

CLINICAL JUDGMENT SCRIPTS AS A STRATEGY  
TO FOSTER CLINICAL JUDGMENT

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## ABSTRACT

Clinical judgment is a term used to describe how nurses use their knowledge of the patient to generate, assess, and prioritize patient care alternatives. The purpose of this research was to investigate if the incorporation of a standard clinical judgment script, based on Tanner's (2006) Clinical Judgment Model, into student experiential learning activities could foster the development of reflective thinking and clinical judgment.

Participants were 53 senior nursing students, enrolled in their final semester of study. Data concerning student reflective thinking and clinical judgment skills were gathered and analyzed from three sources: (1) Results from two independent raters observing students in simulation were analyzed using a dependent t test; (2) A one-factor repeated measure ANOVA and descriptive statistics were used for data gathered from the students themselves; and (3) A one-factor repeated measures ANOVA was used to analyze data from the student's clinical instructors. Research results from this study found that the use of a standardized clinical judgment script does improve student reflective thinking and clinical judgment. Further, the results indicated that most students found the standardized debriefing script to be an effective way to promote the development of clinical judgment. Particularly, the students found the script helpful when evaluating and analyzing key decision making points in their day.

Of importance to nurse education, the research script included cues and prompts which stimulated student's reflective self-assessment skills. The encouragement of reflective thinking allows students to view the entire clinical or simulated experience as a whole rather than a series of independent tasks, thus fostering clinical judgment. Further research is needed using the

standardized debriefing script with more diverse student groups. Also, replicating this research with simulated learning experiences of a more analogous design is indicated.

## DEDICATION

This dissertation is dedicated to my husband Dennis Hines, for his endless support and encouragement. Within our home he took up the slack created by my return to school and became my “APD” (all-purpose Denny). I could not have done this without you.

## LIST OF ABBREVIATIONS AND SYMBOLS

ANOVA	Analysis of Variance
CVI	Content Validity Index
CWID	Campus Wide Identification
df	Degrees of freedom
DML	Debriefing for Meaningful Learning
F	Means of the within groups variances
HPSs	Human Patient Simulators
LCJR	Lasater Clinical Judgment Rubric
M	Mean, sum of all scores divided by the number of scores
n	number in the sample
p	significance
PALS	Pediatric Advanced Life Support
r	Correlation
SD	Standard Deviation
t	Computed t test statistic value
TCJM	Tanner's Clinical Judgment Model
%	Percentage
=	Equal to
$\alpha$	Level of Significance
<	Less than
>	Greater than
*	The mean difference is significant at the .05 level

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## CHAPTER I - INTRODUCTION

### **Clinical Judgment Scripts as a Strategy to Foster Clinical Judgment**

Rapid advancements in healthcare knowledge, increased focus on quality and patient safety guidelines, and updated competencies from accrediting bodies have made rote memorization of material no longer an adequate option for today's nursing student (Dreifuerst, 2012; IOM, 2011; Lasater & Nielsen, 2009). New graduates need to have a conceptual knowledge that supports the development of clinical reasoning and clinical judgment. Graduates are expected to provide safe and reliable care, yet the literature is clear regarding the inadequacies of novice nurses' critical thinking and clinical judgment skills (Gillespie & Paterson, 2009). It would appear unrealistic to expect new nurses to function with the clinical judgment and skills of the expert nurse. However, nursing schools are faced with the very real expectation of producing graduates that are proficient in both technical and reasoning skills (Guhde, 2010; Schubert, 2012; Struth, 2009).

Nurses spend vast amounts of time in direct patient care. To avoid negative patient outcomes, nurses must be able to synthesize a varied and complex amount of patient information quickly and correctly (Benner, Tanner, & Chesla, 2009; Gordon & Buckley, 2009; Lasater, 2011). Nurse educators are challenged with the need to provide students with the kind of clinical experiences that develop their clinical judgment (Weatherspoon & Wyatt, 2012). Simulation has gained acceptance within nurse education as an experiential learning strategy that fosters critical thinking and clinical judgment. Through a combination of online and simulated activities, students are able to apply scientific knowledge, to critically think, and to explore new skills.

(Guhde, 2010). The goal of most simulation experiences is to foster clinical reasoning and judgment, to ease the transition into the nursing role, and to identify any weaknesses in student reasoning and ability (Dillard, Sideras, Ryan, Carlton, Lasater, & Siktberg 2009).

Bambini, Washburn, and Perkins (2009) conducted research to examine if simulation experiences affected the self-efficacy of nursing students' clinical skills and clinical judgment. They found that as the complexity of the patient scenario increased, the students' ability to transfer knowledge from the theoretical to the contextual diminished. Students began to miss patient cues and became inflexible in their plan of care. Additionally, they relied on following clinical guidelines rather than exercising clinical reasoning and judgment. Therefore, a period of debriefing after the simulation experience is vital, as it allows students time to reflect upon and to discuss clinical judgment and performance (Dreifuerst, 2012; Neill & Wotton, 2011).

Debriefing is the time following a simulated or clinical learning experience when students and faculty revisit and discuss the experience in a reflective manner, thus solidifying learning (Gordon & Buckley, 2009). Though debriefing is a critical component to simulation and experiential learning, the best-practices for debriefing have scarcely been studied and a clear need exists for further research in this area (Jensen, 2013; Kuiper, Pesut, & Kautz, 2009; Lasater, 2011). During debriefing, students learn to frame or re-frame their thinking. Following simulation or clinical learning experiences, faculty led, structured debriefing can allow students to verbalize thinking and decision making rationales that promote clinical reasoning and clinical judgment (Mariani, Cantrell, Meakim, Prieto, & Dreifuerst 2013).

In 2006, Tanner published the innovative article, *Thinking Like a Nurse: A Research-Based Model of Clinical Judgment in Nursing*. Based on the review of almost 200 studies, Tanner defined clinical judgment as an “interpretation or conclusion about a patient’s needs,

concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response" (2006, p. 204). This review led to the development of Tanner's Clinical Judgment Model (TCJM) which conceptualized a flexible, ongoing process of noticing, interpreting, responding, and reflecting. Tanner's (2006) model could offer the framework for clinical and simulation debriefing, thus providing a standardized language and format for reflective thinking and for the development of clinical judgment.

Debriefing has been recognized as a critical component to the complex cognitive practices of reasoning, and judgment, yet few studies have focused on the use of a standardized model for debriefing and its effect on clinical judgment development in nursing students (Dillard et al., 2009; Jensen, 2013). The purpose of this research was to answer the following four questions:

1. Does the introduction of a standardized clinical judgment script into clinical and simulation debriefings improve student clinical judgment as seen in simulation activities?
2. Are student perceptions about clinical judgment skills different after the introduction of a standardized clinical judgment script?
3. Are clinical instructor perceptions about student's reflective thinking different after the introduction of a standardized clinical judgment script into debriefing sessions?
4. How do students rate the effectiveness of a standardized clinical judgment script on the fostering of reflective thinking skills needed for the development of clinical judgment?

There were four study hypotheses:

1. The introduction of a standardized clinical judgment script into clinical and simulation debriefing will improve student clinical judgment performance as seen in simulation activities.
2. The use of a standardized clinical judgment script will improve student perception of clinical judgment skills.
3. The use of a standardized clinical judgment script will improve clinical instructor perceptions of students' reflective thinking skills in clinical debriefing.
4. Students will rate the standardized clinical judgment script as an effective tool for the development of reflective thinking and clinical judgment.

Since the nurse is the primary provider for patients in high-acuity settings, the nurse's clinical judgment must be accurate and efficient for optimal patient outcomes. Nurse educators are challenged with having to provide the kinds of clinical experiences that develop clinical judgment in their students (Weatherspoon & Wyatt, 2012). The TCJM is a suggested framework for students and clinical instructors that allows a consistent approach to patient care and the development and evaluation of reflective learning and clinical judgment. The incorporation of a standard clinical judgment script into clinical and simulated debriefing experiences could support the development of reflective thinking skills and clinical judgment.

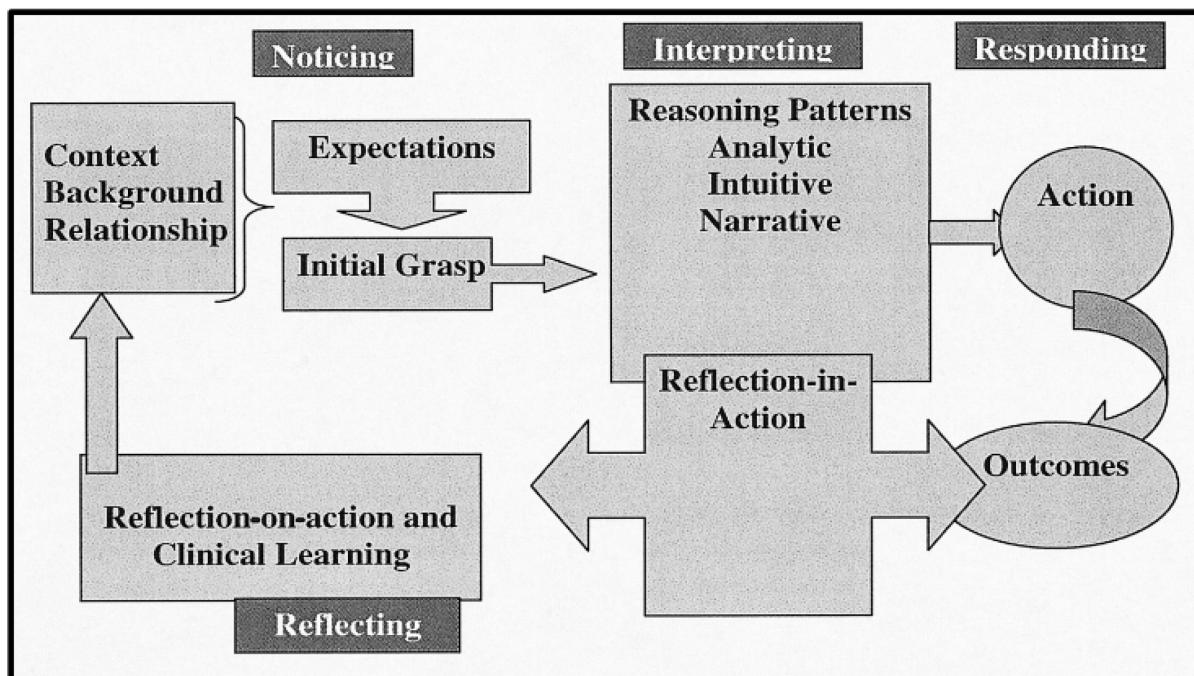
## **Theoretical Framework**

Tanner's (2006) extensive literature analysis resulted in the development of five conclusions:

- (1) Clinical judgments are more influenced by what nurses bring to the situation than the objective data about the situation at hand; (2) Sound clinical judgment rests to some degree on knowing the patient and his or her typical pattern of responses, as well as an

engagement with the patient and his or her concerns; (3) Clinical judgments are influenced by the context in which the situation occurs and the culture of the nursing care unit; (4) Nurses use a variety of reasoning patterns alone or in combination; and (5) Reflection on practice is often triggered by a breakdown in clinical judgment and is critical for the development of clinical knowledge and improvement in clinical reasoning (p. 204).

From these five conclusions Tanner (2006) developed the Clinical Judgment Model pictured below; a flexible and ongoing process of noticing, interpreting, responding, and reflecting.



*Figure 1. Tanner's Clinical Judgment Model*

As the first step in the clinical judgment process, noticing is a function of the nurse's awareness and is based on the nurse's knowledge of the individual, knowledge of similar patients, experience, and theoretical knowledge. Through noticing the nurse becomes aware of important patient cues in a particular situation. Noticing involves a combination of theoretical, contextual,

and patient specific knowledge that leads the nurse to expect a certain patient response. When the expected response differs from the reality of the situation, the nurse recognizes that difference as important (Dillard et al., 2009).

Interpreting what is noticed by the nurse triggers one or more reasoning patterns. These patterns allow the nurse to make meaning of what is noticed and prompt the nurse to pursue a course of action. Correctly interpreting clinical information allows the nurse to draw conclusions based on critical and analytical thinking, intuition, and narrative reasoning (Modic, 2013). Responding involves taking, or not taking, action in a situation. Additionally, there is a concurrent reflection-in-action. This type of ongoing reflection allows for fine tuning of the action in response to additional patient cues or outcomes (Lasater, 2007).

The final phase of the process is reflection. Reflecting-on-action is a learning process that completes the cycle and solidifies the learning of clinical judgment and knowledge. Reflection develops the cognitive patterns needed for clinical judgment; the nurse recognizes and makes sense of how noticing, interpreting, and responding led to a particular patient outcome. Nurse educators need to understand that every patient contact is an opportunity for developing clinical judgment; reflection is the key to accelerating the development of the cognitive patterns essential for clinical judgment (Nielsen, 2009).

### **Definition of Key Terms**

**Clinical Judgment.** Clinical judgment describes the nurse's knowledge, intuition, values, and experiences; clinical judgment involves the nurse using knowledge of the patient to generate, assess, and prioritize possible patient care alternatives. Then, choosing from multiple courses of action, the nurse makes patient care decisions (Benner et al., 2009). For the purposes of this research, clinical judgment was based on the framework of Tanner's clinical judgment model:

noticing, interpreting, responding, and reflecting (Tanner, 2006). Measures of clinical judgment were operationalized through the Lasater Clinical Judgment Rubric (LCJR), a valid and reliable tool for assessing clinical judgment.

**Debriefing/Post-Conferencing.** For the purposes of this study, the terms *debriefing* and *post-conferencing* were used interchangeably. Debriefing/post-conferencing is defined as the period of time at the conclusion of a simulated or clinical learning opportunity in which students examine and reflect upon the learning experience (Lusk & Fater, 2013). Utilizing a debriefing script based upon the process of noticing, interpreting, responding, and reflecting, discussion focused on linking theoretical and practical knowledge, fostering the development of clinical judgment, and exploring student emotions or reactions to experiences (Thidemann & Soderhamn, 2013). A student survey was used to gather feedback about the effectiveness of the debriefing script as a tool to foster the development of reflective thinking and clinical judgment.

**Perception.** Perception includes having insight into one's own thinking as well as being able to conceptualize an idea. For the purposes of this study student perceptions about clinical judgment skills was defined as the ability to conceptualize the many facets of clinical judgment and to perceive the benefits of developing clinical judgment skills (Kelly, Hager, & Gallagher, 2014).

Measures of student perceptions were operationalized through the LCJR. The clinical instructor's perceptions about student's reflective thinking were defined as observation of the student's reflective behaviors and student's comprehension of complex healthcare situations. Measures of clinical instructor perceptions were operationalized through the reflective portion of the LCJR.

