

Running head: USE OF A GUIDED REFLECTION TOOL

USE OF GUIDED REFLECTION TOOLS IN COLLABORATIVE HEALTH CARE  
SETTINGS FOLLOWING SIMULATED LEARNING

by

Laury A. Westbury

A Dissertation Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

William Howard Taft University

October 2018



WE, THE UNDERSIGNED MEMBERS OF THE COMMITTEE,  
HAVE APPROVED THIS DISSERTATION

THE USE OF A GUIDED REFLECTION TOOL IN A COLLABORATIVE HEALTH  
CARE SETTING FOLLOWING SIMULATED LEARNING EXPERIENCES

by

Laury A. Westbury

October 2018

ACCEPTED AND APPROVED ON BEHALF  
OF WILLIAM HOWARD TAFT UNIVERSITY

COMMITTEE MEMBERS

---

Karen L. Ledbetter, Ed.D., Chair

---

Carole Smith, Ed.D., Committee Member

---

Eileen Yantz, Ed.D., Committee Member

### **Abstract**

The Institute of Medicine (2012) and Benner, Sutphen, Leonard, and Day (2010) suggested a radical change within nursing education programs to move toward the goal of optimal patient care and to expand technologies and innovation. The World Health Organization (2011) supports the concept that health professionals must receive adequate education at the student level to be able to work in interprofessional teams that collaboratively solve complex problems. Simulated learning experiences incorporated into health care education have become an innovative and significant component of instruction. Studies on debriefing depict the practice of guided reflection during the post-simulation scenario activity of debriefing as a creative way to deepen learning, since learning occurs best when ideas and thoughts are shared, discussed and reflected upon with others (Dreifuerst, 2009; Wright & Lundy, 2012). Research indicates a lack of collaborative reflection tools for promoting group learning and increasing perceived individual knowledge exchange.

The purpose of this phenomenological study was to determine the following research questions:

1. Does guided reflection, in the experience of the learner, increase knowledge exchange?
2. Does pairing the use of a guided reflection tool with simulated learning experiences increase participants' perception of learning?
3. Are collaborative health care teams able to exchange relevant information during simulated learning experiences?

4. In the experience of the participants, is guided reflection a valuable learning tool?

A review of the literature provided the context for the study, and was organized into six sections. Volunteers from prelicensure programs (undergraduate and graduate) of nursing, and the undergraduate and graduate levels of occupational therapy and speech-language pathology students were asked to reflect on their lived experiences using guided reflection following simulation in a training environment. Six main themes were identified from the data analysis.

Based on the results, the implications for health care education and transition to professional practice are discussed. The contributions serve to aid health care students and the educators who integrate collaborative education and reflection processes into the curriculum. Future research to further the findings of this study may support reflective tool usage in interprofessional simulated learning experiences.

*Keywords:* interprofessional education, simulated learning experiences, guided reflection

### **Dedication**

This dissertation is dedicated to my wonderful parents, Vilma and Pete Dal Corobbo, my beloved husband Brian, and my dear son Dominick Westbury. Without the support of these incredible people in my life, this graduate process would have been impossible. Mom, I am only sorry you are not here to witness the conclusion of my dissertation process; however, I have constantly sensed your strength and encouragement from above.

Brian, for your support and love through our years together (eight of which have seen various stages of my many academic journeys), I cannot thank you enough. You are my inspiration and strength. Now it's your turn for graduate school! Io ti amo. Dominick, you are my life and my joy. I hope living through this academic journey with me offers you a vision for your own academic adventures. You make me proud, every day. Reach for the stars!

### **Acknowledgements**

This dissertation journey would not have been accomplished without support from my family, friends, colleagues, and the dissertation committee.

To the Biel, Dal Corobbo, and Westbury families, my extended family, thank you for being there to raise me up on so many occasions. I value all of you. To my sister Kathy, thank you for taking over the shoulder of support I lost when Mom passed away. You are always there for me.

Thank you to my colleagues, friends, and students at Elmhurst College for supporting me during the past years. Your daily support and encouragement kept me going. I am lucky to have you all in my professional life. To all the health care program faculty and students from the departments of Nursing, Occupational Therapy, and Speech-Language Pathology, your interest and support in my research project were invaluable. Thank you for all you have done.

Last, but certainly not the least, thank you to my dissertation chair: Dr. Kary Ledbetter, and my dissertation committee members Dr. Carole Smith and Dr. Eileen Yantz. Your challenging questions and desire to push the frontiers of nursing education kept me on my toes and compelled me to be comprehensive and thorough. Dr. Ledbetter: I will miss your calming and always encouraging manner. It is to your persistence that I owe my journey completion. I am indebted to you.

## Table of Contents

	Page
List of Tables .....	xii
Chapter 1: Introduction .....	1
Simulation .....	2
Need for Simulated Learning Experiences .....	2
Simulation as a Teaching Pedagogy .....	3
Foundations of Simulation Theory .....	4
Prebriefing .....	5
The scenario .....	5
Debriefing .....	5
Need for Collaborative Reflective Practice .....	6
Meeting Health Care Challenges .....	7
Statement of the Problem .....	8
Statement of Purpose .....	9
Theoretical Framework .....	11
Research Questions .....	12
Definition of Terms .....	13
Delimitations, Limitations, and Assumptions .....	16
Delimitations .....	17
Limitations .....	17
Assumptions .....	18
Nature of the Research .....	18

## Table of Contents (Cont.)

	Page
Summary .....	20
Chapter 2: Literature Review .....	22
Historical Uses of Simulation .....	23
Need for Change in Nursing-Health Care Education .....	24
Conceptual Framework .....	25
Topic Rationale .....	27
Simulation as a Pedagogy, the Phase of Debriefing as Open-Discussion	
Guided Reflection .....	27
Guided Reflection as an Educational Tool .....	32
Socratic Method in the Simulated Learning Debriefing Phase .....	34
IPE and Collaborative Learning .....	35
Transfer of Knowledge .....	40
Simulated Learning Instruments for Evaluation .....	43
Methodological Framework .....	45
Summary .....	45
Chapter 3: Methodology .....	48
Design of the Study .....	48
Sample and Population .....	49
Instrumentation and Data Collection .....	50
Data Analysis Procedure .....	52
Potential Threats to Data Validity .....	52

## Table of Contents (Cont.)

	Page
Summary .....	54
Chapter 4: Data Analysis and Findings .....	55
Description of the Sample.....	55
Ethical Considerations .....	58
Research Design and Introduction to the Analysis .....	59
Summary of Data Findings .....	62
Research Question 1 .....	64
Research Question 2 .....	68
Research Question 3 .....	72
Research Question 4 .....	75
Summary .....	76
Chapter 5: Conclusions and Discussion.....	78
Summary and Discussion of the Findings .....	78
Discussion of Findings in Relation to the Literature .....	82
Simulation as a Pedagogy, the Phase of Debriefing, Open-Discussion Guided Reflection .....	83
Guided Reflection as an Educational Tool .....	84
Socratic Method in the Simulated Learning Debriefing Phase.....	85
Interprofessional Education and Collaborative Learning .....	86
Transfer of Knowledge .....	86
Simulated Learning Instruments for Evaluation .....	88

## Table of Contents (Cont.)

	Page
Study Limitations.....	89
Implication of Results for Practice .....	91
Recommendations for Further Research.....	92
Conclusions.....	94
REFERENCES .....	96
APPENDIX A: Research Study Survey: Reflective Debriefing Utilizing the WSCR-T Guided Reflection Tool.....	107
APPENDIX B: Westbury Student Collaborative Reflection WSCR-T Guided Reflection Tool.....	111
APPENDIX C: Study Consent Form.....	114
APPENDIX D: Script for Research Study Prebriefing, Simulation, Debriefing and Survey .....	116
APPENDIX E: Eva Valentino SBAR report for Simulation Scenario .....	120
APPENDIX F: Simulation Scenario for Westbury Research Study.....	122
APPENDIX G: Simulation Standards .....	137
APPENDIX H: IRB Approval from College of Research Study .....	138
APPENDIX I: IRB Approval from William Howard Taft University .....	139

**List of Tables**

	Page
Table 1: Research Study Participant Characteristics .....	56
Table 2: Final Themes Identified (Qualitative Study) .....	63

## **Chapter 1**

### **Introduction**

The Institute of Medicine (2012) and Benner, Sutphen, Leonard, and Day (2010) suggested a radical change within nursing education programs to move toward the goal of optimal quality patient care. Benner et al. (2010) identified the need to expand the use of technology, innovation, and pedagogy in nursing education to enable students to *think like a nurse*, to replicate realism in professional learning environments. Providing an educational curriculum to help students think like a nurse suggested incorporating realistic nursing care practice to inculcate the skills that would enable students to formulate a plan of care for patients, thereby ultimately optimizing clinical decision making for positive outcomes from the care provided (Benner et al., 2010). Innovation must extend beyond the classroom and clinical patient rotations (American Association of Colleges of Nursing, 2016) and be able to provide authentic experiences while utilizing technology and workforce entry on a global level (Clougher & Mahoney, 2012). The need for changes in the education of health care students is not limited to nursing. The World Health Organization (WHO; 2011) supported the concept that health professionals must receive adequate education at the student level to be able to work in interprofessional teams that collaboratively solve complex problems.

Institute of Medicine (IOM; 2012) declared that more than 100,000 deaths per year occur from preventable health care errors, mainly attributable to ineffective communication and the lack of collaboration between health care providers. Health care professionals commonly participate in intraprofessional teams composed of individuals from the same profession such as physicians, registered nurses, respiratory therapists, and

occupational therapists. A team approach seeks to utilize the abilities of every member to the fullest extent. Health care teamwork is linked to improved job satisfaction, reduced turnover, and better patient satisfaction and outcomes. IOM (2012) introduced the need for interprofessional teamwork to group health care professionals from diverse fields toward the common goal for patients, families, caregivers, and communities, of providing the highest quality of care. “In order to decrease the frequency of these preventable incidents and improve patient outcomes and satisfaction, patient-centered teams involving multiple disciplines would be more effective than care providers working in isolation from each other” (Costello et al., 2017, p. 624). Collaboration and communication between health care professionals readies students to work collaboratively with other professions during their education and in practice (WHO, 2011).

### **Simulation**

The International Nursing Association for Clinical Simulation and Learning (INACSL; 2016a) defined simulation as an education strategy, a pedagogy, to replicate conditions in the health care environment (patient and environment) for authentic learning situations focused upon each participant. The simulated environment allows for realistic processes in learning and activities for practice, evaluation, and active student learning.

### **Need for Simulated Learning Experiences**

The need to incorporate the use of technology, innovation, and pedagogies presents many teaching challenges for health care education programs. Given the limitations to intervention at the clinical rotation level, and limited timeframes in the

classroom setting, simulated learning experiences incorporated in health care education have become an innovative and prominent component of instruction. Historically, different health care disciplines have delivered health care education in isolation from one another (Benner et al., 2010; Fullan, 2007; IOM, 2012). In an effort to facilitate relationship building among health care professions, the framework of using simulated learning experiences through interprofessional education practices has recently been suggested (Freeth et al., 2009; Liaw, Siau, Zhou, & Lau, 2014; Masters, O'Toole-Baker, & Jodon, 2013; Watson, 2015).

WHO (2011) encouraged collaboration and communication between health care students to prepare them for transition to practice as professionals. Interprofessional practice is rapidly becoming the norm in health care settings. However, health care education has only recently begun to engage in curricular additions for interprofessional education. In this context, simulation-based learning provides an innovative environment for creating authentic collaborative learning situations.

### **Simulation as a Teaching Pedagogy**

Simulation has emerged as a teaching pedagogy in nursing education to provide a format for experiential learning in a safe environment (Coram, 2016; Jeffries, 2012; Pollock & Biles, 2016). The American Speech Language-Hearing Association recently determined certification standards to include clinical simulation experiences to define critical thinking skills as program outcome goals (Ellis, 2017). Simulated learning experiences frequently involve the use of human patient simulators (HPS) or realistic manikins that mimic human beings. These HPS breathe and have heartbeats. The manikins also verbalize, bleed, sweat, and cry. Decades of HPS technology have

provided advancements in fidelity, or realism, which provide learners with interactive engagement that improves year on year. Foisy-Doll and Leighton (2018) defined the changes to simulators in technology, gender, age, and skin tones, offering a higher degree of realism within each simulation involving student participation. Students accept the manikins as their patient assignments, quickly learning to look beyond the plastic facades and treat them as human beings (Chamberlain, 2015; Jeffries, 2012). The high-fidelity technology of HPS allows for learning experiences in acute care hospital settings, clinics-offices or home health-community environments, and within various age groups. As learning scenarios evolve, student participants are immersed in experiences they will frequently encounter in the clinical setting, including experiences that occur less frequently but involve high risk for patient survival. The evidence suggests that learning is enhanced when students engage in active, student-centered experiences that create a framework of skills, knowledge, and attitudes regarding patient care, roles, and responsibilities (Lestander, Nehto, & Engstrom, 2016).

### **Foundations of Simulation Theory**

The foundation of simulation theory (Jeffries, 2012) and establishment of international standards for providing simulation experiences in health care education (INACSL, 2016a) have promoted learning about professional practice and building confidence and higher-level thinking, known as critical thinking and clinical judgment (Dreifuerst, 2015; Lapkin, Levett-Jones, Bellchambers, & Fernandez, 2010). There are three phases of the simulation education process: prebriefing (education introduction), the scenario (active, hands-on application of the education), and debriefing (postlearning activity discussion and reflection).

**Prebriefing.** Prebriefing is the initial information session that occurs immediately prior to employing the simulation scenario. Instructions and preparatory information are given to the participants. Most educators agree that prebriefing should include orientation to the simulation manikin and the environment used in enacting the case scenario (INACSL, 2016a).

**The scenario.** The simulation scenario is an active case study designed to provide participants with an opportunity to meet identified objectives (INACSL, 2016a). Simulation scenarios vary in duration and complexity, based on the corresponding content objectives. The scenario allows learners to gain experience through practicing refinement of skills and interventions in the scenario context while in a safe setting and without putting patients at risk (Foisy-Doll & Leighton, 2018).

**Debriefing.** Studies on debriefing have depicted that using the practice of guided reflection during the post-simulation scenario activity of debriefing is a creative way to deepen learning, since learning occurs best when ideas and thoughts are shared, discussed, and reflected upon with others (Dreifuerst, 2009; Wright & Lundy, 2012). Guided reflection for self-awareness has been identified as necessary in the debriefing process (Decker & Dreifuerst, 2012; Reed, 2012). Guided reflection takes the learners on the path of discovery in the post-simulation scenario of self-reflection, self-analysis, and self-evaluation of their applied nursing intervention priorities. For several years, nurse educators have assumed the role of reflective guides in the simulation process (Slootweg et al., 2014; Swanson et al., 2011). Consistency in the reflective role appears to have a positive effect on facilitating learning (Asselin, 2011). Reflection refers to the use of past experiences to assist in the development of new knowledge and elicit a changed behavior

(Dewey, 1933; Eraut, 2004; Husebo, O'Regan, & Nestel, 2015). Reflective practice follows a framework that develops clinical judgment and confidence (Walker, Tilley, Lockwood, & Walker, 2008).

Owen and Ward-Smith (2014) studied the need to use Socratic questions in simulated activities. Socratic questions, or disciplined and deliberate questioning, guide self-practice within one's profession. The skills of the debriefing educator were found to play an important role in ensuring optimal student learning. "Learning without guidance could lead the learner to negatively transfer a mistake into their practice without realizing it had been poor practice, repeat mistakes, focus only on the negative" (INACSL, 2016d, p. S44).

#### **Need for Collaborative Reflective Practice**

Park, Hawkins, Hamlin, Hawkins, and Bamdas (2014) suggested that a barrier to collaborative education existed in educational programs for health care professionals not addressing the importance of collaboration, teamwork. Snelling and Jenkins (2016) proposed the use of interprofessional simulation on a routine basis for health care professional students, since the curriculum can teach students about each other's professions. Collaboration demonstrated team-building principles to students, while also building upon knowledge and skills.

Self-reflection upon performance after clinical simulation provided the student with insight into knowledge, skills, and attitudes, while introducing the aspects of reflective practice to enhance clinical reasoning in patient care interactions. Giles, Carson, Breland, Coker-Bolt, and Bowman (2014) determined that reflective practice was critically linked to experiences and efforts to improve experience. Simulation scenarios

provide the interactions to identify strengths and the areas needing improvement through reflection during simulation debriefing (Giles et al., 2014). A gap in the research on reflective practice in group-based learning was identified. Guided reflection in group teamwork, or interprofessional teams, has not been studied. A decade ago, James, Dunning, Connolly, and Elliott (2007) revealed a criticism of reflective practice, of its being generally viewed as an individual practice and that the roles of other professionals of the health care team were not being focused upon in the reflective framework.

### **Meeting Health Care Challenges**

Health care programs continue to face the challenge of providing for the demands of education oriented toward learner effectiveness within a professional team. IOM (2012) and WHO (2011) recently appealed for the incorporation in health care education programs of the methodology of interprofessional education (IPE) through simulation experiences early in the curricular structure, so as to address the goals of role and teamwork approaches by the entire health care team to improve the quality of patient outcomes. The use of guided reflection as a tool for increasing understanding and for retention of skills and concepts taught during interprofessional simulations where teams of nurses are trained has not been significantly evaluated or reported in research findings. Kamhi (as cited in Ellis, 2017), a professional in the field of speech-language pathology, expressed the concern that clinicians only use critical thinking and judgment at an individual level, rarely reflecting upon or approaching decisions at the community or collaborative level.

Wright and Lundy's (2012) study indicated that learning is best solidified when ideas and thoughts are shared through reflection and discussed with others. Dreifuerst

(2015) examined the use of Socratic questions in the process of individual reflection during the debriefing session of the simulation experience. However, significant gaps have been revealed in the research regarding the usage of reflective tools to assess knowledge acquisition in interprofessional education (Swanson et al., 2011; Tsingos, Bosnic-Anticevich, Lonie, & Smith, 2015).

This chapter describes the purpose and statement of the problem, the research questions, definition of key terms, limitations and assumptions of the study, and the dissertation structure. The theoretical framework used to guide this study is also discussed. The chapter concludes with a discussion on the significance of the study.

### **Statement of the Problem**

Addressing the issue of teamwork raises the challenge of reforming professional health care education. The literature indicates uncertainty as to what teaching methodology, or pedagogy, best promotes interprofessional education (American Association of Colleges of Nursing, 2016; IOM, 2012; Sloodweg et al., 2014).

