

COMMUNICATING PATIENT STATUS:  
A COMPARISON OF TEACHING STRATEGIES  
IN PRE-LICENSURE NURSING EDUCATION

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## **ABSTRACT**

Educational strategies to develop practice-ready, patient status reporting skills in pre-licensure nursing education are needed (Benner, Sutphen, Leonard, and Day, 2010). This study aimed to explore if there was a difference in patient status reporting performance and perceptions of learning for senior pre-licensure nursing students who participated in one of two instructional techniques. The Cognitive Apprenticeship model and a classroom-based, active learning strategy both featuring the ISBARR reporting method comprised the instruction. A sample of 141 baccalaureate nursing students participated in the study. A randomized posttest-only design with comparison group method was used to conduct the research. Reporting performances were scored using The Inter-Professional Critical Incident Report Evaluation Tool during a post-instruction, high fidelity simulation exercise. No statistically significant difference between mean scores for instructional groups was noted in reporting performance or learning satisfaction and self-confidence. This study supports findings from a similar inquiry which suggest that framework approaches to patient reporting can be helpful in learning procedural skill elements. Proficiency in this domain is contingent however upon the ability to recognize the important features of a clinical situation and identify assessment indicators relevant to the problem.

## **DEDICATION**

To my family, the most important piece of my life. My love for each of you is beyond words. Thank You.

## LIST OF ABBREVIATIONS AND SYMBOLS

<i>a</i>	Cronbach's index of internal consistency
CA	Cognitive Apprenticeship
CBI	Classroom based instruction
<i>df</i>	Degrees of freedom
<i>F</i>	F statistic for ratio of variances
HFS	High fidelity Simulation
IPCIRET	Interprofessional Critical Incident Report Evaluation Tool
ISBARR	Identification, Situation, Background, Assessment, Recommendation, Read back
LTRC	Learning Technologies Research Center
<i>M</i>	Mean
<i>n</i>	number in the sample
NCSBN	National Council for State Boards of Nursing
NLN	National League for Nursing
<i>p</i>	Probability
QSEN	Quality and Safety Education for Nurses
SBAR	Situation, Background, Assessment, Recommendation
SD	Standard Deviation
SSSCL	Student Satisfaction and Self-Confidence in Learning
<i>t</i>	Computed value of <i>t</i> test

< Less than

= Equal to

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## CHAPTER I- INTRODUCTION

Nurses as managers of care must be equipped with the skills to confidently and concisely communicate information regarding a patient's status to other members of the health care team. A substantial body of evidence indicates that ineffective professional communication poses patient safety risks and is often a contributing factor in adverse health care events (Beckett & Kipnis, 2009; Joint Commission Center for Transforming Health Care, 2012). The Quality and Safety Education for Nurses (QSEN) project emphasizes the need for nursing competency in this area, stipulating that effective communication and collaboration in intranursing and interprofessional domains is required to accomplish positive outcomes for patients (Sherwood & Zomorodi, 2014).

Communication among health care professionals in the provision of patient care can occur in many forms, be they written or verbal, and comprise various methods, such as formalized handoff procedures and electronic media (Boykins, 2014). This research focused specifically on verbal communication through phone exchange, referred to in the context of this study as a "patient status report." Phone communication is commonly used to report a change in patient condition.

Verbal communication is multidimensional and can be influenced by numerous factors, including educational background, power relationships, and care complexity, as well as personality, values, and gender (O'Daniel & Rosenstein, 2008). To minimize these variables, the use of a common framework for information exchange has been advocated by The Joint

Commission Center for Transforming Healthcare (2012). The situation, background, assessment, and recommendation framework (SBAR) is employed in many health care settings, and has been credited with risk reduction given its support for the exchange of critical information (Sherwood & Zomorodi, 2014). Further, the SBAR framework provides a shared mental model to facilitate status reporting across health care disciplines (McComb & Simpson, 2013). An extended version of SBAR is the ISBARR method. The (I) prompts the reporting nurse to first identify themselves and patient, while the additional (R) prompts the nurse to read back any orders received. The ISBARR method, since it provides additional prompts, enhances performance and supports the 2009 Joint Commission safety goal of reading back all verbal and telephone orders (Guhde, 2014). Use of the expanded framework has also been found beneficial for nurse learners (Grbach, Vincent, and Struth, 2008).

Framework approaches for patient status reporting, as well as targeted communication objectives are common components of pre-licensure nursing curricula. The National Council of State Boards of Nursing (NCSBN) describes communication competencies as fundamental to the practice of nursing, placing it in the licensure test plan category of “client care needs” (NCSBN, 2013). Likewise, current directives from health care quality and safety initiatives highlight the need for skilled communication in the collaborative environment of health care; however, it has been found that health professions students often lack expertise in interprofessional communication (Interprofessional Education Collaborative Expert Panel, 2011). Benner, Sutphen, Leonard, and Day (2010) in an evaluative study of nine nursing programs found an absence of active, contextually-situated learning strategies focused on skilled communication. These researchers concluded that nursing instructors often recognized the importance of communication competencies but failed to provide students with opportunities to build and refine

these skills through meaningful practice. Other researchers have suggested that theoretical, lecture-based sessions as a stand-alone teaching strategy are inadequate in achieving practice-based competencies (Krautscheid, 2008). Moreover, education in the clinical setting, due to its unpredictable nature provides limited learning opportunities for such skill development (Rentschler, Eaton, Cappiello, McNally, & McWilliam, 2007). Subsequently, as new nurses enter practice, they are often unprepared to effectively and confidently communicate patient status reports (Theisen & Sandau, 2013).

### **Problem Statement**

The lack of effective teaching-learning strategies aimed at developing practice-ready, patient status reporting skills in pre-licensure nursing education is a concern. Because these skills are implicated in the provision of safe care as well as novice nurse preparedness for practice, attention to this issue is essential.

### **Purpose of the Study**

Active learning experiences situated in “practice-mimicking” contexts have received considerable attention in the initiative to transform nursing education. Preparing students for the demands of practice necessitates a move from traditional passive learning strategies to those that are active, student-centered, and context-rich (Benner, et al., 2010). Given this, the purpose of this study was to compare two methods of instruction—one delivered in a classroom setting and the other a context-situated approach using high-fidelity simulation and elements of the Cognitive Apprenticeship (CA) model—to reveal if there was a difference in learning outcomes relative to status-reporting skill in senior pre-licensure nursing students. The identification, situation, background, assessment, recommendation, and read back (ISBARR) communication framework served as the standardizing communication tool. Student perceptions of satisfaction and self-confidence in learning between instructional groups were also assessed. Schilling and Applegate

(2012) suggest that perceptions of satisfaction with instruction often parallel perceptions of confidence. As the literature review will show, new nurses often lack confidence in their ability to communicate and these deficits can have a substantial impact on nurse agency. The following research questions guided the study:

- 1) Do senior pre-licensure nursing students who participate in a simulation-based instructional session focused on patient status reporting using elements of the Cognitive Apprenticeship instructional framework demonstrate a difference in ISBARR performance scores compared to those who participate in classroom-based instruction?
- 2) Will senior pre-licensure nursing students who participate in a simulation-based instructional session focused on patient status reporting using elements of the Cognitive Apprenticeship instructional framework demonstrate a difference in self-confidence in learning scores when compared to those who participate in classroom-based instruction?
- 3) Will senior pre-licensure nursing students who participate in a simulation-based instructional session focused on patient status reporting using elements of the Cognitive Apprenticeship instructional framework demonstrate a difference in satisfaction in learning scores compared to those who participate in classroom-based instruction?

Nursing educators must employ constructive, theoretically-based instructional approaches to prepare students for the demanding responsibilities inherent in the workplace. Classroom learning techniques can certainly utilize strategies that incorporate active learning and engage participants but, high-fidelity simulation provides an authentic environment in which to replicate practice realities. Learning through simulation has become commonplace in nursing curricula and a substantial body of evidence supports its effectiveness (Dunnington, 2014; Hayden, Jeffries, & Kardong-Edgren, 2012). Focused inquiry aimed at testing, evaluating and comparing

outcomes between simulation-based learning and other strategies has been identified as an instructional area in need of rigorous investigation however (Adamson, 2012).

The ability to effectively communicate a patient's status is vitally important. As the literature suggests, more attention to the design and development of teaching strategies aimed at this skill development is needed. Inquiry in this area will assist in establishing evidence-based teaching approaches to support skill development.

### **Theoretical Perspective**

In the context of this study, instructional strategies are compared to determine if differences in learning outcomes related to patient status reporting can be discerned. An emphasis of this study then is to evaluate instructional methods; a common objective of educationally focused research. Further, developing evidence-based teaching recommendations that will not only benefit learners but ultimately improve the quality of patient care is fundamental to the goals of health education research (Turner, 2013). This portion of the research proposal will discuss the theoretical concepts that underpin the Cognitive Apprenticeship method of instruction. Elements of the CA model were used to design the experimental group instruction. Constructivist theories of cognitive development in conjunction with the theoretical foundations supporting the CA model will be presented.

In 2007, The Carnegie Foundation for the Advancement of Teaching conducted a series of studies that focused on best practices in professional education. Apprenticeship learning was identified as an important component for disciplines seeking to prepare students for practice-based professions which included nursing (Noone, 2009). The apprenticeship method of teaching-learning dates back to medieval times as a structured system of mentor-pupil training but has been re-envisioned for contemporary pedagogical practices. Benner and colleagues (2010), in their research-supported directive to transform nursing education called for the

integration of a contemporary form of apprenticeship. The hallmarks of this apprenticeship included exposing and making visible the elements of expert performance for students, providing opportunities for meaningful practice, and using coaching and dialogue to help students recognize the intricate nature of complex clinical situations. Additionally, the apprenticeship method was advocated for its potential to translate knowledge into skilled “know how” (Benner, 2010).

### **Constructivism**

Cognitive Apprenticeship is an instructional framework supported by constructivist philosophies. Constructivism is described as an epistemology that includes both cognitive and social elements. The cognitive domain of constructivist theory is concerned with experiences and how such processes intertwine with prior experience to affect knowledge development (Hean, Craddock, & O’Halloran, 2009). Intellectual growth is born through interaction with the external world. Jean Piaget is credited largely with the development of cognitive constructivism. His Theory of Cognitive Development, while predominantly focused on the study of children, posits that knowledge is advanced through engagement with problems that are slightly more complex than those problems encountered and mastered through prior experiences (DeWolfe, 2014; Piaget, 1952). Knowledge is produced as individuals adapt to and organize their experiences rather than through passive, rote strategies.

Piaget described the development of knowing through the use of “schemata” which are developed from mental symbols and structures associated with particular patterns of behavior (Morford, 2007; Piaget, 1952). Assimilation and accommodation were two theoretical constructs he described that aid in the construction of knowledge and schema formation. Assimilation is described as adding new knowledge to existing schemata whereas accommodation refers to a change in schemata when new information or knowledge challenges the prior way of thinking

(Piaget, 1952; Ultanir, 2012). Allowing learners to experience concepts in action, as is proposed in this study, should foster their cognitive schema development. At later points, and, in similar settings, it is presumed that learners can reflect on such schemata to manage the situation at hand. Much of Piaget's work has provided the theoretical foundation for constructivist pedagogical practices. From an instructional design basis, cognitive constructivism prescribes that learning be experientially situated, problem-focused, and achieved by way of discovery (Morford, 2007).

Constructivist philosophy also emphasizes a social learning element. Learning is viewed as a process mediated by environment (Hean, 2009). Vygotsky's theory of Cognitive Growth is recognized as a major contributor to this branch of constructivism and describes learning as a process that begins with social interaction occurring in juxtaposition with more knowledgeable others (Brunner, 1987). Culture plays an important role in cognitive development and all complex mental processes are organized through interactions with others. Vygotsky described a zone of proximal development. This point is characterized by the potential for cognitive development when assisted by more capable others either through collaboration or guidance (Brunner, 1987; Silver, 2011). In other words, it is the point where a learner needs some degree of assistance to problem-solve but the learning task, with such assistance, is achievable. Considerations for instructional design based on Vygotsky's social cognitive theory would include providing learners with an authentic context in which to resolve problems, employing assistance from others with more advanced knowledge and targeting instruction to the leading edge of the zone of proximal development (Silver, 2011).

In essence then, a constructivist view of knowledge combines both cognitive and social principles as foundational to knowledge development. The constructivist epistemology is thus

well aligned with the CA method of instruction evaluated in this study. Contemporary educators Brown, Collins and Duguid (1989) echoed this philosophy in their theoretical work on CA through the concepts of situated cognition and the culture of learning. They argued that knowledge development could not be separated from the context of its use. Language and mathematics served as illustrative examples in their work but they also encompassed the broader scope of cognitive development by stating, “All knowledge is, we believe, like language. Its constituent parts index the world and so are inextricably a product of the activity and situations in which they are produced” (p. 33). Conceptual knowledge, in the absence of context or, when lacking the broader cultural application for its use, is likened to possessing a tool without understanding how it is used. Robust knowledge development is dependent on the integration of action, concept, and culture; Brown et al. (1989) theorized that meaningful comprehension cannot be achieved without each of these elements. High fidelity simulation, the setting for CA instruction in this study, provides access to an authentic practice setting in which to engage learner participation.

### **Cognitive Apprenticeship Instructional Principles**

Collins, Brown, and Newman (1987) developed principles for instruction based on the theoretical tenets previously described. These principles provided a practical alternative to abstract-based learning methodologies. The educators believed that traditional classroom instruction failed to cultivate the skill and problem solving capabilities needed for real world applications. Approaches centered on content delivery and abstracted concepts could effectively transmit large quantities of information but in their view, the processes that underpin expertise and subsequently aid cognitive development were indiscernible for students when these methods were used (Collins et al., 1987). Similar concerns have been voiced in the current literature and initiatives focused on improving quality in nursing education.

Using Lave's theoretical principles of observation, coaching, and practice, which focused on traditional apprenticeship learning, Collins and colleagues reconfigured the approach for use in contemporary educational settings. Their work emphasized two key points in CA modeled instruction: (1) exposing the processes that experts use when managing complex work in the context of their use; and (2) focusing on the generalization of knowledge to yield strategies that can be applied in varied settings (Collins et al., 1987). Thus, the focus of traditional apprenticeship learning, often viewed as task-based, was re-envisioned to focus on cognitive skill development. Collins et al. (1987) asserted that exposing students to a culture of expert practice through cognitive approaches aids in the development of higher order thinking skills. As noted previously, directives to transform nursing education call for the inclusion of pedagogical practices that richly depict practice contexts and make visible the elements of expert performance for students through coaching and dialogue. Additionally, The National Council of State Boards of Nursing (2005) support the use of cognitively-designed, situated learning experiences, proposing that they help the nurse learner develop advanced level thinking skills and improve clinical reasoning ability.

The CA framework describes four dimensions in instructional environments which include: content, method, sequence, and sociology (Collins, 2006). Content refers to domain knowledge as well as the broader categories of expert knowledge such as "tricks of the trade" and metacognition. Method is described as those instructional approaches that provide students with an opportunity to observe, participate in, and discern expert strategies in context. Sequencing, as the term suggests, dictates that learning activities increase in complexity and vary in nature. Sociology, as an instructional principle, prescribes that learning be situated in realistic contexts, within a community of practice where problem-solving is approached collaboratively.

In this research, the CA principles associated with method and sociology provided the framework for experimental group instruction and will be discussed at more length here. The instructional principle of method, which comprises role-modeling, coaching, scaffolding, articulation, reflection, and exploration, is concerned primarily with the facilitator or teacher's role in instruction. Expert performance is used to role-model concepts in action. The goal is to make the expert's decision making processes evident through verbalization, thus rendering normally tacit knowledge observable. Coaching is the process of providing support to students as they attempt tasks by providing clues and other measures to move them closer to problem-solving solutions. Scaffolding is also a source of support for learners and while coaching could be considered one form, artifacts (i.e., cue cards, SBAR communication framework handout) specific to the learning tasks are included in this category. Articulation is the process of having students verbalize their reasoning in order to help refine their understanding. Articulation can be facilitated by exchanges and engagement with instructors or peers. Reflection allows the student to compare performance with others through a review of learning events. Important concepts are considered and emphasized either through expert-student or student-student comparisons. Allowing students to reflect on their performance is considered most effective however when learner is compared to expert. Additionally, reflection and articulation together are considered the most significant elements in enhancing "cognitive" processes (Collins, 2006). Exploration is the final component of the CA "methods" principle which encourages the learner to attempt independent problem-solving and performance. General goal setting guides the exploration process. The principles associated with the "method" approach in CA learning were devised to support cognitive schema development and increase the learner's awareness of their individual problem solving strategies (Collins, 2006).

The “sociology” principle described in the CA instructional framework, encompasses elements of situated learning, communities of practice, intrinsic motivation and exploiting cooperation. Situated learning stipulates that learning processes reflect “real world” applications. In this way, the problem is seen in context and helps the learner more fully understand when and how to use knowledge rather than simply possess it. Displaying the complexities of practice environments can be a challenging task in nursing education. High-fidelity-simulation has offered recent advances in this area and will be used in this study to situate the learning environment and thus foster skill development. A community of practice, in an instructional sense, strives to advance the knowledge of groups rather than individuals. All participants need to be involved in a combined effort directed at problem-solutions. Individuals can rely on members of the community, in this case student peers and instructors, who may have a clearer understanding or advanced skill development in relation to the problem at hand. Intrinsic motivation is delineated by the personal desire to learn; the desired skill or outcome goal must therefore be important to the learner. Exploiting cooperation relies on the premise of working together to solve a problem at hand. This feature promotes motivation and increases learning potential (Collins, 2006). Just as HFS provides a situated learning experience, it generally features individuals working together in groups or teams to collectively problem solve thus encompassing communities of practice and cooperative CA principles. These elements will be included in the experimental design group instruction. Basic descriptions of the method and sociology principles are featured in Table 1. Specific instructional plans are described in Chapter III.

Table 1: Cognitive Apprenticeship Instructional Design Principles

Method (Techniques to develop expertise)	<ul style="list-style-type: none"> <li>• <b>Modeling:</b> Expert performs task for learners, externalize thought processes</li> <li>• <b>Coaching:</b> Observing and directing students in performance</li> <li>• <b>Scaffolding:</b> Providing tools or methods to support learning</li> <li>• <b>Articulation:</b> Prompting verbal explanation of cognitive processes</li> <li>• <b>Reflection:</b> Providing opportunities for comparison with other learners/experts</li> <li>• <b>Exploration:</b> Independent problem identification and exploration</li> </ul>
Sociology (Social structures, settings)	<ul style="list-style-type: none"> <li>• <b>Situated learning:</b> Context reflects real world applications</li> <li>• <b>Community of Practice:</b> An environment of people working together</li> <li>• <b>Intrinsic motivation:</b> Learners engaged and invested</li> <li>• <b>Cooperation:</b> Problem-solving with others who share common goals</li> </ul>

*Note.* Adapted from Collins, A. (2006). Cognitive Apprenticeship Model. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (pp. 49-50). New York, NY: Cambridge University Press. Adapted with permission.