**Reflection.** Reflection is the process of thinking about what is or what has happened, why it has happened, and what might be done differently in the future (O'Donnell, Reeve, & Smith, 2012). The metacognitive process of reflection supports experiential and theoretical learning, promotes

life-long learning, and fosters clinical judgment (Nielsen, 2009). In this study, reflection was defined as reflecting-on-action and making sense of how participants noticed, interpreted, and responded to particular patient cues.

## CHAPTER II - REVIEW OF LITERATURE

### **Clinical Judgment**

Critical thinking skills are not enough for today's new graduates; nursing students need to develop multiple ways of thinking, including clinical reasoning, and judgment (Benner et al., 2009; Weatherspoon & Wyatt, 2012). Students must be flexible in thought, allowing for adjustments and alterations to care as the clinical situation, context, and concerns change. Reflection-on-action in the context of the situation is the foundation of clinical judgment. Poor clinical judgment may lead to undesirable clinical outcomes. Benner, Tanner, and Chesla (2009) make the point that educational methods for fostering clinical judgment have focused on the application of scientific knowledge. Further they argue that in the complex world of nursing, attention must be given to the development of holistic and intuitive practices gained from experiential learning and reflection, both of which are essential to the development of clinical judgment. Educators should understand that the development of clinical judgment is not limited to theoretical knowledge nor does it progress in a linear fashion. Rather, clinical judgment involves multiple forms of knowledge and the process develops cyclically (Lasater, 2011).

Prior to the development of TCJM clinical judgment was viewed through the lens of the nursing process: assessment, diagnosing, planning, implementation, and evaluation. Although the nursing process might be useful to novice nurses, its linear, problem-solving format is inadequate when describing the fluid and complex clinical reasoning of experienced nurses (Tanner, 2006). Recent safety initiatives, developed in response to quality and safety reports, have further added to the complexity of patient care and require increasingly greater levels of clinical judgment from

new graduates. Educators often perceive and communicate the development of clinical judgment as the student is learning to think like a nurse (Adamson, Gubrud, Sideras, & Lasater, 2012).

The traditional clinical model for nurse education is one instructor with multiple students; this model may make it difficult for the clinical instructor to evaluate students' clinical judgment skills (Levett-Jones et al., 2010). High-fidelity simulation provides an opportunity for the assessment of student clinical judgment that might be missing in the clinical area (Cato, Lasater, & Peeples, 2009). The Lasater Clinical Judgment Rubric (LCJR) is an evaluative tool developed for the measurement of clinical judgment. Based on TCJM, the rubric identifies performance indicators, utilizes a common language as the basis of a trajectory scale, provides opportunity for self-assessment, and promotes the educator's evaluation of the student's clinical thinking (Lasater, 2007). A copy of the LCJR can be found in Appendix A.

### **Simulation's Role in the Development of Clinical Judgment**

Due to advances in technology, Human Patient Simulators (HPSs) have the ability to bring authentic situations and authentic context into a controlled learning environment; thus providing the ideal conditions for the development of clinical judgment (Gordon & Buckley, 2009). In simulation experiences, students are able to integrate theoretical knowledge into a real-world environment and practice critical thinking and clinical judgment without fear of causing actual patient harm. Additionally, simulations allow the educator a unique opportunity to evaluate student judgment (Thidemann & Soderhamn, 2012). Simulations can be standardized and reproducible, allowing for authentic learning environments. These environments allow the student access to expert nurses who serve as more than physical role models of behavior; these nurses also model thought processes (Onda, 2012).

Simulated learning activities typically involve a patient care scenario through which the students must successfully navigate. Upon completion of the scenario, students participate in a time of debriefing. During debriefing students are encouraged to reflect on the simulation. Reflection allows the learners to understand how new knowledge fits into or builds upon previously gained knowledge; and abstract concepts become concrete and cognitive patterns are formed. Questions and scripted discussions during debriefing could lead to deeper thinking and facilitate a higher development of clinical thinking and judgment (Weatherspoon & Wyatt, 2012).

The ultimate goal of simulated learning activities varies. The goal of any simulation could be to provide a holistic learning opportunity, bridge the theory to practice gap, build teamwork, teach communication skills, or provide insight into the role of the professional nurse. However, the intended goal of the simulation may be misaligned with the actual learning outcome or student perceptions of learning. Kelly, Hager, and Gallagher (2014) conducted a study to investigate the impact of 11 specific components of simulated learning on the development of clinical judgment. The study involved 102 students near the end of their baccalaureate nursing program and the Tanner Clinical Judgment Model was used as its theoretical framework. Participants were familiar with the aspects of Tanner's model as the university's school of nursing had fully integrated the TCJM into their program. For the simulation participants were given opportunity to assess (notice), determine an action (interpret), and respond to a clinical scenario. The simulation lasted approximately 10 minutes and was followed by a 20 minute instructor guided debriefing. A post-simulation Likert style survey was then administered to gain insight into student learning experiences in relation to clinical judgment. Mean scores, on a scale of 1-5, ranged from 3.23 to 4.02 with facilitated debriefing,

post-simulation reflection, and guidance by the academic being ranked first to third respectively. Participation in a role, viewing the simulation audiovisual playback, and patient case notes rounded out the lowest scores. The researchers reported that these findings were original to the literature and should be considered when planning simulated learning experiences. The authors also reported that the Tanner Clinical Judgment Model provided a scholarly framework for simulation and the enhancement of clinical judgment (Kelly, et al., 2014).

## **Debriefing**

Dreifuerst (2012) defined debriefing as the time following a simulated learning experience where “students and faculty revisit the encounter reflectively and learn from the events that occurred” (p. 362). Debriefing solidifies learning by allowing students to build on prior knowledge and to test assumptions about care and patient responses. The importance of debriefing is well documented, yet limited studies exist to determine best practices for debriefing (Neill & Wotton, 2011). The traditional debriefing model includes discussion between student and instructor, centered on intended learning objectives. Student performance is critiqued and thoughts about future clinical performances are discussed (Dreifuerst, 2012). Neill and Wotton (2011) conducted a review of literature about debriefing in nurse education. They focused on articles published in English between 2000 and 2010. They identified only nine published articles concerning debriefing during high fidelity simulations: two studies with qualitative descriptive design, one study using qualitative exploratory design, three mixed methods studies, one discussion article, and two literature reviews. Neill and Wotton (2011) further identified six main themes about debriefing: the debriefing structure, the faculty demeanor, the perception of the safety of the environment, the style or aids of the debriefer, the timing of the debriefing, and the time allowed for debriefing.

Gordon and Buckley (2009) studied the effects of high-fidelity simulation among graduate students. The primary purpose of this research was to examine graduate level nursing students' engagement and confidence during and after a high-fidelity simulation of a clinical emergency. However, a secondary focus was to identify which aspects of simulation participants found most useful. While high-fidelity simulations are often well scripted to ensure a realistic scenario, the debriefing experience was not. Therefore prior to the simulated experience the 50 participants were divided into groups of 12 and exposed to a team-building exercise based on leadership styles. The simulations were recorded and played back for participants and the entire group immediately prior to debriefing. During debriefing reference to the team-building exercise was used as a script to facilitate discussion. Immediately following debriefing participants were asked to complete a questionnaire about the simulation and a Likert scale survey to identify which aspects of the simulation they found most useful to their learning.

The results of the study revealed that 94% of the participants identified formal debriefing after simulation as the most useful aspect of the simulation experience. Participants found that the facilitated critique of their clinical performance helped to identify technical and non-technical aspects of participant performance. While the authors identified formal debriefing as the most valuable aspect of simulation they did not comment or make recommendation for further research in this area (Gordon & Buckley, 2009).

By contrast Shinnick, Woo, Horwich, and Steadman (2011) identified, through literature review, that many nurse educators support the belief that both the hands-on and debriefing components of simulated learning are important; yet the impact of these two individual aspects of simulated learning needed further investigation. The purpose of their study was to determine where in the simulation experience greater knowledge gains occurred. The 162 participants were

divided into two groups (Hands-on only and Hands-on plus debriefing) for this repeated measures, pre and post-test design study. Both groups participated in identical lecture and pre-testing, followed by an individual hands-on simulation activity. Following the simulation the Hands-on only group was given the post-test. The other group participated in instructor led, small group debriefing followed by the post-test. The Hands-on only group actually had significantly decreased post-test scores, while the Hands-on plus debriefing group demonstrated dramatically improved post-test scores. The authors concluded that the guided reflection of debriefing was the most valuable component of simulation when measuring gains in knowledge and further research was needed concerning debriefing best practices and the impact of debriefing and intensive teaching without the hands-on component (Shinnick, Woo, Horwich, & Steadman, 2011).

In an attempt to identify and evaluate best evidence for debriefing practices in health professions education, Levett-Jones and Lapkin (2014) conducted an extensive review of literature. An inclusion criterion for the review was established. Studies were limited to health professions education, published between January 2000 and September 2011, where debriefing was a part of a simulation-based learning experience. Only ten empirical studies of an experimental or quasi-experimental design met all inclusion criteria. Six studies pertained to video-facilitated instructor debriefing and the remaining four involved various techniques, such as instructor facilitated, real-time feedback, and in-simulation debriefing.

Despite the type of debriefing technique, the inclusion of debriefing led to statistically significant improvement of technical and non-technical skills in all ten studies, thus reinforcing the importance of debriefing to the learning experience. Further the review highlighted two weak areas in debriefing research: 1. the majority of studies did not include sufficient detail about the

debriefing itself, and 2. if details about the debriefing were reported the interventions and evaluation tools varied widely. This lack of consistency during debriefing makes recommendation of best practice for debriefing impossible, and therefore, an area where further research is needed (Lovett-Jones & Lapkin, 2014).

During debriefing students learn to frame or re-frame their thinking. Faculty-led structured debriefing allows students to verbalize thinking and to discuss rationales for clinical reasoning and judgment. Although most nurse educators are aware of debriefing's significance in clinical simulation, there is limited research about best practices for debriefing (Lusk & Fater, 2013; Thidemann & Soderhamn, 2012).

In the traditional approach to clinical instruction, students are given total care of a single patient for the entire day. Instructor-student interaction tends to be superficial and task oriented. Time for deep discussion that promotes clinical judgment is limited. Instructors move throughout the clinical setting, and because they are not with the student 100% of the time, cues that might connect theoretical knowledge to the current patient situation often go unnoticed by the student (Nielsen, 2009). Reflective discussions in the debriefing session have been shown to facilitate clinical judgment (Dreifuerst, 2012). Reflection is a metacognitive process which allows students to be aware of their own thinking and learning. Through structured and standardized debriefing students learn to develop and cultivate a metacognitive level of reflection that fosters life-long professional development.

Mariani, Cantrell, Meakim, Prieto, and Dreifuerst (2013) explored one suggested best practice of structured debriefing by conducting a mixed methods study on the effect of a structured debriefing based on the Debriefing for Meaningful Learning (DML) method. Debriefing for meaningful learning offers a consistent process of reflection centered on six

components: engagement, evaluation, exploration, explanation, elaboration, and extension. Through this process students are asked to reflect-in-action, reflect-on-action, and reflect-beyond-action. The purpose of their study was to test and compare the clinical judgment skills of the 86 students who participated in either the intervention group, which used structured debriefing with the DML, model or a control group who received unstructured debriefing. Student clinical judgment was measured by use of the Lasater Clinical Judgment Rubric. The results showed that while the mean scores of the intervention group (DML) were improved over the control group, there was no statistical difference between the groups. This lack of statistical significance prompted the researchers to recommend further research in structured debriefing design and its effect on clinical judgment development and learning outcomes. Additionally, the researchers questioned the sensitivity of the LCJR to measure student clinical judgment skills and suggested further research utilizing this tool (Marini et al., 2013).

Higher level questions in the debriefing require a deeper level of thinking from students. Thoughtful, well designed questions that stimulate thinking help to bridge theoretical knowledge to the clinical setting and to foster the development of clinical judgment (Lasater, 2011). Kuiper, Pesut, & Kautz (2009) studied reflective thinking in students through journaling. Self-regulating prompts provided the student with a framework from which to reflect and self-monitor clinical reasoning skills. The descriptive study examined the incorporation of journaling and worksheet experiences with 66 undergraduate nursing students over eight months of time. The journaling and worksheets were designed to test the idea that self-regulation of clinical reasoning skills can be developed using the Self-Regulated Learning Theory and the Outcome-Present-State-Test model. This process also provided the structure and common language from which to assess clinical reasoning development. Results showed a significant correlation between students who

were able to ‘frame’ information and clinical reasoning. Framing was defined as the ability to identify, interpret, prioritize, and evaluate information. The researchers recommended further research to examine whether the incorporation of a conceptual language into educational practices can accelerate the development of clinical reasoning in novice nurses and to see if it could maintain this development over time (Kuiper et al., 2009).

As a framework for patient care and clinical judgment, the TCJM allows students to build upon prior knowledge, and to develop the reflective skills necessary for metacognition and self-awareness of learning (Dillard et al., 2009; Nielsen, 2009). Scripts and rubrics have been used during debriefing as a way to foster reflective thinking and clarify learning (Mariani et al., 2013). The dimensions of the LCJR provide a logical progression from which educators formulate questions and thus guide student thinking about patient care. Each question links what was noticed, to how it was interpreted, to how the patient responded (Lasater, 2011).

### **Rubrics and Scripts**

Purposeful, guided reflection allows educators to detect misunderstandings or gaps in student thinking, follow student train-of-thought, gain insight into student rationale for judgment decisions, and identify moments of significant student learning (Stokes & Kost, 2012). Emergent situations are an instance where scripted debriefing could make an impact.

The American Heart Association Pediatric Advanced Life Support (PALS) course teaches pediatric resuscitation utilizing simulation. To achieve PALS instructor stats requires a certification course. However, even with certification training, different instructors teach with varying instructional styles and, depending on location of training, with varying levels of simulation. Additionally, few instructors have any specific simulation or debriefing training. Looking at novice instructors, Cheng et al. (2013) conducted a prospective, randomized, factorial

study to determine whether the use of a debriefing script and/or the use of high or low realism simulation affected learner knowledge gain or performance in simulated cardiopulmonary arrests. The authors reported they were unable to find any existing literature on the use of a debriefing script in simulation based education.

Conducted over four years, the study included 387 participants from multiple healthcare professions. Participants were randomized into one of four groups: non-scripted low realism, scripted low realism, non-scripted high realism, scripted high realism. A debriefing script based on existing PALS learning objectives and the Advocacy Inquiry Debriefing Theory was developed. The script was designed to guide the debriefing conversation by providing the inexperienced instructor and the participants with a common language that promoted reflective learning. The study's results demonstrated that participants exposed to a scripted debriefing demonstrated a greater improvement in knowledge gain and team leader performance. There was no difference in overall team performance, nor was there any significant difference in the use of low or high realism simulation. The researchers concluded that for novice PALS instructors the use of a standardized debriefing tool could improve learner cognitive and behavioral outcomes. Furthermore, the researchers felt that since the instructors and participants were a multidisciplinary group, the research findings could be generalized to other learner groups of varying composition. Studies with more experienced instructors, in different contexts, and over time (as the instructor becomes more familiar with the script) were recommended as areas for further research (Cheng et al., 2013).