Interprofessional simulation-based learning, also termed collaborative education, places two or more professions in a simulated health care experience with shared educational goals and objectives. Interprofessional education also promotes each discipline as an integral part of the health care team. Students learn from, about, and with each other toward effective collaboration for improving patient outcomes (Foisly-Doll & Leighton, 2018).

While the promotion of interprofessional-collaborative education of the health care team is desirable in current health care practice, no evaluation has been carried out of the use of a focused format or tool for guided reflection, to study knowledge exchange

and participants' perceptions of learning through a multiteam approach in the educational setting. The problem is that the failure to use a guided reflection tool in simulated learning experiences of collaborative-interprofessional health care hampers information exchange and reduces the acquisition of knowledge. It has been established that simulated learning experiences allow for an active learning process that promotes, enhances, and deepens learning through experience (Lestander et al., 2016). Knowledge gains are significant after the debriefing stage of the simulation process (Shinnick, Woo, Horwich, & Steadman, 2011), which includes the promotion of self-reflection practices for the interventions and care provided. However, there has been criticism that "reflective practice is generally viewed as an individual practice and that the role of others in the process, particularly fellow practitioners is insufficiently stressed" (James et al., 2007, p. 543). This study evaluates the perceptions of students, in a collaborative group setting, as they use a guided reflection tool to augment their learning.

I. Jones and Alinier (2015) suggested that further research was needed to evaluate the use of reflective practice methods. Owen and Ward-Smith (2014) affirmed the need for Socratic questioning in the quest of a reflective practice guide toward self-assessment, yet there was a lack of research suggesting the practice of reflection in collaborative teamwork presentations beyond individual self-confidence intervals. Accrual of further gains by using reflective practice in interprofessional settings was not well established in health care education.

### **Statement of Purpose**

There has been significant research regarding individual guided reflection during nursing debriefing sessions (Decker & Dreifuerst, 2012; I. Jones & Alinier, 2015; Reed,

2012). Although elements of self-reflection are required to think as part of a team, further components of group activity and reflection also need to be included in the collaborative learning process. Fewster-Thuente and Batteson (2016) supported the need for innovations in teamwork collaboration while also meeting the defined competencies within the process of learning across health care disciplines. Debriefing is commonly used as a synonym for guided reflection (Decker & Dreifuerst, 2012). Debriefing allows student participants to assess and evaluate decision making and communicative interventions during their actions within the scenario.

Inconsistencies have been found concerning reflection abilities of the learner (Fewster-Thuente & Batteson, 2016). Schon (1983) suggested that reflective experiences allow a learner to respond to new situations based on a recollection of past experiences. Educator guidance in the facilitation of reflection was deemed crucial for learner benefits from the simulation experience, both in clinical practice and curricular matriculation (Decker & Dreifuerst, 2012).

Reflection has been approached as an innate process of learning (Nash & Harvey, 2017); however, research has shown that reflection is not to be considered a direct process to knowledge attainment. Research has indicated a lack of collaborative reflection tools for promoting group learning. A tool for student reflection was created for use in this study. The purpose of this study was to evaluate the perceptions of students, in a collaborative setting, while using a guided reflection tool following simulated learning experiences. This study aimed to inform the nursing and health care community of the potential benefits of using a guided reflection tool in conjunction with collaborative simulation education. This study differs from previous studies that focused on the use of

guided reflection by individuals from the same setting, by including participants from multiple health care disciplines in the reflection process. The next section provides a discussion of the theoretical framework.

### **Theoretical Framework**

This study followed the Jeffries-National League of Nursing (NLN) Theory of simulation delivery in nursing and health care environments (Jeffries, 2015) and the INACSL Standards of simulated learning experiences (INACSL, 2016b). Jeffries (2015) and INACSL (2016a) theorized a framework for simulated learning experiences toward optimal student-learning outcomes, influenced by the educator, the student learner, educational practices, and simulation design characteristics.

Dewey (1933) investigated the nature of reflective thinking, of how the way of thought was linked to the educative process. Dewey proclaimed that reflection occurred in five phases: problem identification, collection of pertinent data, interpretation, hypothesis and reasoning, and testing-taking action. These phases of reflection were approached as a foundation for how to separate individual thoughts of experiential learning into parts of a process for reflection to occur, to expose and support knowledge transfer. Dewey (1933) deemed active reflection following these process steps as integral to learning.

As an extension of Dewey's (1933) work, Schon (1983) explained the concepts of reflective thinking as occurring in-action and on-action. According to Schon (1983), reflection-in-action is the phase of engagement in the experience where the learner is self-monitoring and dealing with the situation at hand. In the following phase, reflection-on-action, the learner reviews and evaluates his or her previous action after the activity.

In support of Schon (1983), Tanner (2006) established the notion of *thinking like a nurse*, to focus on the development of clinical judgment and the use of reflective practice as crucial components to bridge the gap between theory and practice.

Simulation and reflection are widely recognized as a methodology in education delivery that promotes learning about professional practice (Dreifuerst, 2009; INACSL, 2016d; Neill & Wotton, 2011). However, intraprofessional teams using simulation education have not incorporated simulation into training across disciplines. Since health care professionals rely on a team approach to patient care, a focus on team reflection is an important component of the educational process. Past research exists on individual learning reflection as a framework for student nurses. Group reflection allows individuals to learn about, from, and with each other and create purposeful learning, which results in improved patient-care outcomes (INACSL, 2016d). Guided group reflection, used in the post-simulation phase of learning, may increase the retention of knowledge, enhance collaborative interactions, and result in improved patient outcomes. The next section includes a discussion of the research questions for this study.

### **Research Questions**

This phenomenological study addresses the following research questions:

1. Does guided reflection, in the experience of the learner, increase knowledge exchange?
2. Does pairing the use of a guided reflection tool with simulated learning experiences increase participants' perception of learning?
3. Are collaborative health care teams able to exchange relevant information during simulated learning experiences?

4. In the experience of the participants, is guided reflection a valuable learning tool?

Lethbridge, Andrusyszyn, Iwasiw, Laschinger, and Fernando (2011) established that educators agree on the importance of reflection in nursing education; however, they also revealed a lack of consistency in the evaluation of reflection effectiveness. Since nurses typically train and work in a team-based health care setting, group reflection research is essential for providing meaningful input on the effectiveness of training experiences in nursing practice. Addressing the need for the incorporation of interprofessional learning at the educational level, and addressing the need for assistance in reflection upon subsequent learning experiences, contributed to the formulation of the research questions. Examining the lived experiences of individuals using a guided reflection tool in a collaborative health care setting following simulated learning experiences pointed to the potential for rich descriptive perceptions arising from the research questions. The student-centered need to develop critical thinking abilities and knowledge exchange through a guided reflection process also directed the formation of questions for the study. The research questions aimed to reveal literature gaps relating to guided reflection, guided reflection tools, and collaborative learning and knowledge exchange.

### **Definition of Terms**

The following key terms are significant to this research study:

- Actual Learning: “A change in knowledge that is reflected and identified by a rigorous measurement of learning” (Bacon, 2016, p. 3).

- Cognitive Learning and Function: Learning and subsequent behavior that is focused on problem-solving abilities within knowledge acquisition. This refers to the desire in the educational curriculum, on the basis of Transformational Learning Theory (Mezirow, 1981), to reflect critically and engage to reach higher levels of cognitive functioning.
- Collaborative inquiry: Refers to the process of pondering the answers to Socratic questions (What went well? What could have gone better?) to guide prioritization of care and alter future practice post-IPE learning experience (Dreifuerst, 2015; Owen & Ward-Smith, 2014).
- Collaborative Learning Tool: One or a set of tools to guide toward objective or goal achievement when working together to solve a problem or derive meaning from a body of material (C. S. Bradley & Dreifuerst, 2016).
- Collaborative Education: Two or more individuals learning together in the same setting (Jeffries, 2012).
- Collaborative Interprofessional Education: Two or more individuals belonging to or from different professions learning together in the same setting (Agency for Healthcare Research and Quality [AHRQ], 2015; Li, Mohebbi, Pierce, Rowe, & Stockton, 2014; McCalla-Graham & DeGagne, 2015).
- Debriefing or Postsimulated Learning Experience: Refers to the planned third phase of the simulation framework where learner participants are led by educators (who have completed formal training or are certified in simulation debriefing) to review patient care interventions and foster reflection and meaningful learning in their professional roles and not only self-evaluate their

actions, but receive feedback from peers and faculty (Dreifuerst, 2015; Jeffries, 2012).

- **Guided Reflection:** Refers to the deliberate methods to integrate understanding and deeper meaning into simulation debriefing phases to allow for proper modes of reflective practice by the learner participant (Dreifuerst, 2015).
- **High Fidelity:** Refers to the degree of realism, or authenticity of replication, in mimicking real-life situations using the highest of technological capabilities (INACSL, 2016a; Jeffries, 2012).
- **IPE:** Educational methods to facilitate many health care professions to learn together to understand each other's roles and perspectives in the health care system (Failla & Macauley, 2014). Incorporating interprofessional education into learning programs assists in optimal patient care outcomes, cohesiveness of a team, and fosters collaboration among the disciplines (AHRQ, 2015; Li et al., 2014; McCalla-Graham & DeGagne, 2015).
- **Intraprofessional:** A team of professionals who are all from the same profession collaborating on the same case (American Association of Colleges of Nursing, 2016).
- **Learner Participant:** Refers to a student who is actively involved in the simulation learning experience for the purpose of "gaining or demonstrating mastery of knowledge, skills, and attitudes of professional practice" (Meakim et al., 2013, p. S7).

- Perceived Learning: A student's self-report of knowledge gain based on reflection and observation of an individual's own learning process (Bacon, 2016).
- Reflection Tool: Refers to items of specific criteria that signify the synthesis of critical thinking, critical judgment, and practical and moral judgments to enable the development of self-evaluation (Lasater, 2007).
- Simulation Scenario or Simulated Learning Experience: Refers to the active phase of the simulation framework where participants provide care for an HPS or manikin or standardized patient in a controlled, safe environment that mimics an authentic clinical setting (Chamberlain, 2015; Jeffries, 2012). This is the second of the three phases of the simulation process.
- Socratic Questioning: Open-ended questioning in a simulated learning experience to encourage or elicit thinking associated with actions; reflective thinking to develop clinical reasoning and decision making (Dreifuerst, 2015).

### **Delimitations, Limitations, and Assumptions**

This section addresses the potential weaknesses of the study that the researcher could not control (limitations), the boundaries of the study that reveal the choices made by the researcher throughout the study (delimitations), and the assumptions or plausibility of the study (DeCuir-Gunby & Schutz, 2017; Gay, Mills, & Airasian, 2012; Polit & Beck, 2012). The identification of delimitations provided a framework for the goals of the research to be defined within a scope of interest defined by the study. The limitations identify the factors of influence that are not controllable by the researcher but could influence the results of the study (Creswell, 2013).

**Delimitations.** The following delimitations were applied to the study. The study was conducted with a sample of volunteer nursing students, occupational therapy students, and speech-language pathology students selected from one four-year college. The student population at the college consisted of nursing students: undergraduate and master's level (prelicensure); occupational therapy: undergraduate and master's level students; and speech-language pathology: undergraduate and master's level students. All participants had previous experience of simulated learning experiences and debriefing, which was inclusive of open-discussion reflection.

1. A sample population of controllable size was essential, considering the qualitative nature of this study.
2. The study was conducted at a four-year college with an eight-year history of nursing education programs with the use of the pedagogy of simulated learning experiences. The college simulation center was being used, for the past two years, with the occupational therapy and speech language pathology health care programs.
3. The study was conducted by one researcher. Qualitative data were compiled and evaluated by the same researcher.

**Limitations.** The following limitations affected the study:

1. The research population of qualified sample subjects were selected from one location. The sample size was recognized to be no more than  $N = 60-70$ , related to the size of student enrollment in each of the three programs of the college.

2. The investigator is employed within the research facility and was known to the volunteer sample subjects.
3. The delivery plan for the simulated experience was structured using a script to promote uniformity for the participants and to reduce the possibility of variables that had the potential to affect the study results.

**Assumptions.** The following assumptions were made for the study:

1. Each study participant was willing to work as a volunteer in the study after school hours.
2. The research study college would approve implementation of the study.
3. Each study participant would actively participate and provide meaningful input.
4. The researcher would be able to extrapolate meaningful data from participant responses.
5. The debriefing phase of the study postsimulated learning experience was scripted to promote research uniformity.
6. Each study participant had the opportunity for individual reflection before group reflection began.
7. Each study participant had previous experience of simulated learning activities and debriefing, which was inclusive of open-discussion reflection.

### **Nature of the Research**

This study used the qualitative research methodology of phenomenology.

Phenomenology captures the richness of the human experience from a participant's point of view. Much as with nursing and health care practices, phenomenology represents an

art and a science in the description of a lived experience (De Chesnay, 2015). The methodology design of phenomenology studies uses in-depth conversations, diaries, and participant views as the main data sources (Polit & Beck, 2012).

The research questions were asked to examine the lived experiences of individuals using a guided reflection tool in a collaborative health care setting following a simulated learning experience. The research questions for this study were:

1. Does guided reflection, in the experience of the learner, increase knowledge exchange?
2. Does pairing the use of a guided reflection tool with simulated learning experiences increase participants' perception of learning?
3. Are collaborative health care teams able to exchange relevant information during simulated learning experiences?
4. In the experience of the participants, is guided reflection a valuable learning tool?

The researcher aimed to gain deeper understanding of the collaborative learning dynamics in the prelicensure nursing, occupational therapy, and speech-language pathology population using simulated learning experiences. The study used the perceptions of the study participants as a basis for the research findings, rather than actual student learning. Previous researchers have established that student-perceived learning and actual student learning are different concepts (Sitzmann, Ely, Brown, & Bauer, 2010). Perceived learning refers to a student's self-report of knowledge gains based on reflection and contemplation of one's own learning formation and process (Bacon, 2016). Incorporating the use of a guided reflection tool during open-discussion debriefing

allowed the researcher to understand fully the effect of guided reflection in a collaborative simulated learning setting. The researcher's observations of the study participants, the review of narrative documents, reflective journaling, and audiovisual recordings were integral parts of the research.

A post-simulation debriefing online survey (see APPENDIX A) was completed by all study participants. The online site maintained the anonymity of each study participant. A nine-item survey format was used with a 5-point Likert scale, with the 10th question as an optional comment section. Likert scales, also called summated rating scales, examine questions related to the research phenomenon: "Respondents typically indicate degree of agreement or disagreement with each statement; a total score is computed by summing item scores, each of which is scored for intensity and direction of favorability expressed" (Polit & Beck, 2012, p. 325). The purpose of the survey was to gain further information related to the study's research questions in an alternate format.

A nonprobability sampling of volunteers within the prelicensure nursing, occupational therapy, and speech-language pathology student population from one site was considered for this research study. The sample population will be further discussed in Chapter 3.

### **Summary**

To sum up, this study concentrated on evaluating the perceptions of participants in a collaborative setting, while using a guided reflection tool following a simulated learning experience. This chapter provided the introduction of simulation and the debriefing phase, reflection and IPE, the background and statement of the problem, and the purpose of the study. The research questions for this study were:

1. Does guided reflection, in the experience of the learner, increase knowledge exchange?
2. Does pairing the use of a guided reflection tool with simulated learning experiences increase participants' perception of learning?
3. Are collaborative health care teams able to exchange relevant information during simulated learning experiences?
4. In the experience of the participants, is guided reflection a valuable learning tool?

The research questions addressed a gap in the current research related to the use of guided reflection in team-based simulated learning scenarios. Identification of the potential benefits of using a guided reflection tool during collaborative or IPE simulated learning experiences were expected outcomes of the study. The definition of key terms, delimitations, limitations, and assumptions were discussed. Chapter 2 presents the review of the literature.

## Chapter 2

### Literature Review

The research questions for this study were as follows:

1. Does guided reflection, in the experience of the learner, increase knowledge exchange?
2. Does pairing the use of a guided reflection tool with simulated learning experiences increase participants' perception of learning?
3. Are collaborative health care teams able to exchange relevant information during simulated learning experiences?
4. In the experience of the participants, is guided reflection a valuable learning tool?

The historical uses of simulations in training and the conceptual framework of reflective theory and reflective theorists were reviewed in the literature. To maintain relevance to the research questions, the need for change in health care education, the practice of reflection methods in the simulation phase of debriefing, and knowledge transfer and learning instruments utilized in simulated learning experiences were also reviewed.

The William Howard Taft University and Elmhurst College library services were accessed for information. The electronic databases used were the Education Resource Information Center, Medline, Cumulative Index of Nursing and Allied Health Literature, and ProQuest Education Journals. Although many nursing journals were examined within the literature search, the journals specializing in simulation: *Clinical Simulation in Nursing* and *Simulation in Healthcare: 2003–2017* were primary sources for gathering

data and relating to existing research conclusions and data gaps. The search terms used were as follows:

- Collaboration in health care;
- Critical reflection;
- Guided reflection;
- IPE;
- Intraprofessional education;
- Reflection;
- Rubrics and measurement tools in simulated learning experiences;
- Simulation in health care history;
- Simulation in nursing;
- Socratic questioning and methods;
- Team strategies;
- Teamwork in health care;
- Theory of reflection; and
- Transfer of knowledge in simulation.

### **Historical Uses of Simulation**

A decade ago, health care instructors and curricular leaders began to look toward the research and usage of simulation within the field of aviation. Aviation instructors, in their efforts to train novice pilots for flight emergencies, used computer-based simulation for training and the reduction of errors. An increase in critical thinking abilities and the capacity to respond in emergency situations were hoped-for outcomes of simulation training (Jeffries, 2012). While the aviation industry began to be considered a *high-risk*

*industry* in the early 1930s, it took several more decades for the realization to sink in that health care also should be considered a high-risk industry that demands training innovation to improve human factor outcomes (Foisy-Doll & Leighton, 2018).

The early 20th century marked the creation of static, low-fidelity manikins that offered nursing students the opportunity to practice patient care. These attempts at replicating real-life situations began with static manikin usage, which lacked the technology to mimic human movement or provide realistic capabilities. As technology advancement needs have been met, simulated learning in health care has improved. Human patient simulators are able to breathe and allow for listening to and assessment of lung sounds, heart sounds, bowel sounds, blink their eyes, have microphones for speaking back to the learner participant, and even bleed or birth a baby (Jeffries, 2012).

