blum et al., 2010; Utley-Smith, 2004). Evaluation of students initially begins with validation of psychomotor skills such as performing vital signs and hand hygiene. As the student progresses through the academic program, the evaluation focus may change from performance of basic nursing skills to the use of critical thinking and clinical reasoning (Kardong-Edgren, Starkweather, & Ward, 2008).

Integrating the knowledge a student gains in the classroom with psychomotor skills is challenging for students, and it is imperative that evaluations of students include their ability to make the connection between theory and practice in simulation or during their clinical rotations (Todd, Manz, Hawkins, Parsons, & Hercinger, 2008). For
example, sterile technique (psychomotor), infection control (cognitive), and assessment (psychomotor and cognitive) skills may be evaluated during a simulation or in clinical practice within the context of a patient situation (Brannan, White, & Bezanson, 2008). Evaluating each domain separately is difficult in nursing education, because in most situations these behaviors occur simultaneously (Mikasa et al., 2013; Wolf et al., 2011). Well-designed simulations require students to function appropriately in all domains. However, current evaluation tools tend to focus heavily on one learning domain without adequately incorporating other areas of learning. For example, Gibbons et al. (2002) created a 22-item checklist for noting critical assessment skills for advanced practice nurses. Abdo and Ravert (2006) described development of a student satisfaction tool, capturing only one element of the simulation experience while neglecting performance behaviors. Comprehensive performance assessment tools are needed that can more accurately describe students’ clinical abilities.

**Simulation Evaluation Tools**

Currently, evaluation tools utilized in clinical simulation may be too broad in the concepts they measure (i.e., satisfaction, confidence) to provide meaningful assessment; on the other hand, others are too narrow and specific, limiting their applicability to a larger variety of simulation events (Kardong-Edgren et al., 2010). Instruments capturing data on performance have been adapted from other disciplines and applied to nursing simulations (Parsons et al, 2012; Todd et al., 2008). However, at this time, it is not clear whether they adequately measure concepts specifically related to nursing student clinical performance.
Another issue in clinical simulation performance measurement is that the majority of available tools lack sufficient reliability and validity, decreasing confidence in their ability to measure student outcomes in clinical simulation (Adamson et al., 2013; Arnold et al., 2009). A review article regarding current evaluation instruments for human patient simulation supports the need for increased reliability and validity data on the 22 evaluation instruments available at the time of publication (Kardong-Edgren et al., 2010). The authors suggest that practitioners refine existing clinical evaluation tools instead of continuing to flood the arena with additional instruments. Historically, skills checklists and evaluation tools created a systematic method for grading students’ performance while providing some consistency and reliability among faculty evaluators. However, using a basic skills checklist in a simulation may be difficult when evaluating such behaviors as teamwork, decision-making, or therapeutic communication (Schlair et al., 2010).

Although there have been attempts to make evaluation consistent and objective through the use of standardized tools, this goal has been difficult to achieve (Ashcraft et al., 2013; Kardong-Edgren et al., 2010). Faculty members mentally interpret a selected checklist or tool differently, producing a subjective assessment of the students’ performance. For example, in one study, students were scored on whether a behavior was completed or not completed, leading to a scoring system of either meets behavior or doesn’t meet behavior (Todd et al., 2008). Faculty debated the use of the evaluation tool and the interpretation of whether the behavior was actually completed satisfactorily. Development of an evaluation tool and faculty preparation for a valid observation can be difficult when having to rate whether students did “most” of the skill properly. While students strive for successful demonstration of nursing behaviors or competence, lack of
standardization of what defines these goals hinders the establishment of an adequate tool that captures a true reflection of their performance (Axley, 2008).

**Study Significance**

The findings of this study provide significant contributions to knowledge regarding the use of evaluation in nursing clinical simulation. As the current literature supports the need for more research and understanding of the evaluation process in clinical simulation, this study provides valuable information to faculty working with clinical simulation in nursing programs seeking more effective and consistent methods of evaluating student performance. While the current literature focuses heavily on the use of evaluation tools and instruments when measuring performance, this study’s findings provide an enhanced understanding of how faculty make decisions concerning students’ performance, therefore supporting the development of more consistent and effective evaluation measures. The conceptual model developed from this study supports the need for more standardized methods of evaluating student performance in simulation and increased intentional training of faculty to support those experiences.

**Definition of Terms**

*Axial coding* – axial coding is the process within grounded theory studies involving the creation of a coding paradigm to establish connections between categories of coded data through the structures of conditions, context, action strategies, and consequences (Strauss & Corbin, 1998).
Central phenomenon – a central phenomenon is the central concept within the research study needing exploration and examination and is identified during the axial coding process (Strauss & Corbin, 1998).

Clinical simulation – clinical simulation is a technique that allows learners to experience a representation of a real event for the purposes of practice, learning, or evaluation (Nehring & Lashley, 2010).

Conditional matrix – this is a diagram that presents conditions and consequences related to the central phenomenon (Strauss & Corbin, 1998).

Constant comparative method – the constant comparative method is an analytic process developed for grounded theory studies which urges researchers to move back and forth between coding of the data and category creation for development of theory (Strauss & Corbin, 1998).

Evaluation – evaluation is the process of gathering information used to make judgments about student learning and achievement including clinical performance (Oermann & Gaberson, 2006).

Formative evaluation – formative evaluation is providing feedback to learners on their progress toward meeting objectives (Oermann & Gaberson, 2006).

Gestalt – gestalt is the physical, biological, psychological, or symbolic configuration or pattern of elements so unified as a whole that its properties could not be derived from a simple summation of its parts (Pyles & Stern, 1983).

Grounded theory – grounded theory is an explanation of an action or process derived from studying the phenomenon it represents. Through systematic data collection and analysis, theory may be developed (Glaser & Strauss, 1967).

High-fidelity human patient simulators – high-fidelity human patient simulators are full-body mannequins computerized for simulated real-time physiological and pharmacological parameters (Nehring & Lashley, 2010).

Low-fidelity human patient simulators – low-fidelity human patient simulators, including static mannequins and task trainers, provide for simple gross movements used for teaching basic psychomotor skills (Nehring & Lashley, 2010).

Moderate-fidelity human patient simulators – moderate-fidelity human patient simulators are full-body mannequins that allow students to assess breath and heart sounds and some pulses but lack chest movements or computer-modeled physiological parameters (Nehring & Lashley, 2010).

Open coding – open coding is the initial stage of grounded theory data analysis in which data is broken down and then compared and contrasted for categorization (Strauss & Corbin, 1998).

Propositions – a proposition is an abstract statement that further explains the relationship that exists between two statements (Creswell, 2013).

Qualitative research – qualitative research is based on a distinct methodological tradition of inquiry in which researchers attempt to gain an understanding of a phenomenon from a participant’s view (Creswell, 2013).

Saturation – saturation describes what qualitative researchers seek when determining continuation of sampling. When no new data emerges, the coding categories and their relationships are established as well as validated, thereby reaching the state of saturation (Strauss & Corbin, 1998).
Selective coding – selective coding is a stage of data analysis used in grounded theory studies whereby all of the categories are systematically related to the central phenomenon. In addition, testing is conducted on the relationships between categories and further data is added for further refinement of the substantive theory (Strauss & Corbin, 1998).

Substantive theory – substantive theory is the primary goal of grounded theory research; it provides an explanation and description of the central phenomenon and cannot be generalized past the context in which it was developed (Strauss & Corbin, 1998).

Summative evaluation – summative evaluation provides information on the overall success of the learner in the achievement of objectives and most often occurs at the end of the learning process (Oermann & Gaberman, 2006).

Theoretical sampling – theoretical sampling is the process of data collection in which the researcher decides what data to collect next in order to develop the theory as it emerges (Bryant & Charmaz, 2007).

Assumptions

This study was conducted on several assumptions. It was assumed that the participating nursing faculty have similar experiences with the student evaluation process during a clinical simulation. The second assumption was that nursing faculty would openly and honestly share their experiences related to evaluation in simulation with little influence from the researcher. The third assumption was that nursing faculty have a process for evaluating students during a clinical simulation. Last, it was assumed that
participants would have knowledge and experience with the general evaluation of nursing students.

**Organization of the Study**

The study presentation is organized into five chapters. Chapter 1 provides the reader with an introduction to the topic, including a discussion of the study purpose, central and sub-research questions, significance of the problem, definition of terms, study assumptions, and organization of the study, and a summary. Chapter 2 provides a review of the literature on general evaluation in nursing education and evaluation in nursing clinical simulation. Chapter 3 describes the study methodology, including rationale for the use of qualitative research, grounded theory approach, philosophical assumptions, study sampling, data collection and analysis procedures, establishment of credibility, ethical considerations, and the role of the researcher. Chapter 4 contains a description of the study findings and specific information about data analysis, including the development of themes, categories, and the proposed conceptual model. Chapter 5 provides a discussion of the results, recommendations for future research, implications for nursing education, and the study conclusion.
CHAPTER 2

REVIEW OF THE LITERATURE

Nursing faculty have been challenged by how to best evaluate the clinical aspect of nursing student performance. Over the past century, clinical evaluation has evolved to include simulation experiences integrating multiple strategies and tools. Today, the clinical evaluation process is even more challenging in light of the increasing complexity of patient care, technological advances in simulation, and the changing healthcare environment. This review of the nursing education assessment literature presents a summary of research focusing on the most common evaluation methods of student clinical performance with actual and simulated patients. It reveals the problems presented by these methods, including inherent subjectivity and instructor bias (both intentional and unintentional). Additionally, this review will include guidelines by which pre-licensure students must be prepared in order to meet the outcomes of expected graduates of nursing programs. By understanding the process by which faculty make decisions regarding the performance of a nursing student in clinical simulation, more consistent and effective clinical evaluation methods may be designed that support the fair and accurate evaluation of nursing students.

Professional Nursing Practice

According to the American Association of Colleges of Nursing (AACN), “The Essentials of Baccalaureate Education for Professional Nursing Practice” provides the
educational framework for preparing professional nurses for completion of end-of-program outcomes (AACN, 2008). Within the “Essentials” document, nine outcomes are identified that address the integration of knowledge, skills, and attitude (KSAs). While assuming the roles of provider of care, coordinator of care, and member of a profession, these “Essentials” encompass the following concepts: patient-centered care, interprofessional teams, evidence-based practice (EBP), quality improvement, patient safety, informatics, clinical reasoning, critical thinking, genetics and genomics, cultural sensitivity, professionalism, and care across the lifespan. Nursing programs are charged with adequately preparing students to graduate and begin work as new nurses.

The National League for Nursing (NLN, 2010) has set out competencies for nursing graduates in the NLN Education Competencies Model. These general competencies address the areas of human flourishing, nursing judgment, professional identity, and spirit of inquiry. Graduates must learn to incorporate knowledge and skills to provide care to patients, families, and communities toward maximum health. Learning to make judgments during clinical practice based upon evidence and teamwork is essential to the provision of safe, quality care. Expressing one’s identify as a nurse while committing to the advocacy for safe, quality patient care as well as providing leadership in improving care is necessary for nursing graduates. A nursing graduate must be competent in contributing to the science by showing confidence in the area of evidence-based practice and inquiry towards solving clinical practice problems.

While the AACN “Essentials” and NLN Education Competencies provide a general framework for academic institutions to prepare nursing professionals, the Quality and Safety Education for Nurses Institute (QSEN, 2014) has defined quality and safety
competencies for nursing graduates that also serve as a guide for curriculum development and outcome measurement. These competencies include the following: patient-centered care, teamwork and collaboration, EBP, quality improvement (QI), safety, and informatics. Each of these competencies includes an operational definition as well as KSAs specific to each competency.

Additional agencies outlining competencies for nurses include the American Nurses Association (ANA) and the National Council of State Boards of Nursing (NCSBN). The scope and standards of nursing practice are defined by the ANA (2010). Within this document are basic standards of professional nursing practice and professional performance. Among these are the nursing process (assessment, diagnosis, outcomes, planning, implementation, and evaluation), ethics, EBP, quality, communication, collaboration, leadership, and resource utilization. The NCSBN includes all state boards of nursing and offers a regulatory function in relation to the licensing of graduate nurses (2010).

Among all of these agencies, there is overlap in the desired outcomes of generalist nursing education. While the licensure exam provides new graduates with a license to practice, it is the academic institution’s responsibility to adequately prepare nursing students for practice, evaluating them to determine that they demonstrate the competencies and meet the standards required to graduate from the nursing program. While each of the aforementioned organizations provides guidelines for academic program outcomes and curriculum, faculty must develop a practical way to effectively establish and consistently evaluate clinical competence upon graduation (Cummings, 2014).
Clinical Performance

Nursing students participate in clinical rotations as part of their education process. Working in the clinical setting affords students the opportunity to learn firsthand the actual process of applying the concepts they learn in the classroom. Clinical performance represents the integration of knowledge and skills and the application of these in practice. For nursing students, clinical performance is most often evaluated by the nursing instructor through observation. As part of clinical performance, the student must complete an assessment of the patient and, based on this assessment, develop, implement, and evaluate a plan of care. This includes performing such skills as administering medications and urinary catheter insertion, as well as using therapeutic communication with the patient and the patient’s family. Ultimately, the overarching goal for the student is to provide for patient safety in all aspects of clinical care.

Curricula in nursing programs offer a graduated approach to learning and outcome assessment for the nursing student. While most nursing programs vary in their curricular arrangement, generally, expectation of performance increases as the student progresses through the program. Students in initial nursing courses are expected to function at a minimum safe level, providing basic care such as history taking, therapeutic communication, basic hygiene, and vital sign assessment. As students move through the nursing curriculum, they acquire new skills and more knowledge, which they are expected to apply in the clinical setting. Senior-level nursing students should provide a complete physical assessment and provide a plan of care for the patient, while interacting with healthcare team members to ensure appropriate care is given. Students in their final
semester of an academic program should be functioning at a higher level than when in their fundamental courses.

Academic institutions must establish criteria and a process for measuring and evaluating the clinical performance of nursing students at each level of the program, based on the multitude of competencies described above. As challenging as this might seem, evaluating outcomes achieved by students, program effectiveness as well as student learning and preparation may be assessed is essential for developing safe practitioners.

**Evaluation**

In all areas of nursing education, evaluation is an important process for measuring clinical performance. In academia, evaluation is defined as the process of collecting information for judging student attainment of objectives and goals and involves a value judgment about the learner (Oermann & Gaberson, 2006). Formative evaluation is an ongoing process of evaluating and providing feedback to the learner related to progress toward achievement of objectives and competencies. Summative evaluation assesses broader content areas and global competencies and generally occurs at the end of a course (Oermann & Gaberson, 2006). For nurse educators, these evaluation practices encompass a variety of frameworks and are developed from nursing competencies.

Evaluation of nursing students has traditionally been based upon a combination of expected clinical behaviors, organizational standards, and nursing process frameworks. Evaluation tools are designed to capture the expected clinical behaviors of nursing students. These tools can also incorporate the standards developed for student
performance by groups such as the AACN and the Institute of Medicine (IOM). The nursing process, a framework long used to teach students how to organize care, is also commonly used in evaluation tool design. Regardless of the underlying framework used to organize these evaluation tools, most tools also incorporate aspects of sound educational design theory such as the use of multiple learning domains and objective levels appropriate to the learning exercise.

The “nursing process” is often used to guide the evaluation of students in their clinical practice and includes the concepts of assessment, diagnosis, planning, implementation, and evaluation (Gantt, 2010). Nursing process theory, originating in the 1950s, has been one of the foundations for student evaluation in clinical and simulated experiences and is used in most nursing programs to teach students to learn, think, and reason like a nurse (Berman & Snyder, 2012). While each of these phases overlaps, the process is cyclical since patient care occurs on a continuum. The purpose of the nursing process is to provide a systematic, rational method of planning for patient care (Berman & Snyder, 2012).

Often used in conjunction with nursing frameworks in evaluating nursing student performance, Bloom’s taxonomy represents levels of learning in three domains: cognitive, affective, and psychomotor (Jeffries & Norton, 2005). Because the domains are not mutually exclusive, nursing students are continuously being evaluated in each domain. Use of this taxonomy provides a framework that helps ensure evaluation methods match the intended learning outcomes (Oermann & Gaberson, 2006). While tools measuring concepts within these domains have been developed and documented in the literature in the broader field of education, tools measuring key concepts more
specific to nursing performance, including teamwork, communication, safety, and critical thinking, are needed in nursing research.

**Evaluation of Clinical Performance**

Nursing faculty generally attempt to evaluate students’ performance in the clinical setting by adapting clinical course objectives to the application of behaviors considered pertinent to clinical practice. Typical strategies for evaluating student clinical performance include: observation, checklists, and rating scales, written assignments, clinical simulations, and clinical journals (Isaacson & Stacey, 2008). These strategies are usually based upon constructs decided by faculty (i.e., nursing process, safety, communication) and guided by individual program learning outcomes (Decker et al., 2008). Often the absence of clearly constructed operational definitions or the generality of the learning outcomes makes it difficult to adequately grade student performance. Oermann et al. (2009) found that most nursing programs utilize a basic clinical evaluation tool for all courses, making modifications if needed to reflect unique concepts of an individual course. Clinical evaluations should include a variety of ways to provide fair and equitable assessments for students (Amicucci, 2012; Bourbonnais et al., 2008).

Clinical evaluation tools have been developed from criteria established by the National League for Nursing (Krichbaum et al., 1994; Oermann et al., 2009). Other nursing programs identified key elements for evaluation based upon other frames of reference such as recommendations by the AACN, internal program outcomes and objectives, and faculty-selected measures (Krichbaum et al., 1994; Oermann et al., 2009). While most clinical evaluation tools vary widely, generally each represents the basic
learning outcomes of the nursing programs. Some outcomes may be emphasized more than others, depending upon each nursing program’s mission and philosophy for its graduates.

Another issue with evaluation of clinical practice is the difficulty of consistently evaluating students. Each clinical situation varies, which makes it a challenge to evaluate each student using the same criteria (Karayurt et al., 2008; Seldomridge & Walsh, 2006; Tanicala et al., 2011; Woolley et al., 1998). With potential for instructor bias, unequal clinical experiences, and broad clinical evaluation tools, nursing faculty struggle to objectively discern satisfactory student performance in the clinical setting (Isaacson & Stacy, 2008; Seldomridge & Walsh, 2006).

Clinical performance may also include subjective assessments by the faculty. While not noted on the checklist, the student may demonstrate a friendly personality which may prompt the faculty to characterize the student as a team player. A student may be sufficient in their clinical work, but not demonstrate the eagerness deemed necessary by the faculty, these perceptions lead to decisions in the grading of the student. Each clinical situation varies; hence, it is difficult to measure each student in the same situation. Additionally, in response to this bias, nursing educators have attempted to develop consistent standards for judging students in the clinical setting, yet the implementation of assessments continues to be inconsistent.