Based on the theoretical perspective presented, the supporting rationale and design for this study can be summarized as follows: IF knowledge is better assimilated through (a) authentic contextual learning environments in conjunction with (b) expert guidance and support along with (c) strategies to facilitate cognitive development (d) will patient status reporting performance and (e) perceptions of learning be improved when these instructional elements are present?

## **Assumptions**

As a precursor to this study, the following assumptions were considered. Since students had completed several semesters in the undergraduate nursing program, it was assumed that they were familiar with high fidelity simulation learning as it is an integral component of several nursing courses. Similarly, it was assumed that students would be familiar with communication principles and methods as the curriculum includes this content in previous course work through both classroom and clinical applications. Therefore, students would be refining and building on their prior knowledge in regards to communication. Lastly, since the study sample consisted of senior nursing students, it was assumed that opportunities to practice and refine their assessment skills would have been afforded through prior classroom and clinical learning experiences.

## **Definition of Terms**

The following conceptual and operational definitions are applicable to this research and are described in this section to provide clarity of meaning.

*Verbal Communication* - In the context of this study, verbal communication is defined as communication expressed through voice (Danesi, 2009). Verbal communication is often used in health care settings in times of uncertainty and urgency (Curtis, Tzannes, & Rudge, 2011).

*Pre- licensure nursing student* - Participants in this study will consist of pre-licensure, baccalaureate nursing students. The term pre-licensure denotes a student enrolled in a nursing program of study in preparation for entry into practice as generalists (NCSBN, 2005). Upon graduation from the pre-licensure program and in conjunction with licensing board approval, the student is eligible to take the registered nurse licensure exam (NCSBN, 2005).

*Simulation* - Simulation is described as an activity or event replicating clinical practice (Hayden, Jeffries, & Kardong-Edgren, 2012). In this study, simulation includes the use of life-like manikins that can be programmed to present multiple patient scenarios often referred to as high

fidelity simulation (Dunnington, 2014). Simulation experiences are incorporated in the curriculum as a portion of each student's clinical learning hours.

*Simulation-based learning* - Simulation-based learning is a method of instruction (independent variable) used in the study. Operationally, simulation-based learning is defined in the context of this study as a clinical experience in the baccalaureate nursing education program conducted in a controlled simulation environment within the College of Nursing. The method creates an environment that is conducive to experiential learning and closely replicates clinical practice (Norman, Dore, & Grierson, 2012).

*Classroom Instruction* – A method of instruction (independent variable) used in the study which includes instruction that features live lecture and active learning strategies, being those that actively engage the learner, which are delivered in an environment that supports the mastery of facts and skills out of context for use. Whole-class instruction dominates in this learning venue (Tomlinson, 2001).

*ISBARR* – a structured communication tool used in health care. The acronym stands for identify, situation, background, assessment, recommendation and read back (Guhde, 2014). The tool provides a structural framework for organizing information in a succinct format (McComb & Simpson, 2013). Applications vary and include both verbal and written use. Performance of ISBARR to report patient status, a dependent variable in this study, is defined operationally as the inclusion of ISBARR sub-scale elements identified in the Inter-professional Critical Incident Report Evaluation Tool. The tool is presented in the methods section of this document under the “Data Analysis & Instrumentation” sub-heading.

*Satisfaction in learning* - Satisfaction in learning is identified as an indicator of both the pleasure and effectiveness of an educational experience (Wang, 2003). According to Yukselturk and

Yildirim, (2008) it is an important measure of learning experience quality. As a dependent variable, this indicator is operationally defined as self-rated student responses using the NLN Satisfaction in Learning survey. The tool is intended for use following a simulated learning exercise to specifically measure student perceptions of satisfaction with the learning experience.

*Confidence* - The perceived belief regarding personal capabilities to manage potential situations (Bandura, 1994; Pollack & Lilly, 2008). The notion of confidence is central to the construct of self-efficacy (Pollack & Lilly, 2008).

*Confidence in learning* - A measurement often evaluated in pedagogical assessment to determine perceptions of self-confidence related to learning outcomes (Brennan, 2013). As a dependent variable, this indicator is operationally defined as self-rated student responses using the NLN Confidence in Learning Survey.

## **CHAPTER II - REVIEW OF LITERATURE**

A literature review was conducted utilizing four electronic databases: ERIC, Education Full Text, CINAHL, and ProQuest Nursing and Allied Health Source. Points of inquiry included novice nurse communication skills, communication teaching strategies, cognitive apprenticeship, situated cognition, role-modeling, reflection, SBAR, and ISBARR.

### **The Novice Nurse and Communication**

A preponderance of evidence suggests that novice nurses experience difficulty in transitioning from the educational setting to the practice environment. Significant stress is associated with this transition; high error rate and an inability to communicate effectively have been recognized as contributing factors (NCSBN, 2013). In a critical review of 26 research studies, Theisen and Sandau (2013) identified competency deficits in six key areas for the new nurse and included professional communication among this list. Knowing “how” to effectively convey patient information has been identified as problematic in the novice’s view (Schwartz, Wright & Lavoie-Tremblay, 2011). Nurse to physician communication has also been reported as stress provoking due to a lack of skill and familiarity (Rodgers, 2007). Administrators and nurse managers have added to this concern by noting significant shortfalls in new nurse communication competencies (Thomas, Ryan, & Hodson-Carlton, 2011).

Acknowledged failures in novice nurse communication skill at the outset of practice should prompt nurse educators to reexamine current pedagogical approaches focused on this skill development. Aside from the alarming concern for patient safety, poor communication skill also impacts nurse agency. O’Daniel and Rosenstein (2008) indicated that negative exchanges with

members of the health care team resulting from poor communication skill and inexperience often made new nurses hesitant to report concerns regarding a patient's status. Such occurrences are likely to contribute to feelings of disempowerment for the novice which has been cited as a causal factor in new nurse burn-out (Spence Laschinger, Leiter, Day, & Gilin, 2009).

The difficulties related to novice transition are complex and multiple, but deficits in professional communication skill appear to play a significant role. As the work of Theisen and Sandau (2013) indicated, the capacity to effectively communicate has a direct influence on novice nurse success. The established lack of confidence and skill is an area in need of focused improvement (Pfaff, Baxter, Jack, & Ploeg, 2014).

The NCSBN (Research, Transition to Practice, n.d.) report that approximately 25% of new nurses leave their positions within the first year of practice. This pattern destabilizes health care, making the provision of safe, quality care more challenging (Institute of Medicine [IOM], 2011). Several strategies have been envisioned and implicated to address these issues; chief among them has been a call to improve pre-licensure nursing education through improved, higher-order competency training, as it is foundational to the complexities of care management (IOM, 2011).

Patricia Benner (1982), in her work *Novice to Expert*, described the skill level of the novice nurse as rule-governed and task-focused. Benner suggested that these characteristics make it difficult for novices to recognize and interpret the salient features inherent in complex health care situations. With experience, ability improves and the novice progresses to higher levels of proficiency. Viewed from this perspective, reframing approaches and instructional strategies in nursing education to more carefully consider cognitive and context-situated learning designs that provide authentic practice experiences is in order.

Scholarship centered on novice success has implications for both practice and educational arenas. A phenomenological study conducted by Etheridge (2007) indicated that educational experiences, to serve as effective preparation for entry into practice, should focus on strategies that help students “think like a nurse.” It has also been suggested that coaching and reflective learning can be effective in cultivating the high order thinking skills required (Jewell, 2013; Johnson, Hamilton, Delaney & Pennington, 2011). While some regard the expectations for novices upon entry into practice as unrealistically high, it is essential that safe care competencies be in place prior to transition (Trepanier, Early, Ulrich & Cherry, 2012).

### **Communication Teaching and Learning**

Poor performance indicators, coupled with quality improvement initiatives, have led educators and clinicians to evaluate current practices and new approaches to communication teaching and learning. In one school of nursing, a curriculum evaluation was undertaken to determine the adequacy of communication learning objectives and outcomes (Boschma, Einboden, Groening, Jackson, MacPhee, Marshall, & Roberts, 2010). Within the study, focus group sessions were conducted to reveal student perceptions as well as student recommendations regarding communication teaching. Specific suggestions by students included fewer lecture-based sessions, less focus on communication theory, and more content aimed at practice competencies. In a similarly curriculum-focused study conducted by Krautscheid (2008), performance evaluations of student (n = 285) communication competencies demonstrated significant deficits. The analysis revealed that communication strategies taught in the classroom failed to transfer to skilled performance. Interventions in this evaluative study included consistent learning experiences threaded throughout the undergraduate curriculum, use of the SBAR tool, applications in the clinical environment, and structured practice sessions with faculty supervision. The researcher reported improvements in communication performance; however,

not all groups achieved benchmark objectives. According to Krautscheid (2008), a centrally important skill in the communication process was the student's ability to conduct focused assessments and make judgments regarding a patient's condition.

Brady (2011) described a curriculum redesign initiative centered on the QSEN competencies framework. Communication was emphasized due to its importance as a "teamwork" element in the QSEN model. Various teaching strategies were outlined, as well as a systems approach for improving professional communication skills. High fidelity simulation (HFS) was heavily integrated in the curriculum redesign effort; however, an assessment of learning outcomes was not included.

Recent studies have been published that focus on professional communication using HFS in both instructional and evaluative formats. An experimental research aimed at helping students develop the skills to recognize and react effectively to a patient with deteriorating status, included the use of HFS to both teach and subsequently evaluate performance (Liaw, Scherpbier, Klainin-Yobas, & Rethans, 2011). Communication exchange using the SBAR framework was included. The authors found that students who participated in the HFS-centered instructional modules demonstrated improved learning outcomes in all measured scales, including the SBAR communication technique. Another study by Liaw, Zhou, Lau, Siau, and Chan (2014) evaluated an SBAR communication training module for both medical and nursing students which culminated with an interdisciplinary HFS exercise. Outcomes in this study were evaluated by measuring student perceptions of confidence in communication ability when caring for the deteriorating patient. Findings indicated that students perceived the teaching strategy as effective.

Foronda, Gattamorta, Snowden, and Bauman (2014) reported on a group intervention study that used computer-based virtual simulation to improve status-reporting skills in a nursing undergraduate cohort. The post-test scores showed marked improvement in comparison to pre-test scores. The sample size in this study consisted of only eight students, and statistical measures for the evaluative tool were not established, thus limiting the findings.

An emphasis on communication and patient status reporting has been an integral component in studies centered on teamwork and collaboration. Using an in-situ simulation method, described as a simulated event that occurs in an actual patient care area and mimics as closely as possible a realistic context, Miller, Riley, Davis, and Hansen (2008) evaluated selected learning outcomes focused on interdisciplinary teamwork. Participants in this study were licensed personnel from multiple disciplines and levels of work experience were not reported. Failure to use standardized communication approaches during a critical patient event were recognized by participants in post simulation evaluations. Effective situational communication which encompasses sending, affirming and confirming exchanges was also cited as an area of failure by participants. While the objective of this work was to report on an instructional strategy, Miller, Riley and Davis (2009) later published work on key nursing behaviors when working in interdisciplinary teams. Observing videotaped scenarios to rate communication performance via in situ simulations, the researchers noted that SBAR performance by nurses was sub-optimal in nearly half of the observed incidents. Further, this failure was said to occur at highly urgent times when the nurse needed to effectively and concisely report information regarding a patient's status. Increased attention to both individual and team training approaches, especially with regard to communication skill, were recommended. Assertiveness and confidence

were also recognized as important attributes for nurses to possess when communicating with members of the health care team.

The Quality and Safety Education for Nurses (QSEN) project outlines a set of core competencies to guide the preparation of future nurses. Communication is identified as a key element of team and collaborative processes within the framework (Cronenwett, Sherwood, Barnsteiner, Disch, Johnson, Mitchell, & Warren, 2007). The QSEN competencies may be used in several curricular applications including program structure, test plans and as a basis for instructional design. Applying the QSEN framework in nursing education is best accomplished through active learning strategies and context- rich experiences (Brady, 2011). While the QSEN framework has been utilized to develop several instructional plans, published evaluations of learning outcomes are sparse. Based on the work of the QSEN expert panel (2014), communication knowledge and skill is essential for effective team collaboration and safe health care systems.

### **Cognitive Apprenticeship**

The Cognitive Apprenticeship Model has been advocated as a teaching methodology in nursing education and other disciplines to support active learning. A qualitative study using focus groups was employed to assess medical student perceptions of CA methods in clinical training (Stalmeijer, Dolmans, Wolfhagen, & Scherpbier, 2009). Students reported that they could recognize CA components in their clinical training and indicated generally positive perceptions of the method. In evaluative discussions, the students recommended that mentors focus on the thought processes that guide decision-making. Students also recognized the importance of clinical educators' understanding their skill level in order to provide effective learning support (Stalmeijer et al., 2009).

CA has been recommended as an effective model for practice-based professions as it can help promote skilled know-how and an unearthing of tacit knowledge. Gardiner and Anderson (2013) described the applications of the CA model in endoscopy training for physicians and advocated its methodology (including modeling, coaching, scaffolding, articulation, reflection, and exploration) as a comprehensive approach to promote competency development. In psychiatric rehabilitation field training, the CA model has been proposed as superior to classroom instruction in developing effective workplace skills (Bates, Waynor, & Dolce, 2012).

The CA model can also be employed through the use of teaching technologies; however, it has not been clearly demonstrated whether or not technology enhances the use and reception of the model. Nurse educators Woolley and Jarvis (2007) argued that the CA model as an instructional strategy can be used to augment clinical learning and support cognitive skill development. The authors detailed a technological approach using video and digital recording along with expert supervision and coaching applied from the CA framework. According to the designers, implementing the instructional plan was challenging, mostly due to the complexities of technology. Learning outcome measures were not included in the manuscript. Similarly, Wu, Hwang, Su, and Huang (2012) combined a CA-based strategy with mobile technologies to deliver instruction in a physical assessment nursing course. Results indicated significantly improved performance among students, while the technological format was perceived as only modestly enhancing.

The CA model includes several components in both its general instructional principles and methodological framework. Concepts applicable to this study are the methods and sociology principles which are described in the theoretical perspective section. Each of these principles features multiple sub-elements and many have been used as a singular methodological approach

in designing learning environments. The following section of this literature review will consider the applicable scholarship in these areas as a means of informing the proposed research.

### **Expert Role Modeling and Coaching**

Several recent studies have focused on expert role modeling as an instructional strategy. Sharpnack, Goliat, Baker, Rogers, and Shockey (2013) detailed an active teaching strategy based on the work in Benner's (1982) *Novice to Expert*. Video scenarios featuring expert nurses were used to illustrate and present common practice situations. Results distinguished that videotaped expert performance as a pre-simulation teaching tool improved student performances in the domains of communication, assessment, and patient safety (Sharpnack et al., 2013). Similar work published by Aronson, Glynn, and Squires (2013) detailed the development and implementation of a videotaped intervention depicting the expert nurse in a simulated scenario. The primary objective was to evaluate the effectiveness of a role-modeling intervention aimed at improving student nurse competency in responding to a simulated emergent patient event. The instruction was delivered in a pre-briefing simulation session. Student performance was then evaluated in the simulated scenario and scored by videotape review. The researchers compared pre-intervention performance measures with post-intervention performance measures and reported significant improvements.

Johnson, Lasater, Hodson-Carlton, Siktberg, Sideras and Dillard (2012) conducted a quantitative, multisite research study on the effectiveness of expert role modeling in conjunction with simulated exercises. The study sample consisted of two-hundred-seventy-five undergraduate nursing students from two countries. The researchers concluded that role modeling, when combined with simulation as an instructional strategy, led to better outcomes in the development of clinical judgment. For students, hearing aloud the thought processes of the expert and seeing the accompanying actions yielded better transfer and integration of learning.

Later work published by Lasater, Johnson, Ravert, and Rink (2014) to report on qualitative findings from the same study also concluded that expert role modeling was perceived as helpful by students. Other notable observations that inform this study include that students were able to notice the major health issues for a patient but how to interpret and, how to respond to such issues was often problematic. Additionally, developmental issues were identified when students could not discern which information regarding a patient's status was most important.

Role modeling is used in many nursing curricula through preceptorship approaches which typically centers on the pairing of student with practicing nurse. In a qualitative study conducted by Callaghan, Watts, McCullough, Moreau, Little, Gamroth, and Durnford (2009), findings suggested that students perceived preceptorship as beneficial because it exposed the realities of practice. Preceptor role models in the clinical practice area have also been perceived as supportive of self-discovery and enhancing to student confidence (Nouri, Mokhtari, Ebadi, Alhani, Rejeh, & Ahmadizadeh, 2013). A recognized shortcoming in this educational model however is a lack of formal educational knowledge for preceptors.

Rodriguez and Tavares (2011) conducted an exploratory study comparing educator clinical instruction and preceptor instruction. Both approaches were considered effective but students perceived the educator-led group as more effective because critical thinking and the integration of theoretical knowledge were emphasized. Such findings are useful in this study in supporting practice setting, role-modeled learning but also demonstrate the integral need for educational knowledge and skill to achieve the best learning outcomes.

Coaching, as well as role modeling, is an instructional principle in the CA methods framework. Weitzel, Walters and Taylor (2012) describe the process of coaching as a method to foster hands-on learning in a safe setting with the support of more knowledgeable others. Dresser

and Asato (2014) indicate that the process encompasses more than close-ended performance evaluations and should focus instead on helping learners elaborate their thoughts as well as include meaningful, constructive feedback. Benner and colleagues (2010) advocated for the inclusion of coaching in situated settings to facilitate learning in nursing education. A peer coaching model was constructed by researchers Himes and Ravert (2012) among a cohort of fundamentals nursing students (n=104). The knowledgeable expert was absent from the strategy but the researchers hypothesized that effective equal-peer coaching could be devised through the use of scripted case studies and scaffolding techniques. The authors reported that learners were satisfied with the instruction and felt confident in relation to learning outcomes. No measures to evaluate the transfer of learning were included however. Beyond this study, as the authors recognized, there is very little inquiry evidence focused on coaching as a teaching strategy in nursing education.