### **Need for Change in Nursing-Health Care Education**

A radical change to health care education was deemed a necessity by some researchers (Benner et al., 2010; IOM, 2012). Benner et al. (2010) investigated the need for profound changes in nursing practice, which pointed to a corresponding need to revise the curriculum in nursing education to reflect the current needs of the professional environment. Nursing education reform required facilitation of learning for nursing students that would foster professional attentiveness, develop responsibility, and focus on excellence in nursing practice and improved patient outcomes.

The literature was unclear as to what teaching strategy meets the need for changes in health care education; however, the goal presented was to expand and incorporate technology, innovation, and pedagogies into the plan of change. Simulation and reflection within the debriefing phase of simulation was approached as the most important

component of training. In the debriefing phase, students reflect on the simulated learning scenario (Dreifuerst, 2015). Evaluating the phase of debriefing and reflection remains understudied. Incorporating the need for interprofessional education and the potential guidance toward reflection add another dimension that reflects lack of research.

### **Conceptual Framework**

Research identified an inconsistent definition of *reflection* within educational domains, as well as in application of reflection theory (Moon, 2013). Dewey (1933) proposed that an open-minded, active learner gains a better understanding of an experience. Dewey described a learner in *active participation* as being able to reflect in five phases: (a) problem identification, (b) data collection, (c) interpretation, (d) hypothesis-reasoning, and (e) testing or taking action.

Theorists who followed founded their research on the works of Dewey. Schon (1983) focused on the emphasis on reflective practice within the diverse disciplines related to how professional practitioners think and subsequently act. As a philosopher and professor of urban planning, Schon recognized the gap between theory and practice. Schon studied the applied science view of technical rationality and recommended a more practical rationality of reflective activities to promote higher levels of thinking and problem solving. Schon wanted to address circumstances beyond the ordinary and those that were unanticipated. Schon's work is highly regarded in health care, since the health care arena provides practitioners with an ever-changing environment of needs and patient status changes. Schon defined the differences in problem-based learning and reflection as the difference between scientific theory and higher-level thinking, with the focus on unanticipated events potentially impacting the practitioner.

Schon (1983) defined two stages of reflective thinking: reflection-in-action and reflection-on-action. Using knowledge acquired in one's given practice or profession and adding reflection is thought to deepen understanding and problem-solving abilities. Reflection-in-action, as Schon (1983) defined, represented the thought-based actions that an individual prioritizes when engaged in an experience that allows for action when interpreting a situation in real-time. The results of these actions may be desired or undesired outcomes. Schon (1983) also elaborated on the concept of an *internal pause* before choosing and taking action. Pausing allows the actor to consider alternatives before making a commitment to a specific course of action.

Reflection-on-action is also referred to as cognitive postmortem, or thinking about an action once it is complete (Schon, 1983). Reflection-on-action is the reflective stage that is the impetus for future actions. Whether the learner has achieved positive outcomes as a result of applying the information gleaned from the learning situation, subsequent experiences will allow for the learner to respond based on past knowledge and recollection of past situations.

The controlled environment of simulation facilitates this process of reflecting in and on action. Reflection assists deeper understanding of situational learning, where repeated exposure to similar scenarios builds further understanding (Schon, 1983). The nursing profession has adhered to Schon's (1983) findings in the initial studies on reflective practice in simulated learning experiences. The safe environment of simulation and debriefing (Coram, 2016; Pollock & Biles, 2016) fosters a controlled arena for introducing high-risk situations that may not be experienced within the routine clinical environment, or can be introduced before clinical environment exposure. Repetition

within simulation scenario participation prepares a student learner for thinking like a nurse (Benner et al., 2010). This aligns with the thoughts of Schon (1983), that knowledge and reflective conversations guide practice.

### **Topic Rationale**

Assessing the historical foundations of reflective theory with simulation in the educational format for health care students guided this review. Moon (2013) showed that student learners are not always able to initiate independent reflective practices effectively, thus revealing a need for a more systematic guidance as a learning strategy. I. Jones and Alinier (2015) concluded that a systematic approach to guide learners through reflective and cognitive stages of learning encouraged a positive approach toward student learning outcomes. Using a tool for visualization to model ideas in a structured format for reflective learning “provides clarity of focus for the learners so that they can map and manage their learning” (I. Jones & Alinier, 2015, p. 329). Bringing forth the concept of tools for the guidance of reflection and fostering deeper understanding and transfer of knowledge through collaborative education in today’s health care system were proposed elements of importance for this research study. The studies related to these concepts are detailed in subsequent sections of this chapter.

### **Simulation as a Pedagogy, the Phase of Debriefing as Open-Discussion Guided Reflection**

Simulation pedagogy combines the application of hands-on experience with human patient simulators (manikins) that mimic real-life personas, and a debriefing session posthands-on experience, as the final phase (INACSL, 2016a; Jeffries, 2015). Student confidence levels have been elaborately studied, and the results favor enrichment

through simulated learning, although research gaps exist beyond the increased confidence levels.

The purpose of the study conducted by Shinnick et al. (2011) was to determine where in the simulation experience process the greatest knowledge gain occurred for the student participant. Findings from the study indicated that high-fidelity simulation debriefing sessions should be considered the crucial and essential component for achievement of learner knowledge gains and deepened understanding of curricular content (Shinnick et al., 2011). In this experimental study, 162 prelicensure nursing students from three nursing programs, who were in year three of a four-year program, were randomized into two groups: one with only simulation scenario/hands-on application of learning and the other with simulation scenario/hands-on application plus a debriefing session. The simulation scenario focused on symptom manifestation in a heart failure patient. A quantitative research approach utilizing a pretest and posttest modality suggested that knowledge gains decreased pretest to posttest for the group with only the sim scenario/hands-on learning ( $M = -5.63$ ;  $SD = 3.89$ ;  $p < .001$ ), whereas the pretest to posttest results for the hands-on learning and debriefing group increased profoundly ( $M = +6.75$ ;  $SD = 4.32$ ;  $p \leq .001$ ; Shinnick et al., 2011). The findings from Shinnick's et al. (2011) study supported the value of simulation as a learning pedagogy in nursing curricula, with suggestions for further studies in debriefing and guided reflection.

The National Simulation Study conducted in the United States (Hayden, 2010) involved 1,060 prelicensure nursing programs utilizing simulation as a pedagogy, yet 75 of those programs did not use the debriefing phase of the simulated experience. Hayden (2010) suggested that despite the acknowledged importance of debriefing practices, there

is little standardization in the framework of learning during debriefing. Hayden (2010) further stated that debriefing facilitators often do not allow enough time for meaningful learning through reflection during the post-simulation debriefing phase.

Although the standards for simulation education (INACSL, 2016b) and the framework of simulation theory (Jeffries, 2015) both depict the need for a longer debriefing time than simulation scenario experience time, many nursing education programs continue to conduct learning experiences without adequate time management and consequently simply run out of time and cannot conduct debriefing. Educator training in debriefing for meaningful learning methods, which rely on deliberate Socratic questioning, is often not a part of nursing faculty development (A. L. Jones, Reese, & Shelton, 2014; Walker et al., 2008). Harder (2009) suggested that the technological advancement of high-fidelity simulation must be planned and deliberate in the coordination of objectives. Widespread use of simulation must be supported by “continued research, as well as work in teaching and learning practices, if we are to take advantage of these simulation experiences” (Harder, 2009, p. 172).

In another study, Pollock and Biles (2016) referred to the pedagogy and methodology of simulation education, yet the perspectives of the student participant were seldom reported. In a qualitative design study of data collected via interviews, a purposive convenience sample of 10 students enrolled in a two-year nursing program was investigated (Pollock & Biles, 2016). All study participants were in their third semester of the nursing curriculum in the two-year program. The sample size was divided into two groups for participation in simulation and guided reflection facilitated by one faculty member. Interviews and debriefing notes revealed five major themes of the study: (a)

simulation makes me think, (b) makes connections, (c) tests capabilities, (d) makes me feel anxious, and (e) allows me to learn in relationships (Pollock & Biles, 2016).

Learning within immersive simulation, the students felt that the learning environment was safe for making errors. Pollock and Biles (2016) aimed at an understanding of student response to simulated learning. The researchers concluded that as faculty strive to adhere to course objectives within simulated experiences, student feedback toward student-centered learning needs to be considered to secure guidance toward optimal student outcomes and successful graduates for the health care workforce.

Reflection process facilitated by debriefing was suggested as a methodology to assist student participants in transferring the benefits from simulation settings to practice environments (Decker & Dreifuerst, 2012). Wazonis (2014) and Husebo et al. (2015) identified methods of reflective theory used in the debriefing phase. Both Wazonis (2014) and Husebo et al. (2015) reported that adding engagement and emotion into learning at the debriefing phase increased knowledge and improved future practice.

In a recent study that examined the gap in the research related to how reflective practice is used to ensure that learner outcomes are achieved, a reflection cue card was used in simulated learning phases. Neill and Wotton (2011) previously established that there is lack of research on how reflective learning is evaluated. I. Jones and Alinier (2015) decided to research whether the use of pocket-sized reflective cue cards could “serve both students and facilitators by focusing reflective learning creatively and flexibly while ensuring that the outcomes for learning were aligned with the wider curriculum of competency, knowledge and skill development” (p. 328). In this study, I. Jones and Alinier (2015) studied 72 undergraduate students in the final year of their

program. The Reflective Simulation Framework was presented as a guide to be used during debriefing and to encourage meaningful reflective learning. Evaluation was conducted using a 10-item survey [5-point Likert scale formation] postdebriefing-simulation session. Each subcategory defined a different aspect of the reflection process, with the following results:

1. 72.2% of the sample population viewed the pocket guide reflection card as positive.
2. 62.5% used the card in feedback and debriefing session.
3. 56.9% affirmed that the framework of reflective practice was satisfactory in increasing knowledge.
4. 52.8% agreed that card use increased the development of skills.
5. 29.2% of the study sample learned more about themselves.
6. 97.2% of the sample population stated that a guided cue card allowed for meeting at least one learning need or objective (I. Jones & Alinier, 2015).

The cue card reflected the six components of the reflective simulation framework as including knowledge, skills, and attributes of the reflective cycle:

- Scenario-based sim activity/reflection-in-action;
- Feedback and review/reflection-on-action;
- Self-evaluation/reflection-on-action;
- Identify learning needs/action-on-reflection;
- Planned action-identified transferable learning; and
- Applied and embed-reflection in clinical practice.

I. Jones and Alinier (2015) pointed to the need for further studies on the use of reflective tools and techniques for developing reflective simulated learning.

Asselin (2011) researched reflection strategies, linking course knowledge to clinical practice. Asselin (2011) reported the need to incorporate deliberate and dynamic dimensions into experiences to gain insight of self and practice. In this study, 10 experienced Registered Nurse to Bachelor of Science students who were returning to school for their bachelor's degrees volunteered to participate. Volunteers in this purposive sample were from one university. All were given a preview of reflective thinking, allowed to ask questions regarding the process, and presented with a standardized definition of reflection. Case studies with challenge questions for critically reflecting and three reflective journaling (written) opportunities were assigned.

Seven emerging themes appeared in the study: facing emotions, weighing choices, making sense, percolating insights, letting go, blending insights with practice, and looking back and acknowledging growth (Asselin, 2011). It was concluded in this study that reflective exercises assisted student participants to reach deeper knowledge and higher levels of thinking and to achieve transformational thinking regarding changes that are evident in practice. Participants also concluded that freedom to reflect on personal and group needs was an important aspect for transfer of knowledge.

### **Guided Reflection as an Educational Tool**

The open-discussion format of debriefing guides the learner toward reflection through Socratic questioning. Research has shown that the process of reflection is not a direct process as previously suggested (Nash & Harvey, 2017). Reflection is widely regarded as an important element to facilitate the progression of clinical thinking and

reasoning skills. However, there are no instruments in place to facilitate and guide reflection for collaborative-interprofessional simulated learning experiences.

Jeffries (2015) and the NLN created a 20-item instrument that allowed for evaluation of simulated learning experiences by the learner participant. Content validity for the Simulation Design Scale was established and reliability tested with Cronbach's  $\alpha = 0.92$  (presence of features) and  $0.96$  (presence of features) respectively. Guided reflection is addressed as a category within the tool. The Simulation Design Scale is an evaluative source for simulated learning experiences to evaluate the learning scenario and performance within the scenario. The Simulation Design Scale does not guide the learner during the process of the simulation scenario or debriefing. The guided reflection evaluative questions are related to feedback received from the learner and the analysis of self-actions and behavior.

Realizing the advantages of a tool to guide reflection postclinical experience, Atkinson and Nixon-Cave (2011) studied the use of a guided reflection tool with physical therapy students. Student participants ( $N = 65$ ) were given a guided reflection tool postpatient care (1:1 ratio patient-student). The tool was not created for simulated learning experiences, but rather for authentic field experiences. The focus of the tool was to gather progression points relating to (a) patient care, (b) skill interventions, and (c) progression plans for follow-up care. Data postresearch established that students felt a more structured ability toward critical thinking if guided in the reflection process. All 65 of the research participants acknowledged the guidance of the tool during their experience, as a referral guide and as a postactivity guide to formulate knowledge from the experience.

**Socratic Method in the Simulated Learning Debriefing Phase**

The Socratic method, or Socratic questioning, is a teaching mode used to foster critical thinking. Facilitating critical thinking allows a student to develop rationales for decision making on difficult or complex issues. The health care arena immerses students in many complex situations relating to skills for patient care, as well as ethical complexities (Dreifuerst, 2015).

Simulated learning experiences allow the health care student to replicate situations in the clinical unit. Socratic questioning during the open-discussion phase of debriefing allows foundational learning to be explored more completely (Dreifuerst, 2015, Jeffries, 2012). This further allows the development of critical thinking and alternative options for decision-making opportunities. The Socratic questioning method encourages students to engage in an open discussion to identify areas for improvement and to stimulate critical thinking to gain insights. Socratic questioning fosters individual perspectives being explored, tested, accepted, or refuted (Fois-Doll & Leighton, 2018).

Kotcherlakota, Zimmerman, and Berger (2013), in a study with 13 graduate nursing students, investigated the use of mind mapping and feedback in the classroom. Initiating a Socratic method of teaching, Kotcherlakota et al. (2013) used a Socratic pedagogical approach for the study. The research participants were asked to organize concepts (from content learned in the course) and map the content in a color-coded visual poster. In the study, a faculty member, a student, and a peer sat in an inner circle while the student presented his or her concept map. The peer and the faculty member initiated the Socratic questioning of the presenting participant concerning the poster, while the outer circle of participants took notes and gave written feedback to the presenting

participant. Outer circle participants were allowed to ask questions of the presenting participant with the permission of their inner-circle peers.

Data analysis, using qualitative observations and a 4-item Likert scale survey, indicated that 13 of 13 participants found the Socratic fishbowl experience very beneficial in preparing mind maps and sharing initial ideas and discussion. Benefits were affirmed in learning as presenter participants and also as observer participants (Kotcherlakota et al., 2013). The study revealed that participants perceived the exercise as expanding their thinking and providing the ability to organize complex information with greater success. Student participants also concluded (13 of 13) that the exercise promoted an atmosphere for students to give and receive constructive feedback with their peers (Kotcherlakota et al., 2013).

### **IPE and Collaborative Learning**

WHO (2011) suggested that effective collaboration is needed in health care to improve patient care outcomes. There have been various attempts to create core competencies of IPE for developing curricular plans for students within the health care professions (Jernigan et al., 2016). A national model for improving patient care interventions and communication among the disciplines of health care was established. TeamSTEPPS (AHRQ, 2015) is a collaboration that began with military training and aviation and has recently been extended to health care professions to assist in teaching teamwork. Simulation scenarios are encouraged as a realistic training pedagogy used to teach the foundations of teamwork, enhance communication, and encourage role appreciation for transition to practice in the health care environment.

Research throughout the past five years has focused on the long history of nursing education being presented within a silo—where information does not flow between groups or parts of the organization. Nursing education, conducted in isolation from other health care disciplines, does not position a student as an agile practitioner who is an effective team player (Robinson, Gorman, Slimmer, & Yudkowsky, 2010). Graduates must be prepared to function as part of a highly effective team (Masters et al., 2013). Without the experience at the education level, the transition to working in a multiprofessional team becomes difficult.

Stewart (2010) focused upon team education and training in three main categories: teamwork skills of the individual, team members, and the team process and team results. Students in health care working together in school minimize the transition shock upon graduation as health care professionals (McCalla-Graham & DeGagne, 2015; Thomas & Mraz, 2017). Outcomes toward transition to professional practice suggest a more adapted job integration when a health care worker has experience at the student level and is a part of an interprofessional team in the health care environment. Evaluating the research, it seemed logical to introduce the approach of interprofessional education as early as possible within each professional health care program. The goals of interprofessional education were aligned within research studies. Common goal-related objectives for interprofessional education are to design a realistic collaborative situation to improve competence, confidence, plan, demonstrate and evaluate patient care while improving communication, and understanding of the roles of the health care team as a whole (Fewster-Thuente & Batteson, 2016; Jernigan et al., 2016; Masters et al., 2013). Interprofessional collaboration and education are viewed as essential for today's health

care environment; however, many facilities have not incorporated multidisciplinary simulation scenarios into their educational programs, nor has the debriefing style in these curriculums fully evolved (Robinson et al., 2010).

In one mixed-methods study, a university representing multiple health care programs conducted a research project that included a simulated scenario of patient care rounds by a complete team of professional groups (Fewster-Thuente & Batteson, 2016). The main objective of the study was to identify if the attitudes and behavior pre- and post-simulation scenario showed evidence of change. The goal for the study was to learn to collaborate in interprofessional roles. The convenience sample population encompassed 515 students from the disciplines of nursing, anesthesia (nursing and medicine), physician assistant, medicine, pharmacy, physical therapy, and psychology. The sample of students was further classified into 64 groups that were equally divided with regard to professional discipline representation. Each group was given a 1-hour training before the simulation began, to utilize the instructional steps and collaborative components from the TeamSTEPPS program (AHRQ, 2015). In the postinterventional study, the themes that emerged from simulation observation and the pre- and posttests of 5-point Likert style 12-question surveys were compiled. For 10 of the 12 questions, the  $p < 0.001$  was reached, with students establishing that the simulation taught them about other provider roles and provided essential communication that is needed to collaborate in a team most effectively. Fewster-Thuente and Batteson (2016) wrote:

By placing students from diverse programs together in teams and giving them education, instructions, and a task, they learned to work with, from, and about one

another to solve the patient's health problem, thereby successfully meeting the competencies of interprofessional education. (p. 150)

At a single university in Kansas, a two-level research was carried out with 78 volunteer students from 13 professional programs within the university (Jernigan et al., 2016). The purpose of the study was to create and evaluate the key elements of the TeamSTEPPS approach of interprofessional learning for a foundation for all health profession students represented in the university. The 13 professions included in the study were divided between participants from the undergraduate baccalaureate program and the graduate program as follows:

- Undergraduate baccalaureate program: nursing, respiratory care, clinical laboratory sciences, health information management and biomedical sciences; and
- Graduate program: medicine, pharmacy, social work, physical therapy, occupational therapy, hearing and speech, nurse anesthesia and nutrition and dietetics.