**Evaluation of Clinical Simulation Performance**

Clinical simulations are designed to be replications of real clinical situations. Perhaps because the use of simulation is fairly new to nursing education, nursing faculty
often rely on previous clinical evaluation tools or skills checklists as a method to evaluate student performance in simulations (Kardong-Edgren et al., 2010). Clinical simulation allows faculty to develop a standardized environment to assess students’ performance of a myriad of skills and competencies (Jeffries, 2012). However, evaluation of student performance in simulation settings requires valid and reliable tools to measure the psychomotor, affective, and cognitive learning outcomes for nursing professionals (Kardong-Edgren et al., 2010). A review of the literature reveals the development and use of many simulation evaluation tools, each attempting to measure different aspects of the simulation experience. For the purposes of this discussion, tools that measure performance outcomes of clinical preparedness will be reviewed.

In most nursing programs, skills validations are conducted to assess students’ ability to proficiently complete psychomotor skills. Some institutions may also utilize simulated clinical experiences to evaluate various aspects of nursing student performance of such skills; however, these experiences have not been consistent among nursing schools (Jeffries, 2007; Kardong-Edgren et al., 2010). Due to the complex nature of nursing and the fact that many necessary skills involve all learning domains and cannot always be separated or judged out of context, developing appropriate tools to evaluate psychomotor, cognitive, and affective skills of students is difficult.

**Evaluation instruments.** While there obviously are some objective measures in clinical evaluation, such as giving an injection correctly, many clinical evaluations can be subjective in nature, making it difficult for faculty to accurately judge students fairly, even using an evaluation form (DeYoung, 2009). In response, nurse educators have
developed instruments and tools for simulation evaluation that attempt to gauge the skills and qualities they desire in students’ performance in clinical practice. Although nursing faculty struggle with fairly and adequately evaluating students, the ultimate goal for all faculty is that students are safe practitioners.

Generally, evaluation tools in clinical simulation fall within three domains: psychomotor, cognitive, and affective. Some of the evaluation tools are simple behavioral checklists detailing required behaviors for a specific skill or task. Tools based on nursing competencies or behaviors are multi-conceptual and incorporate concepts such as safety, communication, caring, and assessment. Singular concepts such as self-confidence, anxiety, and self-efficacy are also the basis for a variety of simulation evaluation tools (Kardong-Edgren et al., 2010).

**Psychomotor domain.** Nursing education has historically focused on the psychomotor domain when evaluating students on task trainers in a skills laboratory. For example, psychomotor skills checklists are common in early nursing education, as nursing students learn to perform basic nursing interventions such as medication administration and intravenous line insertion. A checklist includes steps to perform a certain procedure or skill (Nitko, 2004). Using checklists provides faculty with a tool to evaluate skill competence prior to clinical practice (Oermann & Gaberson, 2006). Specific checklists are selected and adapted from textbooks or clinical handbooks and may be adapted based upon evidence or even institutional policies related to the skill in question. Current trends are to contextualize psychomotor skills into a clinical simulation (DeBourgh, 2011). Often a clinical simulation will involve an overall evaluation of
performance but incorporate specific skills checklists to assess a student’s individual ability in those skills.

Research reveals that some psychomotor skills evaluation tools have been faculty-devised adaptations of clinical evaluation tools or merely check-off tools (Gore, Hunt, & Raines, 2008; Herm, Scott, & Copley, 2007). These tools had not been evaluated for reliability or validity yet provided examples of how some students pass with a generically worded clinical tool but not with a simulation evaluation tool. Nevertheless, the authors of these studies demonstrated that transferring objectives from a clinical tool to a simulation evaluation tool could be effective in capturing scores for simulation events (Gore et al., 2008; Herm et al., 2007).

Cognitive domain. Over the years, nursing faculty have found it challenging to adequately judge the clinical competence of nursing students (Kardong-Edgren et al., 2010). Clinical competence, which engages the cognitive domain, can be defined as the ability and capacity to integrate KSAs into the context of patient care; in short, clinical competence encompasses the general day-to-day care of patients (Meretoja & Koponen, 2012). A determination of competence is dependent upon several variables, including the evaluator’s education, perception, knowledge, and training (Yanhua & Watson, 2011). For example, competencies for an individual clinical course may be selected by faculty based upon the specific expected outcome performance. While few studies are available to support the development of clinical competence, it has been defined as the KSAs needed to provide safe patient care (Meretoja & Koponen, 2012). The AACN along with QSEN has identified a variety of competencies needed by new graduate nurses such as
patient-centered care, evidence-based practice, teamwork and collaboration, and the
ability to use clinical reasoning. These competencies are the skills that must be
demonstrated by the students in the clinical setting. Regardless of the fact that there is a
variety group of competency standards for new graduates, reliable evaluation of each
competency is also problematic.

Consistent with clinical evaluation tools measuring competence and overall
performance, simulation evaluation tools falling within this category also take a
comprehensive approach to nursing student performance. Herm et al. (2007) developed a
tool that uses a side-by-side comparison of essential elements in clinical performance to
those in simulation performance. Included within the tool are concepts related to
assessment, patient safety, communication, planning, intervention, and medication
administration.

Radhakrishnan, Roche, and Cunningham (2007) developed the Clinical
Simulation Evaluation Tool (CSET) based upon the following performance categories:
safety, basic assessment, prioritization, problem-focused assessment, interventions,
delegation, and communication. The CSET was used to evaluate groups of students
through the awarding of points for behaviors achieved. Similar to Radhakrishnan et al.
(2007), Todd et al. (2008) organized their evaluation tool based upon the AACN core
competencies, which are integrated into the “Essentials of Baccalaureate Education for
Professional Nursing Practice” (AACN, 2008). These core competencies include critical
thinking, communication, assessment, and technical skills. In the Todd et al. (2008)
study, the Creighton Simulation Evaluation Instrument (C-SEI) incorporated 22
behaviors assigned to one of the four competencies, which became the structure for the
evaluation tool. These researchers established content validity through expert faculty ratings of each behavior on the tool using a 4-point Likert scale. These tools have gained popularity and use in the simulation arena as more educators are using and adapting them for evaluation due to their comprehensive nature and wide applicability to simulation events (Kardong-Edgren et al., 2010).

The Lasater Clinical Judgment Rubric (LCJR) was developed for use in single simulation experiences and offers a methodological approach to apply Tanner’s work on clinical judgment (Lasater, 2007; Tanner, 2006). The LCJR supports the evaluation of students based upon levels of beginning, developing, accomplished, and exemplary, which somewhat mirrors the work of Benner’s levels of nursing practice (Lasater, 2007). In a separate study, the LCJR was adapted for use in a group of junior nursing students for self-assessment of their simulation experience and was considered most useful for helping students organize their thoughts on the simulation (Cato & Murray, 2003). However, the data were purely anecdotal and self-reported by students.

Similar to the LCJR, Clark’s Clinical Simulation Grading Rubric (CSGR) incorporates Benner’s novice to expert model but also integrates the levels of Bloom’s taxonomy in his application (Clark, 2006). Gantt (2010) used the Clark CSGR attempting to collect information beyond the basic checklist by capturing contextual and critical-thinking components, but offered no validity data—only inter-rater reliability data. However, the author suggested that the tool could easily be adapted to any scenario and inter-rater reliability would be easily established.

One set of researchers adapted the Lasater Tool to evaluate an IV simulation in three dimensions: confidence, skill, and performance (Reinhardt, Mullins, De Blieck, &
Schultz, 2012). The researchers adapted their skills check-off form to evaluate return demonstration on the psychomotor aspect of IV insertion; however, a revision to the LCJR was formulated to determine overall performance, while a similar adaptation of the same rubric was made for the self-confidence report tool. This type of tool revision and development is essential in furthering refinement of tools for evaluating the cognitive domain.

**Affective domain.** The focus of most research studies around simulation has been to qualitatively explore students’ perceptions, anxiety level, and self-efficacy related to the simulation learning experience itself (Feingold, Calulace, & Kallen, 2004; Nehring & Lashley, 2004; Robertson, 2006). In fact, multiple student perceptions tools exist. For example, Reese, Jeffries, and Engrem (2010) and Reed (2010) developed tools focusing on student perceptions of debriefing and effective teaching during the clinical simulation. In addition, Abdo and Ravert (2006) modified a student satisfaction survey originally developed by Feingold et al. (2004). Three scenario evaluation tools were designed by the Laerdal Study Group under the auspices of the NLN (NLN, 2006). These three tools were the Educational Practices Questionnaire (EPQ), the Simulation Design Scale (SDS), and the Student Satisfaction and Self-Confidence in Learning Scale (SSSCLS) (NLN, 2006). Multiple self-report instruments provide basic information on general evaluation of the simulation experience from students’ perspective (McCausland, Curran, & Cotaldi, 2004; Schoening, Sittner, & Todd, 2006).

Three concepts that are frequently studied throughout the simulation evaluation literature: perceptions of students and faculty, anxiety in simulations, and confidence and
self-efficacy. Some researchers argue that the ease of conducting research on such topics versus the complexity of investigating the outcomes of simulation experiences and their effect on real clinical practice must be addressed (Kardong-Edgren et al., 2010). More research on learning outcomes, clinical practice transferability, and patient outcomes is necessary to further advance the arena of simulation (Todd et al., 2008). Other researchers continue to conduct research in this domain and defend the usefulness of addressing these topics specifically in specialty areas or in emergency situations (Arnold et al., 2009; Megel et al., 2012).

Anxiety in simulation has been measured by two groups of researchers utilizing Spielberger’s State-Trait Anxiety Inventory (STAI) (Gore et al., 2008; Megel et al., 2011). This inventory tool stems from the field of psychology and has been used extensively with reported validity and reliability data. While one group of researchers utilized the STAI as the single evaluation tool (Gore et al., 2008), Megel et al. (2012) chose to create several additional faculty-developed tools to gather further demographic, assessment, and skills information. These researchers also measured self-confidence and student satisfaction with the NLN simulation evaluation tools. These authors did provide reliability and validity data for the simulation evaluation tools. In a separate study, Lasater’s rubric was used by a group of faculty to determine the impact of simulation on student self-confidence and clinical competence (Blum et al., 2010).

Self-efficacy is a concept measured often during clinical simulation. One tool used in measuring nursing students in obstetric simulations is the Self-Efficacy for Obstetric Critical Episodes Evaluation (SEOCCE). Christian and Krumwiede (2013) adapted the tool for their study related to management of eclampsia and pre-eclampsia. A
similar scale was developed called the Obstetric Nurse Self-Efficacy Scale (ONSE) (Guimond & Simonelli, 2012), which was used with novice nurses in obstetrical clinical rotations. Multiple studies engage questions of self-efficacy in nursing students.

Despite the abundance of research on the simulation experience from nursing students’ perspective, few studies focus on faculty perspective on the effectiveness of these experiences. Additionally, gaining faculty perspective on how well evaluation tools capture the intended concepts is needed and will further facilitate improvement of evaluation methods.

**Nursing Faculty**

**Educational Preparation**

According to the AACN (2008), faculty must be prepared at the graduate level in order to teach in an undergraduate baccalaureate program. This preparation may vary depending upon the degree earned and the focus of the level of the nursing program. Faculty who seek a master’s degree in nursing education must complete required classes in teaching and learning strategies as well as curriculum development. Evaluation methods and strategies are part of these classes or may even constitute an entire class in itself.

However, some graduate programs include, for example, nurse practitioner and administration tracks that incorporate very little course material on educating nursing students. Often, these students are expected to function upon graduation as nurse educators in an academic setting (Morin & Ashton, 2004). These faculty are left to learn evaluation strategies on their own or from other faculty. Universities may offer a formal
orientation or mentorship program for supporting new faculty into the role of nurse educator. These programs may include review of the institution’s evaluation practices and familiarizing faculty with current evaluation tools and rubrics (Morin & Ashton, 2004).

**Evaluation Practices**

Generally, nursing faculty base their evaluations of student performance on a variety of personal and professional experiences. Often, for example, faculty base their appraisal of a student on how they were judged in nursing school. An instructor’s background or clinical training may also influence their perception of student performance (Oermann & Gaberson, 2006), perhaps forming a mental model for how they evaluate students and their perception of what a successful performance looks like.

Given that faculty bring diverse expertise and experience to assessment; instructor perspective or bias emerges as a vital concern. Nursing faculty have intrinsic beliefs and personal frameworks which may not be transparent when evaluating students. While faculty are encouraged to put aside all biases and personal opinions, it is difficult to alter deep-seated beliefs or standards related to clinical performance.

Emerson (2007) suggests that to increase fairness in the evaluation of nursing students, faculty should be involved in interfaculty consistency activities, perform a self-assessment of biases, and be familiar with the objectives and standards of their academic programs. Gantt (2010) recommends that faculty establish inter-rater reliability among faculty assessors prior to student assessment for consistent grading of students’ performance. Faculty may attend orientation programs that explicate behavioral norms and expectations across the institutional landscape that could include accepted evaluation
practices (Morin & Ashton, 2004). Individual course faculty may dictate evaluation expectations within a course thereby setting informal norms related to how students should be evaluated such as “harder or easier.” Ultimately, however, the evaluation of clinical performance is left to the discretion of the faculty member (Emerson, 2007), leading to inconsistent results in student evaluation and therefore possibly in the development of new nurses as well.

**Summary**

The review of the literature demonstrates the lack of research and knowledge of how faculty actually formulate a process to account for how they evaluate students’ performance in a clinical simulation. While attempts have been made to objectify the evaluation process in simulation, little work has been done to understand the nature of the faculty’s role in the decision-making process. Checklists and tools have been created, used, and tested to some degree yet still have been difficult to implement equitably and fairly. With a deeper understanding of faculty and their mental frameworks as they appraise students’ performance in a simulation, an evaluative process may be implemented that is more consistent and reflective of students’ actual performance.

While evaluation lends itself to difficulties, the development of tools needed to support the collection of information to describe the evaluation event is even more problematic. Nursing educators have historically used tools based upon a variety of concepts and have been challenged to adequately capture the true picture of a student’s overall performance. Nursing faculty attempt to evaluate students’ clinical performance in the simulation laboratory by adapting clinical course objectives as concepts to be
assessed. Due to the multi-faceted nature of nursing and the fact that the skills needed cannot be separated or judged out of context, developing appropriate tools to gauge the psychomotor, cognitive, and affective skills of students is difficult. Nursing gestalt, or the “putting it all together,” is difficult to objectify using an evaluation tool. As a result, faculty use the tools to evaluate students yet maintain a standard that is not captured by the tool. Even though students complete the behaviors itemized on the list, faculty still interpret checklist items differently and view students from their own perspective as safe or unsafe students. This inconsistent perception by faculty leads to inaccurate evaluations that may affect safe practice for patients. Gaining an understanding of how and why faculty formulate decisions and impressions of students is critical in improving current evaluation strategies in clinical simulation.
CHAPTER 3

METHODS

In order to fully understand the process faculty utilize when evaluating student performance during a clinical simulation, a qualitative approach was used as the study design. With little research available on this topic, it is necessary to explore and understand this phenomenon through an analysis of faculty’s mental processes when judging a student’s performance. Qualitative research is an inquiry approach useful for the exploration and understanding of a phenomenon of interest from multiple perspectives (Strauss & Corbin, 1998). A variety of qualitative research approaches exist, including ethnography, case study, phenomenology, narrative studies, and grounded theory; each of these targets different aspects of the phenomenon and understanding people’s experiences with it. In this study, the grounded theory approach was chosen because the researcher wanted to understand the processes of how faculty evaluate student performance in simulation and the need for a conceptual model to delineate this process.

When selecting a particular method to conduct research, the nature of the research problem should direct the selection process (Creswell, 2013). Specifically, the research problem in this study necessitated understanding and explaining how faculty evaluate student performance in an adult health clinical simulation. Little is known about the mental framework or cognitive processes that faculty use when observing students during clinical simulation. The grounded theory approach is used to understand the process of
experience and how this process can be explained within a specific context (Strauss & Corbin, 1998). It is important to develop a substantive theory on this evaluation process to guide faculty as they evaluate student performance in simulation.

**Grounded Theory Approach**

The need for development of a theory and not just a description of the process of the unknown phenomena warrants a qualitative approach known as grounded theory. In the grounded theory approach to researching a study question, the inquirer attempts to generate a substantive theory about a process. With grounded theory research, the investigator is attempting to explain a process entailing identified steps or phases that eventually lead to the development of a theory (Strauss & Corbin, 1998). The intention of a grounded theory approach is to move beyond description and generate a theory by being grounded in the data from the field, specifically the actions, interactions, and processes through interrelating categories of information (Denzin & Lincoln, 1994). Substantive theory is developed through the continuous interplay between analysis and data collection.

Grounded theory is a qualitative research approach first developed in 1967 by Strauss and Glaser. While Glaser and Strauss eventually disagreed on their approach to grounded theory, three types of grounded theory designs emerged. Glaser vied for an emerging and open-ended design, whereas Strauss joined forces with Corbin for a more prescriptive and structured grounded theory approach (Creswell, 2013). An additional approach developed by Charmaz (2006) involves grounded theory research that is more reflective of the social constructivist perspective and is less structured.
This research study was designed based upon the more structured guidelines for grounded theory research set out by Strauss and Corbin (1998). For this study, grounded theory was chosen in order to understand processes of faculty making decisions when evaluating students and to gain insight into their cognitive framework of evaluation. Grounded theory approach is characterized by data collected through interviews and supported through sources such as observations and document analysis. The constant comparative method is employed, whereby the researcher moves back and forth between the data constantly comparing to emerging categories in order to saturate the categories (Denzin & Lincoln, 1994; Strauss & Corbin, 1998). Following this approach, although there are distinct steps, data collection and analysis occur simultaneously for open coding (development of initial categories and dimensions), axial coding (process of relating codes and forming coding diagram), selective coding (choosing one category to be the core category), and the development of a theory (set of well-developed, interrelated concepts used to predict a phenomenon) (Strauss & Corbin, 1998).

According to Strauss and Corbin (1998), theory can be defined as “derived from data systematically gathered and analyzed through the research process” (p. 12). Grounded theory can offer insight, enhance understanding, and resemble reality more than a previously conceived theory. Essential components of grounded theory research include the following:

1. Process approach – Sequences of actions or interactions around a central phenomenon occurring over a period of time (Strauss & Corbin, 1998). In this study, identifying the process used by participants includes identifying a sequence of activities,
actions, and interactions among other people. This process emerged from the problem and the need to explore the phenomenon of evaluation process for student performance.

2. Theoretical sampling – Sampling that evolves during the research process aimed at maximizing opportunities to discover variations in emerging concepts. Thus, sampling is cumulative, building from and adding to previous data collection and analysis (Strauss & Corbin, 1998). In this study, the chosen data were collected from interviews and artifacts, hopefully yielding useful information and images in generating the theory.

3. Constant comparative data analysis – An inductive method of data analysis in which the researcher identifies activities, incidents, and events and compares them constantly to develop emerging categories until saturation is achieved (Creswell, 2005). The researcher for this study conducted constant comparisons involving eliminating redundancies and developing evidence for categories. Data from the interviews were returned to repeatedly as themes continued to emerge.