### **Reflection**

Reflective learning strategies have been associated with positive outcomes in nursing education. Reflective learning encompasses a deliberative process of reviewing situational events and evaluating one's actions (Rolfe, 2014). HFS learning designs frequently employ reflective learning. Reflection during debriefing sessions following simulation is considered beneficial for knowledge integration and the development of critical thinking skills (Garrett, MacPhee, Maura & Jackson, 2010). Reflective strategies can also be used in varied ways including journaling and informal group settings to enhance learning.

Ganzer (2013), in a qualitative methods study, reported that structured reflective exercises increased nursing student's self-awareness, improved confidence and enhanced participation in the learning process. The study was designed as a measure to alleviate stress for students prior to introductory clinical rotations in the psychiatric health care setting and featured

a sample of thirty undergraduate nursing students. Another significant finding included a reported change in student perspective and conceptual ideals related to the patient population.

Lavoie, Pepin, and Boyer (2013) focused on reflective debriefing exercises for novice nurses upon transition to critical care practice areas. The exercises were included in simulation debriefing. Participants perceived the reflective teaching strategy as useful for linking theory knowledge to the practice environment. Participants also noted significant improvement in communication skill. A small sample size (n=5) and pilot status was a limiting factor in this study.

Rolfe (2014), in a theoretical manuscript focused on reflective practice, draws attention to the notion that reflection as a process is embedded in practice itself. Using the theoretical work of Schon, Rolfe (2014) argued that the process is integral to practice settings and should not be perceived as an isolated event occurring after the fact. Reflection is thus said to occur in action. The author concluded however that reflection, as a process of learning, is associated with enhanced critical thinking and the development of practice know-how in nursing educational environments (Rolfe, 2014).

### **Situated Cognition**

Situated cognition is a component of the sociology principle in the CA model. It is often described as a useful approach to designing and conducting nursing education since knowledge of a practical nature is best developed in authentic, contextually-structured environments. Social and cultural influences, as well as historical components embedded in the situational setting, promote understanding and help learners make meaning out of particular elements as they unfold (Paige & Daily, 2009).

Situated cognition as a theory of learning is frequently associated with the use of HFS in nursing education. Lasater (2007) conducted focus group research on the benefits of context-

based learning through the use of HFS. The researcher reported that the integration of learning and the linking of theory to practice required the use of critical thinking. Learners were able to associate cause and affect relationships resulting from treatment and anticipate next steps, a defining characteristic of clinical judgment. Wyrostok, Hoffart, Kelly and Ryba (2014) reported on a simulation exercise design grounded in the principles of situated cognition. An end of life scenario was featured to help learner's recognize the complexity of events as they might occur in real-world settings. According to the researcher's, students were able to develop a much better understanding of the nursing role in these situations and overall, confidence on the part of the student was reported as improved. The researcher's drew these conclusions from qualitative data collected in pre-briefing sessions, interim sessions and post sessions conducted one week after the event. While situated learning enables students to experience the complexity of authentic, practice modeled environments, demonstrating its effectiveness through performance evaluation is an area in need of inquiry (Adamson, 2012). Most of the work and evaluation of situated cognition strategies is concentrated on student perceptions of learning rather than measurable outcome data. As many authors contend, student perceptions of learning effectiveness do not always align with performance indicators (Adamson, 2012).

## **SBAR**

The SBAR tool is a structured communication framework used in health care settings which was first conceptualized in aviation and military organizations (Compton, Copeland, Flanders, Cassity, Spetman, Xiao, & Kennerly, 2012). A variety of applications (i.e., hand-off reporting, verbal communication and written communication) as well as use in varied settings is commonplace in today's health care environment. As noted previously, SBAR stands for S-situation, B-background, A-assessment, and R-recommendations. The tool promotes a clear and efficient structure for organizing information and also provides a shared mental framework for

interdisciplinary team communication (McComb & Simpson, 2013). Differences in education and training among health care disciplines results in varying communication styles; the SBAR tool has been shown to offset this problem (Krautscheid, 2008). Thus, both the Institute for Health Care Improvement (n.d.) and The Joint Commission [TJC] (2012) support the use of standardizing teamwork systems such as the SBAR tool. In 2007, TJC further advanced the call by implementing a safety goal standard to include a framework approach in hand-off communications.

A pilot study conducted by Rodgers (2007) investigated the use of SBAR in phone communication between nurses and physicians. Study findings noted that SBAR use was especially effective for novice nurses. In a mixed-methods study, Beckett and Kipnis (2009) found that educational strategies employing the SBAR method resulted in transfer to the clinical setting. The SBAR framework tool has also been used in other studies, with positive results reported. Kesten (2011) compared SBAR instruction in didactic format to didactic with role-play and reported a significant improvement in observed reporting skill. Favorable outcomes in multiple health care settings, from tertiary care to extended care facilities have also been reported when using the SBAR communication framework (Renz, Boltz, Wagner, Capezuti, & Lawrence, 2013; Woodhall, Vertacnik, & McLaughlin, 2008).

Additional benefits extending beyond SBAR's utility as a communication tool have been reported in the literature. In a qualitative study, Vardaman, Cornell, Gondo, Amis, Townsend-Gervis, and Thetford, (2012) suggested that professional enrichments with use of the SBAR method included improved schema cognition and personal agency. Such a finding should be significant to nursing education in its pursuit to develop clinical reasoning and critical thinking skills. Improvements in situational awareness and process efficiency have also been reported

with the use of SBAR further suggesting that learning enhancements beyond the communication domain could be realized (Cornell, Townsend-Gervis, Vardaman, & Yates, 2014).

Grbach et al. (2008) in a QSEN project report expanded the SBAR framework to ISBARR after finding that nursing students failed to include basic information pieces (i.e. identifying themselves and patient) in patient status reports during simulated exercises. The addition of (I) reminds the reporter to first identify themselves and the added (R) prompts the reporter to read back any orders received. An evaluation instrument to measure verbal reporting in critical incidents was devised by Guhde (2014) using the ISBARR approach titled, *Inter-Professional Critical Incident Report Evaluation Tool*. The tool's principle application centers on evaluating the effectiveness of reports and identifying weaknesses in the process. Educators can adapt the tool for various clinical cases by determining the relevant indicators for each communication variable. The evaluation tool addresses three other categories as well. One of these focuses on early identification of the problem. To create situational awareness the problem should be noted at the outset of the report; doing so better promotes the listener's understanding of subsequent data. Secondly, information must be provided in a logical sequence. As an example, the author cites that a report of indicators such as vital signs should be provided together including baseline and changes. Finally, the tool evaluates the salience of the status report since it is important to provide key information and avoid unnecessary detail. The *Inter-Professional Critical Incident Report Evaluation Tool* will be used in this study and is further described in the methods section.

## **Summary**

As this literature review has shown, the need to enhance undergraduate nursing curricula to improve professional communication skill competencies is apparent. Patient safety, successful novice transition, nurse agency and graduate nurse confidence are directly affected by

professional communication deficits. The SBAR and ISBARR communication methods provide a practical framework with which to structure learning but, the literature indicates that lecture-based formats alone do not develop the skill level needed for practice. Nursing educators, in evaluating curriculum effectiveness through the performance of its graduates, must consider this deficit an incentive for educational improvement.

Creative, contextually centered teaching strategies have been envisioned as a way to improve nursing education and prepare graduates for work in complex health care settings. Evaluative measures to assess learning using such strategies, most expressly those related to performance, have been recognized as an area in need of study (Adamson, 2012). This research will seek to investigate whether a context-centered, apprenticeship-based teaching strategy enhances performance in contrast to a more traditional approach. The study findings will therefore provide nursing education with outcome performance measures in relation to communication instructional strategies as well as contribute to the broader pedagogical evidence base.

Cognitive apprenticeship, as a model approach to teaching and learning, has been deemed effective for practice-based professions. More inquiry and investigation is needed to build a case for such methods however. The theoretical premise of the CA model is focused on cognitive understanding through conceptual model development and enhanced awareness which subsequently leads to effective, transferable learning. Achieving these outcomes requires more than attention to setting or context but demands thoughtful integration of multiple CA principles. At present, there is limited evidence to support or better understand the contributions of this learning model especially with regard to nursing education. The model does integrate many of the constructivist principles advocated for in the current nursing education literature yet; a robust

evidence-base to support such learning designs, especially using apprenticeship methods, is needed (Noone, 2009).

## **CHAPTER III - METHODOLOGY**

The research design used for this study was a randomized posttest-only design with comparison group. The method is considered effective in the assessment of cause-effect relationships and was used for the purpose of comparing reporting performance, self-confidence in learning and satisfaction in learning among students participating in either simulation-based instruction or classroom-based instruction (Trochim, 2006). A convenience sample of undergraduate baccalaureate senior nursing students participated in the study. This chapter will describe the study variables, participants, sampling procedures, instructional procedures and the instrumentation used to conduct the study. The ethical considerations relevant to the study and the informed consent procedures are also presented in this chapter.

### **Variables**

The independent variable in this study included methods of instruction; HFS-based CA instruction (SBI) and classroom-based instruction (CBI). HFS-based CA instruction served as the intervention for experimental groups. Classroom-based instruction, since it represented a standard educational treatment, was provided for comparison groups. Patient status reporting performance and instructional survey data comprised the dependent variables. Table 2 lists all study variables, the corresponding research questions and the instrumentation used for each assessment. Further discussions related to measures are included in the instruments section.

Table 2: Variables, Research Questions, Instruments, and Measures

Independent Variable	Dependent Variables	Research Question (RQ)	Instruments & Measures
Method of Instruction (1) Simulation-based CA instruction (experimental) (2) Classroom-based instruction (comparison)	ISBARR performance scores post-instruction simulation exercise	RQ1	Inter-Professional Critical Incident Report Evaluation Tool: Scale measures of ISBARR performance.
Method of Instruction (1) Simulation-based CA instruction (experimental) (2) Classroom-based instruction (comparison)	Satisfaction in learning scores following simulated exercise	RQ2	NLN Student Satisfaction and Self-Confidence in Learning Survey (SSSCL)  Questions 1, 2, 3, 4, 5: satisfaction with teaching methods, activities, methods of facilitation, motivation, and support of personal learning style
Method of Instruction (1) Simulation-based CA instruction (experimental) (2) Classroom-based instruction (comparison)	Self-Confidence in learning scores following simulated exercise	RQ3	NLN Student Satisfaction and Self-Confidence in Learning Survey (SSSCL)  Questions: 6, 7, 8, 9, 10, 11, 12, 13: content mastery, critical content, skill development, resources, and availability of learning support

### Setting

The study took place at a major Southern University with an approximate enrollment of 8,000 students. The University offers undergraduate and graduate nursing education programs. Approximately 800 students are enrolled in the pre-licensure, baccalaureate nursing program. The

College of Nursing has state-of-the-art simulation facilities located in the program's Learning and Technology Resource Center (LTRC). Study activities took place in this facility using two of the high fidelity simulation labs and one classroom space to deliver the instruction. The LTRC high fidelity labs were used to conduct the post instruction simulation exercises.

### **Ethical Considerations and Recruitment**

Application for Institutional Review Board (IRB) approval was completed and granted at both the host institution (Appendix A) and PI sponsoring institution (Appendix B). At the beginning of a semester, in compliance with the host institution simulation center policy, all students are asked to sign documentation noting their approval for simulation videotaping and are informed that such materials may be used for educational/research purposes (Appendix C). Participants were provided with full disclosure for this research activity however and asked to provide written informed consent. The consent form included a clear statement indicating that participation in the study included permission to use videotaping technology for the purpose of data collection. The study instructional sessions were developed as a supplement to regular course content and did not require additional outside class time or simulation activities.

Prior to recruitment, informational sessions were conducted by the PI in compliance with the study's IRB protocol. The sessions were conducted with both the fall and spring semester cohorts during a regular course meeting. The study's purpose and the consent form were explained. Any questions or areas needing clarification were addressed by the PI. Students were made aware that participation in the study was strictly voluntary and would have no impact on course grade. When the informational sessions concluded, students were invited to participate in the study by indicating their consent on the provided form. Those not wishing to participate were asked to leave the form blank. Students were also asked to note any criteria making them ineligible for participation by indicating in the appropriate spaces on the consent form. A large envelope was

provided for consent collection and the PI exited the room as the forms were submitted to the envelope. All informed consent information was stored in a locked file cabinet in the PI's private office.

A color and letter coding system was used to compile the report performance data, no names were used on either the video recordings or scoring tools. Participating students were asked to note instructional assignment and eligibility on the SSSCL survey forms by checking the specified boxes. This measure was taken to maintain confidentiality.

The pre-simulation instructional events represented a new formalized approach to teaching communication and patient status reporting. All students participated in one form of the instruction prior to simulation. The simulation exercises that followed were also part of the scheduled course content and adhered to the policies and procedures outlined for such activities. The randomized drawing process used to assign student simulation a role was a variation required for the study however. Students typically participate in simulation exercises in groups of four but, for the study, students were assigned in pairs to obtain the needed sample. The scoring of videotaped communication performances and the post-simulation satisfaction in learning and self-confidence surveys were additional elements specific to the research.

### **Sample**

A convenience sample of first semester senior level baccalaureate nursing students enrolled in a required adult health course participated in the study. The course description indicates that learners “apply the nursing process for clients requiring complex and collaborative nursing management” (The University of Alabama in Huntsville, n.d.). Prior to taking this course, students had completed one fundamentals nursing course and an adult health course as foundational curricular components. Approximately 300 clinical clock hours were completed

between the two previous courses. Students had also participated in simulated experiences as part of prior course enrollments.

Any student with prior licensure as a health care worker or service in military medical corps was excluded from study participation. The rationale for this exclusion included possible prior experience with health care communication tools and techniques. Additionally, any students repeating the course in the second semester of data collection were excluded from participation to limit confounding factors. Over two semesters, a total of 141 students consented and were deemed eligible for participation in the study. Two students were excluded in the fall semester for prior experience as licensed healthcare workers. One student was excluded in the spring due to course repeat and another for prior licensure as a health care worker.

### **Sampling Procedures**

Course clinical groupings were used to determine instructional assignment to either the classroom based method or simulation-based method (See illustrative diagram Appendix D). Clinical groups are traditionally configured at the outset of a semester for the purpose of clinical facility assignment and the assigned groups also participate in on-campus simulation exercises together. Each clinical group has an assigned clinical instructor. Approximately seven to eight students comprise a clinical group. The clinical section number served as group identification and was used to conduct the random drawing for instructional assignment (CBI or SBI). A simulation schedule was created by the PI based upon the assignment of sections and given to the course manager who matched instructor name to section. The course manager provided this information to LTRC personnel as well as course team members. The procedure allowed the PI to remain blinded to instructional assignment until all reports were scored.

In the fall semester cohort, there were some groups with less than the anticipated numbers due to a change in scheduling procedure. The spring cohort had the traditional seven to eight

students per clinical group. In the fall 2015 course cohort, there were 13 clinical groups of varying sizes and in the spring 2016 course cohort, there were 11 clinical groups. Therefore, there were 24 clinical groups that formed the potential sample. Of these groups, 12 were assigned to classroom-based instruction (seven in the fall, five in the spring) and 12 were assigned to simulation-based instructions (six in the fall, six in the spring). Again, instructional assignment of the clinical groups was done by random assignment.

Following the instruction and prior to the course simulation exercises, students reported to an assigned conference room to meet with their clinical instructor. At this juncture, students were asked to draw from a color-coded envelope filled with cards designating simulation roles. One role was the “assessment nurse” and the other “reporter”. Each of the two roles had a letter association, for example assessment nurse “A”, reporting nurse “A”; the lettering scheme for all groups was A - D. This matched students in a pair wise fashion for participation in the simulation. When a clinical group had an odd number of students, the person drawing the single letter card with no matched card participated as an observer. Following the drawing, each clinical instructor completed a form enclosed in the envelope matching student name to role assignment. The envelopes were then passed to the simulation technician, who coded each video using the color and letter assignment. The simulation technician then sealed the envelope and stored in a locked file which was retrieved by the PI after the activities were completed.

A total of 72 ISBARR reports were determined eligible for study inclusion. The total sample size was projected to be approximately 80 – 96 scored performances however; the student cohort size was smaller than anticipated in the spring and then, technical problems resulted in a loss of three video recordings over two semesters. Based upon a large effect size of 0.8, a priori estimate indicated that a total sample size of 70 (35 in each group) would result in

.95 level of power. The CBI group yielded 39 scored performances while the SBI group yielded 33 scored performances. Any student that drew the reporter role who did not consent to participate in the research was excluded from data analysis. Any student drawing the reporter role who did consent, made up the sample for reporting performance evaluation. In some cases, a reporting student may have been paired in the simulation with another student who participated only as a course requirement thus accounting for the unequal distribution of the research samples. Again, the only performance evaluated and used in the data sample was that of reporting nurse. The collection of learning satisfaction and self-confidence surveys were completed by all participating students upon exiting the simulation which yielded a sample of 141 eligible surveys.

### **Instructional Procedures**

The initial step in the research procedure included the delivery of ISBARR communication content to all students in the class cohort. A fifteen-to-twenty minute session focused on ISBARR reporting (see Appendix E for lesson plan) was delivered using PowerPoint media (Appendix E-1). This session took place one-week prior to the simulation event during regularly scheduled lecture time and was taught by a course instructor, not the researcher. Both instructional groups then had equal instruction in relation to domain knowledge which included specific facts, concepts and procedures related to communication and patient status reporting. Because the students were previously taught communication concepts and reporting techniques, including the use of SBAR, the session was approached as a knowledge “refresher”. Students customarily receive a preparation packet prior to simulation activities. A handout of the ISBARR communication framework (Appendix F) was provided for all students in the simulation resources packet via the online course management system.

On the day of scheduled simulations, the classroom (comparison) and simulation-based CA instruction (experimental group) were scheduled as the initial learning activity. The instruction was conducted based upon the schedule completed through random drawing. For both groups, instruction lasted approximately one-hour and was taught by full time faculty instructors with more than ten years of recent clinical teaching experience and advanced nursing degrees. Classroom instruction was conducted with one to two clinical groups per session. One instructor provided the classroom instruction to all CBI assigned clinical groups. For the simulation-based CA instruction, a high-fidelity simulation lab was used to provide instruction to each assigned clinical group. Typically, this represented seven to eight students per simulation-based session but, on some occasions there were less. There were two simulation-based instructors and each was assigned to teach an equal number of clinical groups all elements of the instruction using two identical case scenarios. Simulation technicians provided the voice of the patient during the sim-based instruction. Each technician was thoroughly pre-briefed and provided with a case script to follow for the instructional sessions. All of the participating instructors spent an hour in an instructional pre-briefing meeting to review the lesson plan and patient cases. The simulation instructors were briefed on the CA instructional model and provided with very detailed instructions for application. The instructors that participated in the fall returned for the spring semester phase. Each instructor, over both semesters, was provided with an informational folder that included lesson plans, scripts and the sample cases that would be used in each learning session. The two case scenarios used for instruction were identical for both CBI and SBI instructional groups. Table 3 provides an overview of the instructional procedures and CA elements used in the simulation based instruction where applicable. Detailed lesson plans for both instructional approaches can be found in Appendix G.