Likewise, Kolbe et al. (2013) reported that while debriefing is recognized as a core element of simulation-based learning, best-practice for debriefing is still under investigation. They did, however, identify three trends in the literature with regards to debriefing: there is

ongoing debate over instructor-guided versus learner-guided debriefing, there is growing awareness that to conduct effective debriefing requires instructor training into the debriefing process, and suggestions for best-practice include a supportive learning environment which focuses on a few critical performance issues. With that in mind, the researchers designed a study whose purpose was to develop a debriefing structure and framework (a script) that integrates elements from three current debriefing strategies: guided team self-correction, advocacy-inquiry, and systemic-constructivist technique. The researchers called this debriefing strategy TeamGAINS; TeamGAINS consisted of six steps, each step having a specific series of guided questions or actions. The six steps included general reactions to the simulation, debriefing about clinical or technical aspects of the simulation, transferring from simulation to reality, reflection and self-corrective discussions, summarization of key points, and if necessary, remediation of clinical skills. Simulation scenarios were designed around emergency anesthesia events; participants included senior anesthesiologists, anesthesia residents, and nurse anesthetists. Debriefings were co-led by an anesthesiologist and a psychologist, both of whom were experienced in debriefing technique.

The purpose of the study was to develop a debriefing structure and framework that integrated three established debriefing techniques and to evaluate this hybrid approach with respect to debriefing quality and potential changes in team psychological safety and leader inclusiveness. Debriefing quality was studied using a post-test only six-point Likert scale survey after the final simulation. Psychological safety and leader inclusiveness were measured using a pre and post-simulation five-point Likert scale survey. There was no control group. The research found that participants rated the debriefing quality as highly positive, and the psychological safety and leader inclusiveness scores increased significantly. Acknowledging the limitations in

the study design, the researchers concluded that TeamGAINS could provide a useful debriefing tool, but further research is needed on its individual components and the attitudes and behaviors of participants exposed to this debriefing technique. Additionally, they recommended further research that included observation measures to assess debriefing quality, long-range effects of TeamGAINS on learning, and the development of a debriefing model based on the TeamGAINS technique (Kolbe et al., 2013).

A rubric is an assessment tool that provides a common language for instructor and student, delineating the expectation for each task or assignment. Rubrics are useful in focusing the student's attention on outcomes, as there is clear communication describing the characteristics of every achievable developmental level (Lasater, 2007; Panadero, Alonso-Tapia, & Reche, 2013). During debriefing, rubrics help students reflect on their experience, assess their developmental progress, and provide feedback and opportunities for higher levels of thinking. The LCJR provides a common language from which student and instructor can describe the student's clinical judgment development; the TCJM provides a framework from which to organize communication, thought, and action in clinical and simulated care areas (Lusk & Fater, 2013). The LCJR also communicates a trajectory for student development by providing clearly defined expectations and an avenue for constructive and understandable feedback (Lasater, 2011).

Nielsen (2009) conducted a study in which students used the TCJM as a study guide during a concept-based learning rotation. Students participated in written and verbal discussions about patient care centered on a core concept. The TCJM framed the written and verbal discussion about what was noticed, how it was interpreted, and typical and atypical patient responses to care. The primary focus of the reflective discussion was to promote higher level

thinking through instructor-led questioning that prompted analysis, synthesis, and evaluation of clinical thinking. The discussion also provided feedback for student development and improvement by allowing students to see relationships, principles, and generalizations that promoted the transfer of learning. The LCJR was used for formative evaluation, as it defined dimensions of clinical judgment, as well as a developmental scale from beginning to exemplary performance. In the end, Nielsen (2009) concluded that the combination of the TCJM and concept based learning was effective in promoting student development of clinical judgment and critical thinking.

Rubrics and scripts provide students a framework from which to self-assess and to regulate personal learning (Panadero et al., 2013). Self-regulation is a process through which self-generated thoughts, emotions, and actions are planned and adapted to reach a personal goal; and for self-regulation to occur students must be able to assess their own cognitive, emotional, motivational, and behavioral processes (O'Donnell et al., 2012). Students need to be able to adequately self-assess their level of learning through a process of setting goals, determining strategies for learning, monitoring the effectiveness of the strategies, and making needed adjustments along the way (Stegers-Jager, Cohen-Schotanus, & Themmen, 2012). For self-assessment to occur students need to utilize adequate assessment criteria at the optimal time. Assessment criteria are those standards instructors set for any given task. Students must internalize the assessment criteria in order to adequately self-assess performance. Rubrics and scripts are traditionally used as a way to communicate assessment criteria. The optimal timing of a self-assessment is usually in the reflective stage of self-regulation (Stegmann, Pilz, Siebeck, & Fischer, 2012).

Rubrics are assessment tools which contain a list of criteria for assessing goals, a grading scale, and descriptors for each qualitative level. Furthermore, rubrics can enhance student performance and learning, and improve grader reliability. Scripts, like rubrics, have a positive effect on learning and self-regulation (Bonnel, 2012). Based on a theoretical model or framework, complete scripts contain prompts and cues that guide the performance of a task or the discussion of a task. Scripts show how something should be done, from beginning to end. Unlike rubrics, scripts have no scoring or grading criteria. Scripts focus the student's attention on the learning process and are cognitively demanding for both the student and the instructor (O'Donnell et al., 2012).

In 2013, Panadero, Alonso-Tapia, and Reche conducted research to compare rubrics versus self-assessment scripts and their effect on student self-regulation, performance, and self-efficacy in pre-service teachers. According to the researchers, rubrics are primarily designed to evaluate activities and are characterized by: criteria for assessing the main points of tasks, a scale for grading, and a description for each qualitative level. Rubrics are also useful as a tool to improve student performance and learning, to improve reliability among teachers when rating students, and to improve reliability when the same teacher scores different students. By contrast, scripts are designed to help students during an activity. Scripts include cues and prompts which facilitate specific steps based on a model for performing a task. Both rubrics and scripts are useful to the development of self-regulation and learning. However, the researchers could find no previous research comparing the effectiveness of rubrics and scripts when compared to each other and/or a control group.

This study sought to evaluate the effectiveness of rubrics and scripts on student self-regulation, performance, and self-efficacy, when compared to a control group. Additionally, if

rubrics and scripts did affect student self-regulation, performance, and self-efficacy, which of the two was most effective. A final question, which self-assessment tool do students perceive as being more effective, was also investigated. Participants were 69 pre-service teachers enrolled in an educational technologies course. There were three classrooms of students and the class was randomly assigned as script, rubric, or control.

Self-regulation was measured using a general and a specific self-regulation questionnaire. Performance was measured via a computer based treasure hunting activity and rubric. A self-efficacy questionnaire was developed for the research based on course material and integrating components from the Didactic Unit Design scale and the Multimedia Material Design scale. Lastly, student perception of helpfulness was measured by a five-point Likert scale survey.

Research results showed that both rubrics and scripts enhanced self-regulation over the control group with scripts being more effective than rubrics. The explanation for this, according to the researchers, was that, if used properly, scripts encourage students to activate more learning strategies and are therefore ideally suited for learning experiences that are highly cognitively demanding. There was no significant difference between groups with regards to performance or self-efficacy. The researchers questioned these findings stating that differences in teachers, classrooms, and/or teaching methods may have altered the results. Lastly, rubrics and scripts were perceived as helpful by participants over the control group with rubrics being rated as the most helpful. Researchers speculated that the security of knowing how the assignment was to be scored and the fact that rubrics are less cognitively demanding than scripts may have made the learning expectation more clear and easier to follow (Panadero et al., 2013). This study demonstrates that scripts and rubrics could contribute to student self-regulation and self-

assessment which are necessary to reflective learning and to the development of clinical judgment.

## **Summary**

Nurses are expected to synthesize a varied and complex amount of patient information quickly and correctly to avoid negative patient outcomes; therefore, the process of clinical judgment development is critical for the new nurse (IOM, 2011; Lasater, 2007). Clinical judgment is a term used to describe how nurses use their knowledge of the patient to generate, assess, and prioritize possible patient care alternatives (Lindsey & Jenkins, 2013, Tanner, 2006). The incorporation of a standard clinical judgment script into the clinical and simulated learning debriefing is a strategy for metacognitive learning strategies, reflective thinking, and clinical judgment development (Dillard et al., 2009; Dreifuerst, 2012; Jensen, 2013; Kuiper et al., 2009; Lasater, 2011).

In 2007, Lasater developed the LCJR as an evaluative tool for the measurement of clinical judgment. Furthermore, Kelly et al., (2014) found that the TCJM provided a scholarly framework for the enhancement of clinical judgment. Numerous studies confirmed the importance of debriefing solidifying learning, building upon prior knowledge, and developing clinical judgment (Gordon & Buckley, 2009; Neill & Wotton, 2011). Shinnick et al., (2011) took it one step further and identified reflective practices during debriefing as having the greatest influence on the development of clinical judgment in nursing students.

In task intense simulated learning experiences, scripted debriefing conversations have led to improved knowledge gain and performance (Cheng et al., 2013). However, in the area of clinical judgment, inconsistencies in research and dissimilarities in debriefing techniques have made any recommendation of best practice for debriefing impossible and furthermore an area

where further research is needed (Lovett-Jones & Lapkin, 2014). The purpose of this research was to answer the following four questions:

1. Does the introduction of a standardized clinical judgment script into clinical and simulation debriefings improve student clinical judgment as seen in simulation activities?
2. Are student perceptions about clinical judgment skills different after the introduction of a standardized clinical judgment script?
3. Are clinical instructor perceptions about student's reflective thinking different after the introduction of a standardized clinical judgment script into debriefing sessions?
4. How do students rate the effectiveness of a standardized clinical judgment script on the fostering of reflective thinking skills needed for the development of clinical judgment?

There were four study hypotheses:

1. The introduction of a standardized clinical judgment script into clinical and simulation debriefing will improve student clinical judgment performance as seen in simulation activities.
2. The use of a standardized clinical judgment script will improve student perception of clinical judgment skills.
3. The use of a standardized clinical judgment script will improve clinical instructor perceptions of students' reflective thinking skills in clinical debriefing.
4. Students will rate the standardized clinical judgment script as an effective tool for the development of reflective thinking and clinical judgment. The LCJR will be used as the evaluative tool for measuring clinical judgment.

## CHAPTER III - METHODOLOGY

### Purpose

Clinical judgment is critical to the success of the new nurse. Recent graduates are expected to have the situational awareness and reasoning skills needed to care for clients in various states of health (IOM, 2011; Lasater, 2007). The incorporation of a standard clinical judgment script into the clinical and simulated learning debriefing is a technique for metacognitive learning strategies, reflective thinking, and clinical judgment development (Dillard et al., 2009; Dreifuerst, 2012; Jensen, 2013; Kuiper et al., 2009; Lasater, 2011).

Debriefing has been recognized as a critical component of the complex cognitive practices of reasoning and judgment, yet few studies have focused on the use of a standardized model for debriefing and its effect on clinical judgment development in nursing students (Dillard et al., 2009; Jensen, 2013). The purpose of this quantitative repeated measures, single group, research was to answer the following four questions:

1. Does the introduction of a standardized clinical judgment script into clinical and simulation debriefings improve student clinical judgment as seen in simulation activities?
2. Are student perceptions about clinical judgment skills different after the introduction of a standardized clinical judgment script?
3. Are clinical instructor perceptions about student's reflective thinking different after the introduction of a standardized clinical judgment script into debriefing sessions?
4. How do students rate the effectiveness of a standardized clinical judgment script on the fostering of reflective thinking skills needed for the development of clinical judgment?

After defining a few key terms, this chapter will discuss the participants, instrumentation, setting, procedures, and data analysis for this research.

### **Definitions of Key Terms**

**Clinical Judgment.** Clinical judgment describes the nurse's knowledge, intuition, values, and experiences; clinical judgment involves the nurse using knowledge of the patient to generate, assess, and prioritize possible patient care alternatives. Then, choosing from multiple courses of action, the nurse makes patient care decisions (Benner et al., 2009). For the purposes of this research, clinical judgment was based on the framework of Tanner's clinical judgment model: noticing, interpreting, responding, and reflecting (Tanner, 2006). Measures of clinical judgment were operationalized through the Lasater Clinical Judgment Rubric (LCJR), a valid and reliable tool for assessing clinical judgment.

**Debriefing/Post-Conferencing.** For the purposes of this study, the terms *debriefing* and *post-conferencing* were used interchangeably. Debriefing/post-conferencing is defined as the period of time at the conclusion of a simulated or clinical learning opportunity in which students examine and reflect upon the learning experience (Lusk & Fater, 2013). Utilizing a debriefing script based upon the process of noticing, interpreting, responding, and reflecting, discussion focused on linking theoretical and practical knowledge, fostering the development of clinical judgment, and exploring student emotions or reactions to experiences (Thidemann & Soderhamn, 2013). A student survey was used to gather feedback about the effectiveness of the debriefing script as a tool to foster the development of reflective thinking and clinical judgment.

**Perception.** Perception includes having insight into one's own thinking as well as being able to conceptualize an idea. For the purposes of this study student perceptions about clinical judgment skills were defined as the ability to conceptualize the many facets of clinical judgment and to

perceive the benefits of developing clinical judgment skills (Kelly et al., 2014). Measures of student perceptions were operationalized through the LCJR. The clinical instructor's perceptions about student's reflective thinking were defined as observation of the student's reflective behaviors and student's comprehension of complex healthcare situations. Measures of clinical instructor perceptions were operationalized through the reflective portion of the LCJR.

**Reflection.** Reflection is the process of thinking about what is or what has happened, why it has happened, and what might be done differently in the future (O'Donnell et al., 2012). The metacognitive process of reflection supports experiential and theoretical learning, promotes life-long learning, and fosters clinical judgment (Nielsen, 2009). In this study, reflection was defined as reflecting-on-action and making sense of how participants noticed, interpreted, and responded to particular patient cues.

## **Participants**

Participants were senior nursing students, enrolled in their final semester of study. The course was chosen because of its proximity to graduation, student familiarity with simulation experiences, and the critical need for clinical judgment skills when caring for the complex client. Sample size was calculated using G\* Power based upon a medium effect size for a dependent t test and a sample size of 45 was identified at 0.95 power. Also, the sample size based on a repeated measures analysis and medium effect size found that 36 participants were needed at 0.95 power. Therefore, the sample was identified as a minimum of 45 participants.