4. Central category – Represents the main theme of the research that emerges during the axial coding stage. A set of criteria facilitates the selection of the central or core category (Strauss & Corbin, 1998): (a) it must be central, meaning all categories must relate to it, (b) it must be present in the data frequently, (c) the explanation that evolves must be logical with no forcing of data, (d) the name to describe the category must be abstract so it can be used in research in other substantive areas, (e) with the refining of the concept, the theory grows in depth and explanatory power, (f) the concept is able to maintain the explanation even when conditions vary. The researcher selected a central core category from the major categories derived from data. This selection was
5. Theory generation – Theory generation is an abstract explanation or understanding of a process about a substantive topic grounded in the data (Creswell, 2013). Strauss and Corbin (1998) recommend that researchers describe what they believe is going on within the data and ask questions related to what appears to be the main problem. Within this study, the theory generated an abstract explanation of the process around faculty evaluation of student performance in simulation and was based upon predetermined systematic categories.

6. Memos – Grounded theorists write memos about the data as a tool to guide them in further data collection, coding, and analysis. Maintaining memos may be useful in tracking ideas within the data, noting thoughts, and exploring hunches or ideas (Strauss & Corbin, 1967). In this study, the researcher used memos for free writing on thoughts and ideas and as a method of beginning conceptualization through tracking of ideas.

This study is necessary to gain an understanding of what processes nursing faculty use when evaluating nursing students in a clinical simulation. The decision-making process and how faculty formulate a mental model of student performance were central to the research questions for this study. Given the nature of this research problem, the grounded theory research approach was the most appropriate of the qualitative approaches, as it embraces discovering the nature of a process or action (Strauss & Corbin, 1998).
Philosophical Assumptions

Lincoln and Guba (1985) suggested that, before starting the research process, qualitative researchers identify their philosophical assumptions. Qualitative researchers begin their research by identifying a basic set of beliefs or assumptions that guide their inquiry and shaping of the research problem. Creswell (2007) discussed five philosophical assumptions: ontological (the nature of reality), epistemological (relationship between the researcher and the issue being researched), axiological (role of values), rhetorical (language of research), and methodological (process of research). This researcher’s belief is more appropriately aligned with the post-positivist paradigm. Guided by this paradigm, the researcher views inquiry as a set of logical steps, accepts multiple perspectives versus single reality, and desires rigorous data collection and analysis (Creswell, 2005). With post-positivism, the grounded theory approach includes acknowledgment that understanding reality is limited to the human being’s cognitive abilities (Lincoln & Guba, 1985). The aim of post-positivist research is prediction and explanation, striving for objectivity and ensuring that the findings fit with the existing knowledge base. However, unlike positivists, post-positivist researchers acknowledge and spell out any predispositions that may affect the objectivity.

Ontology

The nature of reality is the focus of the ontological assumption. Within this assumption, reality is subjective and multiple, as observed by participants in the study. Different perspectives are presented through the use of words and descriptions by participants (Strauss & Corbin, 1967).
Post-positivists believe that there are limitations with human inquiry and that the order of the universe can never be completely understood. While the researcher attempted to understand participants’ cognitive processes, only an approximation can be made about their experiences and feelings due to the researcher’s not having had the same experiences and knowledge. During this study, only inferences from the data were made, as the researcher entered the study with different experiences and knowledge than the participants. This study was conducted on the premise that each person’s life experiences are different.

**Epistemology**

The epistemology assumption is the relationship between the researcher and the phenomenon being researched. The researcher collaborates with the participants by spending time in the field with the participants and becoming an insider (Creswell, 2013). Post-positivists work diligently to structure their research methods to ensure the role of the researcher as data collector. Within the grounded theory tradition, the researcher attempts to report what was found rather than her impressions, aiming for objectivity and rigor in the research method.

**Axiology**

Within the axiology assumption, the question at hand is the role of values. The researcher acknowledges the research process as value-laden with biases present. While the researcher must bracket biases and beliefs, there is an attempt to capture participants’ views in a structured and rigorous manner adhering to a post-positivist approach.
Grounded theory is one of the preferred methods for post-positivist research (Lincoln & Guba, 1985). Strauss and Corbin (1985) propose the need for a grounded theorist to maintain the ability to analyze the situation with a critical eye, think abstractly, and be flexible and open to criticism.

**Rhetorical Assumption**

Rhetorical assumption refers to the literary style used to report findings. Additionally it refers to the personal voice and use of qualitative terms and phrases (Lincoln & Guba, 1985). This researcher used “thick, rich descriptions” (Lincoln & Guba, 1985) and participant quotes but reported the findings in a third-person style. Quotes from the interview process were used to support findings from the data analysis.

**Methodological Assumption**

Methodological assumptions refer to the process of research. In qualitative research, data is categorized as emerging and inductive and then shaped by the researcher’s experience in data analysis. The systematic process of grounded theory requires the researcher to repeatedly refer to the purpose of the study and examine biases during the data collection and analysis. In this study, the researcher utilized the grounded theory approach according to the guidelines laid out by Strauss and Corbin (1967) while consistently examining biases during the research process.
Sampling

Site and Context

Nursing programs elected for the study included a variety of pre-licensure nursing programs. Schools selected were from across the southern United States so that there was a certain degree of similarity in curriculum oversight for clinical requirements and usage of clinical simulation. Each of the schools of nursing must have used some form of clinical simulation in their nursing programs. Programs used clinical simulation in a summative or formative manner and varied in their evaluation processes. The selection of nursing programs was dependent upon participants’ willingness to be part of the study and included eight schools of nursing.

Participants

Purposeful sampling is appropriate when conducting qualitative research so the researcher can solicit the most appropriate experiences capable of providing the most meaningful data related to the central phenomenon (Creswell, 2013). For this study, the researcher used theoretical sampling, which is a type of purposeful sampling aimed at providing the most relevant information for an “evolving theoretical explanation” conducive to grounded theory research (Strauss & Corbin, 1985). The researcher recruited nursing faculty in southern schools of nursing who were currently utilizing simulation for teaching adult health nursing students. Emails were sent via membership lists from simulation professional organizations. Many potential participants responded to the recruitment email, and from those, the inclusion criteria were reviewed and participants selected. Each of the participants had been a nursing instructor for at least 1
year as well as conducted or participated in simulation activities for at least 1 year prior to the interview. The researcher communicated via email or phone with participants to determine date and mode of the interview. Saturation during data collection is defined as the point at which new or relevant information no longer emerges from the data (Strauss & Corbin, 1985). Saturation was reached at a sample of 20 participants.

**Data Collection**

Data collection in grounded theory follows an inductive approach in which data collection and analysis often occur simultaneously (Strauss & Corbin, 1998). This process is often described as an emergent design (Creswell, 2013), or as an unfolding design (Lincoln & Guba, 1985). With the qualitative tradition of grounded theory, however, there are certain characteristics guiding the process (Strauss & Corbin, 1998). The purpose of grounded theory research is to generate or discover a theory that is an abstract schema of a process (Strauss & Corbin, 1998). The theory must be grounded in data that has emerged and evolved into general and abstract categories. In this study, the data were collected via an interview process and provided the means for extracting codes and themes necessary for formulating a conceptual model.

**Semi-structured Interview**

The interview process began with gathering general demographic information from the participants via a demographic information sheet (see Appendix A). Interview questions were developed to collect information on participants’ process when evaluating student performance in simulation and were presented in a semi-structured format (see
Appendix B). The interview questions were designed to capture each of the initial concepts reflected in the research questions. Probing questions were designed to elicit additional details of the participant’s evaluation process. The researcher attempted to guide the participant through their individual process, asking questions for clarity and understanding. The researcher recorded and made notes throughout the entire data collection and data analysis process. During the interview, participants were given the opportunity to provide additional documents related to the grading and evaluative process of clinical simulations, but none were ultimately provided to the researcher. Throughout this process, verbatim transcripts were created after each interview, documenting information and data collected.

**Video Elicitation**

**Simulation video development.** The purpose of video elicitation was to provide a rich source of data regarding the evaluation methods of nursing faculty (Henry & Fetters, 2012). While general interview data is important, having the participants actually simulate evaluation of a student performance in simulation provided a unique perspective into their individual approach. After watching the video, the participant was asked to discuss the video, describing their initial impressions and thoughts and what was going on in their mind as they evaluated the student and ultimately made a final decision on the student’s performance. The researcher created two videos of a scripted simulation experience in a simulation room within a simulation center used by undergraduate nursing students. Each video was filmed in a simulation room set up similarly to a hospital room. A high-fidelity simulator was used and programmed according to the case
specifications. Each video was scripted around a common patient situation of congestive heart failure (CHF). Care of the CHF patient is included in the majority of pre-licensure programs, and nursing students and faculty alike would be familiar with patient management in such a situation. A diagnosis of CHF holds some essential assessment findings that nurses must be attuned to, as well as knowing basic interventions for providing care.

The researcher chose to develop two short, 5-min videos of the same patient scenario. Video 1 was a scripted event of a junior level or beginning nursing student caring for a simulated CHF patient, while video 2 was a senior level or advanced student providing care for the same simulated patient. By doing this, the researcher hoped to determine whether the level of learner affected the participants’ evaluation process. The actors in the video were real student nurses who volunteered to act in the simulated video. They were provided information related to how they were to perform in the simulation. They were instructed to perform the three major tasks of medication administration, application of oxygen, and physical assessment and then to go in and perform as if they were in a simulation for their class. The student actors were allowed liberties with what areas of the three major tasks to perform correctly and incorrectly. While the videos were scripted, the participants were given a preview of each scenario, major objectives, and the level of student.

The participants were told the main objective for the student performance was an initial shift assessment and overall management of care of a CHF patient. Three key skills were performed: medication administration of intravenous Lasix, administration of oxygen, and a physical assessment. This scenario and these skills were selected because
most faculty are familiar with evaluating the standards for each one. These particular skills include not only psychomotor skills but also critical thinking, nursing knowledge, and the need to interact with the patient. Purposely, the researcher chose these skills and this scenario as it warrants keen observation by the faculty when rendering a judgment on the student’s cognitive, affective, and psychomotor skills, as well as their ability to “put it all together” in managing care of the patient. No tool or instrument or written scenario information was provided to the participant. Additionally, the participants were told that the students received a basic sheet of information and provider orders for intravenous Lasix and oxygen administration for low blood oxygen saturations.

**Implementation of video elicitation.** For this study, participants were given verbal information on the objectives for the student during the simulation and brief information on the patient. The researcher also told participants the interview questions that would be asked at the end of the video. After showing the videos, the researcher began the interview, allowing participants to verbalize thoughts and observations of the student actions and performance in the simulation. Participants were also asked to render a judgment on whether the performance was satisfactory or unsatisfactory.

**Data Analysis**

In grounded theory research, data collection and analysis should be conducted simultaneously. For this study, the process of grounded theory was followed according to Strauss and Corbin’s guidelines (1998). NVivo 10 software is a software package useful for qualitative data analysis and was used to assist with the analysis of the interview data.
in this study. Initially, the interview data was reviewed and transcribed by the researcher and then uploaded in the NVivo 10 software program. In grounded theory research, the researcher zigzags through the data, attempting to refine analytic categories as data are being collected (Creswell, 2013). In this study, the data were collected over a four-month period to allow for in-depth reflection and analysis. Following a zigzag process of data collection and analysis while applying the constant comparative method is consistent with the grounded theory approach. In the analytical process of grounded theory, there are three major steps of coding: open, axial, and selective.

Open coding begins soon after the start of data collection. Open coding is the initial stage of grounded theory data analysis, in which data are broken down and then compared and contrasted for categorization (Strauss & Corbin, 1990). Following this, the data are continuously reviewed for themes or categories and then further broken down according to their basic properties and dimensions (Strauss & Corbin, 1998). Properties are subcategories or themes, and dimensions show the extreme possibilities on a continuum of the property (Creswell, 2013). As the process continues with constant comparative analysis, the next phase, axial coding, occurs.

Axial coding is the process of relating categories to their subcategories, and linking categories according to their dimensions and properties (Strauss & Corbin, 1998) (see Figure 1). Categories surrounding the central phenomenon are causal, contextual, and intervening conditions, strategic actions/interactions, and consequences (Strauss & Corbin, 1998). Causal conditions represent sets of events that lead to the occurrence of the category and influence the phenomenon. Contextual conditions are the specific sets of conditions or patterns of conditions that pertain to the category. Intervening conditions
Figure 1. Grounded Theory Axial Coding Diagram. This diagram illustrates the logic and structure of the axial coding paradigms (Lincoln & Guba, 1985).
are those that alter the impact of casual conditions on the phenomenon. Strategies are purposeful or deliberate acts that are taken to resolve a problem and shape the phenomenon in some way. Consequences are the ultimate outcomes of the strategies (Strauss & Corbin, 1998). Figure 1 shows the axial coding diagram, which is a visual representation of the conditions in grounded theory research. This diagram uses boxes and arrows to show the relationships indicating the process or flow of activities (Strauss & Corbin, 1998).

Selective coding is the next stage in the process and involves identifying connections between the categories revealed in the axial coding stage. At this stage, the theory about the process that is being studied is developed. At the broadest level of analysis, a conditional matrix is created, providing an analytical aid for the researcher to visualize consequences and conditions (Strauss & Corbin, 1998). A conditional matrix is a set of concentric circles that demonstrate the connections between the macro and micro influences on the central phenomenon (Creswell, 2013). Propositions related to the central phenomenon are generated and may be tested in determining categorical relationships.

Establishing Credibility and Trustworthiness

Validation in qualitative research is essential to ensuring the credibility of the study. While the terms validation and credibility may be used interchangeably, the concept of trustworthiness may vary depending on the researcher’s position along the continuum of positivism, constructivism, and pragmatism (Lincoln & Guba, 1985). Due to the interpretative role of the researcher in qualitative research, the standards of
qualitative validation must be established. According to Lincoln and Guba (1985), useful methods for establishing trustworthiness in a naturalistic inquiry as compared to quantitative research include: credibility for internal validation, transferability for external validation, dependability for reliability, and confirmability for objectivity.

Credibility in this study was verified through three validation strategies: member checking, use of rich and thick descriptions, and peer debriefing (Lincoln & Guba, 1985). An additional strategy more specific to grounded theory is the production of substantive theory. When using details from a rich and thick description, the reader can discern the transferability of the information in regard to the participants and setting of the study. In this study, quotations from participants as well as descriptions from qualitative data collection support the transferability of the study findings.

Member checking is a method whereby the researcher seeks participants’ views on the credibility of the findings from the study (Lincoln & Guba, 1985). In this study, interview summaries were sent to participants regarding the accuracy of the findings and whether any important information was missing. The majority of the participants responded with no corrections, and only one who responded clarified a few points in the transcript. Follow-up emails were sent as needed to further clarify any discrepancies in the data.

Peer debriefing supports the establishment of credibility by providing an external check on the inquiry process. An external person probes and explores the researcher’s process and personal biases, ensuring honesty and clarity throughout the research (Creswell, 2005). A fellow faculty member of the researcher helped with the study through identifying and clarifying biases as well as the inquiry process. This debriefing
supports the researcher in maintaining clarity and increasing awareness of personal values and biases.

Thick, rich descriptions allows for others to make decisions on transferability. Thick descriptions mean that the researcher provides details when describing a theme (Creswell, 2013). By using descriptive verbs, details, and quotes, the researcher attempted to support the data, fully anticipating potential transferability to other settings.

**Ethical Considerations**

Appropriate documents were submitted to the Institutional Review Board at University of Alabama at Birmingham (UAB) and approval was obtained prior to participant recruitment (See Appendix C). There was no risk of harm to participants involved in the study. Information on the study was provided to the participant prior to their inclusion in the study. A recruitment letter was sent to each potential participant. Participation in this study was on a voluntary basis. Confidentiality for the participant was maintained, and data from all forms of media (print, video, field notes, audio recordings) were securely housed within the UAB School of Nursing on a network server and password protected.

Assuring confidentiality is essential in order to secure the trust of the participants. Gaining the participants’ trust ensures more open, honest disclosure for the study. According to APA (2002) ethical standards, it is imperative that all participants have the right to confidentiality and anonymity, justice and benefits of the study. Each participant in this study received a recruitment letter, a verbal explanation of the study process, and details of the purpose of the study. At the beginning of each interview, the researcher
asked the participant for permission to audio record the interviews, and each participant was asked for a pseudonym to be referred to in the study report.

Role of the Researcher

The researcher is a nursing faculty member with over 8 years in the academic setting and over 20 years as a registered nurse. Six of the last 8 years have been devoted to the mission of clinical simulation and its integration in the curriculum of a school of nursing and school of health professions. As a faculty member, the researcher struggled with skills validations and simulation evaluation, as she never felt it was reflective of the true nature of student performance. As a simulation expert, she felt frustrated when facilitating simulations for courses in which faculty struggled with implementation of an appropriate evaluation process. While the clinical simulation community is heavily concentrated on evaluation methods and tools useful in simulation, the researcher believes there must be an understanding of the processes by which faculty make their evaluations before appropriate evaluation methods can be determined. The researcher conducted all interviews and was the main author of the final report. The researcher sought balance between personal experiences with the identified phenomenon and the data collected in order to define and provide depth to the findings of the study (Strauss & Corbin, 1998).
CHAPTER 4
FINDINGS

This chapter reports the study findings. The chapter begins with an overview of the study setting, contexts, and participant characteristics. This is followed by details of the study findings, beginning with an outline of the discovery of the general themes through open coding. The next section describes the axial coding process through which open codes were developed. The final section of the chapter concludes with selective coding and the development of the conditional matrix and conceptual model representing the evaluative process nursing faculty use while assessing a simulation experience.

Setting

This study was conducted with participants from six states and 12 different colleges across the southern United States. Twenty participants were recruited from Alabama, Florida, Tennessee, Louisiana, Georgia, and Texas. A variety of undergraduate nursing programs was represented, including associate degree, bachelor’s degree, and accelerated nursing programs. Each institution is regulated by a state agency, the State Board of Nursing, which is overseen by the National Council of State Boards of Nursing. Each state varies on regulations regarding simulation integration in the curriculum but must be in accordance with national regulations and licensure.

From the state of Alabama, 12 participants were interviewed from six different colleges. Of those six colleges, one was a community college offering an associate degree...
in nursing and lower-level nursing programs. Three of the four-year colleges are located in large cities and have large student populations in both graduate and undergraduate nursing programs. Two of the four-year universities are in smaller suburban areas and house a smaller nursing school population while still offering smaller graduate and undergraduate programs.

Three participants were from the state of Florida. Two participants were employed at a community college that offers a bachelor’s of science in nursing (BSN) program, while one participant worked in a large four-year state university that offers a variety of nursing programs. The community college services students in undergraduate and even graduate courses with a variety of nursing program options. The four-year university has a large nursing program with over 700 students in the undergraduate programs and over 300 in the graduate programs.