The mixed-method study incorporated three levels of evaluation:

- One preactivity evaluation with Likert scale responses;
- Immediate post-simulation activity evaluation with another Likert scale response and open-ended response questions; and
- Three-week postactivity evaluation, which focused on retention and qualitative feedback related to utilization of interprofessional tools, behavior and attitude changes, and knowledge retention of goals and steps approached in the research. Team structure ( $p = 0.026$ ), Situational monitoring ( $p =$

0.027), and mutual support ( $p = 0.001$ ) exemplified the highest significance in the study (Jernigan et al., 2016).

Overall, the students were satisfied with the experience and the scenario enabled them to gain insight into the requirements of a team-based environment of health care.

Costello et al. (2017) conducted research on effective strategies for interprofessional education with nursing students, physical therapy students, nutrition students, and social work students within a collaborative simulation scenario. The study identified four interprofessional collaboration core competencies:

- Roles and responsibilities;
- Ethics and values;
- Interprofessional communication; and
- Teams and teamwork topics.

Costello et al. (2017) concluded that interprofessional simulation was a learning pedagogy that was a positive strategy toward promoting teamwork among the health care professions. They also recommended further research into the preparation of students from various health care disciplines toward clinical team integration in the workforce (Costello et al., 2017).

Kraft, Wise, Jacques, and Burik (2013) examined the use of interprofessional simulation education as a method to educate health care students on discharge planning. The mixed-methods study examined the perceptions of occupational therapy, physician assistant, and physical therapy students in a simulated discharge planning scenario. Study conclusions revealed that interprofessional simulation experiences contributed to student learning and individual development during the complexity of discharge planning: 88.6%

of the students ( $p = .001$ ) reported increased insight into the discharge planning process as revealed by post-simulation survey data (Kraft et al., 2013).

A research study conducted by Titzer, Swenty, and Hoehn (2012) examined the collaboration and problem-solving abilities within an interprofessional simulation scenario with nursing, radiologic technology, respiratory, and occupational therapy students. The study results indicated that students felt the interprofessional simulation provided an environment that supported working in a clinical situation involving peers, which permitted the exploration of various paths of patient care delivery and the facilitation of independent problem solving (Titzer et al., 2012).

In 2016, the INACSL organization added Sim-IPE to its Standards of Best Practice for Simulation (INACSL, 2016c), stating that interprofessional education in simulation “enables participants from different professions to engage in sim-based experiences to achieve shared or linked objectives and outcomes” (p. S34). INACSL (2016c) established criteria to meet this standard. The INACSL Standards Committee further addressed the need not only to plan and conduct IPE simulation scenarios based on the standards of the Sim-IPE criteria (INACSL, 2016c), but to also devise an evaluation plan with appropriate and valid tools to measure the impact of “learner outcomes, culture change and the impacts of individual and team behavior” (p. S36). This further revealed the gap in the research regarding appropriate tools for evaluation of knowledge retained and reflected the postinterprofessional education scenario.

### **Transfer of Knowledge**

Eraut (2004) defined transfer of knowledge as “the learning process involved when a person learns to use previously acquired knowledge/skills/competence/expertise

in a new situation” (p. 212). Learning outcomes based on related simulation objectives have been studied, with the results reported in the literature. However, the transfer of knowledge from simulated learning experience to the clinical environment and cognitive transfer and application have not been fully considered in the research. INACSL (2016d) Standards for Simulation established that design is key in developing cognitive and psychomotor interventions. Under the criteria for facilitator standards during simulation, it is held that there should be effective and appropriate cognitive guidance by the facilitator during debriefing for learning transfer to occur within the clinical environment.

Nash and Harvey (2017) suggested that the transfer of knowledge postsimulated learning experience should not be assumed to be a direct process. Attention must be devoted to replication of simulation scenarios to match that of the clinical environment for outcomes of learning transfer to occur. In a study conducted in an Australian school of nursing, 25 nursing students in the third year of a three-year baccalaureate program were recruited for a qualitative focus group research study. The student participants were familiar with simulated learning situations and had completed at least 65% of the clinical hours required for their program. Focus groups (semistructured) of eight or nine students per group session were conducted post-simulation. The scenario involved a patient (represented by a manikin) who had been admitted with the complaint of abdominal pain and vomiting, and a history of diabetes mellitus. Focus group discussions, conducted and transcribed by a nonaffiliated researcher, allowed for student viewing (via paper handouts) of Gibbs (2013) Reflective Cycle for student guidance. Students were permitted to question the facilitator. Emerging themes were identified and collected, as follows:

1. Simulation is not the same as clinical practice at times.
2. Sometimes, these differences do not allow replication and application in the clinical environment.
3. Allowing for making better connections would assist students.
4. Simulating scenario situations that are more commonly seen in the health care environment could allow for skills and knowledge to be applied more readily.
5. Debriefing post-simulation scenario assists in connecting to previous learning: short debriefings are not effective in connecting the fragments of learning, given the time issues (Nash & Harvey, 2017).

Student retention of information, the ability to apply what had been taught postsimulated learning, and the methodology of reflection were investigated (Lestander et al., 2016). The authors utilized a qualitative descriptive approach in their study (Lestander et al., 2016). Among students enrolled in year two of a three-year baccalaureate program of nursing in Sweden, 51 were randomly assigned into nine groups for a simulation scenario with patients associated with medical-surgical conditions (cardiac and respiratory). Post-simulation scenario, the students were engaged in a debriefing session. The reflection model used in this study focused on a three-step post-simulation and debriefing reflective model of study:

- Written reflection of simulation-debriefing learning the day of the simulation experience;
- Verbal group reflection one day post-simulation experience; and
- Written reflection one week post-simulation experience.

Furthermore, 16 students completed all three steps of the study. Themes exposed in the written and verbal reflective phases indicated that reflection developed over time. Ongoing development of insights is thought to deepen learning. “Directly after the HFS day, the reflections focus on *Starting to act as a nurse*, and after the group reflection, the students focus on *Maturing in the profession*” (Lestander et al., 2016, p. 223). This model adhered to a cycle of reflection that was mostly student driven and peer manipulated. The study findings through qualitative and descriptive data collection and analysis indicated that the reflective process is effective and enhances student learning at immediate and extended time frames. This study suggested that more research was needed to investigate if student-led group reflection would lead to the same outcomes. Further thoughts relating to standards of debriefing suggested studying the outcomes of guided reflection to replicate or enhance outcomes (Decker & Dreifuerst, 2012; INACSL, 2016b).

### **Simulated Learning Instruments for Evaluation**

The advancement and influence of simulated learning experience in nursing education also raised the need to move beyond student learner satisfaction and confidence, and head toward the measurement of learning and performance improvement (Lasater, 2007; Prion, Gilbert, Adamson, Kardong-Edgren, & Quint, 2017; Smith, Farra, Ten Eyck, & Bashaw, 2015). De Vellis (2003) established a development process for simulation evaluation tools. The need for more quantitative measures to establish the value of critical thinking, clinical judgment, and clinical decision making and problem solving has been discussed in the literature. A tool facilitating self-reflection has been suggested as part of the recommendations from simulation research.

Prion et al. (2017) conducted a study of 67 volunteer students in five associate degree programs of nursing and one bachelors' degree program in nursing. The students were evaluated during simulated learning and debriefing while participating in medical-surgical scenarios. The Washington State Center for Nursing provided a grant to develop and test a competency tool. Results of the study, which involved use of the Quint-Levelled Clinical Competency Tool (Prion et al., 2017), depicted a high interrater reliability 0.87 and coefficient alpha of 0.83. Self-reflection was considered, as strengths and weaknesses, to increase the quality of performance and self-evaluation for the learner. Prion et al. (2017) also included the assessment of instructor feedback using the tool during the debriefing phase of the simulation as a portion of evaluation.

Tsingos et al. (2015) suggested the need for assessment and evaluative planning in health education and pharmacy program education to measure reflection levels in students. In the extensive literature review, the study revealed the gap in the literature as a result of a lack of reflective rubrics or existing tools for use in education. Without appropriate use of reflective thinking strategies for deeper levels of learning in educational activities, students may not see the importance of reflection (Benner et al., 2010; Dreifuerst, 2015). Smith et al. (2015) studied the creation and implementation of an instrument following the TeamSTEPPS (AHRQ, 2015) framework of teamwork skills in simulated learning.

Psychometric quantitative research of an 11-item evaluation (scale content validity index of 0.98 and individual item content validity index scores between 0.75 and 1.0 for all 11 items) used a convenience sample of 151 senior capstone students in a public university throughout two semesters (Smith et al., 2015). For this study, an

element of self-evaluation or confidence in the team setting was measured. Since student outcomes in a team setting were viewed as essential for the preparation of the current nursing education workforce, reflection within the group setting as part of an assessment tool was revealed as a gap in the literature and research.

### **Methodological Framework**

Evaluation of the use of reflective thinking relies on elements of descriptive thought and qualitative data evaluation. The literature review posed limitations as to descriptive feedback from sample populations (I. Jones & Alinier, 2015).

Phenomenology makes use of the methods of interview, conversation, diaries and journaling, and participant observation. The less structured, subjective design of this methodology encourages participants to detail the learning experience in an open-ended manner (De Chesnay, 2015). Simulated learning experiences, and the debriefing phase, rely on open-discussion reflection. The design of phenomenology allows for researchers assisting the participant group in describing their lived experiences, without conducting a researcher-led discussion (Polit & Beck, 2012). This study proposed to maximize the strengths of the thorough descriptive thoughts of the sample population.

### **Summary**

This chapter provided a review of the literature relevant to this study. The historical uses of simulation were reviewed in the literature. Technological advancements and the availability of human patient simulators have been more evident in the past decade within health care education facilities, including in nursing. IOM (2012) and Benner's et al. (2010) call for innovative pedagogies for active student learning, along with realistic approaches to health care needs to prepare today's graduate, have

introduced a challenge into the preferred method of education delivery. Within the literature defining conceptual frameworks, the theories of Dewey (1933) and Schon (1983) were reviewed. Amid the efforts to bridge the gap between theory and practice, and to reach a higher level of thinking, reflective theory can prompt nursing students to think like a nurse (Benner et al., 2010). Reflective theory serves as the basis for the topic rationale of fostering deeper learning and knowledge transfer to guide students in reflective practice. Simulation processes, especially within the phase of debriefing, have been evaluated. However, there is a lack of research on how reflective learning is evaluated (Neill & Wotton, 2011), although there has been limited research on how the visual cues for reflection (self-reflection focused) aid deeper learning and critical thinking (Asselin, 2011).

Following the WHO's (2011) suggestion to improve outcomes in health care and provide students with interprofessional education opportunities for nurses to learn to be effective members of the health care team, formulating goals related to team objectives directed toward optimal patient outcomes are education necessities (AHRQ, 2015; Masters et al., 2013). Methods to deliver, promote, and evaluate collaborative learning are still under research. Transfer of knowledge assessment in the literature review identified that it should not be assumed that this occurs as a direct process (Nash & Harvey, 2017). The literature search and review of instruments for evaluation in simulated learning experiences exposed a gap in the literature regarding tools or rubrics in general (Adamson, Kardong-Edgren, & Willhaus, 2013; Prion et al., 2017). Although there is research that supports reflective thinking strategies for deeper learning (Dreifuerst, 2015), the use of effective team reflection as a means of understanding health

care team roles, and collaborative team goals and objectives, was not apparent in the literature. Consequently, this study addressed the gap in the literature regarding the use of a guided reflection tool through a sample of prelicensure nursing, occupational therapy, and speech-language students in a collaborative health care setting, following simulated learning experiences and improved knowledge exchange and the participants' perception of learning. Chapter 3 discusses the methodology and design of the study.

## **Chapter 3**

### **Methodology**

Chapter 3 explains the methods used in the research study. The chapter begins with an overview of the study methodology, a discussion of the study design, the sample population description, the instruments and data collection, and the data analysis procedure deployed.

This study used a qualitative research methodology of phenomenology. Phenomenology captures the richness of the human experience from the participants' point of view. Nursing and health care programs focus on a holistic approach to the patient experience, which was deemed to have a direct correlation with the research design of phenomenology. Phenomenology focuses on the wholeness of the participants' experience (De Chesnay, 2015).

### **Design of the Study**

This study evaluated the use of a guided reflection tool in a collaborative health care setting following simulated learning experiences to determine participants' perception of learning and knowledge exchange. The research questions for this study were:

1. Does guided reflection, in the experience of the learner, increase knowledge exchange?
2. Does pairing the use of a guided reflection tool with simulated learning experiences increase participants' perception of learning?
3. Are collaborative health care teams able to exchange relevant information during simulated learning experiences?

4. In the experience of the participants, is guided reflection a valuable learning tool?

This study used a qualitative descriptive observation and verbal feedback session during the debriefing phase, post-simulation scenario participation. Following a Socratic framework of questioning during the debriefing process allowed for a student-centered approach and encouraged participants to engage in discussion (Dreifuerst, 2015).

Emerging themes were analyzed as narrative responses were collated. Additional information was gathered through a postdebriefing online survey that was completed by all 68 participants of the research study.

### **Sample and Population**

This study was conducted at a private four-year college in the western suburbs of Illinois.

The sample population was arranged by volunteers of the prelicensure student programs (undergraduate and graduate) of nursing, and undergraduate and graduate level occupational therapy, and speech-language pathology students, representing a purposive convenience sample accessible and proximal to the researcher (DeCuir-Gunby & Schutz, 2017). A computer randomizer program was used to assign students to each simulation scenario. Each simulation grouping of students included two students from nursing, two students from occupational therapy, and two students from speech language pathology. One additional student volunteer was randomly assigned to play the role of a family member for a portion of the experience. All other sample volunteers played roles within their own disciplines.

All students had previous knowledge of the pedagogy of health care simulation and had been participants in simulated learning experiences and the debriefing phase utilizing an open-discussion reflection process. All study volunteers were accepted into the study based on their interest and fulfillment of study criteria. The following section discusses the instruments and data collection methods used to measure reflection and individual knowledge retention after team-based simulation scenarios.

### **Instrumentation and Data Collection**

This study used the Westbury Student Collaborative Reflection (WSCR-T) Guided Reflection Tool (see APPENDIX B) to measure descriptive student reflection ability within team-based IPE simulation scenarios. The tool allowed for student reflection feedback to self and group, both written and verbal, during the debriefing phase of simulation. The tool also encompassed intraprofessional and interprofessional learning objectives for the simulated learning experience, as well as a brief patient biography (see APPENDIX B). The tool was researcher created, based on relevant self-reflection research (AHRQ, 2015; Dewey, 1933; Dreifuerst, 2009). Research by Dreifuerst (2009) defined the debriefing stage of simulation as the arena for guided reflection. The creation and utilization of the WSCR-T Guided Reflection Tool attempted to support and fill the gaps in the research on team-based learning reflection, feedback, and analysis. The guided reflection tool was designed to assist students in contributing knowledge within the group, along with a process for feedback communication and peer-to-peer knowledge exchange. The content of inquiry related to the tool was designed to increase the participants' perceptions of the depth of knowledge obtained through the use of guided reflection. The tool focused on 10 questions for collaborative reflection:

1. How did I assist with the group assessment needs and the alignment in goals-objectives? Was I motivated as an individual within a group dynamic toward optimal goals and outcomes?
2. How did I contribute knowledge within the group?
3. How did I consider and respect the values, opinions and input of all group objectives?
4. How did I take the feedback-constructive criticism by peer group? How will I construct this feedback in the future?
5. How did I adjust the plan of care to meet group objectives? How did I actively fulfill individual objectives as well as group objectives? (adaptive reflection)
6. How did the communication and co-coordination within the interprofessional team occur? Was it successful-effective? What went well? What would I do differently in the future?
7. How did I assist in the formation of clear interprofessional objectives?
8. How did I assert leadership qualities within a group? Were there barriers to effectiveness?
9. Were there clearly defined roles for each subgroup or discipline?
10. Did I work together with the group to ascertain effective allocation of resources?

A 5-point Likert scale survey, postteam-based simulation participation (see APPENDIX A), complemented the observed discussion research data. The survey allowed for the scoring of each item on a scale from 1 to 5 (1 representing strong agreement with the proposed question; 5 a representation of strong disagreement). All

questions used the Qualtrics (2018) validation response entry requiring study participants to answer nine questions before submitting the survey. If a participant attempted to submit the survey without answering a forced-response validation question, a message appeared to indicate the need for a response. It was optional for study participants to respond with descriptive comments to the final question of the evaluation. This question was not prompted as mandatory for evaluation submission by the student participant. The next section details the data analysis procedures for the research study.

### **Data Analysis Procedure**

Once data were collected, the steps for analysis of data were followed. The qualitative data were compiled based on themes and categories per each reflective question or emerging feedback. Verbal feedback during debriefing sessions was transcribed, recorded video segments of simulation scenario and debriefing were observed, and written feedback upon the WSCR-T Guided Reflection Tool was collated and themed for comparison to verbal feedback. Time and resources for conducting this portion of the study were given due consideration, to reduce the chances of overreading data early in the research process, and allow sufficient time for qualitative data to be collected from study participants.

The survey responses were collated and assigned under emerging research study themes. Responses to the free-text comment question upon the evaluation survey were investigated and themed using a similar methodology as the qualitative feedback analysis.