Table 3: Instructional Procedures

Groups	Instructional Overview	Cognitive Apprenticeship Elements
Classroom (Comparison)	<p>1-2 Clinical Groups (7-8 students per group)</p> <p>ISBARR Quick Review (3 minutes)</p> <p><b>Patient Case 1 (20 minutes)</b>            Pair Students            Ten minutes to review case 1            Ten minutes role-play patient status report with student partner</p> <p>Instructor present for guidance and feedback</p> <p><b>Patient Case 2 (20 minutes)</b>            Ten minutes to review case 2            Ten minutes role-play patient status report (alternate) with partner</p> <p>Instructor present for guidance and feedback</p>	<p>NA</p> <p>NA</p>
<p>Simulation-based (Experimental)            *Plan followed for each clinical group</p>	<p>1 Clinical Group (7-8 students) per session</p> <p>ISBARR Quick Review (3 minutes)</p> <p><b>Patient Case 1 (20 minutes)</b>            Ten minutes to review case 1            Simulation Lab 1 (patient bedside)            Instructor models thought process relative to case data/patient status            Instructor prompts students to interject thoughts            Instructor models patient status report using ISBARR</p>	<p><i>Situated learning:</i> Context reflects real world applications  <i>Modeling:</i> Expert performs task for learners, externalize thought processes.  <i>Articulation:</i> Prompting verbal explanation</p>

**Patient Case 2 (20 minutes)**

8-students  
Ten minutes to review case 2  
Simulation Lab 1 (patient bedside)  
Student groups to frame a patient status report.  
Instructor provides prompts, support  
Student collaboration  
ISBARR by one student, team critique  
Instructor prompts reflection on completion.

*Situated learning:* Context reflects real world applications  
*Coaching:* Observing and directing students in performance  
*Scaffolding:* Providing learning support  
*Articulation:* Prompting verbal explanation  
*Reflection:* Providing opportunities for comparison  
*Community of Practice:* people working together  
*Intrinsic motivation:* Learners engaged and invested  
*Cooperation:* Problem-solving with others

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**Post Instruction Simulation**

Following the initial ISBARR instruction, each clinical group reported to an assigned conference room for simulation pre-briefing. The random drawing for paired assignments was conducted at this time and then students participated in the simulation exercise as indicated by the role assignment drawing. Generally, students participated in groups of two unless there was an odd number in the group which warranted a team of three.

The simulation event was selected in collaboration with the course team based upon course content and course objectives. As is customary, there was no instructor present during the course simulation exercises as students are expected to manage the situation independently. The simulation scenario was taken from the Program for Nursing Curriculum Integration (PNCI) which was developed by Medical Education Technology Incorporated (METI). Slight modifications were made to the simulation to ensure that a status report would be indicated in the early phases of the scenario but again, any modifications were made in collaboration with the course team. The simulation featured a client who sustained closed head injury secondary to

trauma. Learners were expected to note signs and symptoms indicating increasing intracranial pressure which would warrant a patient status report to be given to the medical provider by phone. Course faculty participated in a simulation run-through each semester which occurred about two weeks prior to the actual event. At this time, all instructors were briefed on study procedures and invited to clarify any questions. The LTRC simulation technician staff, four in the fall semester and three in the spring semester, assisted with the study. All participating technicians were registered nurses. Each was thoroughly briefed on the study procedure, present for run-through and provided with the necessary scenario materials. To maintain consistency, the decision was made in collaboration with the course team that simulation technicians would play the role of medical provider (report receiver and provider of medical orders). Each of the simulations was videotaped and labeled by technicians using the color-letter coding system. As students exited the simulation lab, they were asked to complete the NLN Student Satisfaction and Confidence in Learning Survey and note on this form the ISBARR method of instruction they received prior to simulation. Non-participating students were instructed to leave the form blank.

### **Instrumentation**

The Inter-Professional Critical Incident Report Evaluation Tool (IPCIRET) was developed to assess the effectiveness of nursing performance when providing a patient status report (Guhde, 2014). According to the author, the tool is appropriate for use in both practice-based and educational settings. Permission for use is granted by the author as long as the work is appropriately referenced. The tool provides an organizing framework. Information relevant to a simulated case is added to the tool to provide specific parameters for effective reporting. The course faculty assisting with this study together with the PI collaboratively developed the simulation materials which were used to create the report scoring tool.

When using the Inter-Professional Critical Incident Report Evaluation Tool, a “Yes” response indicates that defined subscale elements were included and a point value of “1” is awarded. When students fail to include the designated case elements, a “no” response is indicated and “0” points are awarded. Total score using the tool as developed for this study included a point value range of 0 – 25. Student ISBARR performance was evaluated for: (1) clarity in sequence (uses correct progression), (2) early problem identification (stated after identification; before background) and (3) pertinent information based upon the parameters defined for the simulated case. Content validity of the tool was established through the current literature which included a three-panel nursing collaborative who are currently active in clinical practice. The interclass correlation coefficient for the tool was reported as .919 after pilot study development (Guhde, 2014). The general evaluation tool is depicted in Figure 1. The tool as developed for this study which defines specific case parameters can be found in Appendix H.

	YES	NO
<b>I</b> Identifies self		
<b>S</b> Identifies patient		
<b>S</b> Patient problem		
<b>B</b> Background		
<b>A</b> Assessment		
<b>R</b> Recommendations		
<b>R</b> Read back		
Patient problem identified early		
Report follows orderly sequence		
Pertinent information only		
Extraneous information (list)		
<b>Total score</b>		

Figure 1: Inter-Professional Critical Incident Report Evaluation Tool

*Note:* **Guhde, J.** (2014). An evaluation tool to measure interdisciplinary critical incident verbal reports. *Nursing Education Perspectives*, 35(3), p. 183.

The total mean scores of ISBARR performance were analyzed and compared between the instructional groups. An independent samples *t* test at  $\alpha = .05$  was used for the analysis. The descriptive data and the statistical analysis are reported in Chapter IV. An analysis of interrater reliability was performed using the ISBARR scores from the IPCIRET. A clinical faculty member with experience in simulation and undergraduate nursing education agreed to serve as a second rater. A one-hour training session was created by the Principal Investigator based upon the tool publication which provided a detailed description for application. Practice sessions were completed using illustrative simulation videos featuring a patient status report. After training, one case was selected for analysis and scored by both the PI and second rater for comparison.

Cohen's kappa analysis for measures of agreement yielded a .731 indicating substantial agreement (McHugh, 2012). The training procedure was completed prior to the data collection phase. Once the video scoring for the study was completed, the second rater scored a randomly selected sub-set of the recordings (n=5) for comparison with PI scoring, this included subscale measures which totaled 125 comparative scores. The second rater was briefed on the reporting tool as developed for the study simulation prior to the scoring procedure. The PI and second rater scoring data were subjected to a measures of agreement analysis using Cohen's kappa (Cohen's  $\kappa$  .688) which indicated substantial agreement (McHugh, 2012).

The National League for Nursing (2005) Student Satisfaction and Self-Confidence in Learning Survey (SSSCL) was used to measure student satisfaction (five items) with simulation activities and self-confidence (eight items) in learning. Responses were assessed using a five-point scale with a rating of (5) indicating strong agreement and a rating of (1) indicating strong disagreement. Permission to use the instrument was obtained from the NLN (see Appendix I). Reliability reported for the instrument includes Cronbach's alpha: satisfaction = 0.94; self-confidence = 0.87 (NLN, 2014). Mean total scores between groups were compared to determine if a significant difference existed with regard to instructional group assignment in learning satisfaction and confidence perceptions. Students were also asked to indicate on the survey if they met any of the exclusion criteria. Responses for this survey totaled 141 over two semesters. Statistical measures and probabilities are presented in Table 4.

Table 4: Statistical Measures

Research Question	Statistic	Probability
1) ISBARR performance	T test $\alpha$ 0.5	0.95
2) Satisfaction in learning	T test $\alpha$ 0.5	0.95
3) Self-Confidence in learning	T test $\alpha$ 0.5	0.95

### Data Collection

The patient status reporting performances were scored using the cataloged simulation recordings and occurred over two semesters. Scoring of communication performance using the Inter-Professional Critical Incident Report Evaluation Tool as developed for the study (see Appendix H) was conducted by the PI. All scoring was completed in the PI's private faculty office by accessing the videos on the LTRC system. The color-letter coding system depicted on each video was used on all scoring sheets as means of matching data. Interrater reliability was assessed for video scoring data and is reported in the instruments section. During the scoring phase, the PI was unaware of comparison and experimental group instructional assignment. Additionally, other than to organize study elements a priori, the PI was not present for any instruction or simulation activities.

Students delivering the status report provided the performance for scoring. A total of 72 videos met criteria for data analysis. The PI compared the simulation role assignment sheets with the consents on file and excluded non-participating students from data analysis. After concluding the simulation, students completed by paper and pencil the designated satisfaction and self-confidence in learning survey. A total of 141 were eligible for data analysis.

## **Validity**

Random assignment was used in all phases of the study which distributed characteristics equally among groups to provide internal validity (Trochim, 2006). When repeating the study in the second semester of data collection, the same procedure was followed. Two semesters of data collection provided the total scored performances needed although the simulation-based group was two short of the desired 35 (n=33). Group assignments remained anonymous during the videotape scoring process and student identity on survey responses was not disclosed. There was a change in the course curriculum which included clinical rotations to intensive care unit areas. These modifications were in place for both semester cohorts however.

Nursing faculty members who conducted the instructional sessions for both comparison and experimental groups had similar years of experience in both nursing and nursing education. A one-hour training session was conducted by the PI for all study instructors in the fall. The same instructors participated in the spring which resulted in less time needed for pre-briefing however; a shorter session was conducted. The patient cases used for instruction were identical for both the comparison and experimental groups. Lesson plans and scripted dialogue were provided each semester for all instructional sessions. This information remained consistent for both phases of the research. Course personnel responsible for course simulation oversight worked closely with the PI to develop the simulation in accordance with course objectives prior to study implementation. A run-through exercise was conducted with the simulation-based instructors and clinical course faculty approximately two weeks prior to the scheduled simulation exercises. The course faculty reviewed and provided input regarding the elements of course simulation at this juncture. Again, the instructional elements and simulation scenario were implemented in the spring just as in the fall.

## **Summary**

The purpose of this chapter has been to describe the research design, study variables, sampling procedures, data collection methods and instrumentation used in this study. Efforts to limit confounding variables and support rigor in the research can also be differentiated and include randomization of assignments, consistency in the delivery of instructional methods, and measures of interrater reliability. A convenience sample of 141 senior baccalaureate nursing students consented to participate in the research. A total of 72 video performances were eligible for data analysis and were used for the purpose of scoring patient status report performances. Student perceptions of satisfaction and confidence in learning were also collected and 141 were included in the data set. Statistical measures and the results of the data analysis are presented in the following chapter.

## CHAPTER IV - RESULTS

The purpose of this study was to determine if nursing students who participated in a high fidelity simulation-based instructional session using elements of the Cognitive Apprenticeship instructional framework would demonstrate a difference in patient status reporting performance when compared to students who participated in classroom-based instruction. Students were also asked to rate their satisfaction in learning and perceptions of self-confidence in learning for comparison across instructional groups. Each instructional session was delivered just prior to a scheduled course simulation and focused on the ISBARR method of patient status reporting. The simulation sessions that followed the instruction were videotaped and compiled for the purpose of ISBARR report performance scoring. Students completed an NLN instructional survey to rate perceptions of satisfaction and confidence in learning as they exited the simulation lab. A convenience sample of senior baccalaureate nursing students, one course cohort in the fall semester and one course cohort in the spring, participated in the research.

The PI viewed the cataloged simulation videos for each course cohort to score student reporting performance using the Interprofessional Critical Incident Report Evaluation Tool (IPCIRET). Measures of interrater reliability were assessed using this data set and are reported in Chapter III. Data from the NLN Student Satisfaction and Self Confidence in Learning (SSSCL) post-simulation surveys were also compiled by the PI. All data were entered into Statistical Package for the Social Sciences (Version 23) for data analysis. For each of the three research questions considered in the study, descriptive statistics were generated and an independent *t*-test

at  $\alpha$  .05 was performed to compare mean scores. This chapter will first describe the study cohort demographics and then present the statistical analysis related to each of the three research questions.

### **Demographic Data**

The age range for study participants was 19 – 59 years of age. The majority of participating students were of female gender. Table 5 presents the demographic information for the study cohort as well as the exclusion criteria data.

Table 5: Demographic Statistics for Study Cohort

Descriptor	N	%
Fall Cohort Gender		
Female	64	81
Male	15	19
Spring Cohort Gender		
Female	55	88
Male	7	12
Exclusions		
Military Medic or Emergency Services Personnel	2	.02
Spring Cohort Exclusions		
Military Medic or Emergency Services Personnel	1	.01
Course Repeat	2	.03

## Measures of ISBARR Performance Based on Instructional Method

A total of 72 ISBARR performance reports were scored by simulation video review using the Interprofessional Critical Incident Report Evaluation Tool. The evaluation tool, with measures specified for the high fidelity simulation case used in this study, included a score range of 0 - 25. All data were entered into Statistical Package for the Social Sciences (Version 23) for analysis.

Scores for the simulation-based instructional group ( $n=33$ ) yielded a mean of 13.57 (SD = 3.27). In comparison, the performance scores for the classroom-based instructional groups ( $n=39$ ) yielded a mean of 12.94 (SD = 2.68). A detailed report of the descriptive group statistics is presented in Table 6.

Table 6: Descriptive Statistics for ISBARR Reporting Performance Scores

Instructional Assignment	N	Mean	Std. Deviation	Std. Error Mean
CBI	39	12.9487	3.27630	.52463
SBI	33	13.5758	2.68130	.46676

To determine if there was a statistically significant difference in reporting scores between simulation-based instructional groups and the classroom-based instructional groups, an independent samples  $t$ -test was performed using a 95% confidence interval,  $\alpha$  .05. The distributions for both instructional groups were analyzed and deemed appropriate for independent samples  $t$ -test application (skew < 2; kurtosis < 2; Lomax, 2012). Testing for the assumption of homogeneity of variances was conducted using Levene's F test ( $F$  .740 ( $df= 70$ ),  $p = .393$ ). Based upon the independent samples  $t$ -test analysis (see Table 7), there was no statistically significant difference in reporting performance scores between instructional groups ( $t = -.878$  ( $df= 70$ ),  $p = .383$  [ $p=.195$ ]).

Table 7: Independent Samples t-test ISBARR Score

Data Set	t	df	Sig. (2-tailed)
ISBARR Score Equal Variances Assumed	-.878	70	.383

### Self-Confidence in Learning

To determine if senior pre-licensure nursing students who participated in CA simulation-based instructional sessions would demonstrate a difference in self-confidence in learning scores compared to those who participated in classroom-based instruction, eight response items were administered using the NLN Student Satisfaction and Self-Confidence in Learning (SSSCL) tool. Students completed the survey immediately following the simulation exercise, prior to simulation debriefing. A minimum score of eight and a maximum score of 40 are possible on the self-confidence in learning portion of the tool. A total of 141 surveys were deemed eligible for data analysis. Non-participating students and students not meeting study criteria were excluded from the data collection. The survey forms were completed using a paper-pencil format. Descriptive statistics were computed to obtain the overall mean scores for each of the instructional groups on the eight item survey (see Table 8).

Table 8: Descriptive Statistics for Self-Confidence in Learning

Confidence in Learning	N	Mean	Std. Deviation	Std. Error Mean
CBI	66	32.7727	5.12849	.63127
SBI	75	33.2667	4.23733	.48928

An independent samples *t* test was performed to determine if a statistically significant difference in the mean confidence in learning scores between CBI and SBI groups existed. The distributions for both groups were analyzed for equality (skew -.334, kurtosis -.285). A Levene's *F* test was computed to test for the homogeneity of variances  $\alpha$  .05 (*F* 1.929 (*df*= 139), *p* = .167). Based upon the independent samples *t*-test analysis (see Table 9), no statistically significant difference in confidence in learning scores was noted between CBI and SBI groups (*t* = -.626 (*df* = 139), *p* = .532).

Table 9: Independent Samples *t*-test Student Confidence in Learning

Data Set	<i>t</i>	<i>df</i>	Sig. (2-tailed)
Confidence in Learning	-.626	139	.532

### Satisfaction in Learning

To determine if senior pre-licensure nursing students who participated in CA simulation-based instructional sessions would demonstrate a difference in satisfaction in learning scores compared to those who participated in classroom-based instruction, five response items were administered using the NLN Student Satisfaction and Self-Confidence in Learning survey tool. The possible score range on the satisfaction and learning portion of the SSSCL is a minimum of

five and a maximum of 25. A total of 141 surveys were eligible for inclusion. Descriptive statistics were computed to obtain the overall mean scores for each of the instructional groups which are reported in Table 10.

Table 10: Descriptive Statistics Satisfaction in Learning

Satisfaction in Learning	N	Mean	Std. Deviation	Std. Error Mean
CBI	66	21.6818	3.29643	.40576
SBI	75	21.4000	3.03582	.35055

An independent samples *t* test was performed to determine if a statistically significant difference in mean satisfaction in learning scores between CBI and SBI groups was present. The distributions for both groups were analyzed for equality (skew  $-.845$ , kurtosis  $.660$ ). A Levene's *F* test was computed to test for the homogeneity of variances  $\alpha .05$  ( $F .081$  ( $df= 139$ ),  $p = .776$ ). Based upon the independent samples *t*-test analysis (see Table 11), no statistically significant difference in confidence in learning scores was noted between CBI and SBI groups ( $t = .528$  ( $df = 139$ ),  $p = .598$ ).

Table 11: Independent Samples *t*-test Student Satisfaction in Learning

Data Set	<i>t</i>	<i>df</i>	Sig. (2-tailed)
Satisfaction in Learning	-.528	139	.598

## **Summary**

In this chapter the statistical analysis pertaining to each of the three research questions posed in this study was presented. In regard to research question one; the analysis suggests that there is no statistical difference in patient status reporting performance between groups who participated in CA simulation-based instruction and those that participated in classroom-based instruction. For research questions two and three, the statistical analysis suggests that there is no statistically significant difference in confidence in learning scores or satisfaction in learning scores between the two instructional groups. The significance of these findings, the implications for nursing education, the assumptions and limitations of this study as well as recommendations for future research are considered in Chapter V.