Two participants were from private four-year colleges, one from the state of Louisiana and one from Tennessee. The small private college in Tennessee is in a large suburban area and offers both undergraduate and graduate nursing programs. The small private four-year nursing school in Louisiana is located in a large suburban area and offers several nursing degree options, both undergraduate and graduate. One participant taught in the state of Texas at a large four-year university. The final two participants taught at a medium-size four-year state institution in a smaller city in Georgia. This nursing school offers an undergraduate nursing degree and limited graduate degrees in nursing.
Participants

The 20 participants in this study ranged in age from 31 years to 67 years, and all but one were female (refer to Table 1). Two participants were Hispanic, one was Asian, and the rest were Caucasian. Participants taught in a variety of nursing programs including BSN, associate degree in nursing (ADN), accelerated pre-licensure in nursing, and graduate programs. Participants’ experiences in nursing education ranged from 3 years to 18 years with specific roles in simulation ranging from 1 year to 15 years. There was a significant difference in how each participant’s role in simulation was structured as well as in how often they facilitated or participated in simulation. Time in clinical practice ranged from 5 years to 30 years, which included some overlap with working in nursing education. Fifteen participants’ highest level of education was at the master’s level, while 5 of the participants had achieved a doctoral degree. The participant demographics are described in Appendix D and a brief profile of the participants is summarized in Table 1.

Open Coding

According to the grounded theory methodology described in chapter 3, each transcript was prepared and analyzed using the open coding process that started soon after the first few interviews were completed (Strauss & Corbin, 1998). The following section will report the results of the initial phase of data analysis, open coding.

As a result of the continuous review and analysis of each transcript using the open coding process, 12 categories emerged. They were organized into four major themes. The four major themes were (a) desired student behaviors, (b) simulation event, (c) evaluation
Table 1

*Participant Profile*

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Education</th>
<th>Nursing Specialty</th>
<th>Years in Clinical Practice</th>
<th>Years in Nursing Education</th>
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</thead>
<tbody>
<tr>
<td>Mr. B</td>
<td>MSN</td>
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<td>3</td>
</tr>
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<td>Ms. BN</td>
<td>MSN</td>
<td>Medical-Surgical</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
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<td>MSN</td>
<td>Orthopedics</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
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<td>MSN</td>
<td>Emergency</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>Ms. D</td>
<td>MSN</td>
<td>Cardiology</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>Ms. DN</td>
<td>MSN</td>
<td>Pediatrics</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Ms. DY</td>
<td>MSN</td>
<td>Pediatrics</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Ms. F</td>
<td>MSN</td>
<td>ER/PACU</td>
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<td>4</td>
</tr>
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<td>Ms. G</td>
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</tr>
<tr>
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<td>18</td>
</tr>
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<td>Management</td>
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</tr>
<tr>
<td>Ms. L</td>
<td>DNP</td>
<td>Critical Care</td>
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<tr>
<td>Ms. LE</td>
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<tr>
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<td>5</td>
<td>9</td>
</tr>
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</tr>
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<tr>
<td>Ms. S-B</td>
<td>MSN, FNP</td>
<td>Critical Care</td>
<td>8</td>
<td>3</td>
</tr>
</tbody>
</table>

influences, and (d) strategies for evaluation. Each theme was categorized into sub-themes and then further delineated by properties. Table 2 includes a complete list of themes and sub-themes with properties that emerged during this analytical phase of the study. Data saturation was achieved when final interviews only revealed repetition of previous information and no new concepts were identified. To provide detail, the researcher assigned properties and used dimensionalized examples to show data extremes. Appendix E provides a detailed summary of this information within an open coding diagram.
Table 2

Themes and Sub-themes

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sub-themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desired student behaviors</td>
<td>Nursing knowledge</td>
</tr>
<tr>
<td></td>
<td>Skills</td>
</tr>
<tr>
<td></td>
<td>Attitudes</td>
</tr>
<tr>
<td></td>
<td>Gestalt</td>
</tr>
<tr>
<td>Simulation event</td>
<td>Types</td>
</tr>
<tr>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td>Evaluation level</td>
</tr>
<tr>
<td>Evaluation influences</td>
<td>Personal</td>
</tr>
<tr>
<td></td>
<td>External</td>
</tr>
<tr>
<td>Strategies</td>
<td>Models</td>
</tr>
<tr>
<td></td>
<td>Pre-existing tools</td>
</tr>
<tr>
<td></td>
<td>Internalized criteria</td>
</tr>
</tbody>
</table>

**Desired Student Behaviors**

The first theme that emerged from the data was desired student behaviors (DSB). The definition given to DSB was what participants described as desirable attributes during a student’s performance. Desired student behaviors were further classified into four sub-themes, nursing knowledge, skills, attitudes, and nursing gestalt.

**Nursing knowledge.** The sub-theme nursing knowledge was characterized in the data by six properties: safety, standards of practice, infection control, medication administration, evidence-based practice, and assessment.

**Safety.** Participants described adherence to safety practices as the primary criteria used when evaluating students’ performance. Examples of key safety measures
participants reported looking for in student performance were patient identification and appropriate bed position. Participants observed for safety adherence in all aspects of the simulation event, especially medication administration.

**Standards of practice.** Standards of practice or care were defined by participants as the “aspects of nursing practice that are standard across patient care settings.” Some participants also voiced the need for students to know what to do when caring for a specific population or a patient with a certain diagnosis. Several participants described this as based on guidelines for behaviors that nurse should or should not do. Comparison of the data revealed differing interpretations of these guidelines that was verified through the secondary data source of video review. Participants voiced concern in each of the video reviews as to whether the student knew appropriate standards of practice and care for the patient. For example, Ms. F stated, “She wasn’t following the basic standards, identifying the patient, allergies, all those things are basic standards.”

**Infection control.** Infection control was reported by participants as essential to student performance. However, the simulation environment depicted in the video did not have the necessary sinks for hand washing. Participants noted the significance of this as related to isolation precautions and sterile technique. One participant stated, “I guess most of the things that I identified would be standards of care because hand washing is a standard of care.” For example, participants voiced concern over lack of proper infection control measures in the simulated video review when the students failed to wash their hands and when they manipulated the IV without gloves.
**Medication administration.** Medication administration was described in the data as the administering of any medication to a patient. Participants discussed medication administration as a primary function of a nurse and expected student adherence to proper procedure when administering medications. All participants strongly voiced agreement that mastery of medication administration is an essential attribute to be attained by students and that this was considered a major safety concern in all simulation experiences. One participant stated:

> When they came to the medication administration, that is such a huge safety thing for nurses that at that point, checklist or no checklist, you violated that, and in our field that’s unacceptable. You know, whether you’re a graduate nurse or you know, like that is embedded in you even before simulation. That’s embedded in you. That’s nursing 101. You do not push anything without doing that two-patient identifier. No, that’s a standard that you don’t deviate from. I had no mercy on that at all. That really bothered me.

**Evidence-based practice.** Evidence-based practice was defined in the data as using current research as a basis for clinical practice. Participants addressed the idea of evidence-based practice as an expectation of student performance. Ms. G noted, “Kind of our six goals that we have for our clinical evaluation tool, what should they be doing for a junior first-semester level? are they using evidence-based practice in simulation?”
**Assessment.** Assessment was a property that emerged and was defined as the gathering of information on the patient, patient’s body systems, environment, and overall situation. Participants emphasized the importance of a complete physical assessment and noted that students must learn that reassessment is also part of nursing care. Essential to managing care of the patient was an appraisal of the environment and the clinical situation, which guided the nurse’s plan of care. On watching the simulation video, Ms. S looked for a thorough assessment in relation to patient diagnosis: “She listened to heart and lungs and checked capillary refill, but I didn’t see her do the pulses until further at the bottom and assessed for edema which is good with the congestive heart failure.” All participants described the importance of some type of assessment and particularly focused on the systematic physical assessment, focused assessment, and reassessment of the patient. Ms. D asked, “Do they come in and see that the room is safe?”

**Attitude.** The sub-theme attitude was characterized in the data by seven general properties: demeanor, engagement, preparation, professionalism, cultural sensitivity, caring, and ethical practice. While each property was noted as being important, it was difficult for participants to speak about just one without linking the characteristic with another.

**Demeanor.** Demeanor was frequently identified by participants as a major attribute they assessed in students. Demeanor was defined in the data as “one's behavior or conduct.” Participants overwhelmingly stated that confidence was something they looked for during a student’s performance in simulation. Ms. DY noted, “Confidence. I
think that when a student of any type enters a room, there has to be some type of confidence there for that patient to be able to rely on that nurse: I believe in you and what you're here to do.” Ms. OI echoed that sentiment: “Well, I’m saying I want them to have the confidence to walk in and begin to assess the patient.”

**Engagement.** Engagement was described as “students being attentive and engaged in the simulation.” Participants spoke to the importance of this trait as it translated into how they presented themselves in a real clinical setting. Ms. OR stated, “We're basically looking at that they are engaged and that they're participating in the discussions and the debriefing discussions and they're participating in the scenario.” Not being engaged affected the faculty’s perspective of the students’ professionalism. Ms. OI was very clear about her high expectations of students in this regard. “If the student is disengaged and feels that this is just a game, that is very frustrating to me.”

**Preparation.** Preparation is a property of attitude and was defined by participants as “having completed preparatory assignments or having equipment ready to go for the simulation.” Many participants verbalized that student preparation was essential when looking at the overall student performance. Ms. G commented, “I have had students that have come in, they did not do their pre-simulation exercise, started in the simulation, and I then tell them they have to come back. Even though it’s just a formative, they still weren’t prepared and I will make them go back and repeat the simulation, just for the fact that they didn’t take the learning experience as seriously as they should have.” The majority of participants felt that preparation is an essential attribute of being a nurse, and
it was expected that all students be held to that same standard. Most participants verbalized frustration at the lack of preparation on the part of students.

**Professionalism.** Professionalism, a category that emerged frequently from the data, was defined as “having an overall professional manner” and included such attributes as punctuality, respect, appropriate uniform attire, and exhibiting a compassionate attitude toward the patient. Almost all participants voiced the importance of professionalism as an expected behavior during students’ performance. Mr. B stated, “First off, I look for fit for duty; did they come in looking like their scrubs had come out of the washing machine and thrown in a big wad, or do they look like they are prepared and ready for work?”

**Cultural sensitivity.** Cultural sensitivity was defined by the data as “being aware of other cultures and making one’s plans accordingly.” One participant commented that students in simulation were expected to note any specific cultural needs that should be addressed for the patient. Ms. G asked, “Are they noticing any cultural issues when planning care for the patient?”

**Caring behaviors.** Caring was defined by participants as “being able to show compassion and understanding toward the patient.” Caring was characterized as synonymous with being a nurse. Participants verbalized wanting students to be compassionate and to care for their patients. Ms. F felt strongly about caring behaviors. “I want them to just care about their patient because if you really care, things can fall into
place. First of all, it matters in your mind that this patient needs help and you're the one to give it and be compassionate.”

**Ethical behavior.** Ethical behavior was defined in the data as “maintaining the moral standards of one’s profession.” One participant observed for ethical behaviors in her students specifically when they were performing in simulation cases with ethical learning objectives. The participant mentioned a situation in which a student became involved in social media with a patient, and this issue became important to her when evaluating students in all settings, even in simulation. This particular participant noted that being honest and maintaining integrity at the patient’s bedside whether in clinical or simulation was something she observed for. Ms. F. stated, “Are there any ethical standards that they are not following, or are they being honest in their care of the patient?”

**Skills.** The sub-theme of skills was characterized in the data by six properties, including use of nursing process, communication, assessment-environmental, assessment-physical, assessment-situational, and psychomotor.

**Use of nursing process.** The nursing process was defined by participants as the five-step systematic method to approaching patient care (i.e., assessment, diagnosis, planning, implementation, evaluation). Interview data supported the use of the nursing process as a skill and revealed that participants looked at student performance to see how
the nursing process was implemented. Mr. B noted, “I look at, did they follow the nursing process when they were evaluating and implementing their care?”

*Communication.* Communication was defined by participants as “the ability to converse and interact appropriately with the patient.” All participants verbalized the importance of the ability to communicate effectively with patients and other healthcare providers. Ms. BN said, “I want students to come in having some idea of how to greet a patient, come into the interaction with at least some ability to communicate and begin some type of focused assessment.”

*Assessment-environmental.* Environmental assessment was defined in the data as “being able to assess the patient’s environment.” Participants explained the need for students to be able to check the patient’s room for safety issues and to be astute in their surveillance of the environment. Ms. D. noted, “There's a person visiting the patient and could be friend or family and have they found out who this person is.”

*Assessment-physical.* Physical assessment was defined by participants as “the systematic assessment of the patient’s body.” The majority of participants addressed the need for students to be proficient in physical assessment as well as know the appropriate means to perform an assessment. Interview data supported the importance of different aspects of the physical assessment to different participants. Ms. G stated, “I did have a question about when she was listening to the patient. She didn't listen to the back for the sound, and possible placement on the aortic looked a little farther to the right than it
should have been.” Mr. B also verbalized issues on physical assessment: “She listened to
the heart sounds through the gown, too, but she did listen to the bowel sounds on the
skin; however, she talked to the patient as she was trying to listen to the bowel sounds.
She left the glasses on the patient when she checked the pupils.”

Assessment-situational. Situational assessment was defined in the data as
observing and noticing aspects of the current situation that directly affect patient care.
Participants wanted students to take into consideration the current patient situation
(physical status, family, mental, emotional), making correlations between various aspects
of the situation in caring for the patient. Interview data supported the importance of
situational assessment and awareness when participants observed students in simulated
videos; participants seemed to find this quality difficult to pinpoint, but they knew
whether students were paying attention to details in the scenario. Ms. O declared,
“Students must own the situation, and be aware of what’s going on around them and
assess the immediate situation. It’s a lot for them to do, but they have to learn.”

Psychomotor. Psychomotor skills were deemed by participants as “those skills
requiring manual dexterity, as well as applying the steps of the skill appropriately.” All
participants mentioned the importance of performing psychomotor skills successfully, as
they are foundational to the profession of nursing. Participants noted that students have
been validated on most skills and have learned how to perform them accurately. They
verbalized frustration when students performed skills incorrectly. Ms. B said, “I am very
strict when it comes to anything that has sterile techniques involved in it because I see
that as a basic safety thing.” Ms. H stated, “She didn't know how to put the oxygen on correctly. That, of course, always bothers me. That's just one of my little pet peeves. She also did not check the arm band on the patient when she got ready to give her Lasix. She didn't flush her line before or after.”

**Gestalt.** The sub-theme of nursing gestalt was defined based on the data as “putting it all together with the skills, attitudes, and knowledge, and thinking like a nurse.” Although they found it difficult to identify, participants described this notion in a variety of ways. This category includes five properties: combining of knowledge, skills, and attitudes (KSAs), clinical judgment, clinical reasoning, clinical proficiency, and competence.

**Combining of KSAs.** Combining knowledge, skills, and attitudes was defined by participants as “the ability to integrate these areas into the care of the patient.” Participants shared the idea that students gradually start putting these areas together into context and that a progression of improvement over time is important. However, participants described varying degrees of students’ ability to integrate KSAs as needed for nursing faculty to deem students’ performance satisfactory. Ms. OI stated, “There's just this little intuitive things that you get about students. There's just something about them that you really can't put your finger on, but you feel they're just not quite there yet. Even though, yeah, they might be task-oriented, but it's not clicking.”
Clinical reasoning. Clinical reasoning was defined by participants as “being able to process all incoming information on a patient situation and develop an appropriate plan of care.” Participants spoke about clinical reasoning specifically during the simulated video review. Most of them observed for actions and interventions by the student in managing care of the patient. Ms. G stated, “With that, you try to see if you can put them in a role of a charge nurse or of the primary nurse in simulation so that you can look and see do they have critical thinking abilities or where is their problem.”

Clinical judgment. Clinical judgment was defined from the data as “coming to a conclusion based upon subjective and objective data.” Clinical reasoning and thinking through a situation leads to making a clinical judgment. Many of the participants addressed this in their evaluation of student performance. Ms. H discussed her concern for the development of clinical judgment as follows: “A lot of times our simulations are too skill focused and not clinical reasoning or critical thinking focused. It's just a philosophical difference, I think, in some things.” Ms. H verbalized that faculty are so focused on psychomotor skill performance in simulation that they miss opportunities simulation affords for students to apply what they have learned. Many participants felt this skill came over time, and each had different levels of expectations of the students.

Clinical proficiency. Clinical proficiency was defined by participants as “being efficient during interactions with patients and providing patient care.” Participants looked for proficiency in students’ care of the patient. Students who fumbled with equipment or skills or lacked confidence were not seen as being clinically proficient. Several
participants noted on the video review the fumbling by the student with oxygen equipment as well as delaying application of the oxygen in other instances. These actions or lack of action indicated to participants that students were not clinically proficient. Ms. C stated, “In your third semester you're going to have to show more clinical proficiency than earlier semesters.” Ms. R noted, “My evaluation is to really scaffold learning so that the students have ample time to develop their skills and their clinical proficiency, whether the cognitive skills or the motor skills or whatever, that they have ample opportunity to develop those in a formative way before the summative is initiated.”

**Competence.** Competence was defined in the data as “meeting a minimal level of proficiency in performing a skill.” Participants addressed the need for students to be minimally competent in performing skills, yet competence was often difficult to define. Nevertheless, Ms. OR stated, “Yes, I do believe, especially in this area, that we're doing nursing that you have to assure some minimal competency in each of the courses as they go along.”

In summary, the idea of gestalt, or putting it all together, emerged as a theme with sub-themes of combining KSAs, clinical judgment, clinical reasoning, clinical proficiency, and competence. Some of these terms may be used interchangeably in some settings. Putting it all together, or gestalt, was also referred to as thinking like a nurse.

**Simulation Event**

The second major theme to emerge was the simulation event, defined from the data as “a learning experience based upon a simulated clinical patient case requiring
management by learners.” Three primary sub-themes emerged that characterize the simulation event: types, frequency, and evaluation level. Each participant shared personal experiences around the implementation of simulation events.

**Types.** The first sub-theme of simulation event is type, which means the level of fidelity of the simulation. Fidelity is a property defined from the data as “the level of capabilities of the simulator.” Some participants addressed the fidelity of the simulation equipment and how it is related to the specific activity the student is expected to complete. For example, a low-fidelity task trainer was used for skills training or validations, whereas a medium- or high-fidelity mannequin was used for an immersive simulation designed to portray a clinical patient situation and elicit overall management of patient care. Ms. LE observed, “It’s a clinical experience that can be replicated. It can be low, medium, or high fidelity. And it can be controlled to be tested for certain things by students. Skills validations can be part of the simulation umbrella.”

**Frequency.** The second sub-theme characterizing a simulation event was the frequency of the simulation event. Participants reported varying frequency of participation in simulation experiences. Many used simulation on a weekly basis, while others reported being in simulation only once or twice a semester. Participants reported the varied frequency of simulation events between courses, noting that it was dependent on the semester and course manager, including staff and lab availability. Ms. C stated, “We are doing maybe one simulation every two weeks, like we’ll do skills one week, and then the following week we’ll do a simulation, and then the following week we’ll do a skill. We are only doing simulation maybe twice a month.” Ms. R noted a high
frequency of simulation in her program: “We really have sessions going on just about all day, five days a week, some of those interprofessional, but majority is not. The majority are uni-professional.”