## **Instrumentation**

Previous research has shown the TCJM to be an effective framework from which to organize communication, thought, and action in clinical and simulated care areas (Lusk & Fater,

2013). For this research a debriefing script was developed based on Tanner's model of noticing, interpreting, responding, and reflecting. A copy of the debriefing script based on Tanner's model of clinical judgment may be found in Appendix B.

The LCJR was developed and used by Lasater (2007) to evaluate students' clinical judgment skills in a simulated experience. The LCJR is based on Tanner's Clinical Judgment Model (TCJM) and is divided into four levels of clinical judgment: noticing, interpreting, responding, and reflecting. Further, the rubric assesses subcategories for each level, ranging from beginning to exemplary. For the purposes of this study numerical values ranging from 1 (beginning) to 4 (exemplary) were assigned to each subcategory. This provided a total of 11 dimensions from which to assign value to the student's clinical judgment skills (Lasater, 2007). A copy of the LCJR Scoring Guide with numerical values may be found as Appendix C.

Previous researchers have successfully utilized the LCJR as a valid and reliable tool for the measurement of clinical judgment. The LCJR has been found to have good reliability (internal consistency) with results ranging from .884 to .974 (Adamson, 2011; Blum, Borglund, & Parcells, 2010). Also, inter-rater reliability has been shown to have a range of .73 to .889 (Adamson et al., 2012; Gubrud-Howe, 2008).

Two raters with training and experience using the LCJR scored students' simulated learning experiences using the LCJR Scoring Guide. Both doctoral prepared raters were experienced nurse educators with a minimum of three years' experience teaching clinical courses at the baccalaureate level. In preparation for this research, the raters participated in *Advanced Evaluation* an online course designed by Adamson and Kardong-Edgren (2014) and available through the National League for Nursing Simulation Innovation Resource Center. This course focuses on the use of the LCJR in the simulated learning environment and contains a series of

videos of students in simulated events. Upon completion of this course, the raters watched one of the *Advanced Evaluation* videos and independently scored the students using the LCJR Scoring Guide. These completed scoring guides were used to establish inter-rater reliability; the Kappa was calculated and found to be 0.814. Finally, for this research, the raters watched each participant's simulation experience via METIVision and rated the student's clinical judgment skills using the LCJR Scoring Guide.

METIVision is a digital and audio management system for healthcare simulation. Complete recording of the simulation experience provides an objective tool that can be used for debriefing, assessment, and evaluation. METIVision utilizes multiple camera configurations which allow the simulation to be viewed and recorded from numerous angles. Additionally, METIVision can be viewed synchronously or asynchronously from any computer with internet capability (CAE Healthcare, 2012). The school of nursing's learning resources center currently uses METIVision to record and stream the simulated learning experience into the debriefing sessions.

Participants in this research were asked to rate the effectiveness of the debriefing script as a tool to foster reflective thinking and clinical judgment. A short, investigator-developed Likert style survey was used for this purpose. The survey was developed and tested by the researcher prior to the initiation of the research process. Content validity of the survey was established through the use of a content validity index (CVI) based on the ratings of five experts and a Cronbach alpha reliability test was done to ensure survey reliability. The experts for this research were five doctoral prepared nurse educators. All experts were on faculty in a baccalaureate nursing program within a large public university in the southeast United States and the average experience, in nurse education, for the experts was 16 years. The final six-item tool

was calculated to have a CVI of .90. The survey was formatted with a 5-point response scale. A copy of the actual *Effectiveness of Scripted Debriefing on Fostering Reflective Thinking Survey*, completed by the students (n=53), is attached as Appendix D.

### **Setting**

Simulation experiences for the research were conducted at the Simulation Center for Clinical Excellence at the College of Nursing. Simulation debriefings were held in various classrooms within the College of Nursing. Clinical debriefings were held in designated post-conferencing rooms at various clinical rotation sites.

### **Procedures**

Prior to data collection, the researcher obtained permission from the university's Institutional Review Board, the college's Assistant Dean for Undergraduate Programs, and the Course Leader for the selected course. The course selected for this research focuses on providing care to people requiring complex, critical care; this 8-week synthesis course is in the final semester of a baccalaureate nursing education program at a large public university in the southeast United States. Course leaders and clinical instructors for this course were essential to this research, therefore, an introductory email was sent to the instructors with basic information about the study and an invitation to attend a clinical instructor workshop. There were six clinical instructors employed by the college of nursing for this course. All the clinical instructors had, as a minimum: a BS in nursing, five years nursing experience, and previous experience as a clinical instructor.

The clinical instructor workshop was developed by the researcher and included: the purpose of the research, Tanner's (2006) model of clinical judgment as the framework for the debriefing script, and the importance of reflective thinking during debriefing. Guided debriefings

utilizing the standardized script were discussed and demonstrated, along with instructions for accessing a pre-recorded resource videotape embedded in the course learning management system (Blackboard Learn). Prior to the workshop, the researcher developed a presentation using PowerPoint with voice over and two videotaped role playing examples of clinical debriefings utilizing the standard debriefing script. The presentation was posted to Blackboard Learn and accessible to instructors and students throughout the semester. While this pre-recorded video was not actually part of this research or the workshop, it did serve as a resource to clinical instructors and students during the semester. Role play with clinical instructors during the workshop was used to verify understanding of workshop content. A copy of the Outline for Clinical Instructor Workshop is provided as Appendix E.

Also prior to data collection, two independent raters were asked to participate in *Advanced Evaluation* an online course designed by Adamson and Kardong-Edgren (2014) and available through the National League for Nursing Simulation Innovation Resource Center. This course focuses on the use of the LCJR in the simulated learning environment and provided the means to establish inter-rater reliability among the two raters.

During the first week of the course, students were recruited by the researcher via face-to-face communication in the classroom setting. Students were given information about the intent of the research, study details (level of participation, time commitment, potential risk/benefits), and an invitation to participate in the study. Instructions were given about the videotaped presentation available to them through the course Blackboard Learn system. Students were reassured that the pre-recorded presentation was a research reference only and not part of the course content.

Students were asked to indicate agreement to participate by completing and signing an informed consent form. A large opaque box with lid was placed at the exit of the College of Nursing simulation lab as a receptacle for consent forms. Students choosing not to participate returned the blank form to the posted receptacle and were excluded from the study. Instructions were given that all forms should be returned to the collection box.

During the course students had six clinical learning experiences in area hospitals and two simulated learning experiences at the College of Nursing's simulation center. Simulated learning experiences use computerized mannequins to respond physically and verbally to students and provide a safe and controlled learning environment. Following a scenario where students are asked to critically think and perform a series of skills there was a time of debriefing.

At the conclusion of each clinical learning and simulated learning experience there was a clinical instructor led, 30-45 minute post-conferencing/debriefing session. Debriefing was guided by the standardized debriefing script to promote reflective discussion. Following the debriefing discussion on the second and fifth clinical days the students rated perceptions of their individual clinical judgment skills using the LCJR scoring guide. Clinical instructors rated each student's reflective skills using only the reflective level of the LCJR scoring guide. Blank rubrics and envelopes were provided to the students and instructors by the researcher at the beginning of each data collection day. Upon completion of the debriefing, participants and instructors completed the rubric using only the last 3 digits of their campus wide ID (CWID) number as a research identifier. Completed scoring guides were returned to a plain white privacy envelope, sealed, and placed in a large brown self-sealing envelope which the clinical instructor sealed and returned to the researcher's campus mailbox.

Following each course simulation, students again rated perceptions of their individual clinical judgment skills using the LCJR scoring guide and clinical instructors rated each student's reflective skills using only the reflective portion of the rubric. Additionally, following both simulations two off-location independent raters watched and scored participants' clinical judgment using METIVision and the full LCJR scoring guide. Student groups and team position were determined by the course leader and based on available clinical instructors and a code number known to the researcher indicating which students had consented to serve as participants. Therefore, the number of participating students in each simulation group varied from 2-4 with only participating students being scored by the raters.

Just as with the clinical learning experiences, blank rubrics and envelopes were provided to the students, instructors, and raters by the researcher at the beginning of each data collection day. Upon completion of the debriefing participants and instructors completed the rubrics using only the last 3 digits of the campus wide identification number (CWID) as a research identifier. Completed scoring guides were returned to the plain white privacy envelopes, sealed, and placed in a large brown self-sealing envelope which the clinical instructor sealed and returned to the researcher's campus mailbox. The two raters identified students by group number and position during the simulation (example: Group A, team leader). A master list linking the student, group, and role with the last three digits of the CWID was generated and maintained solely by the researcher in a locked cabinet. Completed rater scoring guides were placed in large self-sealing brown envelopes and returned to the researcher's campus mailbox.

Lastly, following the second simulation, students completed an *Effectiveness of Scripted Debriefing on Fostering Reflective Thinking Survey*. The survey was placed with the completed rubric in the provided plain white privacy envelope, sealed, and returned to the clinical

instructor, who once again placed the sealed white envelopes in a large brown self-sealing envelope, sealed, and returned to the researcher's campus mailbox. The following flowchart is a visual summary of the research procedures.

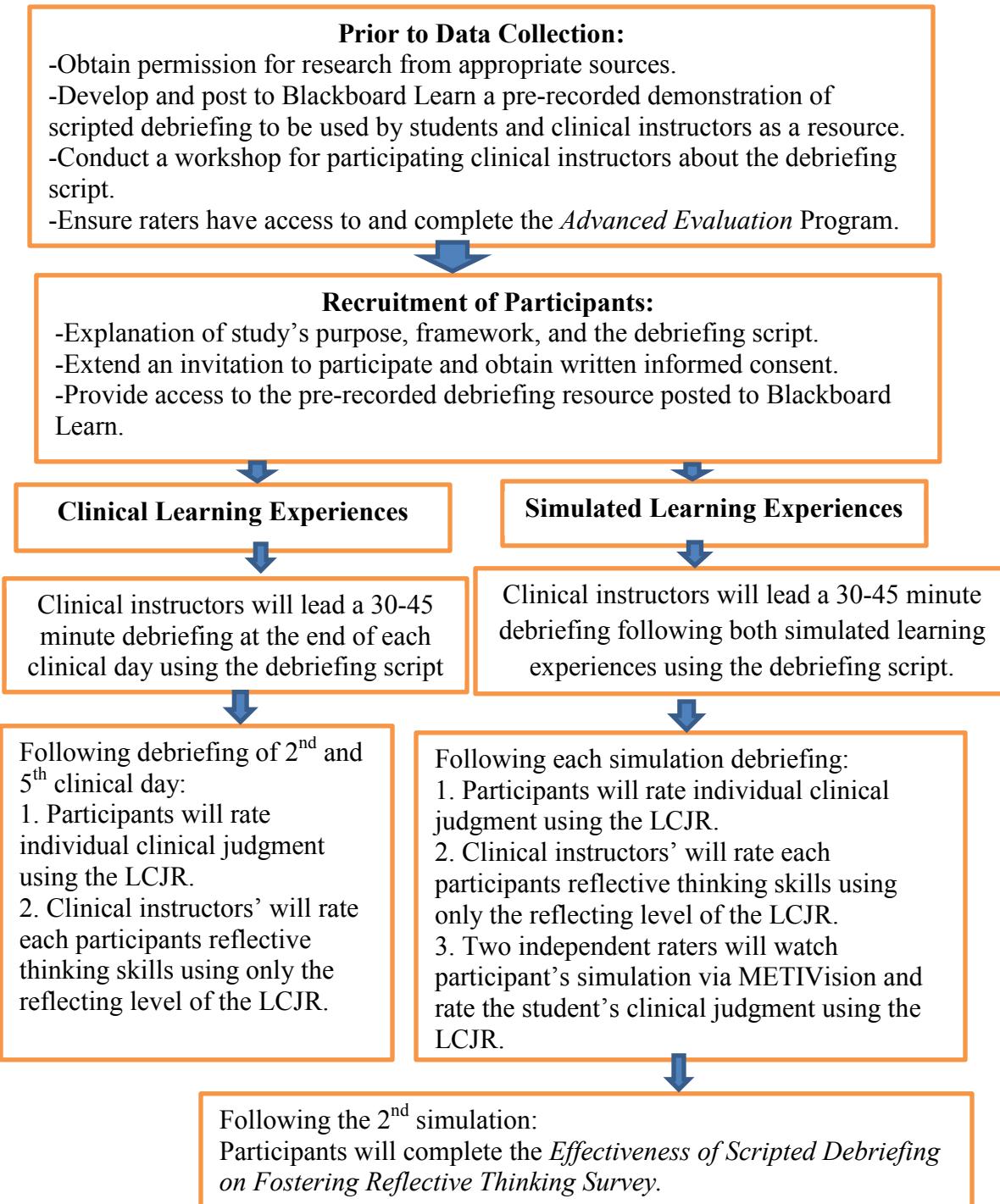


Figure 2. Flowchart of Research Procedures

## **Data Analysis**

Data collected from the raters were used to answer research Question 1: *Does the introduction of a standardized clinical judgment script into clinical and simulation debriefings improve student clinical judgment as seen in simulation activities?* A dependent t test, using  $\alpha = .05$ , was used to analyze results.

Research questions 2 and 3 focused on student and clinical instructor perceptions of clinical judgment and reflective thinking skills.

*Question 2: Are student perceptions about clinical judgment skills different after the introduction of a standardized clinical judgment script?*

*Question 3: Are clinical instructor perceptions about student's reflective thinking different after the introduction of a standardized clinical judgment script into debriefing sessions?*

Data collected from students and clinical instructors concerning perceptions were analyzed using one-factor, repeated measures, ANOVA.

Lastly, for Question 4: *How do students rate the effectiveness of a standardized clinical judgment script on the fostering of reflective thinking skills needed for the development of clinical judgment?* A survey was used for student feedback about the debriefing script.

Participants were asked to rate the effectiveness of the script as a tool to foster reflective thinking and clinical judgment skills using a short Likert style survey. Figure 3 provides a graphic summary of how the data were analyzed.

Table 3.1

*Research Question, Instrument of Measure, and Statistical Test*

Research Question	Instrument of Measure	Statistical Test
Does the introduction of a standardized clinical judgment script into clinical and simulation debriefings improve student clinical judgment as seen in simulation activities?	LCJR (Two Raters)	dependent t test
Are student perceptions about clinical judgment skills different after the introduction of a standardized clinical judgment script?	LCJR (Students)	one-factor repeated measures ANOVA
Are clinical instructor perceptions about student's reflective thinking different after the introduction of a standardized clinical judgment script into debriefing sessions?	Modified LCJR (Clinical instructors, will only use reflective portion of LCJR)	one-factor repeated measures ANOVA
How do students rate the effectiveness of a standardized clinical judgment script on the fostering of reflective thinking skills needed for the development of clinical judgment?	Likert style student survey	descriptive statistics

## Conclusion

The development of clinical judgment skills is vital to new graduates who must be flexible in thought, allowing for adjustments and alterations to care as the clinical situation, context, and concerns change. Simulated patient care scenarios have the ability to bring authentic situations and authentic context into a controlled learning environment, thus providing the ideal conditions for developing and evaluating clinical judgment (Lasater, 2007; Thidemann & Soderhamn, 2012). Debriefing after simulation and clinical experiences solidifies learning by allowing students to build on prior knowledge and test assumptions about care and patient

responses. The importance of debriefing after simulation and clinical experiences is well documented, yet limited studies exist to determine best practices for debriefing (Dreifuerst, 2012; Neill & Wotton, 2011).