### **Potential Threats to Data Validity**

There were two potential threats to data validity that were identified in this study:

1. Researcher was known to the sample population of the study.

2. Researcher authored the WSCR-T Guided Reflection Tool of use for data in this study.

The two identified potential threats were important considerations for minimizing misrepresented or biased data in the result analysis. Rigor and objectivity were maintained for internal and external research validity. Since the researcher was known to the sample population, a nonbiased approach to this study was followed. The researcher acknowledged the potential of participant bias, or participant responses to the study, attempting to meet assumed researcher desires. Study participants were provided information limited to scripted procedures to minimize extraneous details that could serve to manipulate the research experiences and responses. Since the researcher was also the author of the proposed instrument of reflective study, experimenter bias toward the tool was controlled and minimized. Rigor and control entailed scripted approaches to explaining the tool elements of reflective questions, objectives (intraprofessional and interprofessional), and simulation scenario patient synopsis. Each simulated learning experience phase (prebriefing, simulation scenario, and debriefing) was approached in the same manner for each of the 11 simulation groupings of participants ( $N = 68$ ). Usage and timing of research phases and tool introduction was also approached in a repetitive and consistent manner for each research study group. Scope for redirection of the participants, by the researcher in the debriefing phase, was maintained for replication of methodology per each student grouping. Setting and tool explanations were scripted to minimize variances among the 11 groups to maintain consistency in group participation and performance in the simulated learning environment activities, and uniformity in data collection methods.

It was important for this study to not mistake data, or trivialize data, as support for the research questions. Since the study involved only one researcher, strict adherence to the qualitative data notes transcription in collection and analysis, and computer program analysis of the survey data were deemed crucial. The nature of information collected from study participants can be affected by situational context, hence data replication is dependent on delineation by the researcher (Polit & Beck, 2012).

### **Summary**

This chapter described the research methodology for this study. The qualitative methodology of phenomenology was depicted. The methodology design of phenomenology uses in-depth conversations, diaries, and participant views as the main data source (Polit & Beck, 2012). An overview of the sample and population was included. The instruments, data collection methods, data analysis, and study procedures were also included. Chapter 4 will discuss further the data analysis procedures and findings.

## **Chapter 4**

### **Data Analysis and Findings**

The intention of the phenomenology research study was to examine the lived experiences of individuals using a guided reflection tool in a collaborative health care setting following a simulated learning experience. The focus of the study was to learn about the influence the WSCR-T Guided Reflection Tool had on individual knowledge in interprofessional collaborative teamwork in post-simulation scenario debriefing. The process of analysis in this study, using the principles of phenomenology, involved the researcher becoming fully immersed in the descriptive data to expose the themes that described the experience from the perspective of those who lived it (De Chesnay, 2015). The purpose of this chapter is to describe the sampling characteristics, data analysis procedure, and findings of the qualitative study.

#### **Description of the Sample**

A purposive convenience sample of volunteers from the student educational programs of nursing (undergraduate and graduate), occupational therapy (undergraduate and graduate), and speech-language pathology (undergraduate and graduate) was used for this study. These study participants had all undergone previous simulation and debriefing experiences within their educational programs. All study participants were enrolled at the same private four-year college.

The qualitative phenomenological study necessitated a controllable size of participants, which was also related to the size of enrollment at the research facility. Since phenomenology seeks to capture the richness of human experience from a participant's point of view, a limited sample size for research is commonly noted (De

Chesnay, 2015). The researcher recruited 68 study candidates via e-mail based on program lists and course faculty student rosters. The sample size was considered appropriate, based on the student enrollment in each of the three health care programs at the college (collective enrollment < 130). The sample size was considered adequate at 68 and large enough to obtain feedback to represent 35%–60% of each health care program student enrollment in numbers. For qualitative research,  $N = 68$  was also recognized as being a manageable size with regard to researcher workload while gathering descriptive feedback and data themes from the sample population.

Common demographic characteristics included equal student participation from each of the three educational programs for the study, with the participants being predominantly female. All three health care program enrollment statistics displayed a higher percentage of female students than male students (see Table 1). A significant proportion of the participants (94%) identified as Caucasian in race. The characteristics of the sample reflected the overall demographics of the college’s health care program enrollment.

Table 1

*Research Study Participant Characteristics*

Program	Total Students	Gender: Female	Gender: Male
Occupational Therapy	21	18	3
Speech-Language Pathology	22	22	0

(continued)

Program	Total	Gender:	Gender:
	Students	Female	Male
Nursing	25	23	2
Total Participants from all programs	68	63	5

Each participant, upon signing the informed consent form (see APPENDIX C), agreed to participate in one research timeframe of 1.75 hours, which included the following three phases of activity within the research study:

- Participation in an interprofessional collaborative simulation scenario learning experience
- Participation in an individual reflective journaling session, and post-simulation group debriefing session utilizing the researcher created WSCR-T Guided Reflection Tool
- Participation in a postdebriefing online survey questionnaire (9 questions Likert-style, 1 open comment section).

The established timeframe represented a typical timespan of a 15-minute pre-briefing, a 7-minute viewing time for the WSCR-T Guided Reflection Tool, a 20-minute simulation scenario, a 10-minute reflective journaling allowance post-simulation scenario, a 40-minute debriefing phase, and a 10-minute timeframe for online survey completion (102 minutes total). Most simulated learning scenarios are from 20 to 30 minutes in length, and traditionally the debriefing phase is expected to be double that of the scenario length to allow for open discussion and action reflection (Dreifuerst, 2009).

**Ethical Considerations**

Standards to reduce situations of potential harm to participants as a result of participation in this study were considered. The Institutional Review Board at the college where the research study was conducted reviewed and approved the research proposal. Informed consent was obtained from all student volunteers prior to commencement of the research study. Participants were informed that they had a right to refuse to participate, that they could refuse to answer any questions, and that they could discontinue participation at any time, without consequence.

The study consent form was reviewed with each participant, including permission to transcribe field notes and audiovisual recordings during the simulation scenario and debriefing session of the study. They were also informed that the principal researcher would be the only individual in attendance on study days with the randomized group of volunteers. Participants were informed that there would be minimal risks and benefits associated with participation. A consent form was signed and maintained in the researcher's locked cabinet. All questions concerning the research study were answered prior to data collection. Participants were assured that confidentiality would be maintained throughout the study. Participants were reminded that responses during the debriefing session (transcribed as field notes) would remain confidential and coded by group number to preclude detailing or identification of individual responses. Participants were made aware that data would be destroyed after the data collection phase (field notes, tool reflective journaling, online survey site, group simulation scenario database videos). Participants were reminded that the online survey software guaranteed against

trackability during their completion of the online survey at the end of the study timeframe. There were no anticipated risks to the participants in this study.

### **Research Design and Introduction to the Analysis**

The 68 study participants were randomized into 11 simulation study groupings with two or three students from each health care program per group. The data from the study were transcribed during the post-simulation scenario debriefing sessions for each group. Each participant was coded by group number and participant number within each group. For the purposes of data analysis, the participants are referred to by Group number (G#) and Participant number (P#). The researcher's decision to use this coding method for the study related to the desire for confidentiality and uniformity in each grouping while identifying responses or collective responses to emerging themes toward answering the research questions. Participants, both per study consent form and verbally during study participation, were informed of the coding process of their responses.

After review of the researcher's field notes and individual participants' reflective journaling upon the utilized WSCR-T Guided Reflection Tool (which was collected poststudy), preliminary themes were extracted. Upon completion of reflection by each study group, feedback data were analyzed to identify major themes related to tool-specific questions: reflection as a learning modality and knowledge exchange and individual perceptions of learning. Consistent coding of data within theme categorization assisted the researcher in answering the research questions. Data collection achieved confirmation and redundancy in the findings. Categories for the themes of data and participant-specific quotes were linked to the topics of the tool, knowledge, and reflection in an effort to collate data toward answering the research questions.

The survey data were compiled by accessing the Qualtrics (2018) online software platform. The Qualtrics platform was deemed appropriate for this study survey considering its customizing ability for Likert questioning, as well as offering question analytics for any documented free-text comments in the provided area of questioning. Qualtrics (2018) platform portability, and access through smart-device usage, was also of benefit to this study. The participants accessed the survey after the debriefing session. Each participant possessed a smart device, facilitating access.

The study participants were students at the same college where the research was conducted. The Qualtrics software site is used for course evaluations at the college, so that all participants had previously completed evaluation surveys within health care courses on the Qualtrics platform. For this study, their familiarity with the Qualtrics platform increased the probability of ease of use in data completion. Privacy, confidentiality, and anonymity of the Qualtrics site also allowed for secure data collection and analysis. As a researcher, the Qualtrics (2018) site also offered support features, creating confidence in its usage if additional needs surfaced during survey creation, survey deployment, or data analysis.

Research study participants completed the online survey after the simulation scenario and reflective journaling and open-discussion debriefing. All 68 participants submitted individual feedback before leaving the research study environment. Time allocation for onsite survey completion assisted in ensuring survey submission by all 68 participants in the sample population. Each participant accessed the platform via personal smart phone. The online survey was anonymously entered, per one-time access link, and site filters were so designed that no tracking of IP addresses or numbers was allowed. All

participants responded to nine questions, utilizing a 5-point Likert scale (1 representing strong agreement with the question; 5 being representative of strong disagreement with the question). The optional comment section of question 10 secured six additional participant responses.

Prebriefing is referred to as the initial phase of the simulated learning experience. Instructional information is given to the participants regarding the simulation manikin and the simulation environment (equipment, devices) that is used during the simulation scenario (INACSL, 2016a). For this study, the simulated learning scenario and simulation environment orientation were scripted (see APPENDIX D) to minimize any variance in researcher and participant approaches throughout each study grouping. The research study's prebriefing session in the collaborative interprofessional setting was important also to ensure that health care terminology and differing meanings of terms and concepts were collectively and uniformly understood. The prebriefing session impacted the study, as clarificatory questions regarding the simulation setting allowed the participants to have equal understanding and focus on the research study data referring to and related to the research questions.

An HPS manikin was used to portray a 63-year-old woman with status postischemic stroke. The patient, although treated with clot dissolving agents, presented with right-sided weakness of the arm and leg (in comparison to left arm and leg with no physiological deficits or weakness noted in muscle strength and movement), along with speaking and swallowing difficulties, 18 hours poststroke medical treatment. All students were given an oral report of the patient (see APPENDIX E) by the researcher in a method typical in the health care setting. All health care program students had prior knowledge

from didactic course education regarding implications and interventions for a patient presenting with signs and symptoms of a stroke. The student participants were also encouraged to discuss their plans of care intraprofessionally, as well as interprofessionally, before the simulation scenario began.

### **Summary of Data Findings**

The use of a guided reflection tool was introduced to study participants in the prebriefing session of the study. Each participant was allowed 7 minutes of review time for observation of the learning objectives that appeared on the WSCR-T Guided Reflection Tool. Intraprofessional and interprofessional objectives, as well as the guided reflection open-ended questions for postscenario consideration were observed by all 68 study participants. A brief simulation scenario description and short patient biography were also included in the study tool. The WSCR-T Guided Reflection Tool was allowed to be used during prebriefing simulation scenario implementation and post-simulation scenario debriefing. Each participant was also allowed 10 minutes of individual reflective journaling time, prior to open-discussion team debriefing, to gather and compose his or her thoughts related to questions on the active collaborative scenario delivered during the study.

Based on participant responses and feedback, six main themes emerged from the experiences of participants during the simulation scenario and debriefing sessions. The identified themes supported the aim of this study by answering the research questions:

1. Does guided reflection, in the experience of the learner, increase knowledge exchange?

2. Does pairing the use of a guided reflection tool with simulated learning experiences increase participants' perception of learning?
3. Are collaborative health care teams able to exchange relevant information during simulated learning experiences?
4. In the experience of the participants, is guided reflection a valuable learning tool?

Table 2 displays the six themes established in this study. Each theme is discussed in depth within this chapter under the corresponding research question.

Table 2

*Final Themes Identified (Qualitative Study)*

- 
1. The simulated learning experience made me see the importance of collaborative teamwork in the health care setting.
  2. Realistic collaborative experiences and interprofessional communication are important to educational learning.
  3. Reflection as a learning process has benefits in simulated learning experiences.
  4. Reflective journaling prior to the debriefing phase of simulated learning experiences in the collaborative setting was beneficial.
  5. A guided reflection tool to guide learning and performance toward learning objectives is effective in the learning process.
  6. Repetitive use of a guided reflection tool with collaborative simulated learning experiences has the ability to increase the perception of learning and information retention.
-

**Research Question 1**

The data analysis from Research Question 1: *Does guided reflection, in the experience of the learner, increase knowledge exchange?* exposed the themes of (5) a guided reflection tool to guide learning and performance toward learning objectives is effective in the learning process; and (6) repetitive use of a guided reflection tool with collaborative simulated learning experience has the ability to increase the perception of learning and information retention.

During the open-discussion debriefing phase of the study, participant groups were asked the following questions:

1. Did you like having the WSCR-T Guided Reflection Tool with objectives (both intraprofessional and interprofessional) to guide your learning objective goals?
2. Did the WSCR-T Guided Reflection Tool assist in learning to reflect upon important curricular content for an individual within a group?
3. You were able to have the WSCR-T Guided Reflection Tool with you from the prebriefing phase throughout the implementation of the scenario and debriefing session. If you did not have the tool in front of you, would you have known how to efficiently reflect on topics such as leadership and knowledge contribution on your own? Did the tool precipitate knowledge reflection and do you find this important in your learning to function as a professional individual in a team-based collaborative environment?

Moreover, 58 group participants (G1-G11) were eager to reveal that the WSCR-T Guided Reflection Tool assisted their groups with guidance toward how to reflect, which

allowed debriefing time to be complemented and organized the flow of participants' thoughts in learning. The study participants approached the debriefing phase with greater eagerness with regard to peer responses and feedback. Participant G11-P6 stated the following:

Using the tool helped me prioritize care during the simulation and my reflection on knowledge postdebriefing was able to be highlighted with much more of an ease. The tool has individual and team dynamics for reflection which are relevant to the scope of practice in our roles. (personal communication, 2018)

In addition, 59 participants from the 11 groupings (G1-G11) felt their perception of learning within the simulated learning experience was enhanced, as the instrument guided their reflective thought.

If the words were not on the paper in front of me, I would not have reflected on all the essential topics. The tool was helpful to collate my thoughts for sharing in debriefing discussion. The tool also encouraged note taking in debriefing, so the tool was further utilized as a learning tool. That really helped increase my knowledge at the end of the learning experience. (G2-P4, personal communication, 2018)

Further comments focused on the descriptive style of the open-ended question topics on the WSCR-T Guided Reflection Tool being broad enough to encompass several different areas of learning within the simulated learning experience. Of the group participants in groups G1-G11, 54 also declared that using the tool before simulation scenario initiation, and after the action within the learning activity, proved helpful to guide thoughts and deepen knowledge learned. Of the participants in groups G1-G11, 50

agreed they were more attentive and focused than they might have otherwise been throughout the activity phases. Participant G8-P6 stated the following:

I felt much better using the tool in the simulation process. I feel the tool enlists in the human nature as a student to keep improving and increasing our individual knowledge to be the best health care provider as possible when we transition to our own practices. The tool helped to promote guidance in those content areas for reflection that we may not have focused on before in open discussion debriefing without a guidance tool. (personal communication, 2018)

Study participants (63 of the 68 individual participants) revealed that repetitive use of the WSCR-T Guided Reflection Tool during future collaborative simulated learning experiences could provide a format for further growth in learning and prioritization of patient care. Of the participants among all 11 groups (G1-G11), 63 expressed the view that repeated use of the WSCR-T Guided Reflection Tool would allow the process of reflection to occur as a more innate process over time, thereby making it more of a natural habit. Participant G5-P3 suggested that being able to use the WSCR-T Guided Reflection Tool throughout the learning process, including being able to keep the tool upon activity completion, allowed for a richer experience. This same participant (G5-P3) felt that the tool could be used later as an educational reference to further deepen learning. Participant G6-P1 stated the following:

It would be nice to keep the WSCR-T tool for our records to be able to see our growth over time, both on learned content of curricular material and reflection on our actions and interventions. If we used the tool in each of our collaborative experiences in simulation, we could continually look back on our growth,

strengths, weaknesses, and changes in knowledge over time. (personal communication, 2018)

Furthermore, 57 participants out of 68 acknowledged during the open debriefing session that the guided tool was a concise reference that could be used for each interprofessional simulation experience. The prevalent perspective was that the intraprofessional and interprofessional objectives could be altered based on the content scenario, but the reflective questions appeared to be recognized as remaining consistent for each learning scenario. Participant input indicated that guidance in reflection is appreciated and that repeated use in the educational setting could lead to increased retention of, and ability to use, information provided during simulations in the collaborative health care setting, upon graduation, and transition to professional practice. An overwhelming proportion (> 90%) of the participants in the 11 groups (G1-G11) indicated their experiences as participants in the study as leading to an increased ability to use reflective practice to augment individual learning.

Statement 6 of the online survey: *I believe reflective practice and debriefing adds to affirming knowledge from classroom through simulation and retained knowledge of the curriculum in clinical-field experience applications* correlated with data for research question 1. The survey statement approached the thoughts of reflective practice within the debriefing phase of simulated learning experiences. Among the respondents (representing 100% of the sample population), 68 agreed that the reflective processes used in the study affirmed knowledge from the classroom through simulated learning experiences, thereby assisting in enhancing their perception of retaining knowledge to bring forth into the practice (clinical-field) environment.

**Research Question 2**

The data analysis from Research Question 2: *Does pairing the use of a guided reflection tool with simulated learning experiences increase participants' perceptions of learning?* exposed the theme of (4) reflective journaling prior to the debriefing phase of simulated learning experiences in the collaborative setting was beneficial. Throughout the study, the participants in groups G3-G11 reported the benefits of the predebriefing (post-simulation scenario activity) time allowance for reflective journaling. Participant G7-P2 revealed the reality of having difficulties recalling an action after a simulation scenario by stating, "Having a few minutes to think is helpful. The tool usage, and time for journaling, gave me a moment to breathe and gather thoughts when I usually feel rushed to answer questions in debriefing" (personal communication, 2018). Another participant (G7-P6) added the following:

The tool and the time guided me away from scattered thinking. It gave me direction to accomplish objectives and concentrate on learning and goal criteria in the learning. I also feel I acknowledged thoughts that confirmed my strengths in the simulation scenario. I usually just focus on what I did wrong. (personal communication, 2018)

Each group was asked two questions pertaining to reflective journaling:

1. Did the time for reflective thought journaling utilizing the WSCR-T Guided Reflection Tool provide a foundation for inner observation of learning in your role, as well as the roles of other health care professionals?
2. Since you have experience in simulated learning experiences and debriefing postscenario: Do you feel the reflective journaling prior to the supportive

group debriefing using the tool was more helpful to learning than debriefing without tool usage (whereby questions are immediately asked of student participants by faculty facilitators in debriefing)?