**Evaluation level.** The final sub-theme was the evaluation level of the simulation, defined as being either a formative or summative assessment. The majority of participants reported using simulation as a formative learning assessment and said that it was considered a component of the teaching methodology. Two participants noted use of simulation as a graded summative assessment. While the majority reported no grading in simulation, most noted the growing trend toward use of simulation as a tool for high-stakes assessment. Several participants anticipated difficulties with this because they could not get faculty to agree on current student performance in a formative environment. Although some participants used the term evaluation as synonymous with grading, evaluation was discussed as a method of appraising performance with or without grading. Ms. D-N stated, “I guess I am using the word evaluation and debrief interchangeably. That we adapt one consistent way of doing the evaluation. Whether formative or summative, we need to be consistent.” Ms. R voiced strong opinions on simulation as formative assessment: “I like to give the students more chances, again going back to the formative, formative, formative.”

In summary, the theme simulation event was sub-divided into the three sub-themes of type, frequency, and evaluation level. The characteristics of the simulation event were found to be significant to the faculty’s process for evaluating nursing students’ performance in simulation.
Evaluation Influences

The third theme that emerged from the data was evaluation influences and was defined as “factors that impacted the participant’s evaluation process.” The theme of evaluation influences was further subdivided into two sub-themes of personal and external.

Personal. The first sub-theme, personal, was characterized by nine categories: experience-life, experience-clinical, experience-education, experience-simulation, training-simulation, attitudes, values, beliefs, and personality. These categories of personal influence were developed over the participant’s lifetime and became inherent to that person.

Experience-life. Life experience was defined in the data as “the individual dimensions and characteristics of one’s personal life.” Participants discussed how general life experiences affected their process during evaluation. For example, Ms. DY spoke to her role as a mother as being significant in how she evaluated students. Ms. DY stated, “I believe that parenting experience helped me to deal with people and helped me see students differently.” Ms. H reported that multiple hospitalizations as a child and adolescent heavily impacted her role as a nurse and the expectations she had for student performance in simulation. “I also think maybe I have a little personal bias because I was in the hospital a lot as a child, a young adult, when I was pregnant, and my family has had a lot of hospitalizations, and I've been in hospitals a lot and around hospitals, not just working, and my expectations ... I think it's my general expectations of excellence.”
**Experience-clinical.** Clinical experience was defined by the data as “clinical areas where nurses work such as acute care, critical care, or community health.” The majority of participants reported the impact of clinical experience and where they worked as significant factors in their process of developing evaluation methods. One participant described how her time in the critical care unit taught her to manage crises and multiple critical patients and how to be assertive. Due to her ingrained intensive care skills, she expected fast, confident actions from students and a high level of functioning in a simulation experience. Ms. F stated, “Another instructor and I were doing the simulation for the longest time and he was an ICU nurse and I'm the ER nurse, so that's like conflicting approaches.”

**Experience-education.** Educational experience was defined as the educational level obtained academically and included education on evaluation in particular. All participants had at least master’s degrees, with five holding doctoral degrees. While some reported having master’s degrees in nursing education, more than half had taken no formal graduate evaluation courses. Ms. F described no formal training in evaluation and stated, “I would use on-the-job training, maybe, to evaluate at the hospital, because I did use it in my ACLS program, as for our mega code. I learned how we needed to evaluate and just did it.” Evaluation was learned through watching others, on-the-job training, and was self-taught through participants’ own experiences with evaluation. Some participants reported that their own experiences as nursing students affected their evaluation process. Ms. BN stated, “All I really remember about nursing school is I was scared to death all the time.” Ms. OR noted, “An example of how experiences can be positive or negative is
remembering that instructor that I had in nursing school. That was more shame and blame and how that made me feel and wanting to not repeat that behavior.”

**Experience-simulation.** Simulation experience was defined from the data as any experience with any type of simulation. Participants reported a spectrum of experiences with simulation. All participants had engaged in psychomotor skills training or validations as an instructor, as well as some variation of mannequin or standardized patient simulation experiences. Ms. HA spoke of her use of table-top simulation activities related to improving the interpersonal skills of staff when she was a nurse manager. Ms. B stated, “I was the director of the simulation center for both the medical school and the nursing school.” Ms. AR reported participating in simulations daily and that most of her time was spent supporting and implementing simulation events. She stated, “The hospital that I came from had a skills lab in which we had a birthing simulator, a full-body high-fidelity simulator, and some other lower-fidelity mannequins. We had those there approximately two years. I guess you could say I've had six years approximately of simulation experience.”

**Training-simulation.** Simulation training was considered to be “any method in which participants gained knowledge and understanding of simulation methodologies, whether formal or informal.” Almost half of the participants reported having some type of formal training in simulation. Several had attended a full-week simulation instructor course, while others had a graduate certificate or graduate courses in simulation. Ms. DN said, “It was really exposure first. Also shadowing super-user faculty, the faculty that
actually have used and were currently using simulation. After that it was my own independent study, I think, simulation reading and research. Then after that I found a couple of seminars, conferences.” Other participants also reported a variety of methods for learning and gaining knowledge regarding integrating simulation into nursing education.

**Attitudes.** Attitudes were defined by the data as “the way a person views something.” While participants reported their views on evaluating student performance, it was implied that attitudes influenced the evaluation process as well. Participants discussed how they viewed other faculty in their evaluation approaches and noted that the individual’s attitude impacted their judgment of the performance. Ms. BN addressed the attitudes of other nursing faculty and commented that a positive or negative attitude can affect the self-esteem of the student and thereby influence the student’s performance. “They’re not honoring the contract between themselves and the student. The student comes to the check-off with the plan on how to succeed, and the evaluator says, ‘I failed everyone on foleys and I have a high standard.’ Well, that’s not honoring the contract.”

**Values.** Values represent those “concepts that are important and of merit.” Participants reported a spectrum of values when discussing influences on their evaluation process. Ms. F voiced strong values on preparation of students for potential legal situations. She expects detailed documentation and care plans from her students and believes this is essential to their preparation for work as nurses. She valued protecting herself as a nurse while expecting a high level of safety in patient care. Ms. F spoke to
how much she valued caring in her students. “You are approaching your skills, gently, doing whatever gently, you're not being rude to them. You're still treating them like a human being even though they may not be treating you respectfully.” Ms. R and Ms. H both valued patient safety, stating that patient safety was at the core of their evaluation process. On the personal side, Ms. D emphasized caring in her students. “I truly believe that what I see in simulation translates to the bedside. I see them not acting in a caring way. It’s hard for me not to care.”

**Beliefs.** Beliefs were defined from the data as “an opinion or conviction” Ms. H described her Christian beliefs as important in how she evaluated students. This was also relevant since the private institution where she taught had religious foundations. Ms. D also described religious beliefs as foundational to her program due to the religious nature of the school. Other participants discussed beliefs in a more general sense. For example, Ms. BN felt strongly about her beliefs related to evaluation of student performance. She stated, “I think, in general what I believe about evaluation of student skills performance or clinical performance is that it’s a really delicate dance with a student.” She expressed strong belief in supporting the student’s self-esteem and being careful when giving negative feedback. Ms. OI also affirmed that strong beliefs about what a nurse is and does and acknowledged the effect of those beliefs on how she evaluated students.

I think being a nurse and my beliefs in nursing and how I feel that a nurse should present themselves and how they should work affects my approach with students. I have strong beliefs in the way a nurse should carry herself or himself and how they should work and perform. I do not
believe in mediocrity in nursing. And an uncompassionate nurse is like a contradiction in terms. I want to instill it into nursing students that this is the field we're in. We're here to care for the patients.

**Personality.** Personality was defined by the data as “the visible aspect of one’s character.” Many of the participants reported that personality has an important influence on the evaluation process. Ms. G stated, “I think it comes down to their personality.” When asked why she felt personality affected the evaluation process, she stated,

> When a nursing faculty is very specific and rigid, and doesn’t focus on what really matters, which is nursing performance, and instead focuses on subtle differences in students adhering to the traditional patriarchal, hierarchical medical culture, then we’re not going to grow nurses that can critically think and think outside the box, and solve problems that we’re going to face.

Ms. D described personality as highly influential and noted, “The other thing about the faculty and staff that I currently work with, almost all are ex-military.” She felt their rigid methods impeded student performance and growth. Many other participants expanded on this theme, echoing that being “type A” or having perfectionist tendencies does affect their evaluation of the students. They attributed their evaluation approach to their personality, as they felt it affected other areas of their lives as well. Several participants mentioned that they were very patient and good listeners. Others felt their personality had been developed and defined over their life from many experiences and noted it heavily played into how they approached evaluation. Ms. H. said that she liked to get things
done, in her personal life and in her work life. She also stated, “I'm not a coddler, but I want to be fair.” She went on to say that she’s not sure why she is like that, but no matter what, she will always have a very high expectation of student performance. Ms. F reported a similar perspective, that she was a “guidelines and protocol person” and was very detailed, and would always expect top-notch work from her students in simulation.

**External.** The second type of evaluation influence that emerged from the data comprised factors external to the participant. Seven categories were discovered in the data: level of student, stakes, institutional norms, professional norms, peer expectations, fear of recourse, and reputation.

**Level of student.** Level of student in the nursing program was an important factor discussed by the majority of participants, who agreed they had higher expectations of upper-level students. Ms. R reported, “I'm thinking to what level of student are they—that will inform my expectation of them.” Ms. OR stated, “It’s important for the simulation, the student level, what course are they in, what is really the leveling there, all of that I need to form my expectation.” When comparing the videos of the junior and senior nursing students, most participants adjusted their expectations of student performance. When asked about influences on the evaluation process, Ms. C verbalized strong feelings on knowing the level of student and what the expectations are of students at that level. “The expectations are really at the level of the students so I know that I’ve given you the tools to succeed in the simulation because you’ve been taught this all
along.” Ms. C commented after watching the two simulated videos, “the junior student, you still have time to remediate, so I would be a little bit more forgiving.”

**Stakes.** Stakes was another external influence and was defined by whether the simulation was formative or summative and if grading was involved. Stakes were significant to the participants as they voiced concern about severe consequences for the performance in a simulation. Overwhelmingly, interview data indicated that most participants used immersive simulation as a formative assessment tool. All participants stated that skills validations and check-offs were graded and used as summative experience. It was reiterated that simulation was a safe learning environment for students, and it was difficult to use it for a graded experience. Participants suggested that simulation could be used for high-stakes testing, but most felt their programs and the faculty were not ready for this to occur. Participants described opposition to using simulation as high-stakes assessment due to the lack of objective means to measure performance outcomes.

**Institutional norms.** Institutional norms were another property that emerged, defined from the data as “an established standard of behavior shared by members of a group to which each member is expected to conform.” Ms. B felt strongly about institutional norms: “Absolutely, there are institutional influences and cultural influences.” Ms. BN described the influence of institutional norms as follows:

Institutional processes that affect faculty evaluation, that’s very interesting because there’s a couple of very strong influencing factors
that the provost has talked to us about…talked to all faculty in the school of nursing about attrition. It’s kind of directing us to truly think about our feedback to students and think about attrition.

Ms. OR reported the high-level effect of institutional norms. “I think it comes more from actually above the nursing department, head of the department, more the senior administrative level, that somehow 90% of your students should be able to get through the nursing program, and that's not what the statistics really say.” While many participants expressed strong feelings regarding their program or institution affecting their evaluation practice, others described it as more of an individual norm that varied from instructor to instructor. Participants commented that often it was up to the individual faculty member to make judgments and decisions on student performance, even though there was a difference in how they evaluated students.

**Professional norms.** Professional norms are another category of external evaluation influence and can be characterized from the data as standard expectations within the nursing profession. Almost all participants described an overwhelming dedication to nursing and said that to support the nursing profession there were specific expectations on how they were to judge and evaluate student performance. Being a nurse brings with it a set of moral and ethical behaviors participants described as essential. From these behaviors, participants set expectations of their students related to standards of nursing practice and care.
**Peer expectations.** An additional category of external evaluation influences that emerged was that of peer expectations; standards expected of faculty by other nursing faculty. While few participants reported any overt peer expectations, some did describe wanting to be considered a team player. Participants observed that it was difficult for faculty to agree on standards for student performance in simulation. In fact, participants said that there are certain faculty who are always difficult to work with, and this difficulty rolled over into evaluation of students. Additionally, some reported that their own expectations of other faculty are for them to follow the guidelines and protocols for each student in every situation. Inconsistency among faculty created frustration among participants when students were not held accountable. Ms. H described strong emotions regarding lack of regard for consistency by nursing faculty: “The faculty in my opinion, do not just hold them to a standard that is acceptable. I mean, just basic things like attendance and if they miss something they're allowed to make it up. Even if it's an excuse like, ‘I just forgot,’ there's no consistency....I know that's not really evaluation, but it kind of is.”

**Fear of recourse.** Fear of recourse was defined by the data as the fear of ramifications when assigning a student a non-passing grade. Participants spoke of fear of recourse in terms of other nursing faculty. They stated that many faculty felt reluctant to give a non-passing grade or a grade of unsatisfactory. Recourse was feared more when coming from the students than from other faculty. Nursing faculty did not want students who would seek recourse for a non-passing grade and wanted good end-of-the-semester student evaluations.
Reputation. Reputation is the last external evaluation influence that emerged from the data and was defined as the opinion held by someone about someone else. Participants felt comfortable with the reputation they had gained. Most reported a variety of reputations from being easy and laid back to being rigid and harsh. Ms. SS stated, “They don't say easy, they just say I have high standards, but they feel very relaxed, they say. They are not intimidated.” On the other hand, Ms. S discussed her reputation differently. “Students know that they’re going to have to perform a top performance in order to get, and in order to pass in my class, or in my validations or anything.” Some participants noted that they felt their reputation and approach had changed over time due to their own maturity in nursing and teaching, which dramatically affected their approach to evaluation. For example, participants described their early educator years as being overly rigid, but over time, they became more nurturing and supportive of student learning.

Strategies

The fourth theme to emerge through the open coding of data was strategies. Participants described a variety of strategies they applied when evaluating student performance in simulation. Three sub-themes were delineated: using a model or framework, pre-existing tools, and internalized criteria.

Models. Using a model or framework when evaluating student performance in simulation was a type of strategy that emerged from the data. While many participants
reported using a specific model, some reported it was such a natural and ingrained process that they had to think about the model they used.

**Nursing process.** Participants reported using the nursing process when evaluating nursing student performance. The nursing process was defined as a five-step systematic framework nurses use to collect and analyze data on a patient when delivering nursing care. Ms. DY stated, “This only goes back to my school of nursing because this is what one of your foundations was—the nursing process.” Ms. OI echoed that notion; because she wanted her students to be able to implement the nursing process, it became second nature as her model for student evaluation.

**Quality and Safety Education for Nurses (QSEN).** QSEN was defined as the quality and safety competencies for nursing. Almost all of the participants mentioned ensuring patient safety as the first and foremost concern when evaluating students. Several participants specifically mentioned QSEN as a primary influence on their evaluation process of student performance. Ms. OR noted, “We have objectives that each scenario has which are based on QSEN, and therefore, when we're addressing performance gaps, that's what we basically need to assess in every scenario.”

**Benner’s Stages of Clinical Competence.** Benner’s stages of clinical competence were defined as the five levels of clinical proficiency that a nurse passes through. Mr. B stated, “Yeah, I will have to say, we do use Benner's a lot from Novice to Expert.” Other
participants alluded to Benner’s model, addressing the particular stages of novice, advanced beginner, competent, proficient, and expert, but didn’t name the model.

*Tanner’s Clinical Judgment Model.* Several participants reported the use of Tanner’s Clinical Judgment Model, described as a four-phase process of noticing, interpreting, responding, and reflecting. Ms. OR felt strongly about the value of this model.

In [Tanner’s] theory she speaks more about reflection, situational awareness, and her study was also on how do nurses think like nurses and we reflect on our practices when we make a mistake. Also another thing that came out of her extensive literature search on that was that nurses don't think like nurses by just being computers where the assessment findings are put through some kind of a logical algorithm and you pop out with what diagnoses your patient may have.

Ms. O described frequent use of the Tanner Model when evaluating in simulation. “We probably look to Tanner a lot, her Model of Clinical Judgment, and that's how we base the two-hour scenario, how it flows, having the students notice and then interpret and respond, and then to, importantly, reflect on what they did.”

*Watson’s Caring Theory.* One participant spoke directly to the Watson’s Theory of Human Caring, described as the practice of caring and compassion in a world of curing. Ms. C noted, “One of the frameworks that we use is we have a caring curriculum,
and we use Watson’s caring model.” While other participants discussed the importance of caring and compassion in their students, no other caring model was explicitly noted.

**Kolb’s Experiential Learning.** Several participants addressed the notion of experiential learning, learning through experiences, reflection, and applying what one knows. Participants emphatically spoke of simulation as an ideal setting for experiential learning. Ms. G stated, “The other framework I use I had mentioned is Kolb’s Experiential Learning, so you can see that whole cycling process and see the student when they start discovering.”

**Knowles’ Principles of Adult Learning.** Knowles’ principles of adult learning were described as the basic principles of how adults learn and their motivation for learning. Ms. OR discussed the application of adult learning theories and mentioned Knowles’ general principles as playing very well into simulation experiences; she claimed these principles were at the forefront of her mind as she developed simulation events.

**Bloom’s Taxonomy.** One participant described using Bloom’s Taxonomy often when evaluating students and defined this model as having three major domains of learning: cognitive, affective, and psychomotor. Ms. DN stated, “I sometimes think of Bloom’s Taxonomy, since I do get to work with students at all the levels, both juniors and seniors. I had to oftentimes bring myself to the level of the student and where they’re at. I do use Bloom’s Taxonomy to, to get me to that place.” Other participants discussed
the various domains when evaluating students, often citing knowledge, skills, and attitudes that were important to them.

**Debriefing with Good Judgment.** Debriefing with good judgment was described as a method of providing feedback during formative simulation experiences. Several participants discussed the importance of feedback to students during formative learning experiences and how essential, appropriate methods of providing that feedback affected students. Ms. L stated the following:

> It’s really difficult to give feedback, especially when it's not good, especially when a student reacts either angry or upset. I don't think it's easy to give that kind of feedback in person, one-on-one, on the spot, after the intensity of the situation. No, we're probably not universal enough.

Ms. O noted use of debriefing with good judgment often in her simulation center and emphasized the importance of giving feedback in an appropriate and effective manner.

**Jeffries Simulation Framework.** Jeffries Simulation Framework was defined as the use of major constructs when developing and implementing a simulation event. Ms. G described use of this model with all simulation experiences at her center and believed it was essential to ensuring all components of the simulation were in place for each event. She felt this framework should be used when constructing the simulation event so that every student had a strong educational experience while being evaluated.
Pre-existing tools. The second sub-theme to emerge under strategies was the use of pre-existing tools. Four properties were revealed within this theme and included clinical evaluation tools, modified clinical evaluation tools, faculty-created evaluation tools, and simulation evaluation tools.