## CHAPTER IV - RESULTS

### **Background**

This chapter presents the results and the analysis of data obtained. A description of the participants' demographic characteristics will be presented followed by an examination of each research question, corresponding data analysis, and a statement indicating acceptance or rejection of the appropriate research hypothesis. Debriefing has been recognized as a critical component to the complex cognitive practices of reasoning, and judgment, yet few studies have focused on the use of a standardized model for debriefing and its effect on clinical judgment development in nursing students (Dillard et al., 2009; Jensen, 2013). The purpose of this research was to answer the following four questions:

1. Does the introduction of a standardized clinical judgment script into clinical and simulation debriefings improve student clinical judgment as seen in simulation activities?
2. Are student perceptions about clinical judgment skills different after the introduction of a standardized clinical judgment script?
3. Are clinical instructor perceptions about student's reflective thinking different after the introduction of a standardized clinical judgment script into debriefing sessions?
4. How do students rate the effectiveness of a standardized clinical judgment script on the fostering of reflective thinking skills needed for the development of clinical judgment?

There were four study hypotheses:

1. The introduction of a standardized clinical judgment script into clinical and simulation debriefing will improve student clinical judgment performance as seen in simulation activities.
2. The use of a standardized clinical judgment script will improve student perception of clinical judgment skills.
3. The use of a standardized clinical judgment script will improve clinical instructor perceptions of students' reflective thinking skills in clinical debriefing.
4. Students will rate the standardized clinical judgment script as an effective tool for the development of reflective thinking and clinical judgment.

The independent variable for this research was the standardized debriefing script based on Tanner's model of clinical judgment (Tanner, 2006). The script was introduced into both clinical and simulated learning experiences as a debriefing guide. The dependent variable, student clinical judgment, was defined from the framework of Tanner's model: noticing, interpreting, responding, and reflecting. Measures of clinical judgment were operationalized using the Lasater Clinical Judgment Rubric (Lasater, 2007). The research was, therefore, designed to investigate if the introduction of a standardized debriefing script could improve the development of reflective thinking and clinical judgment in students.

### **Demographic Data**

The sample for this study was a convenience sample of fifth semester baccalaureate nursing students enrolled in their final upper division nursing course at a large public university in the southeast United States. Total enrollment in this course was 75 students. All students ( $n = 75$ ) were invited to participate in the study on a voluntary basis. Twelve students declined the invitation to participate in the study. One clinical instructor chose not to participate; therefore the

six students in that clinical group were also excluded from the study. Four students began the study but had to be excluded later due to absence during a simulated learning experience. All remaining students ( $n = 53$ ) consented and participated in the research. Sample size was considered sufficient based on analysis results using G\* Power and using a medium effect size for a dependent t test. This resulted in a minimum sample size of 45 being identified at 0.95 power. Also, the sample size based on a repeated measures analysis and medium effect size found that 36 participants are needed at 0.95 power. A minimum sample size of 45 participants was identified.

Following final data collection, students were asked to complete a short Likert style survey titled “The Effectiveness of Scripted Debriefing on Fostering Reflective Thinking”. A copy of the survey is provided as Appendix F. Included in the survey was basic demographic information. Demographics of the sample are presented in Table 4.1. The sample consisted of 51 females (96%) and 2 males (4%). Fifty-two students (98%) were between the ages of 21-23, one student (2%) was between the ages of 33-35. Forty-eight students (90%) were Caucasian, two Asian (4%), one African-American (2%), one Biracial (2%), and one (2%) student did not identify ethnicity.

Table 4.1

*Demographic Characteristics of Participants (n = 53)*

Descriptor	N	%
<b>Gender</b>		
Female	51	96
Male	2	4
<b>Age</b>		
21-23	52	98
33-35	1	2
<b>Ethnicity</b>		
African-American	1	2
Asian	2	4
Biracial	1	2
Caucasian	48	90
Not Disclosed	1	2

**Research Question 1**

*Does the introduction of a standardized clinical judgment script into clinical and simulation debriefings improve student clinical judgment as seen in simulation activities?* To address Research Question 1, 53 participants were observed by two independent raters with training and experience using the Lasater Clinical Judgment Rubric (LCJR). Prior to data collection the raters completed an online course, *Advanced Evaluation* (Adamson & Kardong-Edgren, 2014). As part of the course the raters rated a video of students in a simulated event. The

completed scoring guides from this course were used in this research to establish inter-rater reliability.

Prior to data collection the Kappa was calculated and found to be 0.814, indicating strong inter-rater reliability. In research designs where you have two or more raters who are responsible for measuring a variable on a categorical scale, it is important to determine whether such raters agree. Cohen's Kappa is such a measure of inter-rater agreement for categorical scales when there are two raters (Xu & Lorber, 2014). The Kappa was calculated to determine if there was agreement between the two independent raters scoring student clinical judgment during simulation. Despite good inter-rater reliability prior to data collection, Kappa results after data collection revealed the inter-rater reliability to be weak (Kappa per subcategory line item for first simulation ranged from 0.016 to 0.598, Kappa per subcategory line item for second simulation ranged from 0.284 to 0.512).

Table 4.2

*First Simulation: Measure of Rater Agreement per Scoring Guide Line Item*

Noticing	Kappa
Focused Observation	.332
Recognizing Patterns	.598
Information Seeking	.240
Sum of all Noticing Scores	.295
<hr/>	
Interpreting:	
Prioritizing Data	.246
Making Sense of Data	.448
Sum of all Interpreting Scores	.276
<hr/>	
Responding:	
Calm/Confident Manner	.284
Clear Communication	.409
Intervention/Flexibility	.390
Skillful	.398

Sum of all Responding Scores	.246
<hr/>	
Reflecting:	
Reflection/Self-Analysis	.073
Commit to Improvement	.016
Sum of all Reflecting Scores	.000

Table 4.3

*Second Simulation: Measure of Rater Agreement per Scoring Guide Line Item*

Noticing	Kappa
Focused Observation	.392
Recognizing Patterns	.338
Information Seeking	.506
Sum of all Noticing Scores	.315
<hr/>	
Interpreting:	
Prioritizing Data	.313
Making Sense of Data	.355
Sum of all Interpreting Scores	.284
<hr/>	
Responding:	
Calm/Confident Manner	.366
Clear Communication	.320
Intervention/Flexibility	.349
Skillful	.305
Sum of all Responding Scores	.315
<hr/>	
Reflecting:	
Reflection/Self-Analysis	.512
Commit to Improvement	.372
Sum of all Reflecting Scores	.452

To answer Research Question 1, students participated in two simulated learning activities. The raters watched the participating student's simulated learning experiences via

METIVision and rated students using the LCJR Scoring Guide (Appendix C). Numerical values were assigned to each subcategory of the rubric ranging from 1 (beginning) to 4 (exemplary). Data from the scoring guides were entered into SPSS statistical software and based on the Cronbach's Alpha it was determined that there was weak inter-rater reliability for this portion of the research. The rater's scores were combined and SPSS analysis performed using the dependent t test.

Table 4.4

*Results of First Simulation Scoring Guides*

Subcategory	Cronbach's Alpha
Noticing	.895
Interpreting	.872
Responding	.868
Reflecting	-.032

Table 4.5

*Results of Second Simulation Scoring Guides*

Subcategory	Cronbach's Alpha
Noticing	.170
Interpreting	.549
Responding	.486
Reflecting	.664

Data from the first and second simulation experiences were collected from the sample of 53 students and for each simulation experience means were calculated. In the subcategory of noticing there was an increase in mean from the first simulation ( $M=19.34$ ) to the second simulation ( $M=22.28$ ), showing overall student improvement. Also, in interpreting there was an increase in mean from the first simulation ( $M=12.85$ ) to the second simulation ( $M=14.79$ ), again showing overall student improvement. Looking at reflecting, there was again an increase in mean from the first simulation ( $M=14.70$ ) to the second simulation ( $M=15.64$ ). However, in the subcategory of responding there was a decrease in mean from the first simulation ( $M=25.42$ ) to the second simulation ( $M=15.08$ ), showing a decline in student's ability to respond appropriately in the simulated activity. Several possible reasons for this perceived decline in responding will be discussed in Chapter 5.

Table 4.6

*Table of Means for First and Second Simulations*

---

Subcategory	First Simulation Mean	Second Simulation Mean
Noticing	19.34	22.28
Interpreting	12.85	14.79
Responding	25.42	15.08
Reflecting	14.70	15.64

---

The dependent t test was conducted to determine if there was a statistically significant difference comparing the first simulation to the second simulation. Table 4.5, the Paired Samples test demonstrates significant improvements in the categories of noticing ( $t = 5.109$ ,  $df = 52$ ,  $p = .000$ ), interpreting ( $t = 5.463$ ,  $df = 52$ ,  $p = .000$ ), and reflecting ( $t = 6.058$ ,  $df = 52$ ,  $p = .000$ ). The introduction of a standardized clinical judgment script into clinical and simulation debriefing did

improve student clinical judgment performance as seen in simulation activities in the categories of noticing, interpreting and reflecting. However, in the category of responding, the Paired Samples test shows there was a significant decrease in student performance ( $t = 15.044$ ,  $df = 52$ ,  $p = .000$ ). Therefore, the hypothesis that the introduction of a standardized clinical judgment script into clinical and simulation debriefing will improve student clinical judgment performance as seen in simulation activities is rejected.

Table 4.7

*Paired Samples Test*

Subcategory	t test statistic value (t)	degrees of freedom (df)	Significance (p)
Noticing	5.109	52	.000
Interpreting	5.463	52	.000
Responding	15.044	52	.000
Reflecting	6.058	52	.000

## Research Question 2

Research Question 2: *Are student perceptions about clinical judgment skills different after the introduction of a standardized clinical judgment script?* A one-factor repeated measures ANOVA was conducted to compare the effect of a standardized clinical judgment script on student noticing, interpreting, responding, and reflecting.

There was a significant within groups effect using the clinical judgment script on student noticing at the  $p = .000$  level. Table 4.6 shows an improvement in student mean scores from day 1 ( $M = 8.2264$ ,  $SD = 1.47598$ ) to day 4 ( $M = 9.3585$ ,  $SD = 1.44241$ ). The Wilks' Lambda results in table 4.7 confirms the statistically significant multivariate mean difference [Wilks' Lambda=

11.179, df (3, 50), p= .000]. The assumption of sphericity was met, therefore Wilks Lambda was used (Mauchly's W= .926, p= .564).

Sphericity is an important assumption of a repeated-measures ANOVA. It refers to the condition where the variances of the differences between all possible combinations of groups are equal. ANOVAs with repeated measures are particularly susceptible to the violation of the assumption of sphericity. A violation of sphericity could cause the test to become too liberal; there would be an increased risk of Type I error (the decision to reject the null hypothesis when it is actually true). Therefore, determining whether sphericity has been violated is very important.

If the Mauchly's W Test of Sphericity results in  $p < .05$  there is a significant difference between the variance of differences; the condition of sphericity is not met. If the Mauchly's test is not significant ( $p > .05$ ) then it can be assumed that the variances of differences are roughly equal, and sphericity is met.

Should sphericity not be met the Greenhouse-Geisser Correction can be used to correct this violation. The Greenhouse-Geisser Correction estimates epsilon in order to correct the degrees of freedom of the  $F$ -distribution. Epsilon is a value by which the degrees of freedom for the test of F-ratio are multiplied. This correction results in a more accurate significance value (Lomax & Hahs-Vaughn, 2012)

Table 4.8

*Descriptive Statistics for Student Noticing*

Subcategory	Mean	Std. Deviation	Sample Size (N)
Noticing 1	8.2264	1.47598	53
Noticing 2	8.2642	1.86208	53
Noticing 3	9.1698	1.10481	53
Noticing 4	9.3585	1.44241	53

Table 4.9

*Multivariate Test for Student Noticing*

Effect	Value	F	Hypothesis df	Error df	Sig.
Wilks Lambda	.599	11.179	3.000	50.00	.000

F = variance of the group means/means of the within group variances.

Table 4.10

*Mauchly's Test of Sphericity for Student Noticing*

Within Subjects Effect	Mauchly's W	Sig.
Student Noticing	.926	.564

The results for Pairwise Comparisons, table 4.9, indicated is statistically significant mean differences between:

1. Noticing day 1 and noticing day 3
2. Noticing day 1 and noticing day 4
3. Noticing day 2 and noticing day 3
4. Noticing day 2 and noticing day 4

The only time periods without a statistically significant mean difference were between noticing day 1 and noticing day 2, and noticing day 3 and noticing day 4. The results presented in the Wilks' Lambda indicate an overall significant difference in means; the pairwise comparison informs where those differences in means occurred. This particular research consisted of data from four different experiential learning opportunities, timed throughout the eight week course. Remembering that this research question was looking for improvement in student perception of clinical judgment skills and with significant differences demonstrated between days 1 and 2, and

days 3 and 4, these results confirm that the use of a standardized clinical judgment script does have a significant effect on student perceptions of their noticing skills.

Table 4.11

*Pairwise Comparisons of Student Noticing*

---

(I)Not. Day	(J)Not. Day	Mean Difference (I-J)	Std. Error	Sig.
1	2	-.038	.235	.873
	3	-.943	.245	.000*
	4	-1.132	.217	.000*
2	1	.038	.235	.873
	3	-.906	.250	.001*
	4	-1.094	.241	.000*
3	1	.943	.245	.000*
	2	.906	.250	.001*
	4	-.189	.205	.362
4	1	1.132	.217	.000*
	2	1.094	.241	.000*
	3	.189	.205	.362

\*The mean difference is significant at the .05 level.

Secondly, using the one-factor repeated measures ANOVA, there was a significant effect using the clinical judgment script on student interpreting at the  $p = .000$  level. Table 4.10 shows an improvement in student mean scores from day 1 ( $M = 5.2642$ ,  $SD = 1.09458$ ) to day 4 ( $M = 6.1321$ ,  $SD = 1.16086$ ). The Wilks' Lambda results in table 4. 11 confirm the statistically significant multivariate mean within groups difference [Wilks' Lambda = 9.238, df (3,50),  $p = .000$ ]. The assumption of sphericity was not met with Mauchly's W (Mauchly's W= .800,  $p = .045$ ), therefore the Greenhouse-Geisser was run [ $F=14.029$ , df (3, 156),  $p = .000$ ] and sphericity assumed.