## CHAPTER V - DISCUSSION

The preparedness of nursing graduates for transition to practice has been a long standing subject of concern. Certain competencies are required for successful transition; chief among them is an ability to communicate effectively with members of the health care team regarding patient condition. Novice nurses have been reported to lack confidence and skill in this domain (O'Daniel & Rosenstein, 2007; Schwartz, et al., 2011). To address the problem prior to entering professional practice, attention needs to be shifted to the methods used in nursing education. Evidence indicates a paucity of productive teaching-learning strategies focused on the development of communication competencies in both nursing education and the broader arena of healthcare education (Benner, et al., 2010; Interprofessional Education Collaborative Expert Panel, 2011). These issues should be cause for serious concern since errors in communication often play a key role in adverse healthcare events and threaten patient safety.

This research was conducted to compare patient status reporting performance among undergraduate nursing students who participated in one of two methods of instruction. Therefore, a major point of inquiry was focused on the development and transfer of communication skills for the nurse learner. The standardized communication framework ISBARR was used to: (1) provide learners with a method for structuring information and (2) comply with clinical practice standards that recommend the use of these tools. Learners also rated their satisfaction in learning and confidence in learning for subsequent comparison. While statistical analyses indicated no significant difference in patient status reporting performance or student perceptions of

confidence and satisfaction based on instructional group assignment, performance observations do provide constructive insights for the discipline of nursing education.

### **Significant Findings**

*Research question 1: Do senior pre-licensure nursing students who participate in a simulation-based instructional session focused on patient status reporting using elements of the Cognitive Apprenticeship instructional framework demonstrate a difference in ISBARR performance scores compared to those who participate in classroom-based instruction?*

Learners participated in instructional sessions focused on patient status reporting using either a classroom-based, peer role-play strategy or a high fidelity simulation-based strategy taught by expert nurses using the Cognitive Apprenticeship instructional framework.

Instructional strategies featuring the principles of apprenticeship learning have been advanced in the nursing education literature as a way to enhance clinical reasoning ability (Benner, et.al, 2010). The experimental instruction was delivered in the HFS environment to provide an authentic context for learning which supports the social elements of the CA learning model. Expert role modeling, along with the other CA principles of coaching, articulation and reflection were also used in the instruction. While mean scores for reporting performance were slightly higher for the CA simulation-based group, a statistical comparison of between group scores indicated no significant difference.

The dependent variable for research question one was assessed by measuring the performance of learners in a simulated event as a patient status report was given. Objective measures of student performance in simulated scenarios are limited and learning outcomes are often assessed by gathering student perspectives in relation to learning and competency development (Fisher & King, 2013). While the findings of this study suggest that the methods of instruction were equally effective for developing patient status reporting skills, the performance

data also revealed areas that were problematic for learners. Across all instructional groups, students performed certain reporting tasks with efficiency but consistently underperformed at other points, namely with those elements that required higher order clinical reasoning skills.

Of significance, findings generated from this study include that a contextually centered, apprenticeship modeled approach failed to produce superior patient status reporting outcomes. Much discussion centers on the need to transform nursing education through the use of instructional strategies that include these elements. Preparing students for the demands of practice necessitates a move from traditional passive learning strategies to those that are active, student-centered, and context-rich (Benner, et al., 2010). In this study however, such an approach was no more effective than an active, classroom-based learning strategy for effecting patient status reporting skill.

*Research question 2: Will senior pre-licensure nursing students who participate in a simulation-based instructional session focused on patient status reporting using elements of the Cognitive Apprenticeship instructional framework demonstrate a difference in self-confidence in learning scores when compared to those who participate in classroom-based instruction?*

Communication competencies are often problematic for the novice nurse. Lack of confidence is frequently identified as a key issue surrounding this deficit. Further, observations in clinical settings reveal that nurses often lack authoritative behaviors in situations that call for skilled communication (Endacott, Bogossian, Cooper, Forbes, Kain, Young, & Porter, 2015; Miller, et.al. 2009). To ascertain whether one instructional method would better support learner self-confidence in relation to patient reporting, a survey was administered following the course simulation to gauge learner perspectives. Between the two groups, no statistically significant difference was noted in the measure of this variable. This finding would suggest that an active,

classroom-based strategy was equally effective when compared to the simulation based CA strategy in fostering self-confidence.

The mean scores for confidence in instruction between instructional groups were closely aligned. A maximum score of 40 was possible and students on average (n=141) rated their confidence in instruction at a score of 33. This would indicate that both instructional groups had reasonably positive outcomes in terms of self-confidence indicators.

*Research question 3: Will senior pre-licensure nursing students who participate in a simulation-based instructional session focused on patient status reporting using elements of the Cognitive Apprenticeship instructional framework demonstrate a difference in satisfaction in learning scores compared to those who participate in classroom-based instruction?*

The measurement of satisfaction in learning was supported by the rationale that satisfaction with learning often parallels confidence (Adamson, 2012). Therefore, perceptions of satisfaction in learning between the two instructional groups were also measured using the post simulation survey. No statistical difference was indicated through analysis of the scores and this should be anticipated if confidence and satisfaction have a reciprocal relationship (Schilling & Applegate, 2012). Additionally, the confidence and satisfaction in learning scores were closely approximated which would also be expected given this relationship. The mean scores for both instructional groups regarding satisfaction in learning totaled 21 points out of a maximum possible score of 25.

## **Discussion**

In nursing education, communication is a broad topic that encompasses multiple domains. This study aimed to contribute findings to the form of communication used to report a patient's condition. The specific intent was to determine if certain methods would provide a superior approach to the teaching and learning of patient status reporting skills. As alluded to

throughout the study, shortfalls in this area can negatively affect patient outcomes, threaten patient safety, and have also been shown to have a strong causal link to lack of confidence and agency for the novice nurse (O'Daniel & Rosenstein, 2008; Theisen & Sandau, 2013).

Research methods that include objective assessments have been called for in nursing education, especially in relation to high fidelity simulation. Student perceptions of skill attainment or ability do not necessarily equate to competent performance (Adamson, 2012). The data pertaining to research question one in this study centered on patient status reporting performance which was measured by the scored assessments of 72 video recordings during a simulated event. This data then provided an objective assessment of performance outcomes. The *Inter-Professional Critical Incident Report Evaluation Tool* used in this study was designed to not only evaluate report effectiveness but to expose areas of weakness in the process (Guhde, 2010). While statistical analyses of total mean scores suggests that no one teaching method proved more effective for reporting skill development, performance observations help to distinguish those areas that proved challenging for learners.

The ISBARR method for interprofessional communication exchange was used in this study as a means to not only teach but subsequently evaluate patient status reporting. Communication frameworks such as ISBARR are recommended for information exchange particularly in situations when a patient's condition is deteriorating. The ISBARR framework is an extension of the SBAR method and was developed to better support nurse learners who were observed to omit even basic pieces of information, such as name of self and name of patient, when giving a patient status report (Grbach et al., 2008). Student performance was scored based on the following measures: (1) identification of self, patient, location (2) brief description of the situation (3) background (4) assessment (5) recommendation (6) read back orders. Early

identification of the problem, orderly report sequence, and relevance of data were also included in the scoring criteria. In nearly all cases and across both instructional groups, students identified themselves, the patient and their location. Additionally, the last step in the ISBARR process—to read back any medical orders received, was again completed at a near perfect frequency.

Areas that presented a consistent challenge included providing an initial description of the patient problem and presenting assessment data to provide a complete, yet succinct, clinical picture. These observations suggest that students were able to transfer learning of the more task-oriented elements of patient status reporting but encountered difficulties in those areas that required advanced reasoning skills, namely focused assessment. This finding is aligned with theoretical work centered on the novice nurse who is described as rule-governed and developmentally lacking in the skills necessary to recognize salient features in a clinical situation (Benner, 2001). Saliency requires recognition of a patient's unique needs as well as deep understanding of the patient's condition (Lasater, et al., 2014). Comparable studies have reported similar findings. Krautscheid (2008) noted that senior nursing students improved patient status reporting performance after participating in seven active SBAR practice sessions that occurred over two semesters. The desired performance benchmarks were not achieved in most of the measured categories however. The ability to assess a patient and interpret what is important in a given situation was identified as a necessary pre-requisite for the development of effective reporting skills. Other inquiries have also demonstrated that students, when confronted with clinical situations, have struggled to determine which patient assessments were most important (Lasater et al., 2014; & Schwartz et al., 2011).

The teaching strategies used for each of the instructional methods in this study were interactive, and student-centered. The simulation-based method (experimental) included the

additional features of an authentic context for learning and a theory-based teaching model for instruction but these elements failed to yield better performance scores. Students in almost all cases could recognize a problem. Stating the problem in simple, concise terms to create situational awareness for the information receiver (these elements were included and rehearsed with practice cases) and then, providing pertinent assessments was again problematic for the majority of students. Constructivist learning theories like that underpinning the CA model imply that a zone of proximal development (ZPD) exists for learners. Vygotsky described the ZPD as the point where a learner needs some degree of assistance to problem-solve but the learning task, with assistance, is achievable (Brunner, 1987; Silver, 2011). Conversely, functions beyond the ZPD cannot be performed even with assistance as the needed development has not yet occurred. Interpretation of the findings in this study along with supporting evidence from similar inquiries might then indicate that students, even at advanced stages of study, need more targeted learning focused on identifying and then organizing the important elements in a clinical situation. Stated explicitly, higher order thinking skills such as analysis and evaluation may require more attention for progression to the zone of proximal development. The National Council of State Boards of Nursing (2016) reflects this standard by noting that the ability to apply knowledge is critical to the practice of nursing. For licensing purposes, the cognitive abilities of graduate nurses are assessed at the application, analysis and evaluation levels as this degree of complex thinking is required by nurses. From the larger perspective, the graduate nurse is expected to reason critically and to apply principles of clinical decision making in the practice setting (NCSBN, 2016).

Expert role modeling was a featured component of the CA instruction and is advanced in the literature as an effective learning strategy, particularly for those skills that are hard to expose

students to in the clinical learning environment (e.g., interprofessional communication, emergent situations (Lasater, 2014). Recent studies report positive gains for students in clinical reasoning skills and perceptions of confidence when using role modeling strategies (Aronson, et al., 2013; Johnson, et al., 2012; Lasater, et al., 2014). The CA role modeling technique, as a component of the experimental instruction used in this study, was not associated with a difference in performance outcomes or student learning perceptions. A probable explanation may be that the expert role modeling sessions as well as the classroom-based sessions featured clinical patient scenarios that had varying physiological features. In other words, the simulation scenario used for the performance scoring featured a patient with an acute health issue that was different from patients encountered in the pre-simulation instructional sessions. While students had studied theoretical content pertaining to the simulated case, including those physiologic changes that signal a problem, piecing together the assessment information that was relevant to the clinical situation was problematic. Theoretical work in the area of nurse development might add further support to this interpretation as it postulates that knowing what is important in a situation requires a sound understanding of the patient's condition (Lasater et al., 2014). Also important to note is that the role modeling strategies described in the recent literature featured clinical cases that were very similar to those subsequently used to evaluate performance and/or to gauge perceptions of learning. For example, Aronson, et al. (2013) reported significant improvement with the implementation of an expert role modeling strategy. A pre-simulation video strategy of the expert nurse caring for a patient with a similar clinical concern (emergent heart failure) was shown to students before participating in an evaluative simulation event. A small sample size (n=24) and a lack of randomized assignments could also be considered limitations in this research. Johnson et al. (2010) also reported positive outcomes using expert role modeling to

prepare students for simulation. However, both the role modeled scenario and the post simulation performances were focused on geriatric patients being prepared for surgery. This observation might imply that role modeling strategies are more effective when focused on a singular patient case but could also present concerns as to the depth of learner understanding; is the basis for an action understood or is an action mimicked? Learning at a deeper level requires understanding “why” an action is indicated rather than “what” the correct action may be (Kaakinen & Arwood, 2009).

The students that participated in this study were asked to rate their confidence and satisfaction in learning as they exited the course simulation. The survey was completed prior to the debriefing process to limit confounding issues that may interfere with their perceptions regarding the methods of instruction. With respect to confidence, the survey asked students to rate items such as perceptions of skill mastery and if they felt confident in their ability to transfer the learned skills to the clinical setting. Satisfaction in learning addressed items such as, were methods of teaching suitable to personal learning style? And, were the teaching methods used helpful and effective? A statistical comparison of the survey scores indicated that there was no difference between instructional groups in either their perceptions of self-confidence in learning or their satisfaction in learning. In fact, mean scores for the two groups were almost identical. Both groups did however rate their perceptions favorably as more than 80 percent of the overall score was achieved for both satisfaction and self-confidence. These results might be attributed to the fact that both groups participated in active, student-centered learning sessions to support the development of patient status reporting skills and had been provided multiple opportunities to use the reporting skills in previous simulation and actual patient care situations. These strategies, whether classroom-based or simulation-based, afforded students an opportunity to rehearse for

practice using actual patient scenarios. Students prefer fewer lecture-based, theoretical sessions focused on communication and more opportunities to develop practice-based competencies (Boschma et al., 2010). The importance of helping students develop reporting skills so that they can confidently perform in the interprofessional environment is vitally important. While experience and clinical reasoning ability are highly intertwined with the performance of this skill, to note that students have little familiarity with communication procedures upon entry into practice is troubling (Schwartz, 2010). Critical patient situations are often stress provoking events. Assertive, confident communication in these situations is required for effective team functioning and will ultimately influence outcomes for the patient (Miller, et al., 2009).

### **Implications**

Conclusions to inform the field of nursing education can be discerned from the findings of this study. Foremost, to communicate a patient's condition, breaking down the process into steps such as that provided in the ISBARR framework can be helpful in learning the procedural aspects of the skill. Proficiency in this domain is contingent however upon the ability to recognize the important features of a clinical situation and identify the assessment indicators relevant to the problem. This finding has not only been suggested from this inquiry but others as well which serves to strengthen the evidence. The simulation-based CA instruction was used to help students gain a better understanding of the cognitive skills used by expert nurses when relaying patient information but, the outcomes indicate that time and practice aimed at developing these skills requires ongoing attention. Benner's work on nurse development adds further clarity indicating that procedural rules will not help the novice determine what is most relevant in a clinical situation but, contextual exposure over time can help learners begin to recognize patterns. Additionally, as procedural elements are repetitively used, constraints on learners are lessened which allows for more focus on situational aspects (Benner, 2001). To

support such growth, opportunities to practice and rehearse should be provided not only through simulation learning but through targeted strategies in both the classroom and clinical learning environments and should occur with frequency. A major emphasis must be placed on prioritization and the organization of assessment data salient to the clinical situation.

The objective measures used in this study for patient status reporting help illustrate the value of these assessments. As discussed earlier, simulation learning outcomes are often based on student perspective rather than measureable observations. Additionally, simulation learning, even when evaluated by objective measures, is often done so based on the transfer of psychomotor tasks (Lasater, 2014). This study illustrates that performance measures featuring both procedural and cognitive skill evaluations can help magnify areas of challenge for the nurse learner. By exposing these deficits more clearly, targeted instruction can be designed to better support learner development especially with regard to higher order thinking skills. Additionally, studies of this nature help build a foundation for simulation designs that emphasize learning gains rather than teaching objectives (Kaakinen & Arwood, 2009).

Student perceptions of confidence and satisfaction with learning, while it cannot be inferred that these indicators translate to competent performance, were nonetheless positive for the active teaching strategies used in this study. For both instructional methods, students had the opportunity to consider clinical scenarios and then actively problem-solve through the communication process using the ISBARR approach. The implication for nursing education is that students perceive of these strategies as beneficial whether they are used in a classroom setting or a simulation lab setting. Additionally, it cannot be over emphasized that confident, assertive communication is integral to effective team performance and therefore, must be an essential learning goal in nursing education (Endacott, et al., 2015).

Implications for clinical nursing practice may also be gleaned from this research. Clearly, for the beginning nurse, attention to communication competency is needed. Orientation measures and observations of practicing nurses with specific attention to interprofessional communication exchanges are in order since it is evident that time, repetition, and experience are needed to support skill development (Endacott, et al., 2015). Directed strategies may provide the level of experiential learning needed to help effect this skill development. While some suggest that expectations for the new nurse in transition to practice are unrealistically high, still it is necessary for nurse educators to understand the intricacies of this skill development and to lay a strong foundation for future practice (Trepanier, Early, Ulrich & Cherry, 2012). Novice nurses will be expected to provide the same level of quality care in emergent situations as their peers who are expert nurses. Patient outcomes are not “adjusted” for the experience level of the nurse—all patients deserve competent care providers.

### **Strengths**

The implications derived from this study should be considered significant for informing approaches to interprofessional communication teaching and learning. Strength and rigor in the study were achieved through the following elements: randomization of assignments at all applicable phases, detailed instructional procedures and training for instructors, scoring procedures conducted without knowledge of instructional assignment, and matching clinical cases used for all instructional events. As outlined in the study methodology, all procedures were carefully followed during study implementation.

### **Limitations**

The limitations that may affect the validity and generalization of study findings should be considered. The following factors have been identified:

- This study used a convenience sample and was conducted at a single site in the southern United States limiting the generalization of results.
- The research was conducted in a single time span and did not include assessments for knowledge and skill transfer over time.
- A pretest/posttest study design may have been more indicative of the improvements students made in relation to patient status reporting.
- The use of a single rater to score all video performances, regardless of the measures conducted to support interrater reliability, could be seen as a limiting factor.

### **Recommendations**

Based on the findings generated from this study, the following recommendations for future research are suggested:

- Design research to evaluate the development of higher order thinking skills for the nurse learner as these skills are needed to effectively communicate patient status.
- Design nursing education studies focused on professional communication that will assess the level of repetition needed to significantly improve performance. Include pretest/posttest design measures to assess learning gains.
- Develop research to evaluate the cognitive learning gains associated with theoretically-grounded instructional strategies.
- Develop future research with a continued focus on apprenticeship learning and techniques.

## **Conclusion**

Improving nursing curricula to effectively support the development of professional communication competencies for the nurse learner is essential. The inability to communicate effectively has serious implications and therefore, this skill development demands focused attention. In this study, two teaching methods aimed at this skill development were implemented with senior undergraduate nursing students. One was based on the cognitive apprenticeship instructional model, a learning approach grounded in social-constructivist learning principles, which was further augmented by bedside instruction in the high fidelity simulation setting. The other was a classroom-based approach that featured peer role play strategies. Subsequent evaluation of reporting performances and students perceptions of confidence and satisfaction in learning revealed that there were no differences between the groups regarding these measures.