Clinical evaluation tools. Clinical evaluation tools were described as those tools used in the clinical setting to evaluate student performance. Participants noted a lack of adequate tools for simulation but said that they had attempted to use clinical evaluation tools during simulation. Ms. G stated, “I will look at those objectives that we set out for the clinical experience or our clinical evaluation tool when we're in the hospital when we evaluate students.” This practice, however, was found to be problematic due to the global nature of the tool.

Modified clinical evaluation tools. Modified clinical evaluation tools are tools modified from a current clinical evaluation tool. Ms. D discussed use of a clinical evaluation tool as “Five rights, or six rights. I mean communication, all those things, it's in their head, the faculty know what the evaluation tool says. It's a personal expectation, but at the same time, they're basing it on the clinical evaluation tool.”

Faculty-created evaluation tools. Participants reported on the creation of evaluation tools by faculty. Ms. F supported this notion: “I do create them specifically. Nobody else in the whole universe uses what I'm using. I mean, there's nothing to compare it to.” Ms. L stated, “Another faculty member and I, what we do is we develop
those tools. They're based on the resources that we give to students. If there's required reading and there's skill stuff in there, or there's videos, we go and read through those steps.” Other participants discussed the development of their own checklists or tools based upon other tools, simulation objectives, personal knowledge, and personal experiences.

**Simulation evaluation tools.** Simulation evaluation tools were described as those currently available in the simulation community and the literature. Ms. C stated, “Based on the Creighton Tool, we do evaluations, and it’s based on things like safety.” Ms. SS noted about current simulation tools, “I notice when we were doing the checklist, people were not observing the scenario. They were too busy reading the checklist and trying to check that off. What I do now is I make a mental note and I take a little note, then those areas that were missed, we talk about in developer-briefing.” Ms. H stated her program used the Clark Evaluation Tool, but it was not consistent and was often used as more of a guide for faculty. Ms. O even questioned the use of these tools. “Can our tools really measure what we cannot even accurately qualify?” Ms. DN noted, “We currently are using the CCEI [Creighton Competency Evaluation Instrument] and for debriefing, we use debriefing for meaningful learning.” She also strongly supported the use of tools in her simulations: “I guess the tool is the most important way to evaluate a student and the most fair way. I have to have a good tool before I will even do that.”

In summary, a variety of tools and versions of tools were mentioned by all participants. While most stated that they did not consistently use a tool, there was concern
regarding the application of tools and the universality of using a specific tool. Most participants voiced a need for a general evaluation tool for simulation.

**Internalized Criteria.** The third sub-theme that emerged as a strategy was internalized criteria. Three properties of internalized criteria include critical behaviors, observational skills, and using experiential norm-reference criteria.

**Critical behaviors.** Critical behaviors were defined as “those behaviors described as being essential for a satisfactory nursing student performance.” All participants discussed critical behaviors when observing students. Some participants noted critical behaviors when working with skills validations or performance. These critical behaviors were the determining factors in a pass or fail grade for these validations. Participants also described critical behaviors as those they personally look for in a student performance, whether the behaviors appear on the tool used for evaluation. Ms. B stated, “I believe that the very basic behaviors of patient identification, infection control, are my two biggest.” Ms. C echoed the importance of critical behaviors:

We’ll make them say, ‘This is my first check. This is my second check. This is my third check. What’s your name and date of birth? Let me look at my computer and make sure that I’m using that because that’s your patient identifier.’ Those are safety things that we do with every simulation, no matter what you do.
The majority of the participants supported overall desired student behaviors as criteria for evaluation, and the behaviors most often mentioned in the interviews were professionalism, safety, confidence, preparation, and patient interactions.

**Observational skills.** Observational skills were defined as “the faculty’s ability to observe a student performance and notice key behaviors while gaining an overall sense of the student’s abilities.” Participants elaborated on the general notion of observing students during a simulation. Ms. R stated, “It depends on individual faculty experiences, they may not notice things in a simulation that I would notice and vice versa.” Interview data supported a varied approach by faculty in their methods for observing student performances. Ms. O voiced, “As I sit there as that facilitator, I make my little plus and minus because I'm solo, so I'm multitasking. I make my little plus and minus.”

The video review by Ms. F led her to comment that she compares what she knows as good nursing practice to what the students were doing.

I was paying attention to what the student was asking the patient, and I was noticing what information the patient responded with, and I was watching for the student’s reactions to what the patient said, for example, she was talking about her water pill and the…it would have been a good time for patient education, and I was waiting for her to talk to a doctor about the patient not taking the medication.

Participants agreed that it was difficult to always catch every single thing a student did in a simulation. Ms. B addressed this issue:
If she did, I missed it. I didn't see identifying the patient before giving them meds. I missed her connection to putting the oxygen on, but I didn't know if there was a pulse oximeter reading or something that had gone on there that I missed, but there are some details there that I would want to make sure what she was thinking about when that was going on.

**Using experiential norm-reference criteria.** The third sub-theme that emerged was using experiential norm-reference criteria, defined as “comparing a student performance to a previous student’s performance.” Ms. C said she used this strategy as she watched the simulation video: “I would say, really, compared to what we do with our students, and I saw that she was pretty much at the same level as our students. She introduced herself, so I was, in my mind, believe it or not, I was using my checklist to see what she was doing.” Ms. DN stated, “Yes, I believe she was at the same level to me. It was more like she was more task-oriented than focusing on the big picture. She was focused on doing the task that she knew she needed to do. It did seem that our students are more prepared.” Other participants compared the two students in the video review. One said, “I think the second semester [student] saw more things, felt more confident in her skills, but she didn’t complete them all, where the first semester student wasn’t that confident but completed them all. Maybe not all completely right, but she actually did them.” Additionally, interview data supported the idea of comparing students to previous performances of other students and rating them against them as a reference. Ms. H stated, “I compared them and to my own students also. The first one I would say I was comparing to my own students because I hadn't seen the second one yet.”
In summary, the third sub-theme that emerged as a strategy was internalized criteria. Three properties of internalized criteria include critical behaviors, observational skills, and using experiential norm-reference criteria. Participants reported a variety of ways of using each of these when evaluating student performance in simulation.

**Axial Coding**

Open coding revealed four main emerging themes, desired student behaviors, simulation event, evaluation influences, and strategies. Ongoing analysis of these themes and the sub-categories related to each theme led to the development of an axial coding diagram. The axial coding diagram is a visual description of the relationships between themes leading to the development of a conceptual model (Strauss & Corbin, 1998). In grounded theory, identifying a core phenomenon and subsequent causal conditions, and contexts, as well as strategies, intervening conditions, and consequences are basic elements for proper research methodology. The axial coding diagram is shown in Figure 2 and will be further discussed in this section.

**Core Category**

The core category or the central phenomenon is the major theme that emerges from the data and is central to the model as it is developed by the researcher (Strauss & Corbin, 1998). For this study, the core category that emerged was perceived expectations (PE). The participants explicitly spoke to how they evaluated nursing student performance with regards to their expectations of each student. More specifically, the participants spoke of their expectations concerning a variety of nurse attributes, such as
nursing knowledge, attitudes, and skills (KSAs) and the gestalt or “putting it all together.”

Figure 2. Axial Coding Diagram of Faculty Process of Evaluation of Student Performance During Simulation.

Of these attributes, the most commonly reported were gestalt and attitude. All participants reported the importance of students “putting it all together” and integrating all aspects of their learning into care for the patient. Most reported that projecting confidence on the student’s part was essential to nursing care and advancing as a nurse. Having and implementing safety knowledge and skills was also reported by all the participants as critical for nursing students. Specifically, participants observed that these
perceived expectations were influenced by the level of the learner and objectives provided. The perceived expectations, influenced by the causal conditions, strongly motivated the participants to apply certain strategies to make decisions regarding performance.

Additionally, knowledge and skills were two other expectations that emerged. Knowledge, while significant in the participants’ reports, was secondary to the application of that knowledge in context. Integrating psychomotor skills into simulations was less important but was evaluated. For those participants who considered skills and skills validation a simulation, students’ technique and performance when completing the task were significant. Perceived expectations by nursing faculty served as a catalyst for their evaluation process.

**Causal Conditions**

Causal conditions are those that represent events that influence and impact the central phenomenon (Strauss & Corbin, 1998). Data analysis revealed five categories that had influence on the core phenomenon of perceived expectations. These categories were meeting course objectives, meeting program outcomes, verifying clinical proficiency, verifying skill acquisition, and providing formative assessment. Meeting course objectives emerged as having a direct influence on the faculty’s process for evaluation and the perceived expectations for student performance. All participants reported the significance of knowing the objectives of the simulation experience that reflected meeting the overall course objectives. For example, if the objective of the simulation was managing respiratory distress versus an objective of basic physical
assessment, the participants adapted their mental frame for evaluation of critical behaviors to the objective. Objectives for the simulation events were key behavioral achievements for attaining the overall objectives for the course. Meeting program outcomes emerged as a step above the course objectives in that participants directly related to the level of the learner in the program and their ability or inability to meet those objectives.

Providing formative assessment to learners was inherent to the teaching style of the majority of the participants. Participants saw simulation as a valuable tool for safe learning for students, allowing mistakes to happen without fear of recourse. If a participant’s evaluation was based on formative learning, there was a less rigid approach to the evaluation of student performance and the tactics to support and provide feedback for student improvement.

Verifying clinical proficiency emerged as participants reported wanting competent students who could function independently and safely. However, some participants reported struggling with how to adequately measure this and often saw students make it through the program without meeting their own personal standards. It was reported by Ms. C that she expected increasing proficiency as students progressed through each semester in the program. All of the participants responded that expectations for clinical proficiency are different for each level of learner.

Verifying skill acquisition emerged as a sub-category and was related to psychomotor skill adeptness. While participants generally spoke to skill proficiency, some indicated that skills were not the primary focus of the simulation events. However, if skills were performed, the participants expected proficiency depending on the level of
the learner. Ms. C, a highly experienced clinical nurse with five years as a nurse educator, said, “They might be hanging an IV. They might be putting the EKG leads on the patients. Every semester we build on the skills that they learned in the first semester.”

**Strategies**

Strategies are defined as actions taken in response to the central phenomenon or core category (Creswell, 2013). Three strategies emerged from the coding process: the use of a model, pre-existing tools, and internalized criteria. Participants in this study applied strategies to evaluate perceived expectations of student performance. Participants used these strategies in a combination of ways, which varied depending upon level of learner and objectives of the simulation. The application of models or frameworks was diverse among the participants, some often using several consciously or subconsciously to guide their evaluation. Some participants reported using pre-existing tools as a strategy to effectively evaluate a student’s performance in simulation, yet difficulty with inter-rater reliability and applicability affected their use. Participants also applied the strategy of internalized criteria. Observation skills were reported as being inherent to the judging of a student’s performance. Using a mental list of critical behaviors ingrained from previous experiences was frequently applied to the evaluation process. Participants often compared their own norm-reference criteria of other students when evaluating student performance in simulation.
Contextual Conditions

Contextual conditions are those factors that influence the strategies (Strauss & Corbin, 1998). Data analysis revealed three contextual conditions, including student characteristics, evaluation type, and student engagement. While these conditions varied among participants, the most commonly identified condition was type of evaluation. Knowing whether the evaluation was formative for learning or summative for grading was clearly important to the participant. Contextual conditions influenced both whether and how participants applied the strategies for evaluating student performance. For the study participants, if the evaluation were a formative assessment, they would apply less rigid feedback to improve student performance.

Intervening Conditions

Intervening conditions are global factors that impact and influence the application of the strategies (Strauss & Corbin, 1998). In this study, the primary intervening conditions emerging from the data analysis were standards of nursing practice, faculty past experiences, personal values, programmatic values and norms, and level of simulation fidelity. The most predominant intervening condition emerging from the study was faculty past experiences. Although the condition in most cases was based upon their experience, these factors played heavily into the participants’ evaluation practices and the application of strategies. Most participants reported a strong clinical background full of rich patient experiences that drove their general philosophy of evaluation. An additional intervening condition, standards of practice, was noted by participants as the driving force of nursing practice. Applying the strategy of using a model was often a
subconscious act for some participants, while others verbalized steps in some models. For example, the strategy of using a model was influenced by several of the intervening conditions. Participants used language from the nursing process and Benner’s model when evaluating students in a simulation.

Personal values were noted to be an intervening condition, and while participants expressed their individual personal values, they also reported their attempts to remain non-biased and to suppress these values when possible. Participants said that pre-existing tools helped guide them and facilitated objectivity in their evaluation process. The strategy of using internalized criteria was significant to participants, as these developed over time and were often personal. Participants’ use of critical behaviors, either from experience or from repeated use of a checklist was influenced by past experiences, standards of practice, and personal values. Comparing student performance to norm-referenced criteria and use of observational skills were heavily influenced by experience with repeated evaluations of students.

**Consequences**

Consequences are the final result of the application of the strategies and ultimately the outcome of all other conditions and factors (Strauss & Corbin, 1998). When participants were successful in applying the strategies of using a model, using a pre-existing tool, and using internalized criteria, the resulting consequences were decision on performance, reliability of evaluation, and decision on curriculum revision. Decision on performance was either satisfactory, remediation, or unsatisfactory. Satisfactory was indicative of students passing or successfully completing the simulation, while a grade of
unsatisfactory was assigned to students who had failed or were unsuccessful. Remediation emerged as an option for some participants who observed incorrect behaviors and wanted to work with the students to correct those behaviors. The axial coding diagram was developed to demonstrate the process of connecting open coding themes and does not indicate a linear process across the diagram (Strauss & Corbin, 1998). For instance, the contextual and intervening conditions’ influence on the strategies and subsequent consequences is different for each participant.

**Selective Coding**

Selective coding is the final stage of the grounded theory process, in which a model or theory is described. This includes the development of a conditional matrix, conceptual model, and associated propositions. Results of the selective coding procedures are described in the following sections.

**Conditional Matrix**

A conditional matrix demonstrates the levels of influence on the central core phenomenon (Strauss & Corbin, 1998). The conditional matrix provides a connection between the coding process and theory development. Within the matrix, the inner rings represent a micro influence, while the outer rings show the macro influence.

Figure 3 presents the conditional matrix that emerged from the study. At the center of the matrix (shaded in green) is perceived expectations. PE were reported by all participants as the driving force behind their evaluation processes. Within the matrix, the arrows indicate the direction of influence between the circles, which demonstrate a
dynamic relationship. There is a double arrow from PE to the outer circle, indicating reciprocating influences across the matrix.

The next ring (shaded in light green) represents evaluation influences. Being closest to the core, this micro factor contributes to the development of the participant’s evaluation process. Evaluation influences can be more personal and internal to the evaluator but can also include external influences such as program and institutional factors.

The middle matrix ring (shaded in lavender) represents strategies used when evaluating student performance in simulation. An arrow from the evaluation influences ring to the strategies ring denotes the relationship between evaluation influences and the types of strategies employed by the nursing faculty.

Figure 3. Conditional Matrix of Nursing Faculty Evaluation Process.
The next matrix ring (shaded in pink) shows the simulation event. The arrow from simulation event to strategies indicates a direct relationship of influence. The simulation event often drives the strategies used in the evaluation process.

The final ring (shaded in blue) represents desired student behaviors, which include nursing knowledge, attitude, skills, and gestalt. This was placed in the outer ring as it is a significant macro factor influencing the entire evaluation process. An arrow stemming from the core of the matrix to this outer ring is indicative of the influence of the core phenomenon throughout all the rings. There is a direct relationship from the outer ring of desired student behaviors to the next inner ring of simulation event. The simulation event is specifically designed to elicit specific behaviors.

**Conceptual Model**

The next phase of this research project was to develop a conceptual model of the faculty evaluation process of student performance in simulation based upon the axial coding diagram and conditional matrix. While this model represents a process for faculty evaluation of student performance in simulation, it does not imply a grand theory or that all nursing faculty evaluating during simulation events experience all aspects of the process. Instead it represents a potential process for nursing faculty evaluation of student performance that will require additional exploration. The conceptual model developed for this study is located in Figure 4.

The evaluation process emerged as a general cyclical process. The first element of the model, influences on the evaluation process, is represented by the gray inverted triangle. The outcomes of the evaluation connect to and shape the influences. So, the
Figure 4. Conceptual Model of Faculty Evaluation of Student Performance in Clinical Simulation.

overall global concepts are noted in connecting and overlapping circles within the inverted gray triangle: faculty, program, institution, student, and profession. Participants describe their past experiences in life, education, clinical practice, and simulation as having a heavy impact on their approach. Additionally, participants note that personal values and programmatic values/norms are intertwined in their evaluation process. One foundational condition is the standards of nursing practice, which also were described as
key to evaluating student performance. Student characteristics, including their level of knowledge, level in curriculum, and their engagement, significantly impacted how faculty approached and modified the evaluation process. Each of these elements is related to the others and may be weighted differently depending on the evaluation situation and perceived expectations. Influences then directly affect the element of perceived expectations.

The second element of the model includes the core phenomenon of perceived expectations, represented by the blue filled circle on the model. The perceived expectations were essential to the participants beginning their process of evaluating student performance; participants described them as standards by which they judged students. Perceived expectations are an inherent foundational theme that spans the entire evaluation process. The participants described in detail their expectations of nursing students during a simulation that included nursing knowledge, attitudes, skills, and gestalt, or the “putting it all together” as a nurse. Perceived expectations are central to the process and shown as having a relationship to the evaluation approach.

The next element on the model is the evaluation approach, represented by the green box and related to the blue circle of perceived expectations with a reciprocating arrow. The relationship between the blue circle containing perceived expectations is reciprocal and ever changing as it oscillates with the evaluation approach. The evaluation approach is unique for each individual and is therefore displayed a single entity. This approach may encompass a variety of strategies, techniques, tools, and observations. As an individual uses and implements their evaluation approach, the result is depicted as outcomes.
The fourth element on the model is outcomes, located within the pink circle; it includes reliable evaluation, decision on performance, and desired student behaviors. These outcomes reflect the effectiveness of the evaluation approach and include outcomes on different levels. While the evaluation process does not necessarily have a beginning or end, this could potentially be an ending point in certain situations. However, as learning never ends and the progress of students never ends, neither does the evaluation process. The outcomes directly shape and influence both the first element of perceived expectations and simulation event.

The final element depicted in this model is the simulation event. It is designated by the tan box at the bottom of the model signifying the importance of the simulation event being at the foundation of the model. While not directly in the cycle of the evaluation process, it impacts the entire process and drives how faculty formulate their evaluation approach. The simulation event is considered the basis on which the evaluation process is grounded.

**Propositions**

The researcher has outlined propositions to show the general relationships between the model concepts. This will further explain the proposed conceptual model and study results.

1. Perceived expectations of student performance drive the evaluation process in clinical simulation.

2. Nursing faculty’s perceived expectations of student performance differ.
3. The purpose of the clinical simulation event (i.e., formative evaluation, high-stakes summative evaluation) influences the selection of strategies used for evaluation of student performance.