Table 4.12

*Descriptive Statistics for Student Interpreting*

Subcategory	Mean	Std. Deviation	Sample Size (N)
Interpreting 1	5.2642	1.09458	53
Interpreting 2	5.3208	1.25228	53
Interpreting 3	6.0755	1.07147	53
Interpreting 4	6.1321	1.16086	53

Table 4.13

*Multivariate Test for Student Interpreting*

Effect	Value	F	Hypothesis df	Error df	Sig.
Wilks' Lambda	.643	9.238	3.000	50.00	.000

F = variance of the group means/means of the within group variances.

Table 4.14

*Mauchly's Test of Sphericity for Student Interpreting*

Within Subjects Effect	Mauchly's W	Sig.
Student Interpreting	.800	.045

Table 4.15

*Test of Within-Subjects Effects for Student Interpreting*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Greenhouse-Geisser	35.057	2.591	13.531	14.029	.000

The results for Pairwise Comparisons, table 4.14, indicate there are statistically significant mean differences between:

1. Interpreting day 1 and interpreting day 3
2. Interpreting day 1 and interpreting day 4
3. Interpreting day 2 and interpreting day 3
4. Interpreting day 2 and interpreting day 4

The only time period where there is not a statistically significant mean difference is between interpreting day 1 and interpreting day 2, and interpreting day 3 and interpreting day 4. These

results suggest that the use of a standardized clinical judgment script does have a significant effect on student perceptions of interpreting.

Table 4.16

*Pairwise Comparisons of Student Interpreting*

---

(I)Int. Day	(J)Int. Day	Mean Difference (I-J)	Std. Error	Sig.
1	2	-.057	.146	.700
	3	-.811	.177	.000*
	4	-.868	.183	.000*
2	1	.057	.146	.700
	3	-.755	.200	.000*
	4	-.811	.194	.000*
3	1	.811	.177	.000*
	2	.755	.200	.000*
	4	-.057	.158	.722
4	1	.868	.183	.000*
	2	.811	.194	.000*
	3	.057	.158	.722

\*The mean difference is significant at the .05 level.

The third level of the LCJR involved student perceptions about their responses. Again using the one-factor repeated measures ANOVA, there was a significant effect using the clinical judgment script on student responding at the  $p = .000$  level. Table 4.15 shows an improvement in student mean scores from day 1 ( $M = 11.1132$ ,  $SD = 2.10914$ ) to day 4 ( $M = 12.6038$ ,  $SD = 2.10621$ ). The Wilks' Lambda results in table 4.16 confirm the statistically significant multivariate mean within groups difference [Wilks' Lambda = 13.480, df (3,50),  $p = .000$ ]. The assumption of sphericity was met with Mauchly's W (Mauchly's W = .868,  $p = .207$ ).

Table 4.17

*Descriptive Statistics for Student Responding*

Subcategory	Mean	Std. Deviation	Sample Size (N)
Responding 1	11.1132	2.10914	53
Responding 2	10.4528	2.67873	53
Responding 3	12.2453	1.82826	53
Responding 4	12.6038	2.10621	53

Table 4.18

*Multivariate Test for Student Responding*

Effect	Value	F	Hypothesis df	Error df	Sig.
Wilks' Lambda	.553	13.480	3.000	50.00	.000

F = variance of the group means/means of the within group variances.

Table 4.19

*Mauchly's Test of Sphericity for Student Responding*

Within Subjects Effect	Mauchly's W	Sig.
Student Responding	.868	.207

The results for Pairwise Comparisons, table 4.18, indicate statistically significant mean differences between:

1. Responding day 1 and responding day 2
2. Responding day 1 and responding day 3
3. Responding day 1 and responding day 4
4. Responding day 2 and responding day 3
5. Responding day 2 and responding day 4

The time periods without a statistically significant mean difference were responding day 3 and responding day 4. These results suggest that the use of a standardized clinical judgment script has a significant effect on student perceptions of responding.

Table 4.20  
*Pairwise Comparisons of Student Responding*

(I)Res. Day	(J)Res. Day	Mean Difference (I-J)	Std. Error	Sig.
1	2	.660	.323	.046*
	3	-1.132	.314	.001*
	4	-1.491	.334	.000*
2	1	-.660	.323	.046*
	3	-1.792	.333	.000*
	4	-2.151	.356	.000*
3	1	1.132	.314	.001*
	2	1.792	.333	.000*
	4	-.358	.260	.174
4	1	1.491	.334	.000*
	2	2.151	.356	.000*
	3	.358	.260	.174

\*The mean difference is significant at the .05 level.

The last level of the LCJR involved student perceptions about their reflecting. Using the one-factor repeated measures ANOVA, there was a significant effect using the clinical judgment script on student reflecting at the  $p=.003$  level. Table 4.19 shows an improvement in student mean scores from day 1 ( $M= 6.1509$ ,  $SD= 1.02650$ ) to day 4 ( $M= 6.8679$ ,  $SD= 1.03845$ ). The Wilks' Lambda results in table 4. 20 show a statistically significant multivariate mean difference [Wilks' Lambda = 5.366, df (3,50),  $p = .003$ ]. The assumption of sphericity was met with Mauchly's W (Mauchly's W= .845,  $p= .129$ ).

Table 4.21

*Descriptive Statistics for Student Reflecting*

Subcategory	Mean	Std. Deviation	Sample Size (n)
Reflecting 1	6.1509	1.02650	53
Reflecting 2	6.3585	.94247	53
Reflecting 3	6.5660	.95090	53
Reflecting 4	6.8679	1.03845	53

Table 4.22

*Multivariate Test for Student Reflecting*

Effect	Value	F	Hypothesis df	Error df	Sig.
Wilks' Lambda	.756	5.366	3.000	50.00	.003

F = variance of the group means/means of the within group variances.

Table 4.23

*Mauchly's Test of Sphericity for Student Reflecting*

Within Subjects Effect	Mauchly's W	Sig.
Student Reflecting	.845	.129

The result for Pairwise Comparisons, table 4.22, indicates statistically significant mean differences between:

1. Reflecting day 1 and reflecting day 3
2. Reflecting day 1 and reflecting day 4
3. Reflecting day 2 and reflecting day 4
4. Reflecting day 3 and reflecting day 4

Statistically significant mean differences were not observed between reflecting day 1 and reflecting day 2, and reflecting day 2 and reflecting day 3. These results suggest that the use of a standardized clinical judgment script does have a significant effect on student perceptions of their reflecting.

Table 4.24

*Pairwise Comparisons of Student Reflecting*

(I)Ref. Day	(J)Ref. Day	Mean Difference (I-J)	Std. Error	Sig.
1	2	-.208	.130	.117
	3	-.415	.146	.006*
	4	-.717	.177	.000*
2	1	-.208	.130	.117
	3	-.208	.151	.175
	4	-.509	.174	.005*
3	1	.415	.146	.006*
	2	.208	.151	.175
	4	-.302	.151	.051*
4	1	.717	.177	.000*
	2	.509	.174	.005*
	3	.302	.151	.051*

\*The mean difference is significant at the .05 level.

Therefore, the second research hypothesis, the use of a standardized clinical judgment script will improve student perception of clinical judgment skills, will be accepted. Students did perceive improvements in their clinical judgment skills in all four areas: noticing, interpreting, responding, and reflecting.

### Research Question 3

Research Question 3: *Are clinical instructors' perceptions about students' reflective thinking skills different after the introduction of a standardized clinical judgment script into debriefing sessions?* A one-factor repeated measures ANOVA was conducted to compare the effect of a standardized clinical judgment script on student reflective thinking skills in the debriefing session following clinical and simulated learning experiences.

Using a one-factor repeated measures ANOVA, there was a significant difference in clinical instructors' perceptions about students' reflective thinking skills after the introduction of a standardized clinical judgment script into debriefing sessions. Table 4.23 shows an

improvement in clinical instructors' ratings of student reflective thinking ( $p=.002$ ). Mean scores from day 1 ( $M=4.7547$ ,  $SD=1.42648$ ) to day 4 ( $M=6.2642$ ,  $SD=1.02189$ ). The assumption of sphericity was not met with Mauchly's W (Mauchly's W= .692,  $p=.002$ ), therefore the Greenhouse-Geisser was run [ $F=21.554$ , df (3, 1.56),  $p=.000$ ] and sphericity assumed.

Table 4.25

*Descriptive Statistics for Clinical Instructors Rating of Student Reflecting*

Subcategory	Mean	Std. Deviation	Sample Size (N)
Cl. In. Reflecting 1	4.7547	1.42648	53
Cl. In. Reflecting 2	5.5094	1.35338	53
Cl. In. Reflecting 3	6.0755	1.17423	53
Cl. In. Reflecting 4	6.2642	1.02189	53

Table 4.26

*Mauchly's Test of Sphericity for Clinical Instructors Rating of Student Reflecting*

Within Subjects Effect	Mauchly's W	Sig.
Cl. In. Student Reflecting	.692	.002

Table 4.27

*Test of Within-Subjects Effects for Clinical Instructors Rating of Student Reflecting*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Greenhouse-Geisser	73.113	2.438	29.991	21.554	.000

Table 4.28

*Estimated Marginal Means for Clinical Instructors Rating of Student Reflecting*

Cl. In. Rating of Student Reflecting	Mean	Std. Error
Day 1	4.755	.196
Day 2	5.509	.186
Day 3	6.075	.161
Day 4	6.264	.140

The result for Pairwise Comparisons, table 4.27, indicated statistically significant mean differences between clinical instructors' perceptions of student reflecting:

1. Day 1 and day 2
2. Day 1 and day 3
3. Day 1 and day 4
4. Day 2 and day 3
5. Day 2 and day 4

Statistically significant mean differences were not noted between day 3 and day 4.

Table 4.29

*Pairwise Comparisons of Clinical Instructors Rating of Student Reflecting*

---

(I)Res. Day	(J)Res. Day	Mean Difference (I-J)	Std. Error	Sig.
1	2	-.755	.170	.000*
	3	-1.321	.166	.000*
	4	-1.509	.243	.000*
2	1	.755	.170	.000*
	3	-.566	.204	.008*
	4	-.755	.244	.003*
3	1	1.321	.166	.000*
	2	.566	.204	.008*
	4	-.189	.198	.345
4	1	1.509	.243	.000*
	2	.755	.244	.003*
	3	.189	.198	.345

These results suggest clinical instructors' perceptions about students' reflective thinking skills improved after the introduction of a standardized clinical judgment script into debriefing sessions. Additionally, the Kappa was calculated and found to be 0.814, showing good agreement among the clinical instructors' perceptions of student reflecting.

Therefore, the research supports the third study hypothesis: The use of a standardized clinical judgment script will improve clinical instructor perceptions of students' reflective thinking skills in clinical debriefing.

#### **Research Question 4**

The fourth and final research question: *How do students rate the effectiveness of a standardized clinical judgment script on the fostering of reflective thinking skills needed for the development of clinical judgment?* Students were asked to rate the effectiveness of the script as a tool to develop reflective thinking and clinical judgment skills by completing a short, investigator-developed Likert style survey. The survey was developed and tested by the researcher prior to the initiation of the research process. The content validity index (CVI) is widely used within nursing research to quantify the content validity for multi-item scale surveys. The CVI is based on expert ratings of relevance and the measure of agreement between experts (Polit, Beck, Owen, 2007). The experts for this research were five doctoral prepared nurse educators. All experts were on faculty in a baccalaureate nursing program within a large public university in the southeast United States and the average experience, in nurse education, for the experts was 16 years.

The final six-item tool was calculated to have a CVI of .90. The survey was formatted with a 5-point response scale. A copy of the actual *Effectiveness of Scripted Debriefing on Fostering Reflective Thinking Survey*, completed by the students (n=53), is attached as Appendix F. The results indicate that most students found the standardized debriefing script to be an effective way to promote the development of clinical judgment. Most noticeably, the students found the script helpful when evaluating and analyzing key decision making points in the day ( $M = 4.6038$ ,  $SD = .53131$ ).

These results support the fourth research hypothesis: Students will rate the standardized clinical judgment script as an effective tool for the development of reflective thinking and clinical judgment.

Table 4.30

*The Effectiveness of Scripted Debriefing on Fostering Reflective Thinking Survey*

Statement	% Students responding Agree or Strongly Agree	Mean	Std. Deviation
1. The debriefing script helped me evaluate and analyze my clinical performance.	96%	4.4151	.56955
2. The debriefing script helped me evaluate and analyze key decision making points in the day.	98%	4.6038	.53131
3. The debriefing script helped me identify my strengths and weaknesses.	92%	4.4528	.63748
4. The debriefing script helped me develop a plan for personal improvement.	90.5%	4.2642	.68363
5. The debriefing script helped guide the debriefing/post-conferencing discussions.	94%	4.4906	.63919
6. The debriefing script is a useful simulation/clinical education tool.	92%	4.4906	.69677

## Summary

Four research questions were addressed in this study. Data from the first research question were examined to determine if the introduction of a standardized clinical judgment script into clinical and simulation debriefings would improve student clinical judgment as seen in simulation activities. Two independent raters used scoring guides to rate student performance in two different simulated learning experiences. The completed scoring guides were entered into

SPSS statistical software and based on Cronbach's Alpha it was determined that there was weak inter-rater reliability for this portion of the research. Therefore, the raters' scores were combined and SPSS analysis was performed using the dependent t test. Significant improvements were noted in student noticing, interpreting, and reflecting. However, there was a significant decrease in student responding from simulation 1 to simulation 2.

The second research question examined student perceptions about their clinical judgement skills after the introduction of a standardized clinical judgment script. A one-factor repeated measures ANOVA was performed on the four levels of clinical judgment and significant improvements were noted in all levels: noticing, interpreting, responding, and reflecting.

The literature supports the use of reflective thinking during debriefing as a means to developing clinical judgment (Mariani et al, 2013). Therefore, the third and fourth research questions focused on reflective thinking. Data from the third research question examined clinical instructors' perceptions of students' reflective thinking. A one-factor repeated measures ANOVA supported the use of a standardized clinical judgment script as a way to improve students' reflective thinking.

The final research question asked students to rate the effectiveness of the standardized clinical judgment script as a strategy for developing reflective thinking skills. On the final day of data collection, students completed a six-item Likert survey. The results indicated that most students found the standardized debriefing script to be an effective way to promote the development of clinical judgment. Particularly, the students found the script helpful when evaluating and analyzing key decision making points in the clinical or simulated experience.