In addition, 59 participants within G1-G11 credited the time to reflect and journal as extremely valuable to their learning knowledge. Participants G1-P6, G2-P3, G3-P3, G4-P1, G5-P6, G6-P6, G7-P4, G8-P2, G9-P1, G10-P2, and G11-P3 indicated that the tool guided them toward positive aspects, while also offering guidance on areas for improvement and effectiveness or barriers. Among the participants (G1-G11), 60 acknowledged that the tool allowed for greater concentration upon what the individual and team strengths were in the learning experience. Participant G6-P6 stated, “Having time to reflect on my performance before debriefing discussion and viewing open-ended questions on the WSCR-T tool really allowed me to capture a macro view of essentials for all our roles and the care of our postischemic stroke patient” (personal communication, 2018).

Moreover, 40 group participants in G3, G6, G8, G9, G10, and G11 spoke of the educational pedagogy of reflective journaling within the health care programs’ curriculums; however, 25 participants felt most reflective journaling assignments in the current curriculum agendas focused on care of a patient and professional care on a one-on-one basis, seldom adding any organization of thought with learning objectives applied to the assignment. Of the group participants within all groups (G1-G11), 62 felt that reflective journaling with the WSCR-T Guided Reflection Tool helped expose the strengths a student had in a team approach, and the important aspects to reflect upon in a collaborative health care setting.

Statement 2 of the online survey: *Having been able to view the WSCR-T tool prior to simulation, I was provided with a useful guide during the simulation scenario* exposed data for research question 2. Statement 2 of the online survey addressed the satisfaction level of the participants in using the WSCR-T Guided Reflection Tool as a guide to reflective thinking in the research study. Data analysis indicated a participant satisfaction rating of 67 of 68 (98.5%) regarding agreement that the WSCR-T Guided Reflection Tool was a useful guide during the simulation scenario activities. One participant response (1/68, equal to 1.5% of the data percentage) took a neutral position regarding the benefits of the WSCR-T Guided Reflection Tool.

Statement 4 of the online survey: *The WSCR-T tool provided me a guide in interprofessional education reflection, and I feel the tool usage with the simulation scenario experience increased my individual knowledge of the health care team caring for a client and desired patient outcomes* correlated with data for research question 2. Online survey statement 4 attempted to address the participant views of the WSCR-T Guided Reflection Tool's guidance toward reflective thinking in interprofessional education postcollaborative simulated learning experiences, and the tool's ability to increase perceived individual knowledge of patient care and outcomes. The data compiled suggested that 65 of 68 (95.5%) of the participants agreed with the question. Two participants (2/68, representing 2.9% of the sample population) remained neutral toward the further development of individual knowledge, while one participant (1/68, 1.5% of the sample population) somewhat disagreed with the concept of tool guidance in reflective thinking increasing individual knowledge.

Statement 5 of the online survey: *I believe the format of guided reflection can be effective for various disciplines of health care participants in collaborative interprofessional education* provided input data for research question 2. Of the 68 participants, 67 (98.5%) agreed that the tool, format, and procedures incorporated into the study were effective guides for reflection that could be utilized for various health care disciplines within collaborative interprofessional education. One participant (1/68, representing 1.5%) adopted a neutral stance in answering this question.

Statement 9 of the online survey: *Having previously participated in simulated learning experiences, my learning at this time was enhanced by the use of the WSCR-T tool* elicited further participant responses toward research question 2. Survey statement 9 elicited participant responses regarding the comparison to previous simulation activity experiences without the use of reflective guidance or reflective tool usage. Participant comparison reflected that 64/68 (94.1%) of the sample agreed that their perception of learning was enhanced by the use of the WSCR-T Guided Reflection Tool. Since all participants in the sample population had participated in previous simulation activity, participants linked the answer to this question as a comparison to previous simulated learning experiences. One response (1/68, representing 1.4% of the research sample population) somewhat disagreed with this question, claiming there was no defined change in learning effectiveness with the WSCR-T Guided Reflection Tool. In contrast, three participants (3/68, representing 4.4% of the research sample population) noticed no profound enhancement with reflective guided tool usage (WSCR-T Guided Reflection Tool), thus adopting a neutral stance to question 9.

**Research Question 3**

The data analysis from Research Question 3: *Are collaborative health care teams able to exchange relevant information during simulated learning experiences?* exposed the themes of (1) the simulated learning experience made me see the importance of collaborative teamwork in the health care setting; and (2) realistic collaborative experiences and interprofessional communication are important to educational learning. In both the prebriefing and debriefing phases of the study, and when using the WSCR-T Guided Reflection Tool, participants were asked to examine their individual role in the interprofessional team and to reflect on feelings and feedback regarding the team collaboration in the simulated learning experience. Among the participants within all 11 groups of the research (G1-G11), 64 concurred that collaborative learning experiences were vital to their knowledge growth in each of the three health care professions. All 68 participants within the 11 groups suggested that everyone had different background knowledge and health care perspectives, which ultimately came together to help the client. Participant G3-P6 shared that the team experience allowed for a format to examine how other roles accentuate one's own role toward the ultimate goal of positive patient outcomes, while solidifying confidence in and knowledge of health care content learned in the classroom. Participant G8-P2 stated, "Working together as a collaborative team minimized health care redundancies and related costs, as many of us have redundancies and duplicate services within our professions. I am not sure I realized that before the collaborative learning experience" (personal communication, 2018).

Effective communication and development and respect for professional relationships were indicated as a crucial result within this study. Of the participants, 66

shared that the realistic and safe environment of the simulation center made for increased confidence and knowledge portrayal, along with the benefits of being able to have immediate and delayed feedback formats in a peer-to-peer manner during the simulation scenario and the debriefing phases of the learning experience. Participant G4-P1 said the following:

The realistic experience encouraged communication and compromise toward flexibility as each health care group had their own agenda and all team-players had to adjust their plans of care to evaluative assessments based on needs within team dynamics. It truly highlighted all of our advocacy to the patient and for patient care. We sometimes find our focus toward task fulfillment keeps us from being able to collaborate at times. (personal communication, 2018)

Participants G2-P2, G1-P5, G4-P6, G10-P3, and G11-P8 commented on the characteristics of clear-concise communication and active listening required to be a part of professional collaboration. These participants also agreed that feedback by group participants helped knowledge growth and increased confidence, which will be needed for future planning of patient goals and plans of care, and will increase caregiver flexibility. Collective group responses in all groups (G1-G11) also exposed differences in the use of health care terminology. Terms were often not synonymous in meaning within the interprofessional setting.

Participants G1-P2, G2-P3, G2-P4, G2-P4, and G6-P6 found that without interprofessional communication and clarifying questions, there was a likelihood of errors based on miscommunication.

Statement 3 of the online survey: *Having been able to write down my feelings to proposed questions for reflective thought on the WSCR-T tool after the sim scenario, but before debriefing, assisted me in the debriefing process of learning and reflection* added data pertaining to research question 3. Reflective journaling time, post-simulation scenario/pre-open discussion debriefing, upon the WSCR-T Guided Reflection Tool was concluded to have assisted participants in learning and reflection processes in 67 of 68 participants (98.5% of the research population). One respondent (1/68, representing 1.5% of the research sample) found reflective journaling opportunities upon the WSCR-T Guided Reflection Tool to be neither beneficial nor disadvantageous.

Statement 7 of the online survey: *I received feedback from peers and faculty, and met personal and group objectives within this exercise* encouraged participant responses toward research question 3. Since feedback in both the collaborative simulation scenario and the debriefing phase of the simulated learning experience is an important part of the learning environment, statement 7 attempted to elicit information on whether study participants received feedback from the collaborative team and faculty (researcher). Given that feedback needs differ for each individual, the attainment of personal and group objectives warrants measurement. In the study exercise, 65 of 68 (95.5%) of the study participants agreed that personal and group objectives were met via feedback assessment. Three participants (3/68, representing 4.4% of the sample population) pled neutrality, neither agreeing nor disagreeing with this question.

Statement 8 of the online survey: *I felt supported in the debriefing process* provided data toward research question 3. Simulated learning experiences and the safe environment format for learning support increasing student participant confidence levels.

Research concludes that when participants feel supported in the simulation process, especially the open-discussion debriefing phase, learning and engagement are enhanced (Dreifuerst, 2015; Jeffries, 2015). In answering this online survey question, 98.5% of participants felt supported in the debriefing process, whereas one participant (representing 1.5% of the sample population) neither agreed nor disagreed with feeling supported in the debriefing session.

#### **Research Question 4**

The data analysis from Research Question 4: *In the experience of the participants, is guided reflection a valuable learning tool?* exposed the theme of (3) reflection as a learning process has benefits in simulated learning experiences. When participants were asked if they valued reflection as a process in learning and growth, all participants (68) in all groups (G1-G11) discussed the incorporation of different elements of the reflective process and practice in their educational programs. Although different in their experiences, 66 participants in the study groupings (G1-G11) voiced agreement with the value of simulation in health care education and in the postgraduation transition to professional practice. In 10 of the 11 groups (G2-G11), 62 participants concluded that reflection was difficult to initiate on one's own, as it was not associated with being an innate process. Participant G9-P3 said, "Reflection allowed for a pause to gather individual and team thoughts on the action performed and observed" (personal communication, 2018). G9-P5 within the same group said:

Reflection also allowed for time to focus and affirm knowledge of the curricular content, learning objectives, and self and team performance. I needed to be guided

in this process, though, and I valued the guidance in this situational study today.  
(personal reflection, 2018)

Statement 1 of the online survey: *I understood the objectives of the simulated learning experience and reflective practice debriefing postinterprofessional education simulated learning experience* suggested input data toward research question 4. Data analysis of responses to this initial statement established that 67 of 68 (98.5%) of the research study participants felt they strongly or somewhat agreed that the intraprofessional and interprofessional objectives of the simulated learning experience and reflective practice through question inquiry postcollaborative learning were understood. One participant (1/68, representing 1.5% of the population sample) chose to be neutral toward this question. The data elicited through this question relates to the comprehension by the research participants of study experience goals, objectives, and intended research outcomes. It is necessary to establish understanding of objectives, if the learning platform toward objectives is to be clear. Jeffries (2015) suggested using objective clarity as the first question in evaluative processes in simulated learning experiences.

### **Summary**

This chapter presented a description of statistics for the demographics and research question. Descriptive statistics were completed to describe the sample. Qualitative themes arising from the analysis of survey data representing participant inputs regarding the use of a guided reflection tool in collaborative health care settings following a simulated learning experience were presented. In Chapter 5, the major qualitative themes of data analysis are discussed in relation to the theoretical framework

and to the findings in the literature. The study's conclusions and limitations, implications for health care education, and future recommendations are addressed.

## Chapter 5

### Conclusions and Discussion

This study aimed to examine the lived experiences of individual participants using a guided reflection tool in a collaborative-interprofessional health care setting following a simulated learning experience. Four research questions were proposed for this study:

1. Does guided reflection, in the experience of the learner, increase knowledge exchange?
2. Does pairing the use of a guided reflection tool with simulated learning experiences increase participants' perception of learning?
3. Are collaborative health care teams able to exchange relevant information during simulated learning experiences?
4. In the experience of the participants, is guided reflection a valuable learning tool?

The study explored student perceptions from the nursing, occupational therapy, and speech-language pathology programs. A phenomenological study design offered the study participants' detailed descriptive perceptions. This chapter contains a summary and discussion of the findings. Further sections include theoretical framework relationships to this study and the relationship of the study findings to the literature. Study limitations, implications, and recommendations for further research are also presented in this section.

#### Summary and Discussion of the Findings

As data gathered from study participants during the debriefing phase of the study were analyzed, six themes emerged to answer the research question. The six themes were:

1. The simulated learning experience made me see the importance of collaborative teamwork in the health care setting.
2. Realistic collaborative experiences and interprofessional communication are important to educational learning.
3. Reflection as a learning process has benefits in simulated learning experiences.
4. Reflective journaling prior to the debriefing phase of simulated learning experiences in the collaborative setting is beneficial.
5. A guided reflection tool to guide learning and performance toward learning objectives is effective in the learning process.
6. Repetitive use of a guided reflection tool with collaborative simulated learning experiences has the ability to increase the perception of learning and information retention.

These themes assisted in gaining an understanding of the use of a guided reflection tool as a key component of collaborative simulated learning experiences in health care educational programs.

The first essential finding was that 67 participants acknowledged and valued the importance of collaborative teamwork in health care education. These participants recognized the lack of experience in interprofessional education at the student level, despite the existence of interprofessional team collaboration during the clinical-field exposure. They further recognized the need for education to reflect the health care arena. The use of simulated learning experiences in education was determined to be an essential

learning component at the educational level for bridging the gap in the transition to professional practice.

The second critical finding was that participants acknowledge the value of reflective thinking. In this study, allowing time for reflection in addition to the use of the guided reflection tool assisted in shaping and organizing the participants' thoughts on the simulated learning experience and was considered advantageous to their knowledge. Study participants credited the tool guidance for the formation of deeper thinking that was aligned with the goals of the collaborative learning teamwork and the care needed for the stroke patient.

A third outcome of this study was that participants felt the safe simulation environment for collaborative learning assisted in building their confidence toward interprofessional experiences, within the realistic portrayal of the health care environment. Participants associated the improvement of their interprofessional and interpersonal skills, especially the ability to communicate with others in the health care arena, as a benefit in learning. The improvement in interprofessional communication led to aligning the objectives of multiple disciplines with regard to patient care and highlighted the importance of mutual respect in the environment.

A fourth finding of this study confirmed the participants' view of the benefit of reflective journaling before the debriefing phase of a simulated learning experience. Since the WSCR-T Guided Reflection Tool was created as a reflective guide, allowing participants time to journal their feelings before the open discussion of debriefing began was perceived as an added benefit in the study. Participants concluded that gathering

thoughts after simulation scenario activity assisted in a deeper focus on knowledge and performance (both individual and team-based).

The fifth finding was that study participants felt that the use of a guided tool, the WSCR-T Guided Reflection Tool, guided their thoughts toward essential learning objectives and the educational priorities of the presented curricular content. Participants acknowledged that debriefing protocols using a guided reflection tool and reflective journaling created a more engaging and focused debriefing phase. Participants were eager to engage in peer-to-peer discussions based on individual and group learning reflections.

The sixth finding of this study recognized the value in using a guided reflection tool in every collaborative simulated learning experience. Further study perspectives from 64 participants revealed that using the WSCR-T Guided Reflection Tool in all future collaborative experiences would assist in reflective practice following a more natural process. All the participants (68) agreed with the research proposition that reflection is an important aspect of learning about curricular content and self-awareness in practice; however, knowledge transfer is not necessarily a direct transfer process. Study participants suggested that using a guided tool creates a procedure for learning and knowledge exchange, and allows for future situations to follow a more natural process in formulating learning and transfer of knowledge. Participants also identified an added benefit to this study. Among the participants, 59 felt that using a guided tool would provide a reference to track individual growth, personal knowledge, and strengths, as the student matriculates through the educational program.

Furthermore, 67 participants (98.5%) claimed, through the survey, that obtaining the WSCR-T Guided Reflection Tool prior to simulation activity was of value. The

continued use of the tool through reflective journaling was also beneficial. In the study results, > 95% of the participants agreed that the tool and format for guided reflection would be effective for various disciplines in collaborative health care programs- interprofessional education. Since all participants had previously participated in simulated learning experiences, the data findings established that > 94% felt that their perceptions of learning and knowledge exchange were enhanced with the experience of utilizing the WSCR-T Guided Reflection Tool. Examination of the participant feedback revealed the participants' lived experience in the research study. Analysis of the data helped to answer the research questions through descriptive thought of the study participants.

### **Discussion of Findings in Relation to the Literature**

The findings of this study link to the theoretical framework of Schon's (1983) reflective theory and knowledge, and Jeffries's (2015) simulation theory. Schon's (1983) reflective theory framework focused on the reflection-on-action and reflection-in-action phases of situational thinking. Schon (1983) concluded that reflection upon learner activity, during and after experiences, allows for building upon the experiences, based on knowledge acquired. Experiences enhance the development of reflection, as knowledge from one experience builds upon previous knowledge. Participant responses in this study suggested that the repeated use of a guided reflection tool within each instance of simulated learning experience creates a path leading individuals toward thinking at a higher level so as to develop reflection and content knowledge.

Moon (2013) suggested that student learners are not always able to initiate independently reflective practices on learning effectively, and there was need for more

systematic guidance as a learning strategy. A gap in the literature existed regarding collaborative interprofessional learning and the use of a guided reflection tool postsimulated learning experiences. I. Jones and Alinier (2015) concluded that a tool to visualize and model ideas allowed learners to manage and track learning. In this study, using a guided reflection tool provided the student participants with a tangible instrument to reflect before, during, and after the experience, and throughout the debriefing phase. Participant responses, of attaining a deeper understanding of reflection and enhanced learning, support the concepts of reflective theory. The findings related to the literature concepts follow in the paragraphs below.

### **Simulation as a Pedagogy, the Phase of Debriefing, Open-Discussion Guided Reflection**

The pedagogy of simulation as a learning modality has been researched. Shinnick et al. (2011), in an experimental study of nurses, determined that the debriefing phase of the simulation experience allowed for the greatest knowledge gain for learner participants, with the achievement of deeper understanding of curricular content. Debriefing experience provides a safe environment for students to reflect, connect to learning objectives, and apply the learning to the development of clinical decision making. Suggestions for further studies in debriefing and guided reflection were made by Shinnick et al. (2011).

The findings in this study correlate with the suggested importance of the debriefing phase to capture the deepest value from reflection and potential knowledge gain. Hayden (2010), in a study of debriefing, declared that although debriefing is considered a vital part of education and learning, practice in the curriculum frequently

lacks the allowance of adequate time for reflection and meaningful learning during the post-simulation debriefing phase. Accordingly, Hayden's (2010) research findings were taken into account for this study. Incorporating sufficient time for individual reflective journaling upon the WSCR-T Guided Reflection Tool, in conjunction with open-discussion debriefing time, fostered more active preparation and discussion upon reflective questions and response to the simulation experience learning objectives. The inclusion of collaborative learning objectives on the WSCR-T Guided Reflection Tool also supported the research and evidence-based protocols for simulation facilitation (INACSL, 2016c).