The CA instructional method used in this study represents an early attempt to investigate this approach to teaching and learning. The findings should not imply that the strategy is unproductive but rather that more work and investigation is in order. While statistical significance related to learning outcomes could not be appreciated in the context of this study, findings to inform the teaching and learning of reporting skills have been expanded for nursing education.

## REFERENCES

- Adamson, K., A., & Kardong-Edgren, S. (2012). A method and resources for assessing the reliability of simulation evaluation instruments. *Nursing Education Perspectives*, 33(5), 334-339. Retrieved from <http://search.ebscohost.com.libdata.lib.ua.edu/login.aspx?direct=true&db=rzh&AN=2012052690&site=ehost-live>
- Aronson, B., Glynn, B., & Squires, T. (2013). Effectiveness of a role-modeling intervention on student nurse simulation competency. *Clinical Simulation in Nursing*, 9(4), e121-e126. doi: <http://dx.doi.org/10.1016/j.ecns.2011.11.005>
- Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), *Encyclopedia of human behavior* (Vol. 4, pp. 71-81). New York: Academic Press. (Reprinted in H. Friedman [Ed.], *Encyclopedia of mental health*. San Diego: Academic Press, 1998).
- Bates, F. M., Waynor, W. R., & Dolce, J. N. (2012). The Cognitive Apprenticeship Model: Implications for its use in Psychiatric Rehabilitation Provider Training. *Journal Of Rehabilitation*, 78(1), 5-10.
- Beckett, C. D., & Kipnis, G. (2009). Collaborative communication: Integrating SBAR to improve quality/patient safety outcomes. *Journal for Healthcare Quality: Promoting Excellence in Healthcare*, 31(5), 19-28.
- Benner, P. (1982). *From Novice to Expert: Excellence and power in clinical nursing practice*. Upper Saddle River, NJ: Prentice Hall.
- Benner, P. (1982). Novice to Expert. *American Journal of Nursing* 82(3), 402-407.
- Benner, P., Sutphen, M., Leonard, V., Day, L. (2010). *Educating Nurses: A call for radical transformation*. San Francisco, CA: Jossey-Bass
- Boschma, G., Einboden, R., Groening, M., Jackson, C., MacPhee, M., Marshall, H., & ... Roberts, E. (2010). Strengthening communication education in an undergraduate nursing curriculum. *International Journal Of Nursing Education Scholarship*, 7(1), doi:10.2202/1548-923X.2043
- Boykins, D. (2014). Core communication competencies in patient-centered care. *ABNF Journal*, 25(2), 40-45. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=2012546038&site=eds-live>

- Brady, D., S. (2011). Using Quality and Safety Education for Nurses (QSEN) as a pedagogical structure for course redesign and content. *International Journal of Nursing Education Scholarship*, 8(1), 1-18.
- Brennan, R. W., Hugo, R. J., & Gu, P. (2013). Reinforcing skills and building student confidence through a multicultural project-based learning experience. *Australasian Journal of Engineering Education*, 19(1), 75-85. doi:10.7158/D12-015.2013.19.1
- Brown, S., Collins, A. Duguid, P. (1989). Situated Cognition and the Culture of Learning. *Educational Researcher*, 18(1) 32-42.
- Callaghan, D., Watts, W. E., McCullough, D. L., Moreau, J. T., Little, M. A., Gamroth, L. M., & Durnford, K. L. (2009). The experience of two practice education models: Collaborative learning unit and preceptorship. *Nurse Education in Practice*, 9(4), 244-252. doi: <http://dx.doi.org.libdata.lib.ua.edu/10.1016/j.nepr.2008.08.010>
- Collins, A. (2006). The Cambridge handbook of the learning sciences. In K. Sawyer (Ed). *Cognitive Apprenticeship* (pp.47 – 60). Cambridge; New York: Cambridge University Press
- Collins, A., Brown, J., Newman, S., (1987). Cognitive Apprenticeship: Teaching the Craft of Reading, Writing, and Mathematics. Technical Report No. 403.
- Compton, J., Copeland, K., Flanders, S., Cassity, C., Spetman, M., Xiao, Y., & Kennerly, D. (2012). Implementing SBAR across a large multihospital health system. *Joint Commission Journal on Quality & Patient Safety*, 38(6), 261-268. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=2011576761&site=ehost-live>
- Cornell, P., Townsend-Gervis, M., Vardaman, J. M., & Yates, L. (2014). Improving Situation Awareness and Patient Outcomes Through Interdisciplinary Rounding and Structured Communication. *Journal Of Nursing Administration*, 44(3), 164-169. doi:10.1097/NNA.0000000000000045
- Cronenwett, L., Sherwood, G., Barnsteiner, J., Disch, J., Johnson, J., Mitchell, P., & ... Warren, J. (2007). Quality and safety education for nurses. *Nursing Outlook*, 55(3), 122-131.
- Curtis, K., Tzannes, A., & Rudge, T. (2011). How to talk to doctors - a guide for effective communication. *International Nursing Review*, 58(1), 13-20. doi:10.1111/j.1466-7657.2010.00847.x
- Danesi, M. (2009). *Dictionary of media and communications*. Armonk, N.Y.: M.E. Sharpe. <http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=275503&site=eds-live>
- DeWolfe, T. E. (2014). Jean Piaget's theory of cognitive development. *Salem Press Encyclopedia of Health*, Retrieved from

<http://search.ebscohost.com.libdata.lib.ua.edu/login.aspx?direct=true&db=ers&AN=93872065&site=eds-live&scope=site>

- Dresser, R, Asato, J. (2014). Coaching, Not correcting. *Multicultural Education*, 22(1), 46.
- Dunnington, R., M. (2014). The nature of reality represented in high fidelity human patient simulation: Philosophical perspectives and implications for nursing education. *Nursing Philosophy*, 15(1), 14-22. doi:10.1111/nup.12034
- Endacott, R., Bogossian, F. E., Cooper, S. J., Forbes, H., Kain, V. J., Young, S. C., & Porter, J. E. (2015). Leadership and teamwork in medical emergencies: performance of nursing students and registered nurses in simulated patient scenarios. *Journal Of Clinical Nursing*, 24(1/2), 90-100 11p. doi:10.1111/jocn.12611
- Etheridge, S. A. (2007). Learning to think like a nurse: Stories from new nurse graduates. *Journal of Continuing Education in Nursing*, 38(1), 24-30. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=2009499498&site=ehost-live>
- Fisher, D., & King, L. (2013). An integrative literature review on preparing nursing students through simulation to recognize and respond to the deteriorating patient. *Journal of Advanced Nursing*, 69(11), 2375-2388 14p. doi:10.1111/jan.12174
- Foronda, C., Gattamorta, K., Snowden, K., & Bauman, E. B. (2014). Use of virtual clinical simulation to improve communication skills of baccalaureate nursing students: A pilot study. *Nurse Education Today*, 34(6), e53-7. doi:10.1016/j.nedt.2013.10.007
- Foronda, C., Godsall, L., & Trybulski, J. (2013). Review Article: Virtual Clinical Simulation: The State of the Science. *Clinical Simulation In Nursing*, 9e279-e286. doi:10.1016/j.ecns.2012.05.005
- Ganzer, C., Anne, & Zauderer, C. (2013). Structured learning and self-reflection: Strategies to decrease anxiety in the psychiatric mental health clinical nursing experience. *Nursing Education Perspectives*, 34(4), 244-247. Retrieved from <http://search.ebscohost.com.libdata.lib.ua.edu/login.aspx?direct=true&db=rzh&AN=2012322109&site=ehost-live>
- Gardiner, A., & Anderson, J. (2013). Cognitive apprenticeship: A key component of contemporary endoscopy education. *Gastrointestinal Nursing*, 11(7), 45-51. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=2012306709&site=ehost-live>
- Garrett, B., MacPhee, Maura & Jackson, C. (2010). High-fidelity patient simulation: considerations for effective learning. *Nursing Education Perspectives*, 31(5), 309-313.
- Grbach, W., Vincent, L., & Struth, D. (2008). Reformulating SBAR to “I-SBAR-R”. Retrieved from <http://qsen.org/reformulating-sbar-to-i-sbar-r/>

- Guhde, J. (2010). Using high fidelity simulation to teach nurse-to-doctor-report: A study on SBAR in an undergraduate nursing curriculum. *Clinical Simulation in Nursing*, 6(3), e115-e115. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=2010730492&site=ehost-live>
- Hayden, J., Jeffries, P., & Kardong-Edgren, S. (2012). The NCSBN National Simulation Study. *Clinical Simulation In Nursing*, 8(8), e407. doi:10.1016/j.ecns.2012.07.070
- Hean, S., Craddock, D., & O'Halloran, C. (2009). Learning theories and interprofessional education: a user's guide. *Learning In Health & Social Care*, 8(4), 250-262. doi:10.1111/j.1473-6861.2009.00227.x
- Himes, D., O., & Ravert, P., K. (2012). Situated peer coaching and unfolding cases in the fundamentals skills laboratory. *International Journal of Nursing Education Scholarship*, 9(1), 1-19. doi:10.1515/1548-923X.2335
- Institute of Medicine. (2011). *The Future of Nursing: Focus on education*. Committee on Quality of Health Care in America, Institute of Medicine. Retrieved from: <http://www.iom.edu/Reports/2010/The-Future-of-Nursing-Leading-Change-Advancing-Health/Report-Brief-Education.aspx>
- Institute for Health Care Improvement (n.d.). *SBAR Toolkit*. Retrieved from: <http://www.ihc.org/resources/Pages/Tools/sbartoolkit.aspx>
- Interprofessional Education Collaborative Expert Panel. (2011). Core competencies for interprofessional collaborative practice: Report of an expert panel. Washington, D.C.: Interprofessional Education Collaborative
- Jewell, A. (2013). Supporting the novice nurse to fly: A literature review. *Nurse Education in Practice*, 13(4), 323-327. doi: <http://dx.doi.org.elib.uah.edu/10.1016/j.nepr.2013.04.006>
- Johnson, M., Hamilton, M., Delaney, B., & Pennington, N. (2011). Development of team skills in novice nurses through an athletic coaching model. *Teaching & Learning in Nursing*, 6(4), 185-189. <http://dx.doi.org.libdata.lib.ua.edu/10.1016/j.teln.2011.05.005>
- Johnson E.A., Lasater K., Hodson-Carlton K., Siktberg L., Sideras S., & Dillard N. (2012). Geriatrics in simulation: Role modeling and clinical judgment effect. *Nursing Education Perspectives*, 33, 176 - 180. 10.5480/1536-5026-33.3.176\_1016/j.teln.2011.05.005
- Kaakinen, J., & Arwood, E. (2009). Systematic review of nursing simulation literature for use of learning theory. *International Journal of Nursing Education Scholarship*, 6(1), 1p-20 21p. doi:10.2202/1548-923X.1688
- Krautscheid, L. (2008). Improving communication among healthcare providers: preparing student nurses for practice. *International Journal Of Nursing Education Scholarship*, 5(1), 1-15.

- Kesten, K., S. (2011). Role-play using SBAR technique to improve observed communication skills in senior nursing students. *Journal of Nursing Education, 50*(2), 79-87.
- Lasater, K. (2007). High-fidelity simulation and the development of clinical judgment: Students' experiences. *Journal of Nursing Education, 46*(6), 269-276. Retrieved from <http://search.ebscohost.com.libdata.lib.ua.edu/login.aspx?direct=true&db=rzh&AN=2009599130&site=ehost-live>
- Lasater, K., Johnson, E. A., Ravert, P., & Rink, D. (2014). *Role modeling clinical judgment for an unfolding older adult simulation*. Retrieved from <http://search.ebscohost.com.libdata.lib.ua.edu/login.aspx?direct=true&db=edswsc&AN=000335953700005&site=eds-live&scope=site>
- Lavoie, P., Pepin, J., & Boyer, L. (2013). Reflective debriefing to promote novice nurses' clinical judgment after high-fidelity clinical simulation: A pilot test. *Dynamics, 24*(4), 36-41. Retrieved from <http://search.ebscohost.com.libdata.lib.ua.edu/login.aspx?direct=true&db=rzh&AN=2012396155&site=ehost-live>
- Liaw, S. Y., Scherpbier, A., Klainin-Yobas, P., & Rethans, J. J. (2011). Rescuing A patient in deteriorating situations (RAPIDS): An evaluation tool for assessing simulation performance on clinical deterioration. *Resuscitation, 82*(11), 1434-1439.
- Liaw, S. Y., Zhou, W. T., Lau, T. C., Siau, C., & Chan, S. W. (2014). An interprofessional communication training using simulation to enhance safe care for a deteriorating patient. *Nurse Education Today, 34*(2), 259-264. doi:<http://dx.doi.org.libdata.lib.ua.edu/10.1016/j.nedt.2013.02.019>
- Lomax, R. G., & Hahs-Vaughn, D. L. (2012). *An Introduction to Statistical Concepts*. New York: Routledge.
- McComb, S., & Simpson, V. (2014). The concept of shared mental models in healthcare collaboration. *Journal of Advanced Nursing, 70*(7), 1479-1488. doi:10.1111/jan.12307
- McHugh, M. L. (2012). Interrater reliability: the kappa statistic. *Biochemia Medica, 22*(3), 276-282.
- Miller, K., Riley, W., & Davis, S. (2009). Identifying key nursing and team behaviors to achieve high reliability. *Journal of Nursing Management, 17*(2), 247-255. doi:10.1111/j.1365-2834.2009.00978.x
- Miller, K. K., Riley, W., Davis, S., & Hansen, H. E. (2008). In situ simulation: A method of experiential learning to promote safety and team behavior. *Journal of Perinatal & Neonatal Nursing, 22*(2), 105-113. Retrieved from <http://search.ebscohost.com.libdata.lib.ua.edu/login.aspx?direct=true&db=rzh&AN=2009929846&site=ehost-live>

- Morford, J. B. (2007). Perspectives constructivism: Implications for postsecondary music education and beyond. *Journal of Music Teacher Education, 16*(2), 75. Retrieved from <http://search.ebscohost.com.libdata.lib.ua.edu/login.aspx?direct=true&db=edb&AN=25148461&site=eds-live>
- National Council State Boards of Nursing (NCSBN) (2005). *Clinical instruction in prelicensure programs*. Retrieved from: [https://www.ncsbn.org/Final\\_Clinical\\_Instr\\_Pre\\_Nsg\\_programs.pdf](https://www.ncsbn.org/Final_Clinical_Instr_Pre_Nsg_programs.pdf)
- National Council State Boards of Nursing (2016). 2016 *NCLEX-RN® Detailed Test Plan: Item Writer/Item Reviewer/Nurse Educator*. Retrieved from: [https://www.ncsbn.org/2016\\_RN\\_DetTestPlan\\_Educator.pdf](https://www.ncsbn.org/2016_RN_DetTestPlan_Educator.pdf)
- National Council State Boards of Nursing (2013). *Transition to Practice Model Toolkit: Fact Sheet Problems, Impact, Solutions*. Retrieved from: <https://www.ncsbn.org/1603.htm>
- National League for Nursing. (2005). Satisfaction and self-confidence in learning©. Retrieved from [www.nln.org/research/toolsandinstruments.htm](http://www.nln.org/research/toolsandinstruments.htm).
- Noone, J. (2009). Teaching to the three apprenticeships: Designing learning activities for professional practice in an undergraduate curriculum. *Journal of Nursing Education, 48*(8), 468-471. doi:10.3928/01484834-20090518-08
- Norman, G., Dore, K., & Grierson, L. (2012). The minimal relationship between simulation fidelity and transfer of learning. *Medical Education, 46*(7), 636-647. doi:10.1111/j.1365-2923.2012.04243.x
- Nouri, J., Mokhtari, Ebadi, A., Alhani, F., Rejeh, N., & Ahmadizadeh, M., Javad. (2013). Qualitative study of humanization-based nursing education focused on role modeling by instructors. *Nursing & Health Sciences, 15*(2), 137-143. doi:10.1111/j.1442-2018.2012.00732.x
- O'Daniel, M., Rosenstein, A.H. (2008). Professional Communication and Team Collaboration. In: Hughes RG, editor. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. Rockville (MD): Agency for Healthcare Research and Quality (US); 2008 Apr. Chapter 33. Available from: <http://www.ncbi.nlm.nih.gov/books/NBK2637/>
- Paige, J. B., & Daley, B. J. (2009). Situated cognition: A learning framework to support and guide high-fidelity simulation. *Clinical Simulation in Nursing, 5*(3), e97-e103. doi:<http://dx.doi.org.libdata.lib.ua.edu/10.1016/j.ecns.2009.03.120>
- Pfaff, K., Baxter, P., Jack, S., & Ploeg, J. (2014). An integrative review of the factors influencing new graduate nurse engagement in interprofessional collaboration. *Journal of Advanced Nursing, 70*(1), 4-20. doi:10.1111/jan.12195
- Piaget, J.-P. (1952). *The origins of intelligence in children*. International Universities Press, New York.