## CHAPTER V - DISCUSSION

### **Significant Findings**

*Research Question 1: Does the introduction of a standardized clinical judgment script into clinical and simulation debriefings improve student clinical judgment as seen in simulation activities?*

The dependent t test was conducted to determine any statistically significant differences in student clinical judgment between the first simulation and the second simulation. Findings showed that the introduction of a standardized clinical judgment script into simulation and clinical debriefings did improve student clinical judgment in the areas of noticing, interpreting, and reflecting. This is consistent with Dreifuerst's (2012) research which focused on a systematic approach to debriefing, rather than teaching content, as a method for equipping students with the tools needed to think and reason through the patient care scenario.

While the findings from this research resulted in significant improvements in the areas of student noticing, interpreting, and reflecting, there was a decrease in student performance in the area of responding. For logistical reasons data for research question 1 were limited to the two simulated learning experiences and, while the focus of the two simulations was vastly different, students demonstrated a decrease in responding in both simulations. This deficiency in responding skills is consistent with existing literature.

Bogossian et al (2014) looked at student early recognition and responding in a sudden patient deterioration simulation. They concluded that final year nursing students lacked the knowledge, clinical skills, team work, and situational awareness required to competently manage a deteriorating patient. Further they concluded that teamwork practices were needed throughout

the curriculum to help bridge the theory to practice gap. Shinnick et al., (2011) also found that pre and post test scores decreased after the hands-on component of the simulation experience, but that following debriefing the scores in the experimental group significantly improved. Suggesting that, “learning does not occur primarily or exclusively in the hands-on portion of the simulation experience, and the debriefing component is the most valuable in producing gains in knowledge” (Shinnick et al, 2011, p. e109).

Although good inter-rater reliability was determined prior to the onset of data collection, research results demonstrated weak inter-rater reliability. Therefore the rater’s scores were combined and SPSS analysis performed using the dependent t test. A possible explanation for the weak inter-rater reliability among the raters could be in the simulation design itself. The simulation content used in the course was pre-determined by the course leaders. The first simulation was a high acuity experience where students were required to physically notice, interpret, and respond to patient cues. Based on the Cronbach’s Alpha for this physically active portion of the simulation there was good inter-rater reliability. It was only during the reflective debriefing, where student activity became communication based, that inter-rater reliability became weak. Likewise, the second simulation was an inter-disciplinary experience with an emphasis on professional communication. Again, when the raters were asked to score communication based student activity the inter-rater reliability was weak. This dichotomy of reliability could have been caused by a number of factors including: variances in student communication skills, raters understanding of responding when evaluating communication based experiences, or difficulties detecting nuances in communication when rating communication skills in simulations groups.

*Research Question 2: Are student perceptions about clinical judgment skills different after the introduction of a standardized clinical judgment script?*

A one-factor repeated measures ANOVA was conducted to compare the effect of a standardized clinical judgment script on student perceptions of their clinical judgment skills. There was a statistically significant within group effect in all areas of clinical judgment using the standardized script. Student perceptions of noticing, interpreting, responding, and reflecting skills all improved.

These findings are consistent with Kuiper et al. (2009) who found that the provision of a structured framework for self-reflection resulted in an accelerated development of clinical reasoning. They found students were better equipped to successfully “frame” patient information; framing was defined as identifying, interpreting, prioritizing, and evaluating patient information. Likewise, Nielsen (2009) found that the Tanner Clinical Judgment Model as a framework for debriefing prompted the development of clinical judgment in students by allowing students to see relationships, principles, and generalizations that promoted the transfer of learning.

*Research Question 3: Are clinical instructor perceptions about student’s reflective thinking different after the introduction of a standardized clinical judgment script into debriefing sessions?*

A one-factor repeated measures ANOVA was conducted to compare the effect of a standardized clinical judgment script on student reflective thinking skills in the debriefing sessions following clinical and simulated learning experiences. The results showed statistically significant improvement in students’ reflective thinking skills after the introduction of the debriefing script.

These results are in agreement with Shinnick et al. (2011) who concluded that guided structured reflection is the most valuable component of simulation when measuring gains in knowledge. Further, Panadero et al. (2013) found that the use of scripts was ideal for learning experiences that were cognitively demanding as they encouraged students to activate more learning strategies and self-assess and think reflectively.

*Research Question 4: How do students rate the effectiveness of a standardized clinical judgment script on the fostering of reflective thinking skills needed for the development of clinical judgment?*

Students were asked to rate the effectiveness of the debriefing script as a tool to develop reflective thinking, a critical component in the development of clinical judgment. A short Likert style survey was used and student responses overwhelmingly demonstrated that students found scripted debriefing to be an effective resource in the fostering of reflective thinking.

These results are in agreement with those of Kelly et al. (2014) who also used the TCJM as their framework for debriefing. In their study, students rated facilitated debriefing, post-simulation reflection, and guidance by an academic to be the three most useful tools in the development of clinical judgment.

## **Discussion**

Rote memorization of material no longer an adequate option for today's nursing student (Dreifuerst, 2012; IOM, 2011; Lasater & Nielsen, 2009). New graduates need to have a conceptual knowledge that supports the development of clinical judgment. Graduates are expected to provide safe and reliable care, yet the literature is clear regarding the inadequacies of novice nurses' critical thinking and clinical judgment skills (Gillespie & Paterson, 2009). Benner, Tanner, and Chesla (2009) make the point that educational methods for fostering clinical

judgment have focused on the application of scientific knowledge. Further they argue that in the complex world of nursing, attention must be given to the development of holistic and intuitive practices gained from experiential learning and reflection, both of which are essential to the development of clinical judgment. Educators should understand that the development of clinical judgment is not limited to theoretical knowledge nor does it progress in a linear fashion. Rather, clinical judgment involves multiple forms of knowledge and the process develops cyclically (Lasater, 2011).

Debriefing is the time following a simulated or clinical learning experience when students and faculty revisit and discuss the experience in a reflective manner, thus solidifying learning (Gordon & Buckley, 2009). Higher level questions in the debriefing require a deeper level of thinking from students. Thoughtful, well designed questions that stimulate thinking help to bridge the theoretical knowledge to the clinical setting and to foster the development of clinical judgment (Lasater, 2011). While debriefing is a critical component to simulation and experiential learning, the best-practices for debriefing have scarcely been studied and a clear need exists for further research in this area (Jensen 2013; Kuiper et al., 2009; Lusk & Fater, 2013; Thidemann & Soderhamn, 2012).

Scripts and rubrics provide students a framework from which to self-assess and to regulate personal learning (Panadero et al., 2013). Self-regulation is a process through which self-generated thoughts, emotions, and actions are planned and adapted to reach a personal goal; and for self-regulation to occur students must be able to reflect upon their own cognitive, emotional, motivational, and behavioral processes (O'Donnell et al., 2012). Scripts show how something should be done, from beginning to end. They include cues and prompts which facilitate specific steps based on a model for performing a task and, unlike rubrics, scripts have

no scoring or grading criteria. Scripts focus the student's attention on the learning process and are cognitively demanding for both the student and the instructor (O'Donnell et al., 2012). Educational research supports the idea that, if used properly, scripts encourage students to activate more learning strategies and are ideally suited for learning experiences that are highly cognitively demanding (Panadero et al., 2013). Therefore, it was the intent of this research to see if the use of a standardized debriefing script, based on the TCJM, could improve student reflective thinking and clinical judgment.

Educators and students have demonstrated an appreciation for the use of simulation in nurse education (Bambini et al., 2009; Cato et al., 2009). However, simulation's attempts to approximate the actual clinical experience cannot fully recreate the diversity and urgency of real world experiences (Blum et al., 2010). Therefore, this research did not limit itself to simulated learning experiences, but also included clinical learning experiences.

Cheng et al. (2013) used a debriefing script, with novice instructors, during an inter-professional resuscitation training program, Pediatric Advanced Life Support (PALS). Instructors in the experimental group were given the debriefing script but with no instruction of how to use it, except to follow the script as closely as possible during debriefings. They found that the students receiving the scripted debriefing showed a greater improvement in knowledge and the student assigned the team leader role showed significant behavioral performance improvement. However, between groups there was not a significant difference in overall performance during the simulation. Data from this research compliments their findings. The two raters, observing and scoring the simulated learning experiences, reported significant improvement in student noticing, interpreting, and reflecting (knowledge), however there was a decrease in student responding (performance).

This same pattern was reported by Shinnick et al. (2011). Student post-test scores declined following a simulated learning experience, however after the experimental group had a time of debriefing, the post-test was re-administered and the student scores in the debriefing group increased significantly over the non-debriefing control group. This led the researchers to conclude that debriefing of vital importance to knowledge gain (Shinnick et al., 2011).

One of the goals of this research was to see if student perceptions about their personal clinical judgment skills improved after the introduction of a standardized clinical judgment script. Stegers-Jager, Cohen-Schotanus, and Themmen (2012) reported that participation in varied learning activities and self-efficacy beliefs were positively associated with year 1 performance of medical students, suggesting that when students believe in their ability to complete tasks or reach goals they perform better. Likewise, Dreifuerst (2012) incorporated a consistent debriefing method, which encouraged reflection, promoted meaningful learning, and fostered the development of clinical judgment. The Dreifuerst research reported a correlation between student perception of a positive learning environment and the demonstration of a positive learning experience. Additionally, findings from this research support the use of a standardized debriefing script, based on TMCJ, as a method for fostering clinical judgment in nursing students.

Lavoie, Pepin, and Boyer (2013) reported, from their pilot study, that novice nurses found reflective debriefing contributed to the development of clinical judgment. Following a simulated event, a guided debriefing based on TCJM was conducted and participants reported reflection aided in their nursing care, nursing assessment, and their clinical judgment in the simulation. Finding from this research confirm that the vast majority of students found the scripted debriefings to be an effective tool in the development of reflective thinking and, that

when asked to self-score their personal clinical judgment skills, using the LCJR scoring guide, their scores reflected a significant improvement from data collection day 1 to data collection day 4 in all areas of clinical judgment: noticing, interpreting, responding, and reflecting.

Cato, Lasater, and Peeples (2009) reported that the majority of students in their study were able to deeply reflect on the simulations, patient events, and their responses. This application of self-reflection led to an increase in theoretical knowledge and the clinical judgment skills necessary for safe practice. Likewise, Dillard et al (2009) reported that “well-planned and debriefed simulations can be an effective clinical experience because they facilitate the application of clinical judgment, which is often overshadowed in practice by the complexity of care and the need to complete tasks.” (p. 103). They reported that during clinical time students were not focused on decision making and the role of the professional nurse, rather their day was often seen as a series of independent tasks. The introduction of the TCJM and the LCJR to faculty provided a framework from which deeper and broader learning experiences could occur. Guided reflective thinking reinforced Tanner’s concept of clinical judgment. Data from this study complements Dillard’s findings. Clinical instructors were asked to rate perceptions about students’ reflective thinking after the introduction of a standardized clinical judgment script into debriefing sessions. The clinical instructors scored student reflective thinking as significantly improved from data collection day 1 to day 4 using the debriefing script.

The goal of experiential learning experiences in nurse education is to impart knowledge, improve skills, and to develop the clinical judgment skills necessary for safe and effective patient care. This research demonstrated that scripted debriefing provides an opportunity for learning that cultivates the reflective thinking necessary for clinical judgment.

## **Implications for Nurse Education**

The results of this study support existing literature that suggests a formal debriefing following experiential learning activities is highly valued by students and encourages the development of clinical judgment (Gordon & Buckley, 2009; Shinnick et al., 2011). Further, as with previous research, the cyclic nature of Tanner's (2006) clinical judgment model allows students to build on prior knowledge, encourages the development of clinical judgment (Dillard et al., 2009; Nielsen, 2009). Incorporating these two concepts, this research has shown that a formal period of debriefing, utilizing a standardized script based on the TCJM, advances the development of clinical judgment in nursing students. Additionally, students and clinical instructors found the debriefing script to be an effective tool for fostering the reflective thinking skills which are vital to the development of clinical judgment. In particular students reported the script helpful when evaluating and analyzing key decision making points in the day.

The debriefing script used for this research included cues and prompts which stimulated self-assessment of the entire learning experience, thus encouraging the clinical or simulated day to be seen as a whole rather than a series of independent tasks. Students scored their progress from data collection day 1 to data collection day 4 as significantly improved in all areas of clinical judgment: noticing, interpreting, responding, and reflecting. During the two simulations imbedded within the course, raters viewed and scored participants as improved in the areas of noticing, interpreting, and reflecting.

Despite all students being provided preparatory background information for the simulations, students' knowledge and experience levels varied. Student comments from the LCJR Scoring Guides indicated that students may not have comprehended nor had confidence in their understanding of the situation. Regarding the intensity of the simulation experience one

student reported, “it was like organized chaos” while another commented “I saw (noticed)...but didn’t know what to do, so did nothing.” With this in mind it is important to recognize that while student responding scores did decrease, the subsequent increase in reflecting scores suggests the script aided students in understanding the experience as a whole rather than piecemeal, thus reinforcing the learning process.

### **Implications for Nursing Practice**

As in schools of nursing, many hospitals are using simulation based education as a strategy to teach clinical content, enhance nursing skills, and validate competency. As a competency piece the emphasis of employment simulations is on nurse response, what did the nurse do or not do during the simulation. Competency is scored against a rubric or validation tool, often with a date and place for the evaluator and employees to initial. Failure to meet all elements of competency may result in a failure to pass the experience and by default affect employment (Muehlbauer, Parr, & Perkins, 2013). While debriefing is usually a component of practice-setting simulation, the focus is on performance improvement not necessarily learning, with the participant being allowed multiple opportunities to repeat the simulation until ‘competency’ is achieved .

Traditionally, nurses have responsibility for their own personal continuing education and competency training, even as they face daily challenges involving higher acuity patients in technically difficult and evolving environments (Lucas, 2014). Changing the focus of hospital simulations from a scored pass/fail format to a scripted learning experience could improve the nurse’s learning by allowing the participant to fully focus on the learning experience itself (O’Donnell et al., 2012). Likewise, incorporation of a structured debriefing by skilled personnel into both simulated experiences and clinical orientations could improve knowledge and overall

performance of the nursing staff (Cheng et al., 2013). Competent and confident nurses have the potential to improve patient safety and impact health care costs by allowing the client a smoother more proficient progress through the clinical experience. While nothing can replace true patient experiences, simulation-based learning offers practicing nurses an opportunity to gain confidence and competence with clinical skills (Lucas, 2014). By allowing for meaningful learning, confidence building, and improved learning prior to a critical competency evaluation the nurse has a better opportunity for professional success.