I. Jones and Alinier (2015) studied the use of cue cards with reflective cycle components for visualization during simulated learning activities. They concluded that guided reflection tools encourage meaningful reflective learning, and recommended that further studies were needed to develop reflective simulated learning and reflective tool usage (I. Jones & Alinier, 2015). These conclusions were a basis for this research study. Per these recommendations, this study created the WSCR-T Guided Reflection Tool to provide question guidance for participant reflection postcollaborative simulated learning experiences.

### **Guided Reflection as an Educational Tool**

Research has shown that the process of reflection is not a direct process (Nash & Harvey, 2017). Collaborative interprofessional simulated learning experiences are desirable at the educational level for transition to practice. Reflection is regarded as an important educational element to facilitate the progression of clinical thinking and clinical reasoning skills (Jeffries, 2012). The debriefing phase is described to be the

foundational environment for reflective thinking during simulated learning experiences (Dreifuerst, 2015). However, instruments to facilitate and guide reflection are not in place for collaborative interprofessional simulated learning experiences.

This study revealed data based on the study participants' perceptions from their lived experiences. The WSCR-T Guided Reflection Tool was perceived as a written guide to reflection before, during, and after the debriefing phase of simulation. In the study, the participants suggested that the guide was advantageous toward content objectives and the principles of reflective thinking with regard to future experiences. Thus, instruments for guided reflection enhance the properties and direct the goals of reflective thinking.

### **Socratic Method in the Simulated Learning Debriefing Phase**

Dreifuerst (2015) suggested that Socratic questioning during the open-discussion time of debriefing allows foundational learning to be explored more completely. Socratic questioning also encourages students to think critically and explore alternative choices in decision making to gain insight. In a Socratic Fishbowl research study, Kotcherlakota et al. (2013) concluded that Socratic questions and exercises promoted an atmosphere for students to think critically and interpret faculty and peer feedback.

In study comparison, the use of the WSCR-T Guided Reflection Tool before and during the open-discussion debriefing phase was acknowledged as positive feature within the domains of learning and professionalism. Participants suggested that peer-to-peer feedback and dialogue in the interprofessional collaborative setting was enhanced by the premise of Socratic questioning upon the guided reflection tool and Socratic questioning in the open-discussion portion of debriefing. In alignment with Socratic method research

(Kotcherlakota et al., 2013), this research study revealed that open-ended questioning in written or verbal form expanded participants' thinking and facilitated the organization and input of learned information.

### **Interprofessional Education and Collaborative Learning**

The need for effective collaboration in health care education to prepare graduates to function as a part of a highly effective team has been a recent focus (Masters et al., 2013). Educational programs have begun to respond to the need for collaborative learning through interprofessional simulated learning experiences. There is a significant gap in the research regarding evidenced-based practice in collaborative learning settings and instilling individual and group reflection in these experiences.

Costello et al. (2017) and Jernigan et al. (2016) concluded that simulation scenarios offered interprofessional participants insight and learning about the needs of a team-based health care environment. When the INACSL Standards Committee (2016c) formulated the standard of Sim-IPE as a standard of best practice for simulation, research on student learning through evaluation was deemed necessary and pertinent to data analysis. This study incorporates the recommendation to research not only perceived learner satisfaction, but also perceived efficacy and learning with the use of a guided reflection tool. Results of analysis of the data compiled from the online survey revealed that perceived knowledge exchange and reflection postinterprofessional educational simulation scenario deployment were enhanced.

### **Transfer of Knowledge**

Transfer of knowledge from simulated learning experiences to the health care clinical environment, along with cognitive transfer procedures of learning, is not fully

considered in the research. This study elicited the responses of student participants to explore their perception of enhanced learning and cognitive transfer. Nash and Harvey (2017) suggested that transfer of knowledge should not be assumed to be a direct process, or a similar process for each individual learner. The incorporation of the WSCR-T Guided Reflection Tool within this study required direct reflection on questions linked to intraprofessional and interprofessional learning objectives. Participant responses in this study supported the conclusions of Nash and Harvey (2017). Participants suggested that repeated future use of the tool in simulation experiences would provide a more direct process of reflective learning goals.

Asselin (2011) explored participant responses in a research study, concluding that reflecting on personal and group needs proved to be an important aspect for transfer of knowledge. Participant satisfaction from reflective journaling upon the reflective tool as part of the simulated learning experience was suggested to be beneficial in this study. As reported within the data, the semistructured viewing and response system to the questions upon the tool and the objectives provided guidance to reflection and ultimately enhanced perceived learner satisfaction and individual perceptions about learning and knowledge exchange.

Postresearch recommendations by Decker and Dreifuerst (2012) have stated the need for analyzing student-led group reflection in debriefing and relating the use of reflection to student outcomes. This study investigated if the use of the WSCR-T Guided Reflection Tool, time for reflection, and the process of debriefing produced stronger engagement in peer-to-peer discussion during the debriefing phase of simulated learning experiences. Participant responses to the research (at a reported 95%), supported the use

of the WSCR-T Guided Reflection Tool in the debriefing process and confirmed the abilities of the tool to enhance and increase individual perceptions of learning.

Kulasegaram and Rangachari (2018) concluded that evaluation as a tool can provide insight as to the level of performance a student achieves in simulated activities. The evaluation further allows the learner to focus on progress and meeting of learning objectives, while providing feedback on simulation scenario design and tool design.

### **Simulated Learning Instruments for Evaluation**

Self-reflection has been suggested as a required measurement for analysis using simulation evaluation tools. Often in simulation, time for reflection after simulated learning experiences is compressed, since dedication to curricular content is the priority. Dreifuerst (2015) suggested that without fostering the appropriate usage of reflective thinking strategies for deeper levels of learning, the importance of reflection may not be perceived by learners.

For this study, the WSCR-T Guided Reflection Tool was developed to structure the reflection and debriefing process. The tool was used to test the potential of the research questions to impact positively the concept of reflection in simulated activity and postactivity to increase knowledge exchange in a collaborative team setting. During simulation, educators and students discuss and debrief about the learning experience. Literature supports the debriefing session as an essential part of the learning process. Often, students are instructed to reflect on their experiences, but rarely is reflection defined, or the student guided through the process of how to accomplish or benefit from the reflective process. The findings of this study support the need for student participant

fulfillment of structured reflection and feedback incorporated into debriefing after a collaborative simulated learning experience.

Within each collaborative simulation grouping, participants were not always familiar with each other. The teamwork in the simulation scenario and debriefing, after WSCR-T Guided Reflection Tool usage, fostered an increase in peer-to-peer communication with comfort during the learning in the study environment. Simulation must serve to enhance student learning. Learning experiences must include an evaluation process not only to inform the learner of curricular progress, but also to provide feedback concerning learner growth and mastery. This study provided feedback to the participants during the debriefing phase, while concluding with an online student-based evaluative survey that focused on the entire collaborative simulated learning experience, the specifics of learning objectives and outcomes, and the WSCR-T Guided Reflection Tool.

Studies in the literature, as well as this study, support that reflection positively impacts knowledge exchange. The results of this study enable concluding that during collaborative interprofessional simulated learning experiences, the phase of debriefing and the use of a guided reflection tool improve the reflection ability of the learner while also increasing knowledge exchange and participants' perception of learning.

### **Study Limitations**

While the findings of this study promise to provide a preliminary contribution to the literature, there were several obvious limitations. The sample for this study was a purposive convenience sample of volunteers that was limited to one facility location, which may not represent similar sample populations in future studies. Although three professional programs in health care were represented in this study, the demographic

characteristics of the sample may also influence the generalizability of the findings. Additionally, since the participants of this study had experience in simulated learning education, their past experience stood as the comparison model, and thus the study lacked a control group. A control group and quantitative research could have provided stronger parameters for the study testing and actual learning metrics.

The relationship between the researcher and the student participants may also be perceived as a limitation for this study. As the director of simulation at the research facility, the researcher had preconceived feelings and biases related to interprofessional collaborative simulation and reflective theory and practice. The researcher was also the creator of the WSCR-T Guided Reflection Tool used in the study. Adherence by the researcher to descriptive field notes and nonbiased actions was crucial to this study. Scripted researcher instructions were read verbatim from script with minimal eye contact with participants to remain objective and so as not to influence them. Objectivity during the data analysis was strictly adhered to.

The population of participants was a purposive convenience sample of volunteers who were requested to volunteer for two study timeframe dates for generating the ability to randomize the groupings (using randomizer software programming). Three study participants were not able to abide by the requirement of choosing two timeframes and, therefore, they were assigned a study date they could participate within, so as not to exclude them from this study. As a result of this factor, group randomization was not fully adhered to in every study grouping. Even though some limitations were identified within his study, the findings offer important considerations for health care education.

### **Implication of Results for Practice**

The purpose of this study was to investigate if the use of a guided reflection tool in a collaborative health care setting following simulated learning experiences increased knowledge exchange and individual perceptions of learning. The results suggest that as reflection in practice is not an innate process, a guided reflection tool (in this study the WSCR-T Guided Reflection Tool) improves the process of learning in collaborative simulated experiences, which ultimately enhances perceptions of individual knowledge exchange and perceptions of learning of curricular content.

Research is used to support best educational practices. IOM (2012) and WHO (2011) declared that education must be implemented at the student level for graduates to be able to work in interprofessional teams and collaborate to solve clinical issues. Based upon these needs, and the findings of this study, the use of a guided reflection tool is meaningful for health care education programs. Moreover, collaborative interprofessional learning experiences are essential to portray a realistic picture of practice in current health care environments.

IOM (2012) and Benner et al. (2010) reported that health care education must be transformed to meet the demands encountered in the current health care environment. Readiness for health care practice could be enhanced, as evident in this study, by grouping collaborative simulation scenario experiences with a guided reflection tool and with time allotted for student participant reflective journaling and the open-discussion debriefing phase. The findings of this research highlight the importance of reflective practice in health care education. The findings may serve as an aid to health care students and educators who integrate collaborative education into the curriculum. The use of

simulated learning experiences at the student level to replicate a realistic health care environment will prepare students for current professional practice needs.

Interprofessional simulated learning experiences should be planned under clear intraprofessional and interprofessional objectives.

A reflective guidance tool, such as the WSCR-T Guided Reflection Tool, provides learners with open-ended reflective questions to engage and direct meaningful learning toward objectives, the attainment of knowledge of curricular content, and critical thinking skills. The reflective practice cycle allows for the individual analysis of reflection in- and on-action during patient care and within team collaboration. Educators should be encouraged to utilize guided reflection and evaluative tools for the purpose of increasing participants' perceptions of learned knowledge exchange, knowledge attainment, and knowledge retention.

### **Recommendations for Further Research**

According to the study findings, the use of a guided reflection tool in a collaborative health care setting following simulated learning experiences increased individuals' perceptions of learned knowledge attainment, retention, and exchange. Future research is needed on collaborative simulated learning experiences and the use of reflective tools to determine the best educational concentration and formats to foster knowledge transfer and critical reflection in the health care environment. Replicating this study with new graduates six months to one year after graduation could help determine if collaborative interprofessional simulated learning experiences and the process of a guided reflection tool increase knowledge and productivity to assist in professional clinical practice adjustment.

Overall, gaps remain in collaborative simulated learning experiences and reflection tool measurement. The conclusions on the guided reflection tool (WSCR-T Guided Reflection Tool) are preliminary. Further research using rigorous study methods would help to bolster confidence in study findings. Using a larger sample size and multiple data collection sites is recommended. Further research will help complement health care program education and the progression of collaborative interprofessional simulated learning experience activities within the curriculum.

Perspectives from student participation were seldom found to be reported in the literature (Pollock & Biles, 2016). The qualitative responses of the participants were desired for this study to elicit raw information about the usage of the guided reflection tool before debriefing, and to observe the increase of perceived knowledge portrayal in the open-discussion phase of debriefing. Health care students are faced with greater challenges in educational preparation to meet the need for transition to practice in the health care environment. Research suggests that self-reports of learning, or perceived learning, can be a valid measure of learning. Patterns of outcomes vary for perceived learning. The academic environment emphasizes the measurement of actual learning via test scores or course grades (Rovai, Wighting, Baker, & Grooms, 2009). Evaluation of the relationship between perceived learning and actual learning is recommended to test further knowledge transfer potentials. Sitzmann et al. (2010) established that actual learning and perceived learning are separate and distinct constructs. For a precise understanding and correlation to the gains of actual learning in simulation research, the use of direct (actual) and indirect (perceived) measurements should be complementarily researched (Bacon, 2016). Using a mixed-methods research study is recommended. A

participant pretest before simulated learning experience, and a posttest analysis after simulated learning experience is suggested as an analysis of actual learning. A mixed-methods research design incorporating a control group to measure actual learning potential with the use of a guided reflection tool would provide a stronger analysis of data. The research data would contribute to the validity and focus of the tool and the attained change in actual individual knowledge as a measurement for comparison to perceived learned knowledge.

### **Conclusions**

Findings from this research study add to the work of previous researchers in the area of simulated learning in health care education. The phenomenological research design was matched to answer the research questions and lived experience of the participants regarding increased knowledge exchange and perceived learning in a collaborative health care setting postsimulated learning experiences utilizing a guided reflection tool. Schon's (1983) theory of reflection and Jeffries's (2015) simulation theory provided the structure to construct meaning for the experience through understanding the findings. The results of this study confirmed findings from the literature reviewed and helped bridge some of the gaps revealed therein. The goal of this research was to evaluate the effect of the use of a guided reflection tool in a collaborative health care setting following simulated learning experiences to increase individual knowledge exchange and perceived learning.

Research has indicated a lack of reflection tools for promoting group and individual learning in collaborative teamwork settings (Fewster-Thuente & Batteson, 2016). The outcomes provided an opportunity to align current practices and best practice

standards in simulation with the development of a guided reflection tool to increase the attainment of curricular knowledge postcollaborative simulated learning experiences. The deeper goal of this research study is for student learners to be able to transfer their learning into their professional environment. The knowledge obtained from this study will serve to further research and discussion regarding the benefits of reflective practice in simulation education among health care programs.

In conclusion, this study adds to the literature regarding guided reflection tools within collaborative interprofessional simulated learning experiences and perceived knowledge attainment and exchange postactivity. Results indicated that as reflection may not be considered an innate habit of student participants, a tool assists in guiding students toward essential knowledge that is based on content objectives and performance evaluation in simulated education. Participants' perceived satisfaction and knowledge significance was found in the usage of the tool, reflective journaling, and the time to reflect predebriefing and through open discussion during the debriefing phase. The implications and recommendations of this study may be used to aid collaborative interprofessional simulated learning experiences within health care education programs and to enhance the reflective practice of collaborative experiences toward optimal student outcomes and transition to professional practice.

## REFERENCES

- Adamson, K. A., Kardong-Edgren, S., & Willhaus, J. (2013, September). An updated review of published simulation evaluation instruments. *Clinical Simulation in Nursing, 9*(9), 393–400. <http://dx.doi.org/10.1016/j.ecns.2012.09.004>
- Agency for Healthcare Research and Quality. (2015). Teamstepps. Retrieved from <http://www.ahrq.gov/professionals/education/curriculum-tools/teamstepps/index.html>
- American Association of Colleges of Nursing. (2016). Retrieved from <http://www.aacn.nche.edu>
- Asselin, M. E. (2011). Using reflection strategies to link course knowledge to clinical practice: The RN-BSN student experience. *Journal of Nursing Education, 50*(3), 125–133.
- Atkinson, H. L., & Nixon-Cave, K. (2011, March). A tool for clinical reasoning and reflection using the international classification of functioning, disability and health (ICF) framework and patient management model. *Physical Therapy, 91*(3), 416–430.
- Bacon, D. R. (2016). Reporting actual and perceived student learning in educational research. *Journal of Marketing Education, 38*(1), 3–6. <http://dx.doi.org/10.1177/0273475316636732>
- Benner, P., Sutphen, M., Leonard, V., & Day, L. (2010). *Educating nurses: A call for radical transformation*. San Francisco, CA: Jossey-Bass.

- Bradley, C. S., & Dreifuerst, K. T. (2016, July). Pilot testing the debriefing for meaningful learning evaluation scale. *Clinical Simulation in Nursing*, 12(7), 277–280.
- Chamberlain, J. (2015, July). Prebriefing in nursing simulation: A concept using Rodger's methodology. *Clinical Simulation in Nursing*, 11(7), 318–322.
- Clougher, J., & Mahoney, K. (2012, May). The use of technology in cultivating a sense of global citizenship in students. *Journal of Cross-Disciplinary Perspectives in Education*, 5(1), 17–21.
- Coram, C. (2016, September). Expert role modeling effect on novice nursing students' clinical judgment. *Clinical Simulation in Nursing*, 12(9), 385–391.
- Costello, M., Huddleston, J., Atinaja-Faller, J., Prelack, K., Wood, A., Barden, J., & Adly, S. (2017, December). Simulation as an effective strategy for interprofessional education. *Clinical Simulation in Nursing*, 13(12), 624–627. <http://dx.doi.org/10.1016/j.ecns.2017.07.008>
- Creswell, J. (2013). Steps in conducting a scholarly mixed methods study. *DBER Speaker Series*, 48. Retrieved from <http://www.digitalcommons.unl.edu>
- De Chesnay, M. (2015). *Nursing research using phenomenology: Qualitative designs and methods in nursing*. New York, NY: Springer.
- De Vellis, R. F. (2003). *Scale development: Theory and applications* (2nd ed.). Thousand Oaks, CA: SAGE Publications.