- Pollack, B., & Lilly, B. (2008). Gaining confidence and competence through experiential assignments: An exploration of student self-efficacy and spectrum of inquiry. *Marketing Education Review*, 18(2), 55-66.
- QSEN (2014). Pre-licensure KSAS. <http://qsen.org/competencies/pre-licensure-ksas/>
- Renz, S.M., Boltz, M.P., Wagner, L.M., Capezuti, E. A., Lawrence, T. E., (2013). Examining the feasibility and utility of an SBAR protocol in long-term care. *Geriatric Nursing* 34 (2013) 295 – 301.
- Rentschler, D. D., Eaton, J., Cappiello, J., McNally, S. F., & McWilliam, P. (2007). Evaluation of undergraduate students using objective structured clinical evaluation. *Journal of Nursing Education*, 46(3), 135-139.
- Renz, S. M., Boltz, M. P., Wagner, L. M., Capezuti, E. A., & Lawrence, T. E. (2013). Examining the feasibility and utility of an SBAR protocol in long-term care. *Geriatric Nursing*, 34(4), 295-301.
- Rodgers, K. L. (2007). Using the SBAR communication technique to improve nurse-physician phone communication: A pilot study. *AAACN Viewpoint*, 29(2), 7-9.
- Rodriguez, L., & Tavares, C. M. d. M. (2011). Intersection of knowledge of teachers and preceptors in the development of the curriculum training in nursing: Exploratory study. *Online Brazilian Journal of Nursing*, 10(2), 1-1. Retrieved from <http://search.ebscohost.com.libdata.lib.ua.edu/login.aspx?direct=true&db=rzh&AN=2011471454&site=ehost-live>
- Rolfe, G. (2014). Rethinking reflective education: What would Dewey have done? *Nurse Education Today*, 34(8), 1179-1183. doi:10.1016/j.nedt.2014.03.006
- Sherwood, G., & Zomorodi, M. (2014). A new mindset for quality and safety: The QSEN competencies redefine nurses' roles in practice. *Nephrology Nursing Journal*, 41(1), 15-72.
- Schilling, K., & Applegate, R. (2012). Best methods for evaluating educational impact: A comparison of the efficacy of commonly used measures of library instruction. *Journal of the Medical Library Association*, 100(4), 258-269. doi:10.3163/1536-5050.100.4.007
- Schwartz, L., Wright, D., & Lavoie-Tremblay, M. (2011). New nurses' experience of their role within interprofessional health care teams in mental health. *Archives of Psychiatric Nursing*, 25(3), 153-163.
- Sharpnack, P. A., Goliat, L., Baker, J. R., Rogers, K., & Shockey, P. (2013). Thinking like a nurse: Using video simulation to rehearse for professional practice. *Clinical Simulation in Nursing*, 9(12), e571-e577.
- Sharpnack, P. A., Goliat, L., Baker, J. R., Rogers, K., & Shockey, P. (2013). Thinking like a nurse: Using video simulation to rehearse for professional practice. *Clinical Simulation in*

Nursing, 9(12), e571-e577. doi:  
<http://dx.doi.org.libdata.lib.ua.edu/10.1016/j.ecns.2013.05.004>

- Sharpnack, P., A., & Madigan, E., A. (2012). Using low-fidelity simulation with sophomore nursing students in a BACCALAUREATE NURSING PROGRAM. *Nursing Education Perspectives*, 33(4), 264-268. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=2012052672&site=ehost-live>
- Silver, D. (2011). Using the "zone" to help reach every learner. *Kappa Delta Pi Record*, 48(1), 28-31. Retrieved from <http://search.ebscohost.com.libdata.lib.ua.edu/login.aspx?direct=true&db=eric&AN=EJ966495&site=ehost-live>; <http://www.kdp.org/publications/kdprecord/index.php>
- Spence Laschinger, H. K., Leiter, M., Day, A., & Gilin, D. (2009). Workplace empowerment, incivility, and burnout: Impact on staff nurse recruitment and retention outcomes. *Journal of Nursing Management*, 17(3), 302-311. doi:10.1111/j.1365-2834.2009.00999.x
- Stalmeijer, R. E., Dolmans, D. H., Wolfhagen, I. H., & Scherpbier, A. J. (2009). Cognitive apprenticeship in clinical practice: Can it stimulate learning in the opinion of students? *Advances in Health Sciences Education*, 14(4), 535-546.
- The Joint Commission Center for Transforming Healthcare (2012). Transitions of care: The need for a more effective approach to continuing patient care. [http://www.jointcommission.org/assets/1/18/Hot\\_Topics\\_Transitions\\_of\\_Care.pdf](http://www.jointcommission.org/assets/1/18/Hot_Topics_Transitions_of_Care.pdf)  
Accessed: April 10, 2014
- The University of Alabama in Huntsville (n.d.). Nursing undergraduate catalog; course description NUR 401. <http://catalog.uah.edu/undergrad/colleges-departments/nursing/#coursestext>
- Theisen, J., L., & Sandau, K., E., (2013). Competency of new graduate nurses: A review of their weaknesses and strategies for success. *Journal of Continuing Education in Nursing*, 44(9), 406-414.
- Thomas, C., M., Ryan, M., E., & Hodson-Carlton, K. (2011). Recruitment & retention report. What are your perceptions of new RN competency levels? *Nursing Management*, 42(12), 15-18.
- Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms*. Alexandria, VA: Association for Supervision and Curriculum Development. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=70544&site=eds-live&scope=site>
- Trepanier, S., Early, S., Ulrich, B., & Cherry, B. (2012). New Graduate Nurse Residency Program: A Cost-Benefit Analysis Based On Turnover and Contract Labor Usage. *Nursing Economic\$, 30(4)*, 207-214 8p.

- Trochim, W.K. (2008). *Research Methods knowledge base*. Web center for social research methods. Retrieved from <http://www.socialresearchmethods.net/kb/destypes.php>
- Turner, T. L., Balmer, D. F., & Coverdale, J. H. (2013). Methodologies and study designs relevant to medical education research. *International Review of Psychiatry*, 25(3), 301-310. doi:10.3109/09540261.2013.790310
- Ultanir, E. (2012). An epistemological glance at the constructivist approach: Constructivist learning in Dewey, Piaget, and Montessori. *Internal Journal of Instruction*, 5(2), 196 – 212.
- Vardaman, J., M., Cornell, P., Gondo, M., B., Amis, J., M., Townsend-Gervis, M., & Thetford, C. (2012). Beyond communication: The role of standardized protocols in a changing health care environment. *Health Care Management Review*, 37(1), 88-97.
- Wang, Y. (2003). Assessment of learner satisfaction with asynchronous electronic learning systems. *Information & Management*, 41(1), 75.
- Weitzel, K., W., Walters, E., A., & Taylor, J. (2012). Teaching clinical problem solving: A preceptor's guide. *American Journal of Health-System Pharmacy*, 69(18), 1588-1599. doi:10.2146/ajhp110521
- Woodhall, L. J., Vertacnik, L., & McLaughlin, M. (2008). Implementation of the SBAR communication technique in a tertiary center. *JEN: Journal of Emergency Nursing*, 34(4), 314-317.
- Woolley, N. N., & Jarvis, Y. (2007). Situated cognition and cognitive apprenticeship: A model for teaching and learning clinical skills in a technologically rich and authentic learning environment. *Nurse Education Today*, 27(1), 73-79.
- Wu, P., Hwang, G., Su, L., & Huang, Y., (2012). A context-aware mobile learning system for supporting cognitive apprenticeships in nursing skills training. *Journal of Educational Technology & Society*, 15(1), 223-236.
- Wyrostok, L., J., Hoffart, J., Kelly, I., & Ryba, K. (2014). Situated cognition as a learning framework for international end-of-life simulation. *Clinical Simulation in Nursing*, 10(4), e217-22. doi:10.1016/j.ecns.2013.11.005
- Yukselturk, E., & Yildirim, Z. (2008). Investigation of interaction, online support, course structure and flexibility as the contributing factors to students' satisfaction in an online certificate program. *Journal of Educational Technology & Society*, 11(4), 51-65.

APPENDIX A – IRB APPROVAL (UAH)



Amelia Lanz  
College of Nursing

June 22, 2015

Dear Amelia Lanz,

The UAH Institutional Review Board of Human Subjects Committee has reviewed your proposal, *Communicating Patient Status: A Comparison of Teaching Strategies in Pre-Licensure Nursing Education*, and found it meets the necessary criteria approval. Your proposal seems to be in compliance with this institution’s Federal Wide Assurance (FWA) 00019998 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46) and has been classified as exempt.

Please note that this approval is good for one year from the date on this letter. If data collection continues past this period, you are responsible for processing a renewal application a minimum of 60 days prior to the expiration date.

No changes are to be made to the approved protocol without prior review and approval from the UAH IRB. All changes (e.g. a change in procedure, number of subjects, personnel, study locations, new recruitment materials, study instruments, etc) must be prospectively reviewed and approved by the IRB before they are implemented. You should report any unanticipated problems involving risks to the participants or others to the IRB Chair.

If you have any questions regarding the IRB’s decision, please contact me.

Sincerely,



Pam O’Neal PhD, RN  
IRB Chair  
Associate Professor  
College of Nursing, University of Alabama in Huntsville,  
207 Nursing Building, Huntsville, AL 35899  
Phone: 256.824.6100 or email: [irb@uah.edu](mailto:irb@uah.edu)

**OFFICE OF THE VICE PRESIDENT FOR RESEARCH**

Von Braun Research Hall M-17

Huntsville, AL 35899

T 256.824.6100

F 256.824.6783

## APPENDIX B – IRB APPROVAL (UA)

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

THE UNIVERSITY OF  
**ALABAMA**  
R E S E A R C H

September 8, 2015

Amelia Lanz  
Capstone College of Nursing  
Box 870358

Re: IRB#: 15-OR-268 “Communicating Patient Status: A Comparison of  
Teaching Strategies in Pre-Licensure Nursing Education”

Dear Ms. Lanz:

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 September 7, 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,



358 Rose Administration Building  
Box 870127  
Tuscaloosa, Alabama 35487-0127  
(205) 348-8461  
FAX (205) 348-7189  
TOLL FREE (877) 820-3066

Carpantato T. Myles, MSM, CIM, CIP  
Director & Research Compliance Officer

## APPENDIX C – CONFIDENTIALITY AGREEMENT

### Learning and Technology Resource Center

#### CONFIDENTIALITY AGREEMENT AND FICTION CONTRACT

As a patron of the Learning and Technology Resource Center (LTRC), I understand the significance of confidentiality with respect to information concerning simulated patients, clinical experiences, and fellow students. I will uphold the requirements of the Health Insurance Portability and Accountability Act (HIPAA), Family Education Rights and Privacy Act (FERPA), and any other federal or state laws regarding confidentiality. I agree to report any violations of confidentiality that I become aware of to my instructor and/or LTRC staff.

I agree to adhere to the following guidelines:

1. All patient information (including simulated patients) is confidential and any inappropriate viewing, discussion, or disclosure of this information is a violation of UAH CON policy. Do not discuss information with your classmates who are not involved in your simulated clinical or lab experience.
2. This information is privileged and confidential regardless of format: electronic, written, overheard, or observed.
3. The LTRC is a learning environment. All clinical experiences and clinical scenarios should be treated in a professional and ethical manner.
4. Video/audio recording may be utilized in the laboratories and/or during simulations. Video/audio recordings may be used by faculty/staff for educational training, research studies and/or educational presentations. The recordings will not be used for any other purpose unless the student and instructor have a written agreement.
5. The manikins should be treated as real patients. Students and faculty agree to wear gloves when handling any of the manikins and not to eat or drink in any of the laboratories.
6. Photography/video of the laboratories, simulated experiences or manikins is prohibited unless prior consent has been obtained from faculty or LTRC/LRC directors.

I understand that failure to comply with these guidelines may result in disciplinary action.

Signature: \_\_\_\_\_

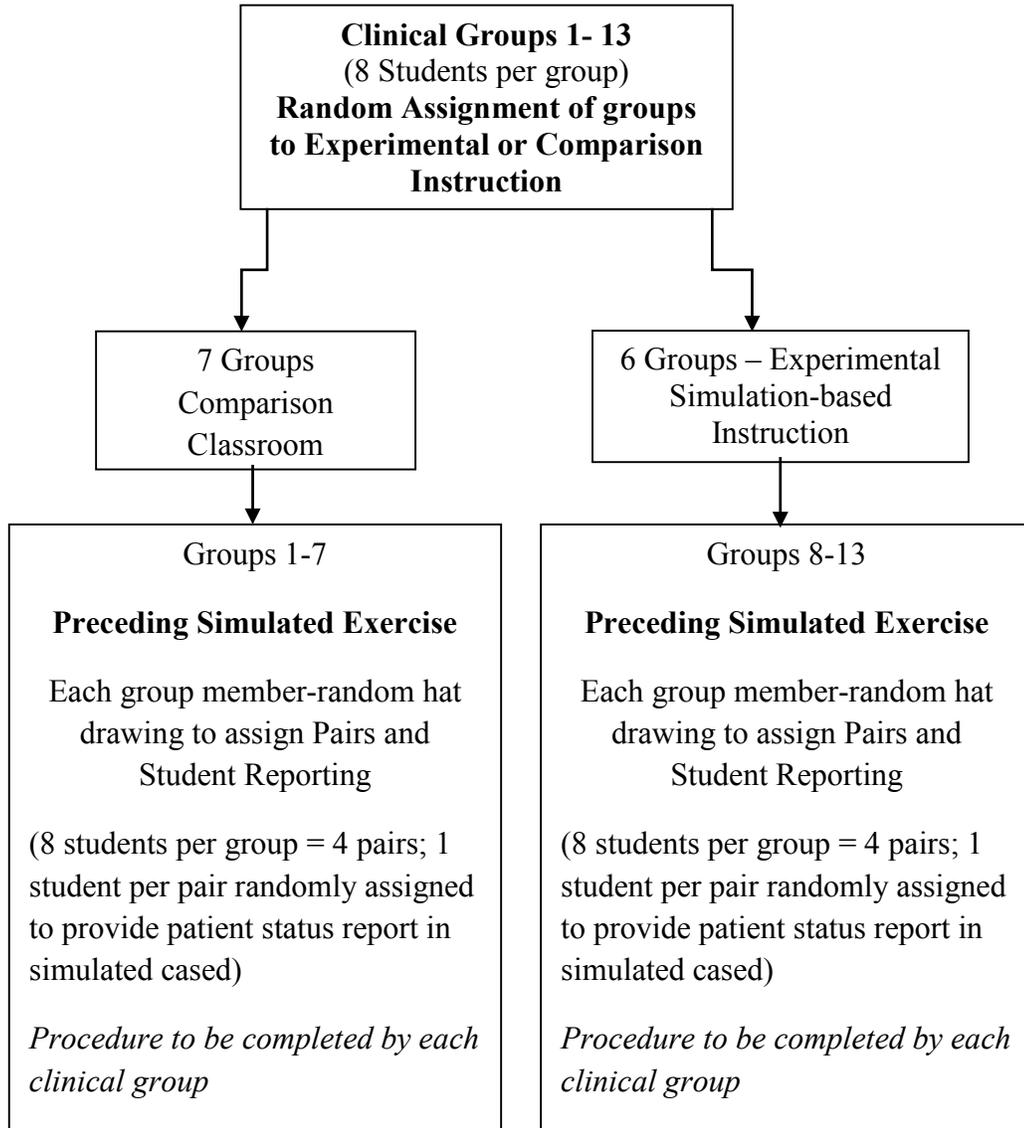
Date: \_\_\_\_\_

DATE APPROVED: 08/5/2014

SEMESTER AND YEAR EFFECTIVE: Spring 2015

**APPENDIX D – SAMPLING PROCEDURES FALL SEMESTER**

■ Figure B.1. Sampling Procedures Diagram – Illustrates Fall Semester



*Note:* Sequence and method of random assignment for instructional groups, student pairs and student designated to provide patient status report. Procedure will be repeated for the spring 2016 semester cohort.

## **APPENDIX E - ISBARR CONTENT LECTURE**

### **Instructional Plan**

#### **Introduction**

The lesson will review the SBAR (Situation, Background, Assessment, & Recommendation) method for reporting patient status. The expansion of SBAR to ISBARR which adds (I) for introducing self and a second (R) to prompt read back of orders will be presented.

#### **Objectives**

- Describe the importance of the nursing role in communication
- Recognize the connection between communication and patient safety
- Discuss variables that can effect communication
- Describe the ISBARR strategy for information exchange

#### **Course Objective Criterion**

#### **Materials**

PowerPoint slides (Included in Appendix A-1)

#### **Instructional Procedure**

A mini-lecture that will last approximately 20 minutes will be provided using PowerPoint technology to present, review and discuss communication and the ISBARR technique.

## APPENDIX E-1

### ISBARR Content Lecture

Slide 1

## **Communicating Patient Status**

### **ISBARR technique**

Slide 2

## **Communicating Patient Status**

- **The process by which information is exchanged**
- **Patient Status reporting should be:**
  - **Complete**
    - **Communicate all relevant information**
  - **Clear**
    - **Convey information that is plainly understood**
  - **Brief**
    - **Communicate information in a concise manner and logical sequence**
  - **Timely**
    - **Validate or acknowledge information**

## Communication

- What communication techniques have you learned in the past for reporting a patient's status?
- A framework approach promotes:
  - Safety
  - Shared understanding
  - Advocated by the Joint Commission Center for Transforming Healthcare (2012)

## The framework

- Elements of the ISBARR method
  - **I** = Identify yourself
  - **S** = Patient & location; patient problem
  - **B** = Background - age, diagnosis, pertinent history and treatments
  - **A** = Assessment – variations in assessment findings; subjective and objective
  - **R** = Recommendation – State what you think needs to be done
  - **R** = Read back – if orders are received, repeat back to sender/prescriber

Slide 5

## Example

- **Identification:** Dr. Smith, this is Nancy Nurse on 4West Medical
- **Situation:**
  - I'm calling about Mrs. Smith who is short of breath.
- **Background:**
  - She was admitted this morning with pneumonia and shortness of breath. The shortness of breath has increased over the past hour. She has O2 at 3L per nasal cannula and received a nebulizer treatment 30 minutes ago.

Slide 6

## Example

- **Assessment:**
  - She has crackles in both lung bases, oxygen saturation was 92% on 3L O2 has now dropped to 87%. Respiratory rate was 24 on admission and now 36.
- **Recommendation:**
  - Increase O2 and consider transfer to ICU
- **Read back:**
  - Repeat to the sender any orders received. "Increase O2 to 6L via face mask. Transfer Ms. Smith to MICU 3-West"

## APPENDIX F - ISBARR HANDOUT

# *ISBARR*

### **I** Identify self & location

### **S** Situation

Identify Patient

*Describe the situation*

*WHAT IS GOING ON NOW*

### **B** Background

*Deliver a concise history*

*WHAT HAS HAPPENED*

### **A** Assessment

*Report abnormal assessment findings*

*REPORT ANY CHANGES TOGETHER*

### **R** Recommendations

*What needs to happen?*

*WHAT WOULD YOU SUGGEST HAPPEN*

### **R** Read back

*Repeat any information received to the sender*

*Remember to:*

- (1) State the problem early to promote situational awareness*
- (2) Keep information orderly by using ISBARR sequence*
- (3) Avoid unnecessary detail and concisely communicate your points*

## APPENDIX G - DETAILED LESSON PLAN

### Classroom Instruction

#### **Introduction**

The lesson will review the SBAR (Situation, Background, Assessment & Recommendation) method for reporting patient status. The expansion of SBAR to ISBARR which adds (I) for introducing self and a second (R) to prompt read back of orders will be reviewed. Students will partner and practice the technique in pairs. Once the exercises are completed, students will be provided with an ISBARR report featuring important data that is relevant to each practice case.