4. Evaluation processes in clinical simulation differ among nursing faculty, resulting in inconsistent decisions of faculty about student simulation performance.

5. Nursing faculty base their evaluation of student performance in clinical simulation on an individual framework developed from personal values, past experiences, standards of practice, and programmatic value/norms.

6. Nursing faculty utilize a variety of strategies when evaluating student performance in clinical simulation, including models, pre-existing tools, and institutional and personalized criteria.

7. The nursing faculty evaluation process related to student performance in clinical simulation results in a decision regarding performance (i.e., satisfactory, remediate, unsatisfactory).

Summary

In summary, the data analysis revealed the following four major themes: (a) desired student behaviors, (b) simulation event, (c) evaluation influences, and (d) strategies. Perceived expectations emerged as the core phenomenon of the conceptual model. A variety of conditions influence one’s application of evaluation strategies, which affects decisions on performance, curriculum revision, and continuity.
CHAPTER 5
DISCUSSION

This grounded theory study was conducted to discover the process used by nursing faculty when evaluating nursing student performance in clinical simulation. Previous chapters have addressed the literature review, methodology used to conduct the study, and the findings as they developed through open, axial, and selective coding. Finally, a conditional matrix and visual model were presented, offering insight into the process of evaluation by nursing faculty, uncovered through the analysis of data.

This final chapter provides a discussion of the major findings, specifically addressing research questions and a comparison of the seven propositions to existing research. This is followed by a discussion of recommendations for future research, implications for professional practice, and conclusions.

Summary of Major Findings

The summary of major findings is organized by research questions.

Central Research Question

The central research question for this study asked what the process was by which faculty evaluate beginning and advanced nursing students’ clinical performance during an adult health clinical simulation. This study revealed that the evaluation process by nursing faculty during simulation is multi-faceted. At the core of this process is the
phenomenon of nursing faculty’s perceived expectations of students related to their performance in a simulation. Evaluation influences both personal and external to the faculty directly affect the process. Strategies used by faculty when evaluating student performance inform the process, whether formal external tools or internally defined conceptual frameworks are used. An analysis of the study findings using open, axial, and selective coding strategies generated a model to illustrate how nursing faculty evaluated student performance in simulation.

The use of evaluation tools is an attempt to improve consistency in evaluation among faculty; yet variables related to the person observing and scoring, such as rater bias and personal interpretation, must be considered (Ulrich & Mancini, 2014). In this study, participants judged student performance differently when viewing and rating simulated student performances. With only just over half of the participants rating the junior-level student performance as satisfactory in this study, the discrepancy in standards for grading demonstrates a lack of consistent expectations and strategies for simulation. Faculty inconsistencies in evaluation have been well documented and addressed in the literature as many institutions attempt to rectify these issues (Cockerham, 2015). The conceptual model of the faculty evaluation process in simulation generated in this study shows the relationships among factors within the process. A variety of influences directly affect the perceived expectations, which are central to evaluation of the simulation event. The simulation event is developed for a variety of reasons, including skill acquisition, preparation for clinical experience, formative assessment, and summative assessment. The simulation purpose influences the evaluation process, as there are different faculty expectations and evaluation decisions associated with each purpose. This process leads
to outcomes that can then in turn enter back into the process, causing faculty to modify their original perceived expectations and the simulation itself.

**Research Sub-questions**

In support of the central research question and to further enhance understanding of the factors that influence a faculty member’s evaluation process, this study addressed the following research sub-questions:

1. *How do personal and job-related factors influence the process faculty use in evaluating students’ clinical performance in a clinical simulation?*

The study results indicate that participants were influenced by a variety of personal and job-related factors at different levels. Participants were asked what influenced their evaluation process. A primary influence was personal experiences, ranging from general life experiences to educational experiences. One study in the literature on this topic described faculty’s tendency to rely on instinct and experience to discern how a typical student should be expected to perform (Isaacson & Stacy, 2008). Data emerging from this study showed that faculty’s clinical experiences heavily impacted the evaluative criteria by which they judged students’ performance. In fact, clinical experiences created a library of actions from which the participants drew upon when comparing the actions of their students to what was successful in their own practice.

Significant to the evaluation process were personal factors and the participants’ own personalities. This researcher found no other studies related to the nursing faculty’s personality and its effect on the evaluation process in simulation. This study revealed,
however, that personality was a major contributing influence in how a participant approached an evaluation of student performance. Participants noted that personal characteristics such as rigidness or perfectionism influenced their perception of whether student performance met their own personal expectations. Other nursing faculty noted that whether a faculty evaluator was shy or outgoing influenced their opinion of how students performed and presented themselves to the patient. Although this researcher could not find literature to support the effects of personality on faculty expectations, the notion of personal bias has been addressed in the literature as something that must be dealt with when evaluating student performance; previous studies acknowledge, however, that avoiding personal bias is difficult to actually implement (Oermann & Gaberson, 2006). Noting that personalities and preferences generated biases and subjectivity when evaluating students, Shipman et al. (2012) found it important for the faculty to discuss their expectations of student performance and objectives for the simulation prior to the evaluation event. Addressing these and potential personal biases helped facilitate a more fair evaluation of student performance.

Participants reported that their position as faculty members played a role in their evaluation approach. Furthermore, participants said that their specific role in the simulation at the time of the simulation event influenced how they approached evaluation. Depending on whether they were leading the debriefing or serving as the main evaluator or simply facilitating the event, their assessment of student performance might differ. Their level of participation in the event also impacted their ultimate evaluation of the student performance, since it was difficult to simultaneously participate in the simulation and have an overall perspective of the event (Decker et al., 2013).
Previous research indicates that the best practice in simulation is to have designated evaluators and debriefers who are not part of the implementation process (Neill & Wotton, 2013).

Some participants reported fear of recourse and reputation protection as factors that played a minimal role in their evaluation process. Almost all faculty reported that, while they thought reputation protection was significant to other nursing faculty when evaluating students, they did not personally worry about how their reputation with students and other faculty would be affected. Studies support the notion that the reputation of faculty with students was often a potential factor in how students were evaluated and affected the ultimate decision on student grades (Amicucci, 2012; Wolf et al., 2011). In a recent study by Walshe et al. (2014), things that went well in the simulation were more readily discussed than those needing correction, potentially leading to false impressions the students might have regarding their performance. Additionally, faculty were found to want students to like them and often gave them the benefit of the doubt (Walshe et al., 2014).

While the fear of recourse was mentioned by a few participants, they did not personally report any issues but stated that other faculty were concerned with the implications of their evaluation of student performance. Previous studies have shown that nursing faculty experience fear of the consequences of the final decision on the disposition of a student (Cockerham, 2015; Isaacson & Stacey, 2009). Novice faculty were found to be reluctant to give low grades for fear of the effect this would have on their own evaluation by students (Isaacson & Stacey, 2009). On the flip side, potential consequences exist when grade inflation occurs, leading to unprepared nursing students
passing courses and caring for patients (Cockerham, 2015; Krichbaum et al., 1994; Shipman et al., 2012).

2. What are the similarities and differences in mental (cognitive) frameworks used by faculty when evaluating students’ performance in a clinical simulation to frame their evaluation?

Results from this study indicate that nursing faculty often use a model or framework when evaluating nursing student performance. However, some participants struggled to name specific models, while others were able to identify models they used when evaluating students. Use of models was often inherent and intuitive as the faculty noted their own personal use of such models when being socialized into the practice of nursing. Previously described research indicates use of models and frameworks such as the QSEN competencies, Jeffries Simulation Framework, or Benner’s Novice to Expert when evaluating students during a simulated clinical event (Benner et al., 2010; Brady, 2011; Doolen, 2015; Larsen & Schultz, 2014; O’Donnell, Decker, Howard, Levett-Jones, & Miller, 2014). In this study, models were often internalized and used intuitively in the participants’ daily practice of evaluating clinical performance. While participants reported using a combination of models, they did not use them in an organized fashion, but often took pieces from several models to create their own.

One particular framework stood out in this study as essential to all participants: the foundation that patient safety plays in all patient situations. Heavily emphasized in the literature is the use of patient safety as a major objective and underlying priority in simulation events (Davis & Kimble, 2011; Frontiero & Glynn, 2012; Walshe et al., 2014). One study reported that nursing programs must demonstrate program outcomes
reflecting attributes of nursing practice, including patient safety, which could be assessed with the use of simulation (Davis & Kimble, 2011). Cockerham (2015) noted that patient safety and improved outcomes were the ultimate goal of nursing education evaluation methods and should help to delineate safe versus unsafe providers.

3. How do nursing faculty establish criteria when evaluating students for successful clinical performance during a clinical simulation?

The criteria for evaluation of clinical simulation include meeting course objectives, meeting program outcomes, verifying clinical proficiency, verifying skills acquisition, providing formative assessment, meeting standards of nursing practice, faculty past experiences, personal values, programmatic values and norms, and level of simulation fidelity. Prior research has shown that guiding factors in determining performance criteria were based upon course objectives and program outcomes (Mikasa et al., 2013). In the Mikasa et al. (2013) study, course faculty established criteria collectively (combining AACN competencies and course objectives) as an educational program improvement process, which also helped validate faculty observations in the clinical setting, identified areas for curriculum revision, and areas for student remediation.

In this study, the objectives of the simulation experience were significant to the process by which faculty set their standards and performance criteria for evaluating students. Participants indicated that knowing and using the objectives of the simulation event was essential to an effective evaluation process and perhaps formed a starting point for faculty. More specifically, the objectives of the simulation event were central to how faculty refined and adapted their evaluative criteria. While most simulation experiences
began with learning objectives, it was clear that faculty used these as the starting point for evaluating students and went on to incorporate other elements into the evaluation process, as has been the case in previous studies (Isaacson & Stacy, 2009; Parsons et al., 2012; Wolf et al., 2011). Wolf et al. (2011) discovered that, even with development of an evaluation tool for simulation and training nursing faculty in its use, there were still challenges as faculty adapted the tool criteria to their own performance criteria. Similarly, one study used the C-SEI in hopes of improving scoring consistency among faculty (Gantt, 2010). Despite training faculty evaluators and reaching a consensus of performance for meeting the criteria, the inconsistency of scoring perplexed the researchers, who attributed it potentially to faculty adapting to the unpredictable unfolding of each simulation and unanticipated pathways that had not been discussed prior to the event (Gantt, 2010).

In this study, participants also noted that the development of simulation objectives resulted from work experiences, personal experiences, and time spent working with nursing students. From these, the faculty had developed their own personal standards and expectations they wanted students to meet. Considering the multi-faceted and overlapping nature of the multiple behavioral domains faculty seek to evaluate in their students, clinical performance is difficult to capture (Isaacson & Stacy, 2009). However, the data from this study revealed that faculty established their own personal interpretation and criteria and superimposed them on the objectives of the simulation. This was not found to be explicit or easily described, as faculty just innately knew the steps and requirements for managing patient care.
4. How do nursing faculty control bias when judging students’ performance during a clinical simulation?

Controlling bias was discussed as something that just had to be dealt with when evaluating students in any situation. Faculty were aware of personal bias and attempted not to let any bias play into the evaluation; however, faculty were realistic in their observations that this was very difficult to do. Specific strategies for controlling for bias were not mentioned. Prior research has shown that having faculty not evaluate their own students was an effective way to manage bias, but the scheduling of the simulation events proved to be difficult (Wolf et al., 2011).

Faculty in this study admitted that evaluation during simulation will always have some subjectivity, and they were trying to identify ways to help alleviate the issue. Some used evaluation tools to make the evaluation process more objective, although the importance of bias varied depending upon the stakes of the event. Past studies have suggested that the use of rubrics could help decrease subjectivity in the evaluation of student performance although not completely eliminate it (Doolen, 2015; Gantt, 2010; Walshe et al., 2014). Walshe et al. (2014) highlighted the implications for rater training prior to a simulation event but specified that efforts should focus on bias and leniency.

5. How does the evaluation of a beginning or advanced student affect the faculty criteria for students’ clinical performance during a clinical simulation?

The results of this study indicate that the level of the student heavily impacted the participant’s expectations of the students’ performance in simulation in the sense that, for most expected behaviors, more lenient evaluative measures were used with beginning nursing students than advanced students. However, certain behaviors such as safety
precautions, patient identification, patient interactions, and general assessment were considered equally important for both beginner and advanced student performance. Data from a previous study affirmed the need to consider the importance of tailoring the objectives and expectations of a simulation event to the level of the learner (Parsons et al., 2012). Another group of researchers based their simulation events on the course objectives, which indicates that the events were created based upon the level of the learner (Shin et al., 2012). Doolen (2015) used a pilot study of first-semester and fourth-semester students to test a rubric for higher-order thinking; it was found that these skills were performed more successfully by the higher-level student, as these were high-level expectations.

6. How do organizational expectations of students’ clinical performance affect faculty decision-making processes when evaluating students?

In some cases, participants reported that organizational requirements and informal norms affected the faculty and how they would evaluate the student, but in most cases, faculty judged students according to their own personal standards, whether or not they fell lower or higher than the organizational standard. The study results suggested that faculty generally applied institutional guidelines and checklists depending on the simulation situation. Most faculty felt that simulation was still in its infancy at their institution and institutional evaluation standards had not been developed. Simulation was used the majority of the time for formative learning; the results suggested that the faculty’s institution expected students to meet general program outcomes, and simulation was used as one teaching methodology to achieve those outcomes and less as an evaluation method. Results of the study suggested that organizational expectations related
to student performance of skills had stricter parameters related to skills validations than to simulation events.

7. How do standards of nursing practice affect faculty appraisal of students’ clinical performance?

The study results supported the idea that there was significant adherence by faculty to standards of practice when evaluating students in simulation. Participants consistently reported measures the students were using to follow standards of practice and care during their evaluation of the student videos. This study found faculty were likely to use standards related to nursing care in evaluation, as has been demonstrated in other studies (Davis & Kimble, 2011; Wolf et al., 2011). The results of this study suggested that faculty used a variety of what they considered standards, including the AACN “Essentials of Baccalaureate Education for Nursing Practice” (2008) and general standards of nursing practice and care.

Several studies in simulation have applied the various standards to their simulation evaluation and developed rubrics and tools to use in simulation evaluation (Davis & Kimble, 2011; Kardong-Edgren et al., 2010). Faculty in this study could not always identify sources they were using as the standards of care for evaluation but stated they were the basis of nursing practice. Study results indicated that faculty felt they knew how to be a nurse and manage care of a patient and used the standards they knew as a major factor in how they evaluated student performance in simulation. This, however, can lead to variation between institutions related to learning needs and competencies of nursing students, resulting in different expectations of the education process of nursing students in the clinical management of patients (Larsen & Schultz, 2014).
8. What other factors affect faculty evaluation of nursing students in a clinical simulation?

Participants reported that the lack of education and training on evaluation in simulation hindered them when they started using simulation. They struggled to find and apply strategies and methods from other areas such as clinical practice to student evaluation. Lack of simulation and evaluation training was consistently reported by the participants as the main challenge to their confidence in their ability to evaluate student performance in simulation. Prior research has shown that nurse educators have received little training in evaluation of student performance in simulation or how to conduct simulation events or debriefing sessions (Cockerham, 2015). In the absence of training, novice faculty learn haphazardly how to evaluate, leading to poor educational planning and inconsistent expectations of students. Despite being clinical experts, faculty struggled with the implementation of best practices related to educational evaluation due to lack of training and development in educational modalities (Weidman, 2013). It is apparent from previous literature that faculty training and development is lacking in conducting evaluation in the simulation setting (Larsen & Schultz, 2014) and also often affects the structure and effectiveness of simulation debriefing and the focus of feedback offered to students.

The final research question, “What model can explain the process of faculty evaluation of students’ performance in clinical simulation?” will be discussed through an explication of the propositions that make up the conceptual model developed in this study. In the next section, the propositions will be described and compared to the evidence from the current literature.
Comparison of Propositions to Evidence

From the conceptual model developed through the analysis of data in this study, propositions were developed to explain the relationships among the concepts that emerged from the data. This section includes an explication of the propositions that emerged from this grounded theory study and a comparison of these propositions to what is already known in the existing literature. The seven propositions for the theory developed are as follows:

1. Perceived expectations of student performance drive the evaluation process in clinical simulation.

2. Nursing faculty’s perceived expectations of student performance differ.

3. The purpose of the clinical simulation event (i.e., formative evaluation, high-stakes summative evaluation) influences selection of strategies used for evaluation of student performance.

4. Evaluation processes in clinical simulation differ among nursing faculty, resulting in inconsistent faculty decisions on student simulation performance.

5. Nursing faculty base their evaluation of student performance in clinical simulation on an individual framework developed from personal values, past experiences, standards of practice, and programmatic values/norms.

6. Nursing faculty utilize a variety of strategies when evaluating student performance in clinical simulation, including models, pre-existing tools, and institutional and personalized criteria.

7. The nursing faculty evaluation process related to student performance in clinical simulation results in a decision regarding performance (i.e.,
satisfactory, remediate, unsatisfactory), decision on curriculum revision, and/or reliable evaluation.

**Proposition 1 and Proposition 2**

Proposition 1: *Perceived expectations of student performance drive the evaluation process in clinical simulation.*

Proposition 2: *Nursing faculty's perceived expectations of student performance differ.*

These two propositions will be discussed together, as they address perceived expectations that drive the evaluation process within the conceptual model. Participants consistently discussed their expectations of the students in each simulation event they viewed. These perceived expectations were representative of how each faculty member wanted the students to perform and drove the development of their entire evaluation process. Findings support the idea that each faculty member identified desired student behaviors for each student performance; yet their own perceived expectations drove what participants actually expected from each student’s performance. This researcher found no studies in the nursing simulation literature that described perceived expectations. However, research described the use of objectives for the simulation event as designating performance criteria sought in each student performance (Doolen, 2015; Kardong-Edgren et al., 2010; Walshe et al., 2014).

Results of this study revealed the importance of defining objectives for the simulation event and aligning these objectives with perceived expectations. Participants reported that along with these objectives come expectations that may or may not be met.
Identified objectives often pointed to an understanding by faculty of what students might do to meet those objectives, which could help in calibrating perceived expectations among faculty. In simulation, certain objectives could be selected to elicit appropriate assessment techniques and interventions by the nursing student that faculty, as a group, could explicitly define.

Participants in this study differed in their perception of student performance during the videoed simulations. Some participants found the physical assessment as performed by the student adequate, while others described it as being incomplete and incorrect. Gantt (2010) found faculty were inclined to first develop a mental image of a passing student before making a formal judgment on a student’s performance. In this study, faculty-perceived expectations formed participants’ mental image of a passing student.

As previously noted, there was little consistency among faculty when rating student performance, and some participants were reluctant to make a summative judgment of the video simulation performance. Another study supported the present study’s finding that faculty often disagree on the expectations for performance regardless of the defined standards (Krichbaum et al., 1994). Most of the participants noted that simulation was most often used in their institution for formative learning, so a summative evaluation was not as important as providing feedback on performance during debriefing. When pressed to make a judgment on a simulation performance, faculty differed on what constituted satisfactory or unsatisfactory performance. This is consistent with a study described by Cockerham (2015) in which faculty realized their own expectations were not aligned with those of other evaluators. Formal prior discussion of perceived
expectations and operational definitions of expected student behavior by faculty may help
decrease the inconsistency demonstrated in this study, acknowledged in the literature, and
experienced by students.