### **Limitations and Recommendations for Future Research**

In an effort to minimize study limitations, raters not associated with the course were chosen to score students' simulation activities. Although the raters had previous training and experience with the LCJR and the raters had written copies of the simulation activities and objectives, they were unfamiliar with the course content and goals. The first simulation was a teambuilding exercise involving a complex trauma scenario where students were expected to notice, interpret, and physically respond to patient cues, followed by a detailed report to an advanced practice provider. The second simulation was an inter-professional activity with pharmacy residents, and heavily skewed toward communication skills. As communication, especially in the second simulation, was an integral part of the learning experience, unfamiliarity with course subtleties may have impacted the raters' abilities to fully appreciate student responding. Future studies should consider using raters more familiar with the course or using simulations of a more similar or physical nature.

An unexpected development of this research was the weak inter-rater reliability when using the rater-based assessments and rubrics. In a medical study, Tavares and Eva (2014) found that as the cognitive demand placed on raters increased, by increasing the number of dimensions

to be rated, the ability to reliably discriminate between candidate performances decreased. Additionally, they stated that the issue of rater performance has not been studied in the area of clinical assessment and clinical competence, as most assessment tools and processes are designed without any consideration for the impact the design will have on rater performance. Future research is needed concerning the impact design changes have on rater performance.

Additionally, it is noteworthy that in both simulations student responding decreased; this decrease in responding is a documented phenomenon in simulation (Bogossian et al., 2014; Shinnick et al., 2011). However, the core competencies for baccalaureate nurse education and the standards of professional nursing practice include: inter- and intra-professional communication skills, teambuilding and collaborative strategies, and effective communication techniques for evidence-based, patient-centered care (AACN, 2008; ANA, 2010). The simulations used in this course were team exercises requiring skillful communication both within the team and intraprofessionally. The results of this study suggest that, in addition to knowledge and clinical skills, students need further opportunity to practice communication skills in team and intra-professional environments as a strategy to improve student responding in patient care scenarios.

The sample was demographically homogeneous in age, gender and ethnicity, which made the results less representative or generalizable than they could be with a more diverse sample. Also, the students were all in their final semester of study in a large baccalaureate program in the southeast United States. A future recommendation would include replicating the study with a more diverse sample and students from different program sites.

## **Conclusion**

The unrealistic expectation placed on nursing students and recent graduates requires that they be able to function with the clinical judgment of experienced clinicians (Bogossian et al.,

2014). Anecdotal observations by this researcher have led to the belief that without a systematic method by which students can process complex clinical situations, for example deteriorating patient scenarios, students tended to remain overcritical and severe in their self-assessment, thus hampering the learning process. Nurse educators need to provide students with not just the experiences, but also with the tools necessary for the development of clinical judgment and a positive method of self-analyzing and understanding clinical and simulated learning experiences (Weatherspoon & Wyatt, 2012).

This study has demonstrated that the introduction of a standardized debriefing script based on Tanner's (2006) clinical judgment model did improve student noticing, interpreting, and reflecting in simulated learning experiences. Additionally, in the clinical and simulated learning environments student perceptions about their clinical judgment improved after the introduction of a standardized clinical judgment script and both students and clinical instructors reported the script was effective in promoting the development of reflective thinking, a key component in the process of clinical judgment.

These findings, while unique in scope, also supported the findings of Kelly et al. (2014) who also used the TCJM as a framework for debriefing. In their study, students rated facilitated debriefing, post-simulation reflection, and guidance by an academic to be the three most useful tools in the development of clinical judgment. The literature clearly identifies a need for further research focused on best-practices for debriefing (Jensen 2013; Lusk & Fater, 2013; Thidemann & Soderhamn, 2012). The results of this research suggest that a scripted debriefing, based on the TCJM, may be an effective tool for fostering the development of clinical judgment and, therefore, warrants further attention.

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## APPENDIX A - LASATER CLINICAL JUDGMENT RUBRIC

<u>Dimension</u>	<u>Exemplary</u>	<u>Accomplished</u>	<u>Developing</u>	<u>Beginning</u>
<b>Effective Noticing Involves:</b>				
Focused Observation	Focuses observation appropriately; regularly observes and monitors a wide variety of objective and subjective data to uncover any useful information	Regularly observes and monitors a variety of data, including both subjective and objective; most useful information is noticed; may miss the most subtle signs	Attempts to monitor a variety of subjective and objective data but is overwhelmed by the array of data; focuses on the most obvious data, missing some important information	Confused by the clinical situation and the amount and kind of data; observation is not organized and important data are missed, and/or assessment errors are made
Recognizing deviations from expected patterns	Recognizes subtle patterns and deviations from expected patterns in data and uses these to guide the assessment	Recognizes most obvious patterns and deviations in data and uses these to continually assess	Identifies obvious patterns and deviations, missing some important information; unsure how to continue the assessment	Focuses on one thing at a time and misses most patterns and deviations from expectations; messes opportunities to refine the assessment
Information seeking	Assertively seeks information to plan intervention; carefully collects useful subjective data from observing and interacting with the patient and family	Actively seeks subjective information about the patient's situation from the patient and the family to support planning interventions; occasionally does not pursue important leads	Makes limited efforts to seek additional information from the patient and family; often seems not to know what information to seek and/or pursues unrelated information	Is ineffective in seeking information; relies mostly on objective data; has difficulty interacting with the patient and family and fails to collect important subjective data
<b>Effective Interpreting Involves:</b>				
Prioritizing data	Focuses on the most relevant and important data useful for	Generally focuses on the most important data and seeks	Makes an effort to prioritize data and focus on the most important,	Has difficulty focusing and appears not to know which data

	explaining the patient's condition	further relevant information but also may try to attend to less pertinent data	but also attends to less relevant or useful data	are most important to the diagnosis; attempts to attend to all available data
Making sense of data	Even when facing complex, conflicting, or confusing data, is able to (a) note and make sense of patterns in the patient's data, (b) compare these with known patterns (from nursing knowledge base, research, personal experience, and intuition), and (c) develop plans for interventions that can be justified in terms of their likelihood of success	In most situations, interprets the patient's data patterns and compares with known patterns to develop an intervention plan and accompanying rationale; the exceptions are rare or in complicated cases where it is appropriate to seek the guidance of a specialist or a more experienced nurse	In simple, common, or familiar situations, is able to compare the patient's data patterns with those known and to develop or explain intervention plans; has difficulty, however, with even moderately difficult data or situations that are within the expectations of students; inappropriately requires advice or assistance	Even in simple, common, or familiar situations, has difficulty interpreting or making sense of data; has trouble distinguishing among competing explanations and appropriate interventions, requiring assistance both in diagnosing the problem and developing an intervention

**Effective Responding Involves:**

Calm, confident manner	Assumes responsibility; delegates team assignments; assesses patients and reassures them and their families	Generally displays leadership and confidence and is able to control or calm most situations; may show stress in particularly difficult or complex situations	Is tentative in the leader role; reassures patients and families in routine and relatively simple situations, but becomes stressed and disorganized easily	Except in simple and routines situations, is stressed and disorganized, lacks control, makes patients and families anxious or less able to cooperate
Clear communication	Communicates effectively;	Generally communicates	Shows some communication	Has difficulty communicating;

	explains interventions; calms and reassures patients and families; directs and involves team members, explaining and giving directions; checks for understanding	well; explains carefully to patients; gives clear directions to team; could be more effective in establishing rapport	ability (e.g., giving directions); communication with patients, families, and team members is only partly successful; displays caring but not competence	explanations are confusing; directions are unclear or contradictory; patients and families are made confused of anxious and are not reassured
Well-planned intervention/flexibility	Interventions are tailored for the individual patient; monitors patient progress closely and is able to adjust treatment as indicated by patient response	Develops interventions on the basis of relevant patient data; monitors progress regularly but does not expect to have to change treatments	Develops interventions on the basis of the most obvious data; monitors progress but is unable to make adjustments as indicated by the patient's response	Focuses on developing a single intervention, addressing likely solution, but it may be vague, confusing, and/or incomplete; some monitoring may occur
Being skilled	Shows mastery of necessary nursing skills	Displays proficiency in the use of most nursing skills; could improve speed or accuracy	Is hesitant or ineffective in using nursing skills	Is unable to select and/or perform nursing skills

#### **Effective Reflecting Involves:**

Evaluation/self-analysis	Independently evaluates and analyzes personal clinical performance, noting decision points, elaborating alternatives, and accurately evaluating choices against alternatives	Evaluates and analyzes personal clinical performance with minimal prompting, primarily about major events or decisions; key decision points are identified, and alternatives are considered	Even when prompted, briefly verbalizes the most obvious evaluations; has difficulty imagining alternative choices; is self-protective in evaluating personal choices	Even prompted evaluations are brief, cursory, and not used to improve performance; justifies personal decisions and choices without evaluating them
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Commitment to improvement	Demonstrates commitment to ongoing improvement; reflects on and critically evaluates nursing experiences; accurately identifies strengths and weaknesses and develops specific plans to eliminate weaknesses	Demonstrates a desire to improve nursing performance; reflects on and evaluates experiences; identifies strengths and weaknesses; could be more systematic in evaluating weaknesses	Demonstrates awareness of the need for ongoing improvement and makes some effort to learn from experience and improve performance but tends to state the obvious and needs external evaluation	Appears uninterested in improving performance or is unable to do so; rarely reflects; is uncritical of himself or herself or overly critical (given level of development); is unable to see flaws or need for improvement
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## APPENDIX B - DEBRIEFING SCRIPT BASED ON TANNER'S MODEL OF CLINICAL JUDGMENT

### **NOTICING**

-What did you notice about your patient?

Include assessment data, environment, patient/family dynamics, and treatment plan.

-What did you notice about the nursing team/nurse colleague?

Include how they approached, communicated, and developed patient care strategies.

### **INTERPRETING**

-What was the primary patient concern?

-What could be done to address the problem?

### **RESPONDING**

-What was done to address the patient situation?

-What was the plan?

-What were the priorities?

-How did you/the team determine the priorities?

-Did the plan change?

### **REFLECTING**

-How did the intervention affect the clinical situation?

-How will this event affect your future practices/action?

## APPENDIX C - LCJR SCORING GUIDE

Student Group #: \_\_\_\_\_

Student Team Assignment: Leader, Head, Left, Right

Observation Date/Time: \_\_\_\_\_

<b>Clinical Judgment Components</b>	<b>Observation Notes</b>
<b><u>Noticing:</u></b> Focused Observation: 4 3 2 1 Recognizing Deviations from Expected Patterns: 4 3 2 1 Information Seeking: 4 3 2 1	
<b><u>Interpreting:</u></b> Prioritizing Data: 4 3 2 1 Making Sense of Data 4 3 2 1	
<b><u>Responding:</u></b> Calm, Confident Manner: 4 3 2 1 Clear Communication: 4 3 2 1 Well-Planned Intervention/Flexibility: 4 3 2 1 Being Skillful: 4 3 2 1	
<b><u>Reflecting:</u></b> Reflection/Self-Analysis: 4 3 2 1 Commitment to Improvement: 4 3 2 1	
<b><u>Summary Comments:</u></b>     	

## APPENDIX D - THE EFFECTIVENESS OF SCRIPTED DEBRIEFING ON FOSTERING REFLECTIVE THINKING

Last 3 of CWID \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_ Ethnicity \_\_\_\_\_

Below are a number of statements concerning the effectiveness of the standardized script we used for debriefing and post-conferencing this semester.

**Please read each statement carefully and indicate with an 'X' to what extent you agree or disagree with each statement.**

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The debriefing script helped me evaluate and analyze my clinical performance. (How did I do?)					
The debriefing script helped me evaluate and analyze key decision making points in the day. (What did I do? What could I have done?)					
The debriefing script helped me identify my strengths and weaknesses.					
The debriefing script helped me develop a plan for personal improvement.					
The debriefing script has strengthened my commitment to personal improvement.					
The debriefing script help guide the debriefing/post-conferencing discussion.					
The debriefing script is a useful simulation/clinical education tool.					

Additional

comments: \_\_\_\_\_

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## APPENDIX E - OUTLINE FOR CLINICAL INSTRUCTOR WORKSHOP

### 1. Learning Objectives

- Explain the concepts of debriefing and clinical judgment.
- Compare and contrast Tanner's Model for Clinical Judgment in Nursing to the traditional phases of the Nursing Process.
- Apply scripted debriefing principles, based on TCJM, to the simulated and clinical post-conferencing settings.

### 2. Overview of Course Content

- Define debriefing and discuss how debriefing principles can apply to both the simulated and clinical post-conferencing settings.
- List and discuss the advantages and techniques for effective debriefing.
- Discuss the advantages of debriefing guided by standardized script.
- Define clinical judgment and its importance in nursing.
- Discuss Tanner's Model of Clinical Judgment in Nursing and how it compares to the Nursing Process.
- Identify and discuss the advantages of using the TCJM as a guide to communication and learning during debriefing.
- Utilizing examples and role play, demonstrate how a scripted debriefing based on TCJM can be incorporated into simulated and clinical learning experiences to promote learning and the development of clinical judgment.

### 3. Evaluation

- Role play and return demonstration exercises will be designed for the workshop so that the clinical instructors will have opportunity to utilize the debriefing script in mock simulated and clinical environments; practicing techniques to increase student involvement in the learning process and methods to encourage a deeper understanding and development of clinical judgment.

## APPENDIX F – IRB APPROVAL LETTERS



Office of Research  
Institutional Review Board for the  
Protection of Human Subjects

January 14, 2015

Cheryl Hines  
Capstone College of Nursing  
Box 870388

Re: IRB# 15-OR-004-MB "Clinical Judgment Scripts as a Strategy to Foster Clinical Judgment"

Dear Ms. Hines:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your application has been given expedited approval according to 45 CFR part 46. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

Your application will expire on January 13, 2016. If your research will continue beyond this date, complete the relevant portions of the IRB Renewal Application. If you wish to modify the application, complete the Modification of an Approved Protocol Form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, complete the appropriate portions of the IRB Request for Study Closure Form.

Please use reproductions of the IRB-approved stamped consent forms to obtain consent from your participants.

Should you need to submit any further correspondence regarding this proposal, please include the above application number.

Good luck with your research.

Sincerely,



100 Ross Parker Hall • Box 870388  
Tuscaloosa, Alabama 35487-0388  
(205) 348-5400  
Fax (205) 348-5406  
e-mail (334) 821-5066

Office of Research  
Institutional Review Board for the  
Protection of Human Subjects

February 27, 2015



Chevy Hines, MSN  
Instructor  
Capstone College of Nursing  
The University of Alabama  
Box 870315

Re: IRB # 15 OR 004 ME "Clinical Judgment Scripts as a Strategy to Foster Clinical Judgment"

Dear Ms. Hines,

The University of Alabama Institutional Review Board has reviewed the revision to your previously approved expedited protocol. The board has approved the change in your protocol.

Please remember that your approval period expires one year from the date of your original approval, January 14, 2015, not the date of this revision approval.

Should you need to submit any further correspondence regarding this proposal, please include the assigned IRB application number. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants.

Good luck with your research.



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