#### **Objectives**

- Describe the ISBARR method for communicating patient status
- Apply the ISBARR strategy for information exchange

#### **Course objective criterion**

Demonstrate increasing responsibility and accountability in providing safe nursing care for client systems experiencing specific complex health alterations.

Collaborate with other health care providers to optimize the health status of the client system.

#### **Material**

Handouts for student pairs of patient case scenario. Case materials will include: specific patient identifiers (i.e., name, age, height, weight, allergies, language), managing medical provider, lab data, baseline assessment parameters and any changes. A report of patient background, baseline status and subsequent changes.

Patient Case 1

Patient Case 2

#### **Instructional Procedures:** (See Table of Detailed Instruction Appendix Table E-1)

The instructor will review the ISBARR framework (presented to course cohort one week prior). Students will be asked to recall the ISBARR concepts.

Students will be asked to describe the important elements of effective ISBARR reporting (identify problem early, follow logical sequence, concise and relevant).

Students will be divided into groups of two. Each student will have a turn to role-play an ISBARR report with their paired classmate using patient scenarios 1 & 2. The non-reporting partner will be asked to critique performance of reporting partner.

## Simulation-based CA Instruction

### **Introduction**

The lesson will review the SBAR (Situation, Background, Assessment & Recommendation) method for reporting patient status. The expansion of SBAR to ISBARR which adds (I) for introducing self and a second (R) to prompt read back of orders will be presented.

### **Objectives**

- Describe the ISBARR method for communicating patient status
- Apply the ISBARR strategy for information exchange

### **Course objective criterion**

Demonstrate increasing responsibility and accountability in providing safe nursing care for client systems experiencing specific complex health alterations.

Collaborate with other health care providers to optimize the health status of the client system.

### **Material**

Handouts for students of patient case scenarios 1 & 2. Case materials will include: specific patient identifiers (i.e., name, age, height, weight, allergies, ethnicity), managing medical provider, lab data, baseline assessment parameters and any changes. A report of patient background, baseline status and subsequent changes.

Patient Case 1

Patient Case 2

**Instructional Procedures:** (See Table of Detailed Instruction Appendix Table E-2)

Students will receive simulation-based instruction in groups of four. Lab 1 will provide instructor role-modeling of ISBARR. Once complete, the student group will rotate to Lab 2. Here students will define the important elements of a patient status report based upon the practice case, receive coaching and feedback from an instructor and work collaboratively to develop the status report.

The instructor will review the ISBARR framework (presented to course cohort one week prior). Students will be asked to recall the ISBARR concepts. Students will be asked to describe the important elements of effective ISBARR reporting (identify problem early, follow logical sequence, concise and relevant).

The instructor, working in Simulation Lab 1 at bedside will point out the changes in patient status relaying salient features aloud. Does the information warrant a call to the medical provider? Students will share their thoughts as to why and then how. The instructor will “think

aloud for students” noting salient features of the situation and consider data needed for report. The instructor will then model communication with medical provider over the phone using ISBARR (hand-held radio; students can hear responses of receiver).

Students will then rotate to Simulation Lab 2. A period of ten minutes will be allowed to review the case information with the assigned instructor. Students will then be asked to discuss among themselves the data that they deem important to report. The instructor will coach students in the process, reminded them of important inclusions (i.e. who you are and who are you calling about, state the problem first to promote situational awareness, have patient data and access to chart easily accessible). The students will choose one participant to role play a call to physician via handheld radio to report status. When concluded, the remaining students will critique performance and note if any major elements were overlooked as well as providing an overall evaluation.

APPENDIX G-1

Table of Detailed Instructional Procedures

Classroom

Table C-1

Instructor Dialogue	Desired responses
<p>“Welcome to Class”</p> <p>“Our focus today is on communicating patient status to the medical provider. What method can we use to concisely and effectively report information when a patient’s status has changed?”</p>	
<p>“Please recall for me the steps of ISBARR technique when providing a report”</p>	<p>SBAR, ISBARR</p> <p>(I) Identify self, (S) identify patient and location &amp; situation (problem), (B) background (history, treatments), (A) assessment, (R) recommendation and (R) read back (Guhde, 2014).</p> <p>Instructor will be provided with</p>
<p>“What other factors are important to consider?”</p>	<p>ISBARR handout (see Appendix B)</p> <p>(1) State problem early (2) orderly (3) concise; avoid unnecessary detail</p>
<p><i>Students should be paired in groups of two.</i></p>	

---

The instructor will explain that a role-play activity will occur. Case information will be provided for each student group.

“We will now look at patient case 1”

*Instructor will hand out documentation*

With your partner, please carefully review the information provided in patient case 1.

---

“What change has occurred in the patient?”	Case 1 – 82-year-old female with diagnosis of acute bronchitis; history of coronary artery disease
“Is communication with the medical provider necessary?” Think about the ISBARR approach, what information will you provide?	I Identify self: This is John Doe, RN on 4NW Medical
With your partner playing the role of medical provider, please provide an ISBARR report.	S Identifies patient: I am calling about Mrs. Nancy Jones in room 412
When you are finished, we will review important data (what a good example will look like). Your partner can also add suggestions and ask questions just as the medical provider would do.	S Problem: c/o Chest pain Mid-sternal Describes as “heavy” pressure sensation  B 80-year-female  B Diagnoses: Bronchitis History of Coronary Artery Disease  B  Had a nebulizer treatment just prior to onset of chest pain

---

---

A  
Rates the chest pain as 6 on 10 point scale

A  
Radiating to left arm

A  
Pulse equal and regular, rate 88  
Current B/P 160/80 Baseline 130/65

A  
SaO<sub>2</sub> 92% on 2 L Nasal O<sub>2</sub>

R  
Recommend 12 lead ECG, consider NTG  
protocol. Medical provider assessment.

Read back: Stat 12 lead ECG, NTG 0.4 mg  
SL, first dose now. May repeat up to total of 3  
doses every 5 minutes if needed. Monitor B/P;  
hold NTG for systolic B/P less than 100.

---

Students will repeat process for Case 2.

Reporting partner will switch

Case 2 – 22-year-old male; day one post-  
operative ORIF right ankle

I  
Identify self:  
This is John Doe, RN on 3E Surgical

S  
Identifies patient:  
I am calling about Donald Brown in room 305

S  
Problem:  
Sudden onset of chest pain rates at 9/10  
Complains of dyspnea and chest tightness

B  
22-year-old male

B  
Diagnoses:

---

Right ankle fracture with ORIF performed yesterday evening after MVA.

A  
Respiratory rate 33

A  
O2 sat 90% on 2 L Nasal O2

A  
HR 115, B/P 140/100

A  
Mildly diaphoretic

A  
Appears anxious

R  
Recommend increasing O2

R  
Rapid response activated and team arriving

R  
Need you at bedside stat

Read back:

Stat ABG and O2 per NRB mask. Defer further management to Rapid Response Team until my arrival.

APPENDIX G-2

Table of Detailed Instructional Procedures

Simulation-based Instruction (CA Principles)

Table C-2

Instructor Dialogue	Desired responses
Simulation Lab 1	
Pre-brief session with student groups	
“Welcome to the simulation lab”	
“Our focus today is on communicating patient status to the medical provider. What method can we use to concisely and effectively report information when a patient’s status has changed?”	Domain Knowledge Review: Content SBAR, ISBARR  (II) Identify self, (S) identify patient and location & situation (problem), (B) background (history, treatments), (A) assessment, (R) recommendation and (R) read back (Guhde, 2014).  Instructor will be provided with ISBARR handout (see Appendix B)
“Please recall for me the steps of ISBARR technique when providing a report”	(2) State problem early (2) orderly (3) concise; avoid unnecessary detail
“What other factors are important to consider?”	

“Please review case 1. We have just been notified by the Certified Nursing Assistant (CNA) that Ms. Jones is complaining of chest pain. Let’s go see Ms. Jones to assess the problem. The instructor will introduce herself to the patient and relay that students are present. The role modeling instructor will think aloud about important assessments related to patient chest pain. The patient will be asked to describe quality, radiation, duration, rate pain on 10-point scale, precipitating factors, any problems of this nature before? The instructor will note that a nebulizer treatment of albuterol and atrovent was just completed. What change has occurred in the patient?”

Based on assessment findings, “Is communication with the medical provider necessary?” Think about the ISBARR approach, what information would you consider important? The role modeling instructor will provide an ISBARR report via handheld radio.

Case 1 (Simulation Lab 1)  
 82-year-old female with diagnosis of acute bronchitis; history of coronary artery disease

I  
 Identify self:  
 This is Jane Doe, RN on 4NW Medical

S  
 Identifies patient:  
 I am calling about Mrs. Nancy Jones in room 412

S  
 Problem:  
 c/o Chest pain  
 Mid-sternal  
 Describes as “heavy” pressure sensation

B  
 80-year-female

B  
 Diagnoses:  
 Bronchitis  
 History of Coronary Artery Disease

B  
 Had a nebulizer treatment just prior to onset of chest pain

A  
 Rates the chest pain as 6 on 10 point scale

A  
 Radiating to left arm

A  
 Pulse equal and regular, rate 88  
 Current B/P 160/80 Baseline 130/65

A  
 SaO2 92% on 2 L Nasal O2

R  
Recommend 12 lead ECG, consider NTG protocol. Medical provider assessment.

Read back: Stat 12 lead ECG, NTG 0.4 mg SL, first dose now. May repeat up to total of 3 doses every 5 minutes if needed. Monitor B/P; hold NTG for systolic B/P less than 100.

---

### Simulation Lab 2

Students will rotate to second session.

Students will review case 2. The patient has paged the nurse with complaints of “not getting my breath good”. Let’s go see Mr. Brown to assess the problem. The instructor will introduce herself to the patient and relay that students are present. Students will be asked to complete a focused assessment regarding patient complaints. The coaching instructor will prompt students with questioning. A time out will be called by the coaching instructor to allow the group to discuss and think through issues. The patient should be asked to describe quality, radiation, duration, rate pain on 10-point scale, precipitating factors, any problems of this

### Case 2 (Simulation Lab 2)

22-year-old male; post- operative day one ORIF right ankle

I  
Identify self:  
This is John Doe, RN on 3E Surgical

S  
Identifies patient:  
I am calling about Donald Brown in room 305

S  
Problem:  
Sudden onset of chest pain rates at 9/10  
Complains of dyspnea and chest tightness

B  
22-year-old male

B  
Diagnoses:  
Right ankle fracture with ORIF performed yesterday evening after MVA.

A  
Respiratory rate 33

A  
O2 sat 90% on 2 L Nasal O2

A  
HR 115, B/P 140/100

---

nature before? Students should obtain vital signs; a cardiac monitor, B/P and O2 monitor will provide continuous data.” Based on assessment finding and patient history, “Is communication with the medical provider necessary?” Based on patient condition, students will also be prompted to notify Rapid Response Team. The hospitalist physician needs to be notified and provided with a patient status report. The instructor will have students consider important data. One student will place call to physician and conduct ISBARR. Students will critique ISBARR report and make recommendations. Students will reflect on the exercise; think back to what was good and what might be improved.	<p>A Mildly diaphoretic</p> <p>A Does appears anxious</p> <p>R Recommend increasing O2</p> <p>R Rapid response notified and team arriving</p> <p>R Need you at beside stat</p> <p>Read back:</p> <p>Stat ABG and O2 per NRB mask. Defer further management to RRT until my arrival.</p>
--	---

**APPENDIX H – INTER-PROFESSIONAL CRITICAL INCIDENT REPORT  
EVALUATION TOOL**

**Simulation; increased intracranial pressure**

**Total points possible = 25 points**

	Yes	No
<b>I</b> <b>Identifies Self:</b> <b>Student states name, credential (SN), location (one point for each identifier; total possible 3 points)</b>		
<b>S</b> <b>Identifies patient:</b> <b>John Doe NICU (1 point for name and location (location can be stated upon self-identification))</b>		
<b>S</b> <b>Problem: Signs and symptoms of increased intracranial (may note GCS score decreased 14 to 10) 1 point</b> <ul style="list-style-type: none"> <li>• (GCS score can also be provided in assessment without deduction of points)</li> </ul>		
<b>B</b> <b>Age:</b> <b>34 year-old male (yes 1 point; no 0 points)</b>		
<b>B</b> <b>Came from ED 1 hour ago (1 point)</b> <b>Diagnosis of: Suspected closed head injury after MVA (1 point for yes; 0 points for no)</b> <b>Positive drug screen cocaine, barbiturates, opiates &amp; blood alcohol 245 (1 point yes; 0 points no)</b>		
<b>A</b> <b>Pupils: equal on admission at 4 mm (1 point)</b> <i>now</i> <b>Pupils unequal: Left 5 mm and right 3 mm both reactive (1 point)</b>		
<b>A</b> <b>Was disoriented but responsive on admission (1 point)</b> <b>Now</b> <b>Opens eyes only to painful stimuli, no verbal response (1 point)</b>		
<b>A</b> <b>Motor: Movement weak but equal bilaterally on admission (1 point)</b> <b>Now</b>		

<b>Movement to painful stimuli and weaker on left</b>		
<b>A</b> GCS score 14 on admission ( <i>1 Point</i> ) To current GCS 3 - 7 (may be provided with situation or earlier without point deduction) <i>1 point</i>		
<b>A</b> Vital signs: B/P 150/80 (1 point for v/s changes) HR 60 from 80's ( <i>1 point for v/s changes</i> ) O2 saturation 82 on 2L, from 96% on RA		
<b>Recommendation</b> Consider treatment for ICP (1 point)		
<b>Read back</b> Repeats orders received to prescriber ( <i>1 point</i> )		
<b>Patient problem identified early</b> <i>1 point if follows identification, should be done early to create situational awareness; 0 points if done elsewhere in report.</i>		
<b>Report follows orderly sequence</b> <i>1 point if report follows ISBARR sequence; if given in different order 0 points</i>		
<b>Pertinent information only</b> <i>1 point if report is limited to facts/data needed to manage situation. Award 0 points if more than 1 item of unnecessary detail is reported.</i>		
<b>Total Score</b>		

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## APPENDIX I - QUESTIONNAIRE

### Student Satisfaction and Self-Confidence in Learning

**Instructions:** This questionnaire is a series of statements about your personal attitudes about the instruction you receive during your simulation activity. Each item represents a statement about your attitude toward your satisfaction with learning and self-confidence in obtaining the instruction you need. There are no right or wrong answers. You will probably agree with some of the statements and disagree with others. Please indicate your own personal feelings about each statement below by marking the numbers that best describe your attitude or beliefs. Please be truthful and describe your attitude as it really is, not what you would like for it to be. This is anonymous with the results being compiled as a group, not individually.

Mark:

- 1 = STRONGLY DISAGREE with the statement
- 2 = DISAGREE with the statement
- 3 = UNDECIDED - you neither agree or disagree with the statement
- 4 = AGREE with the statement
- 5 = STRONGLY AGREE with the statement

Satisfaction with Current Learning	SD	D	UN	A	SA
1. The teaching methods used in this simulation were helpful and effective.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
2. The simulation provided me with a variety of learning materials and activities to promote my learning the medical surgical curriculum.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
3. I enjoyed how my instructor taught the simulation.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
4. The teaching materials used in this simulation were motivating and helped me to learn.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
5. The way my instructor(s) taught the simulation was suitable to the way I learn.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Self-confidence in Learning	SD	D	UN	A	SA
6. I am confident that I am mastering the content of the simulation activity that my instructors presented to me.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
7. I am confident that this simulation covered critical content necessary for the mastery of medical surgical curriculum.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
8. I am confident that I am developing the skills and obtaining the required knowledge from this simulation to perform necessary tasks in a clinical setting	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
9. My instructors used helpful resources to teach the simulation.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
10. It is my responsibility as the student to learn what I need to know from this simulation activity.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
11. I know how to get help when I do not understand the concepts covered in the simulation.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
12. I know how to use simulation activities to learn critical aspects of these skills.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
13. It is the instructor's responsibility to tell me what I need to learn of the simulation activity content during class time..	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5

## APPENDIX J – COPYRIGHT USE PERMISSIONS

Amy McGuire <[amcguire@nlm.org](mailto:amcguire@nlm.org)>

May 11

to me

Dear Amelia,

It is my pleasure to grant you permission to use the "Educational Practices Questionnaire," "Simulation Design Scale" and "Student Satisfaction and Self-Confidence in Learning" NLN/Laerdal Research Tools. (I typically send all 3 tools together, so you don't have to make another request).

In granting permission to use the instruments, it is understood that the following caveats will be respected:

1. It is the sole responsibility of (you) the researcher to determine whether the NLN questionnaire is appropriate to her or his particular study.
2. Modifications to a survey may affect the reliability and/or validity of results. Any modifications made to a survey are the sole responsibility of the researcher.
3. When published or printed, any research findings produced using an NLN survey must be properly cited. If the content of the NLN survey was modified in any way, this must also be clearly indicated in the text, footnotes and endnotes of all materials where findings are published or printed.

I am pleased that materials developed by the National League for Nursing are seen as valuable, and I am pleased that we are able to grant permission for the use of the "Educational Practices Questionnaire," "Simulation Design Scale" and "Student Satisfaction and Self-Confidence in Learning" instruments for your important work to advance the science of nursing education.

Warm Regards, Amy

Amy McGuire | Administrative Coordinator, NLN Chamberlain Center | National League for Nursing | [www.nlm.org](http://www.nlm.org) | [amcguire@nlm.org](mailto:amcguire@nlm.org) | Tel: [202-909-2509](tel:202-909-2509) | The Watergate | 2600 Virginia Avenue NW, 8<sup>th</sup> Fl, Washington, DC 20037

1:01 PM (20 hours ago)

Allan Collins <[acollins1937@gmail.com](mailto:acollins1937@gmail.com)>

to me

Dear Amy

Thank you for your kind words. You are most welcome to use my work in any way you please. If you want other papers on CA I would be happy to send them to you.

Best wishes

Allan

On 7/29/16 11:48 AM, Amelia Lanz wrote:

Dear Sir,

I am writing to seek permission to use an excerpt of your work from the following reference:

Collins, A. (2006). The Cambridge handbook of the learning sciences. In K. Sawyer (Ed). *Cognitive Apprenticeship* (pp.47 – 60). Cambridge; New York: Cambridge University Press

The information is featured in the theoretical section of my dissertation. I basically created a table using a portion of the techniques described in the CA model as it was to be used later for instruction. The table is of course referenced as per APA guidelines. My committee has advised that must seek your permission.

On another note and with this opportunity, I must tell you that I am a big fan of your work. The CA model has enriched my development as a nursing instructor and I find the philosophy very on par with our teaching goals. Thank you. Please let me know if further explanation is needed.

Amy Lanz