**Proposition 3**

Proposition 3: *The purpose of the clinical simulation event (i.e., formative evaluation, high-stakes summative evaluation) influences selection of strategies used for evaluation of student performance.*

All participants in this study reported that the purpose of the simulation and whether it was a graded simulation or for formative learning influenced the entire evaluation process. However, it was evident that, regardless of the need to assign a grade, faculty were continuously evaluating student performance. Selection of specific strategies was dependent on whether students were being graded or not. Faculty wanted to lessen the subjectivity of evaluation if it was a formally graded event and ultimately would have liked a checklist or tool to use. Although they felt that there was a lack of adequate tools and that current evaluation tools were often difficult to implement equitably, they noted that using a tool would provide more objectivity than just observing without clear guidelines for grading and concluded that they would like to have more appropriate tools available.

The use of evaluation tools has been shown to increase the reliability of student evaluation. In fact, faculty training on an evaluation tool has been found to support a more consistent and standard approach to student assessment among faculty during formative simulation (Cockerham, 2015). Sando et al. (2013) defined the Standards of
Best Practice in Simulation for assessment and evaluation. Clear and defined performance criteria should be described at each level of the simulation event, whether the assessment is formative, summative, or high stakes.

Most faculty lamented the lack of consistent strategies for evaluating student performance during simulation. For a formative learning simulation, faculty referred to the simulation objectives to guide the debriefing and feedback session. In this study, results suggested limited use of an evaluation tool by faculty but that such tools were sometimes used specifically for high-stakes simulations. Several studies have discovered that even when using simulation evaluation tools, faculty struggled to implement the tools while observing students in simulation (Ashcraft et al., 2013; Doolen, 2015). Some faculty participants in the present study, however, noted they had randomly tried simulation evaluation tools and found them to be difficult to implement and cumbersome to use during a simulation. Results from other studies offer evidence of the difficulties in the actual implementation of evaluation tools (Davis & Kimble, 2011; Shin et al., 2014). Faculty in this study found it difficult to observe students while simultaneously trying to complete a tool or rubric.

**Proposition 4**

Proposition 4: *Evaluation processes in clinical simulation differ among nursing faculty, resulting in inconsistent faculty decisions on student simulation performance.*

This study supports the idea that nursing faculty utilized different evaluation processes or approaches when judging nursing student performance in simulation. Almost half of the participants decided the junior student’s performance was
unsatisfactory, with almost one third judging the senior student’s performance unsatisfactory. Other studies have also confirmed that the lack of a uniform method of evaluation presents challenges for both novice and expert nursing faculty (Cockerham, 2015; Weidman, 2013). Weidman (2013) interviewed novice nurse educators, who revealed that they did not know how to evaluate students in general and lacked a uniform, standardized process for evaluation. One study by Cockerham (2015) showed that even when a tool is implemented, faculty needed to be trained and their use of the tool calibrated with that of others who evaluated students using the same tool.

**Proposition 5**

Proposition 5: *Nursing faculty base their evaluation of student performance in clinical simulation on an individual framework developed from personal values, past experiences, standards of practice, and programmatic values/norms.*

Results of this study revealed that nursing faculty developed their own framework shaped by multiple influences. This personal framework is formed from personal values, as well as a personal expectation of student behaviors. Personal criteria are developed that serve as the basis for an individual faculty member’s evaluation process. Faculty used past experiences of all kinds in creating their own framework. This is consistent with previous research that has shown that experiences of faculty impacted inter-rater reliability on a simulation evaluation tool; this study also found that faculty developed their own mental image of a passing student and then adjusted the rubric score accordingly (Gantt, 2010). The individual faculty in this study addressed their own personal framework developed over the years from their experiences and personal values
and beliefs while adhering to standards of practice and program requirements. The data from this study confirm that most nursing faculty could not identify a methodological approach to evaluation and lacked training on evaluation techniques. Most faculty learned to evaluate by observing others and emulating their standards, as well as using the experience of how they were evaluated as students. Results of this study indicate there is a lack of training and education on how to evaluate students in the simulation setting.

While there is a push from the simulation community to develop instruments for objectifying and measuring performance (Kardong-Edgren et al., 2010), little research has shown how faculty learn to evaluate using a standardized method. These tools do not address the inherent nature of the actual process involved in evaluating student performance but only provide a checklist to record student behavior. This researcher could not locate any studies describing the actual nature of the step-by-step process by which faculty evaluate student performance in clinical simulation.

**Proposition 6**

Proposition 6: *Nursing faculty utilize a variety of strategies when evaluating student performance in clinical simulation, including models, pre-existing tools, and institutional and personalized criteria.*

Studies have revealed that faculty attempt to objectify the evaluation process through maintaining a mental image of a student performance but also note that certain qualities are difficult to capture on an evaluation tool (Cockerham, 2015; Gantt, 2010).
While participants in this study only used tools occasionally, they felt that evaluation tools were able to only mildly enhance the objectivity of the evaluation.

Use of the Lasater Clinical Judgment Rubric and C-CEI (Creighton Competency Evaluation Instrument) in simulation experiences has increased; these tools have been applied in a variety of settings (Ashcraft et al., 2013; Parsons et al., 2012). Studies of the use of such tools have attested to the ongoing challenges of inconsistencies among faculty and in training, reaching a consensus on what behaviors meet each criterion, and the limitations of the tool in how it was interpreted (Parsons et al., 2012). While making some headway in their use, faculty participants still experienced difficulties related to interpretation and implementation of the tools.

Models such as QSEN and Benner’s Novice to Expert framework have been used in the context of simulation evaluation and provided a foundation for faculty to base their process on. Applying clinical evaluation tools in simulation has been shown to be difficult in practice since such tools often gauge student performance over repeated episodes. While simulation is merely a snapshot of a student’s abilities, these clinical tools adapted for use in simulation did not capture the essence of the simulated patient situation (Cockerham, 2015).

Participants in this study recognized that no single model or tool was used in their evaluation process. However, the results suggested that a combination of models or tools was most often used and was often subconscious and innate. Getting faculty to conform to using one tool when their experience had shown a different method was more effective and such created difficulties in their abilities to force themselves into one mold. In a recent study, Parsons et al. (2012) met this challenge as faculty’s experiences affected the
use and interpretation of the evaluation tool. Personal developed norm-referenced criteria were often used unintentionally and provided a standard for faculty to judge student performance. Applying clinical evaluation tools presented challenges to the participants in the current study in the actual implementation of the tool, findings that echoed the data from a study that adapted evaluation tools and clinical course objectives (Wolf et al., 2011).

**Proposition 7**

Proposition 7: *The nursing faculty evaluation process related to student performance in clinical simulation results in a decision regarding performance (i.e., satisfactory, remediate, unsatisfactory), decision on curriculum revision, and/or reliable evaluation.*

Study results demonstrated that nursing faculty most often decided on one of three outcomes regarding student performance when evaluating simulation: satisfactory, unsatisfactory, or the need for remediation. When faculty observed student performance in simulation, skills or actions that were questionable or performance that lacked implementation of appropriate interventions caused concern for the faculty as they questioned how the student was taught and what had the student learned. This led to the need for course and curriculum changes if deficits were noted, especially if deficits were consistent throughout all student performances.

The study results show that faculty used remediation when students did not meet minimum standards, although no standardized process was in place for this. Some students were allowed to repeat the simulation, or faculty worked independently with the
student to ensure student success in areas in which they were deficient. Previous research has shown that students either passed or failed a simulation scenario, and may even have received remediation to facilitate the student’s success in the simulation (Wolf et al., 2011). One study found that the use of an outcome-based evaluation tool helped faculty make a decision on performance and noted that this led to the development of a formal remediation plan for students (Mikasa et al., 2013).

The majority of participants used simulation as a formative assessment and described the debriefing as serving as evaluation of student performance. When there was a consequence for poor performance, faculty were more likely to increase their attention to detail and seek objective methods for evaluating the student’s performance. Past research has shown that debriefing is still without standards for best practice, and no consistency was found between simulation uses as either formative or summative (Neill & Wotton, 2011). The review of current use of high-fidelity simulation debriefing in the literature highlighted the fact that there was no standard or structured methodology in how debriefings were designed (Neill & Wotton, 2011).

Several researchers have noted that often in the evaluation and debriefing of a simulation event it is easy to focus on student actions and avoid delving into their cognitive frames and emotions that guided the actions (Rudolph et al., 2007). Debriefing as defined by Rudolph et al. (2007) involves a practice of self-reflection to develop personal insights and is somewhat different than the beliefs of some of this study’s faculty participants on debriefing and evaluation, which leaned more toward identifying and stating correct and incorrect behaviors. These seven propositions are hypotheses and described the relationships discovered in the data.
Limitations

There were several limitations associated with this study. First, potential for researcher bias is a limitation of this study. The researcher is well versed in the nursing simulation arena; therefore, preconceived notions regarding simulation could have biased the research process. In addition, use of the think-aloud technique may have made it difficult for some participants to truly and accurately verbalize their mental steps. Further, use of this method may have affected some participants’ ability to adequately analyze and review the video as they normally would a simulation; thinking aloud could have interrupted their mental processing (Lundgren-Laine & Salanatera, 2010). Finally, the study is limited to one regional area and may not be representative of other nursing schools across the country, possibly limiting transferability of this study’s findings to other settings.

Recommendations for Future Research

This study’s findings have prompted the identification of areas for future research. First, research should be conducted to assess the model developed in this study using quantitative research methods with a representative sample of nursing faculty. Testing the model with various populations of nursing faculty will further strengthen and refine the model of the faculty evaluation process of student performance in simulation. Conducting additional research on the model will further enhance its use to facilitate improvement in nursing faculty’s process of evaluation.

While previous research has been conducted on the development and implementation of simulation evaluation tools, more research is needed on training and
facilitating faculty’s use of a standardized evaluation process of nursing student performance in simulation. Gaining insight into the steps of the actual process, researchers may employ better training and education to improve how nursing faculty actually evaluate student performance. Future research should focus on assessing nursing faculty in the simulation setting while they evaluate actual student performance.

Implications for Nursing Education

The model developed in this study could contribute to the continued search for appropriate evaluation methods to be used by nursing faculty for student performance in simulation. Perhaps this model could serve as a foundation for nursing faculty to consider when developing tools and instruments for evaluating simulation events. In considering mechanisms to improve the evaluation process, this model could influence future studies engaging in a more in-depth analysis of the methods nursing faculty use to evaluate and provide rationale for decisions about student performance.

Study results indicate that gaining a clearer understanding of the process of evaluation and the factors that influence this process could help support the future education of faculty on assessing student performance by more objective measures rather than relying on previous personal experiences. Because of the prevalence of personal, non-standardized approaches to student evaluation, nursing faculty working in simulation must consider and address these issues in light of utilizing an instrument or tool. Faculty must gain insight into their own personal values and beliefs and make those explicit. While inter-rater reliability was found to be a fundamental concern among participants in
this study, faculty must not only adjust for biases but also come to a consensus on accepted behaviors and perceived expectations.

While faculty were somewhat familiar with the formal process of evaluation, this study determined that little training on evaluation is offered to faculty, and therefore, faculty develop their own methods by observing others often reflecting on their own experiences as nursing students. This approach to evaluation is an especially important finding for schools of nursing and nurse educators; faculty do not know appropriate methodology for evaluation in simulation and resort to using other learned methods to evaluate student performance. Many faculty members in this study had conducted clinical practice for students and were provided evaluation forms to complete for those students. As a result, they carried those tools over to simulation evaluation. However, this method is a haphazard approach to evaluation in simulation and provides little structure in leveling and defining student performance expectations in a different environment. The strategic use of simulation experiences paired with the formulation of consistent performance expectations through faculty training in simulation and evaluation may enhance students’ overall performance and ability to apply KSAs and gain nursing gestalt.

Conclusion

In conclusion, a conceptual model of nursing faculty’s process of evaluation of student performance in simulation was found to be multi-faceted. The basis of the model is the proposition that perceived expectations of student performance by faculty drives the evaluation of students regardless of the purpose of the simulation or whether a
structured evaluation tool was utilized. A variety of influences impact the faculty’s perceived expectations, including program, institution, student, profession, and personal (faculty). The perceived expectations are driven by the simulation event and lead to the faculty’s own evaluation approach. The evaluation process leads to multiple outcomes, such as an explication of desired student behaviors, more reliable evaluation, decisions on curriculum revision, and decisions about student performance. The type of outcome arrived at through the process in turn changes the faculty member’s view of the simulation event and perceived expectations. This study has shown that the process of student evaluation in simulation is individualized, biased, and unreliable. The process of student evaluation would benefit from the addition of faculty training in simulation and educational evaluation methods.


APPENDIX A

DEMOGRAPHIC INFORMATION FORM
Demographic Form

Please complete the following:

1. **Gender** M or F

2. **Age** _________

3. **Ethnicity** Please check one:
   ___Hispanic or Latino
   ___Not Hispanic or Latino

   **Race** Please check one:
   ___American Indian or Alaska Native
   ___Asian
   ___Black or African American
   ___Native Hawaiian or Other Pacific Islander
   ___White

4. **Education:** Circle highest degree earned
   ADN  ASN  BSN  MSN  DNP  EdD  PhD  Other________

5. **Work Experience:**
   Nursing specialty __________________________________________
   Years of experience in clinical practice _____________________
   Years of experience as a nursing educator___________________

6. **Place a check by the type of nursing program you are currently teaching**
   _____Associate nursing degree program
   _____Baccalaureate nursing degree program
   _____Accelerated pre-licensure program

7. **Years of experience using simulation in nursing education:** _________
APPENDIX B

PARTICIPANT RECRUITMENT PROMPTS
The email recruitment script

Dear faculty,

I am writing to invite you to participate in a research study I am conducting as part of the requirements for completion of my PhD in Nursing at the University of Alabama at Birmingham School of Nursing. My research focuses on understanding the process by which nursing faculty evaluate nursing students during an adult health clinical simulation. For this study I am inviting nursing faculty who have taught in a pre-licensure nursing program for at least one year and have been involved in using clinical simulation in their program.

You will be asked to participate in 2 interview sessions. One interview will focus on how you as a faculty member evaluate student’s performance in a clinical simulation lasting approximately 1 hour. The second interview, lasting 30 minutes, will involve the watching of two 5 minute videos and asking you to comment on how you would evaluate the student’s performance. If you prefer to have those interviews done at the same time, I would be happy to accommodate your preferences. The entire interview process will be audio-taped with your permission and I will be taking written notes. Audiotapes will be transcribed for further analysis. Additionally, if you have any forms or documents you feel may be pertinent to my research related to evaluation of students, I would like to collect those and will remove any identifying information from them. Your participation in this study may not directly benefit you, but will help nursing researchers and nurse educators find better ways to evaluate students during a clinical simulation. You may stop the interview process at any time you feel uncomfortable or wish to stop participating in the study. Participation is voluntary. This interview will be kept strictly confidential. The information collected will be published with no identifying information.

If you are willing to participate in this study or have any additional questions, please contact me via email at piwatts@uab.edu, or call me at 205-934-6560 or 205-413-2275. If you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the UAB Office of the IRB (OIRB) at (205) 934-3789 or toll free at 1-855-860-3789. Regular hours for the OIRB are 8:00 a.m. to 5:00 p.m. CT, Monday through Friday. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else. Thanks so much for your time.

Sincerely,

Penni Watts, MSN, RN
piwatts@uab.edu
205-413-2275
205-934-6560
The telephone recruitment script

Hello, my name is Penni Watts and I am calling you to discuss an opportunity for you to participate in a research study I am conducting for part of the completion of my PhD in Nursing at the University of Alabama at Birmingham School of Nursing. My research will explore the process by which nursing faculty evaluate nursing students during an adult health clinical simulation. For this study, I am inviting nursing faculty who have taught in a pre-licensure nursing program for at least one year and have been involved in using clinical simulation in their program.

You will be asked to participate in 2 interview sessions. One interview will focus on how you as a faculty member evaluate student’s performance in a clinical simulation lasting approximately 1 hour. The second interview, lasting 30 minutes, will involve the watching of two 5 minute videos and asking you to comment on how you would evaluate the student’s performance. If you prefer to have those interviews done at the same time, I would be happy to accommodate your preferences. The entire interview process will be audio-taped with your permission and I will be taking written notes. Audiotapes will be transcribed for further analysis. Additionally, if you have any forms or documents you feel may be pertinent to my research related to evaluation of students, I would like to collect those and will remove any identifying information from them. Your participation in this study may not directly benefit you, but will help nursing researchers and nurse educators find better ways to evaluate students during a clinical simulation. You may stop the interview process at any time you feel uncomfortable or wish to stop participating in the study. Participation is voluntary. This interview will be keep strictly confidential. The information collected will be published with no identifying information.

If you are willing to participate in this study or have any additional questions, please contact me via email at piwatts@uab.edu, or call me at 205-934-6560 or 205-413-2275. If you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the UAB Office of the IRB (OIRB) at (205) 934-3789 or toll free at 1-855-860-3789. Regular hours for the OIRB are 8:00 a.m. to 5:00 p.m. CT, Monday through Friday. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else.

Thanks so much for your time.

Penni Watts, MSN, RN
piwatts@uab.edu
205-413-2275
205-934-6560
APPENDIX C

INSTITUTIONAL REVIEW BOARD APPROVAL FORM
UAB's Institutional Review Boards for Human Use (IRBs) have an approved Federalwide Assurance with the Office for Human Research Protections (OHRP). The Assurance number is FWA00005960 and it expires on January 24, 2017. The UAB IRBs are also in compliance with 21 CFR Parts 50 and 56.

Principal Investigator: WATTS, PENNI ISLA
Co-Investigator(s): E140507010
Protocol Title: A Grounded Theory Model for Evaluation of Student Performance by Nursing Faculty During an Adult Health Clinical Simulation

The above project was reviewed on 5/14/14. The review was conducted in accordance with UAB's Assurance of Compliance approved by the Department of Health and Human Services. This project qualifies as an exemption as defined in 45CFR46.101, paragraph 2.

This project received EXEMPT review.
IRB Approval Date: 5/14/14
Date IRB Approval Issued: 5/14/14

Cari Oliver
Assistant Director, Office of the Institutional Review Board for Human Use (IRB)

Investigators please note:

IRB approval is given for one year unless otherwise noted. For projects subject to annual review research activities may not continue past the one year anniversary of the IRB approval date.

Any modifications in the study methodology, protocol and/or consent form must be submitted for review and approval to the IRB prior to implementation.

Adverse Events and/or unanticipated risks to subjects or others at UAB or other participating institutions must be reported promptly to the IRB.
APPENDIX D

PARTICIPANT CHART
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APPENDIX E

OPEN CODES
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