- Decker, S., & Dreifuerst, K. T. (2012). Integrating guided reflection into simulated learning experiences. In P. R. Jefferies (Ed.), *Simulation in nursing education: From conceptualization to evaluation* (2<sup>nd</sup> ed.; pp. 91–102). New York, NY: National League for Nursing.
- DeCuir-Gunby, J. T., & Schutz, P. A. (2017). *Developing a mixed methods proposal: A practical guide for beginning researchers*. London, England: Sage.
- Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston, MA: D.C. Heath and Co.
- Dreifuerst, K. T. (2009). The essential of debriefing in simulation learning: A concept analysis. *Nursing Education Perspectives*, 30(2), 109–114.
- Dreifuerst, K. T. (2015, May). Getting started with debriefing for meaningful learning. *Clinical Simulation in Nursing*, 11(5), 268–275.
- Ellis, C. M. (2017). Using simulation and critical thinking in speech-language pathology: A university case study. *Journal of Human Services: Training, Research, and Practice*, 2(2), 6–30.
- Eraut, M. (2004). Transfer of knowledge between education and workplace settings. In H. Rainbird, A. Fuller, & A. Munro (Eds.), *Workplace learning in context* (pp. 201–221). New York, NY: Routledge.
- Failla, K. R., & Macauley, K. (2014, November). Interprofessional simulation: A concept analysis. *Clinical Simulation in Nursing*, 10(11), 574–580.  
<http://dx.doi.org/10.1016/j.ecns.2014.07.006>

- Fewster-Thuente, L., & Batteson, T. (2016, Summer). Teaching collaboration competencies to healthcare provider students through simulation. *Journal of Allied Health, 45*(2), 147–151.
- Foisy-Doll, C., & Leighton, K. (2018). *Simulation champions: Fostering courage, caring, and connection*. Philadelphia, PA: Wolters-Kluwer.
- Freeth, D., Ayia, G., Berridge, E. J., MacKintosh, N., Norris, B., Sadler, C., & Strachan, A. (2009). Multidisciplinary obstetric simulated emergency scenario: Promoting patient safety in obstetrics with teamwork-focused interprofessional simulations. *Journal of Continuing Education in the Health Professions, 29*(2), 98–104.
- Fullan, M. (2007). *The new meaning of educational change* (4th ed.). New York, NY: Teachers College Press.
- Gay, L. R., Mills, G. E., & Airasian, P. (2012). *Educational research: Competencies for analysis and application* (10th ed.). Upper Saddle River, NJ: Pearson.
- Gibbs, G. R. (2013). *Learning by doing: A guide to teaching and learning methods* (1st ed.). London, England: Further Education Unit at Oxford Polytechnic.
- Giles, A. K., Carson, N. E., Breland, H. L., Coker-Bolt, P., & Bowman, P. J. (2014). Use of simulated patients and reflective video analysis to assess occupational therapy students' preparedness for fieldwork. *American Journal of Occupational Therapy, 68*(2), S57-S66.
- Harder, B. N. (2009, September). Evolution of simulation use in health care education. *Clinical Simulation in Nursing, 5*, 169–172.  
<http://dx.doi.org/10.1016/j.ecns.2009.04.092>

Hayden, J. (2010). Use of simulation in nursing education: National survey results.

*Journal of Nursing Regulation, 1*(3), 52–57.

Husebo, S. E., O'Regan, S., & Nestel, D. (2015, August). Reflective practice and its role in simulation. *Clinical Simulation in Nursing, 11*(8), 368–375.

Institute of Medicine. (2012). *The future of nursing: Leading change, advancing health*. Washington, DC: Government Printing Office.

International Nursing Association for Clinical Simulation and Learning Board of Directors. (2016a). Standard I: Terminology. *Clinical Simulation in Nursing, 7*, S3-S7. <http://dx.doi.org/10.1016/j.ecns.2011.05.005>

International Nursing Association for Clinical Simulation and Learning Board of Directors. (2016b). Standard VI: The debriefing process. *Clinical Simulation in Nursing, 7*(4), S16-S17. <http://dx.doi.org/10.1016/j.ecns.2011.05.005>

International Nursing Association of Clinical Simulation and Learning Standards Committee. (2016c, December). INACSL standards of best practice: Simulation enhanced interprofessional education (Sim-IPE). *Clinical Simulation in Nursing, 12*(S), S34-S38.

International Nursing Association of Clinical Simulation and Learning Standards Committee. (2016d, December). INACSL standards of best practice: Simulation glossary. *Clinical Simulation in Nursing, 12*(S), S39-S47.

James, C. R., Dunning, G., Connolly, M., & Elliott, T. (2007). Collaborative practice: A model of successful working in schools. *Journal of Educational Administration, 45*(5), 541–555. <http://dx.doi.org/10.1108/09578230710778187>

- Jeffries, P. R. (2012). *Simulation in nursing education: From conceptualization to evaluation* (2nd ed.). New York, NY: National League for Nursing.
- Jeffries, P. R. (2015). *The NLN Jeffries simulation theory*. Philadelphia, PA: NLN and Wolters-Kluwer.
- Jernigan, S., Magee, C., Graham, E., Johnston, K., Zavadke, J., & Shrader, S. (2016, Summer). Student outcomes associated with an interprofessional program incorporating TeamSTEPPS. *Journal of Allied Health, 45*(2), 101–108.
- Jones, A. L., Reese, C. E., & Shelton, D. P. (2014, July). NLN/Jefferies simulation framework state of the science project: The teacher construct. *Clinical Simulation in Nursing, 10*(7), 353–362.
- Jones, I., & Alinier, G. (2015, July). Supporting students' learning experiences through a pocket size cue card designed around a reflective simulation framework. *Clinical Simulation in Nursing, 11*(7), 325–334.  
<http://dx.doi.org/10.1016/j.ecns.2015.04.004>
- Kotcherlakota, S., Zimmerman, L., & Berger, A. M. (2013). Developing scholarly thinking using mind maps in graduate nursing education. *Nurse Educator, 38*(6), 252–255.
- Kraft, S., Wise, H. H., Jacques, P. F., & Burik, J. K. (2013). Discharge planning simulation: Training the interprofessional team for the future workplace. *Journal of Allied Health, 42*(3), 175–181.
- Kulasegaram, K., & Rangachari, P. K. (2018). Beyond formative: Assessments to enrich student learning. *Advances in Physiological Education, 42*, 5–14.

- Lapkin, S., Levett-Jones, T., Bellchambers, H., & Fernandez, R. (2010, November). Effectiveness of patient simulator manikins in teaching clinical reasoning skills to undergraduate nursing students: A systematic review. *Clinical Simulation in Nursing*, 6(6), 207–222. <http://dx.doi.org/10.1016/j.ecns.2010.05.005>
- Lasater, K. (2007). Clinical judgment using simulation to create an assessment rubric. *Journal of Nursing Education*, 46(11), 496–503.
- Lestander, O., Nehto, N., & Engstrom, A. (2016, May). Nursing students' perceptions of learning after high fidelity simulation: Effects of a three-step post-simulation reflection model. *Nurse Education Today*, 40, 219–224.
- Lethbridge, K., Andrusyszyn, M. A., Iwasiw, C., Laschinger, H. K., & Fernando, R. (2011, August). Structural and psychological empowerment and reflective thinking: Is there a link? *Journal of Nursing Education*, 50(11), 636–645.
- Li, X., Mohebbi, S., Pierce, M., Rowe, S., & Stockton, D. (2014). *Development of an innovative interprofessional education program for healthcare delivery*. Paper presented at the Industrial and Systems Engineering Research Conference, Washington, DC. Abstract retrieved from <http://www.ipecon.org>
- Liaw, S. Y., Siau, C., Zhou, W. T., & Lau, T. C. (2014). Interprofessional simulation-based education program: A promising approach for changing stereotypes and improving attitudes toward nurse-physician collaboration. *Applied Nursing Research*, 27, 258–260.
- Masters, C., O'Toole-Baker, V., & Jodon, H. (2013, May). Multidisciplinary, team-based learning: The simulated interdisciplinary to multidisciplinary progressive-level education (SIMPLE) approach. *Clinical Simulation in Nursing*, 9(5), 171–178.

- McCalla-Graham, J. A., & DeGagne, J. C. (2015). The lived experience of new graduate nurses working in the acute care setting. *Journal of Continuing Education in Nursing, 46*(3), 122–128.
- Meakim, C., Boese, T., Decker, S., Franklin, A. E., Gloe, D., Lioce, L., & Borum, J. C. (2013). Standards of best practice: Simulation standard I: Terminology. *Clinical Simulation in Nursing, 9*(6S), S3-S11.
- Mezirow, J. (1981). A critical theory of adult learning and education. *Adult Education Quarterly, 32*(1), 3–24.
- Moon, J. A. (2013). *Reflection in learning and professional development: Theory and practice*. New York, NY: Routledge-Falmer.
- Nash, R., & Harvey, T. (2017, October). Student nurse perceptions regarding learning transfer following high fidelity simulation. *Clinical Simulation in Nursing, 13*(10), 471–477. <http://dx.doi.org/10.1016/j.ecns.2017.05.010>
- Neill, M. A., & Wotton, K. (2011, September). High-fidelity simulation debriefing in nursing education: A literature review. *Clinical Simulation in Nursing, 7*(5), 161–168. <http://dx.doi.org/10.1016/j/ecns.2011.02.001>
- Owen, A. M., & Ward-Smith, P. (2014). Collaborative learning in nursing simulation: Near-peer teaching using standardized patients. *Journal of Nursing Education, 53*(3), 170–173.
- Park, J., Hawkins, M., Hamlin, E., Hawkins, W., & Bamdas, J. A. (2014). Developing positive attitudes toward interprofessional collaboration among students in the health care profession. *Educational Gerontology, 40*(12), 894–908.

- Polit, D. F., & Beck, C. T. (2012). *Nursing research: Generating and assessing evidence for nursing practice* (9th ed.). Philadelphia, PA: Wolters/Kluwer/Lippincott.
- Pollock, C., & Biles, J. (2016, August). Discovering the lived experience of students learning in immersive simulation. *Clinical Simulation in Nursing, 12*(8), 313–319.
- Prion, S. K., Gilbert, G. E., Adamson, K. A., Kardong-Edgren, S., & Quint, S. (2017, May). Development and testing of the Quint leveled clinical competency tool. *Clinical Simulation in Nursing, 13*(3), 106–115.
- Qualtrics. (2018). Retrieved from <http://www.Qualtrics>
- Reed, S. J. (2012, July-August). Debriefing experience scale: Development of a tool to evaluate the student learning experience in debriefing. *Clinical Simulation in Nursing, 8*(6), 211–217.
- Robinson, F. P., Gorman, G., Slimmer, L. W., & Yudkowsky, R. (2010). Perceptions of effective and ineffective nurse-physician communication in hospitals. *Nursing Forum, 45*, 206–216.
- Rovai, A. P., Wighting, M. J., Baker, J. D., & Grooms, L. D. (2009, January). Development of an instrument to measure perceived cognitive affective and psychomotor learning in traditional and virtual classroom higher education settings. *The Internet & Higher Education, 12*(1), 7–13.  
<http://dx.doi.org/10.1016/j.ihedu.2008.10.002>
- Schon, D. (1983). *The reflective practitioner: How professionals think in action*. New York, NY: Basic Books.

- Shinnick, M. A., Woo, M., Horwich, T. B., & Steadman, R. (2011, May). Debriefing: The most important component in simulation? *Clinical Simulation in Nursing*, 7(3), 105–111. <http://dx.doi.org/10.1016/j.ecns.2010.11.005>
- Sitzmann, T., Ely, K., Brown, K., & Bauer, K. (2010). Self-assessment of knowledge: A cognitive learning or affective measure? *Academy of Management Learning & Education*, 9(2), 169–191.
- Slootweg, I. A., Lombarts, K. M., Boerebach, B. C., Heineman, M. J., Scherpbier, A. J., & van der Vleuten, C. P. (2014). Development and validation of an instrument for measuring the quality of teamwork in teaching teams in postgraduate medical training (TeamQ). Retrieved from <http://www.plosone.org>
- Smith, S., Farra, S., Ten Eyck, R., & Bashaw, M. (2015, December). Development of an instrument to measure nursing student teamwork skills. *Clinical Simulation in Nursing*, 11(12), 507–512. <http://dx.doi.org/10.1016/j.ecns.2015.10.006>
- Snelling, M., & Jenkins, P. (2016). Interprofessional collaborative simulations. *Journal of the New York State Nurses Association*, 44(2), 53–56.
- Stewart, G. L. (2010). The past twenty years: Team research is alive and well at the Journal of Management. *Journal of Management*, 36, 801–805.
- Swanson, E. A., Nicholson, A. C., Boese, T. A., Cram, E., Stineman, A. M., & Tew, K. (2011, May). Comparison of selected teaching strategies incorporating simulation and student outcomes. *Clinical Simulation in Nursing*, 7(3), 81–90.
- Tanner, C. A. (2006). Thinking like a nurse: A research-based model of clinical judgment in nursing. *Journal of Nursing Education*, 45(6), 204–211.

- Thomas, C. M., & Mraz, M. A. (2017, October). Exploration into how simulation can affect new graduate transition. *Clinical Simulation in Nursing*, 13(10), 465–470. <http://dx.doi.org/10.1016/j.ecns.2017.05.013>
- Titzer, J. L., Swenty, C. F., & Hoehn, W. G. (2012, October). An interprofessional simulation promoting collaboration and problem solving among nursing and allied health professional students. *Clinical Simulation in Nursing*, 8(8), 325–333.
- Tsingos, C., Bosnic-Anticevich, S., Lonie, J. M., & Smith, L. (2015). A model for assessing reflective practices in pharmacy education. *American Journal of Pharmaceutical Education*, 79(8), 1–10.
- Walker, C., Tilley, D., Lockwood, S., & Walker, M. (2008). An innovative approach to accelerated baccalaureate education. *Nursing Perspectives*, 29, 342–353.
- Watson, S. M. (2015). *The influence of participating in an international clinical experience during baccalaureate nursing education on interprofessional collaboration and teamwork for new registered nurses* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3682269)
- Wazonis, A. R. (2014). Methods and evaluation for simulation debriefing in nursing education. *Journal of Nursing Education*, 53(8), 459–465.
- World Health Organization. (2011). *Framework for action on interprofessional education and collaborative practice*. Retrieved from <http://www.who.int/WHO/HRH/HPN/10.3>
- Wright, L., & Lundy, M. (2012). Blogging as a tool to promote reflection among dietetic and physical therapy students during a multidisciplinary international service-learning experience. *Journal of Allied Health*, 41(3), 73–78.

**APPENDIX A****Research Study Survey: Reflective Debriefing Utilizing the WSCR-T Guided Reflection Tool**

Dissertation Survey Qualtrics link: Research study link for participants

[https://elmhurst.co1.qualtrics.com/jfe/form/SV\\_6WLZxoCWbfOHdnD](https://elmhurst.co1.qualtrics.com/jfe/form/SV_6WLZxoCWbfOHdnD)

Dissertation research study survey: reflective debriefing  
utilizing the WSCR-T Guided Reflection Tool©

Q1

I understood the objectives of the sim experience and reflective practice debriefing post interprofessional education simulated learning experience.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q2

Having been able to view the WSCR-T tool prior to simulation, I was provided with a useful guide during the simulation scenario.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q3

Having been able to write down my feelings to proposed questions for reflective thought on the WSCR-T tool after the sim scenario, but before debriefing, assisted me in the debriefing process of learning and reflection.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q4

The WSCR-T tool provided me a guide in interprofessional education reflection and feel the tool usage with the simulation scenario experience increased my individual knowledge of the healthcare team caring for a client and desired patient outcomes.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q5

I believe this format of guided reflection can be effective for various disciplines of healthcare participants in collaborative interprofessional education.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q6

I believe reflective practice and debriefing adds to affirming knowledge from classroom through simulation and retained knowledge of the curriculum in clinical/field experience applications.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q7

I received team feedback from peers and faculty and met personal and group objectives within this exercise.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q8

I felt supported in the debriefing process.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q9

Having previously participated in simulated learning experiences, my learning at this time was enhanced by the use of the WSCR-T tool.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q10

Comments:

**APPENDIX B**

**Westbury Student Collaborative Reflection WSCR-T Guided Reflection Tool**

<p><b>GROUP COLLABORATIVE REFLECTION (Focus on communication, collaboration and respect within group learning activities)</b></p>	<p><b>NOTES OF LEARNER</b></p>
<p>How did I assist with the group assessment needs and the alignment in goals/objectives?</p> <p>Was I motivated as an individual within a group dynamic towards optimal goals and outcomes?</p>	
<p>How did I contribute knowledge within the group?</p>	
<p>How did I consider and respect the values, opinions, and input of all group objectives?</p>	
<p>How did I take the feedback/constructive criticism by peer group? How will I construct this feedback in the future?</p>	
<p>How did I adjust the plan of care to meet group objectives? How did I actively fulfill individual objectives as well as group objectives? (<i>Adaptive Reflection</i>)</p>	
<p>How did the communication and co-</p>	

<p>coordination within the interprofessional team occur? Was it successful/effective?</p> <p>What went well? What would I do differently in the future?</p>	
<p>How did I assist in the formation of clear interprofessional objectives?</p>	
<p>How did I assert leadership qualities within a group? Were there barriers to effectiveness?</p>	
<p>Were there clearly defined roles for each subgroup or discipline?</p>	
<p>Did I work together with the group to ascertain effective allocation of resources?</p>	

**Simulation Scenario Topic:** E. V. is a 63-year-old woman who was admitted to the hospital unit status post-ischemic stroke: 18 hours post intervention. She has symptoms of right-sided residual weakness of the arm and leg, and difficulty speaking and swallowing.

**Interprofessional Learning Objectives for Research Study Simulated Learning**

- |   |
|---|
| <p>1. Develop understanding and knowledge of the scope of practice of other disciplines in providing quality patient care by demonstrating similarities, differences and role redundancy in care.</p> |
| <p>2. Increase understanding and respect for the values and ethics that differentiate within</p>  |

the health professions.
3. Develop the ability to effectively represent one's own profession in patient-centered care and towards healthcare colleagues.
4. Understand the relationship and communication needs between one's own profession and the background, scope and roles of other healthcare professionals, patients and family members.
5. Demonstrate understanding of collaborative teamwork needs and team dynamics that are significant to situations and plans of care in the healthcare setting.
6. Reflect and evaluate one's own ability to work effectively in a team and evaluate knowledge into transition to practice.

### Healthcare Discipline Goals

1. <b>Nursing Students:</b> Recognize mental and physical status changes in the client; Identify, assess and safely implement priority nursing care for a client with status changes: including medication administration [ability to take p.o. [by mouth] meds or define need of change in route of administration] patient education and neurological assessment.
2. <b>OT Students:</b> Recognize status changes in ADL's, mobility and movement in the client; Communicate and educate client and family towards activity devices, building strength and modifications towards activities of daily living while identifying activities to meet patient goals.
3. <b>SLP Students:</b> Recognition status changes in the client in communication, feeding/eating/swallowing, aspiration risk, speech ability and quality, education of patient and family, modifications in needs related to patient status.

## APPENDIX C

### Study Consent Form

#### INFORMED CONSENT LETTER AND FORM

Laury A. Westbury  
14200 Greensboro Court  
Plainfield IL 60544  
lbwestbury@comcast.net

April 13, 2018

Dear Volunteer,

You are invited to participate in a research study being conducted by Laury A. Westbury, Doctoral Student at William Howard Taft University conducting research regarding the use of a guided reflection tool in a collaborative healthcare setting following simulated learning experiences. This letter is an invitation for your contribution to my study. You were selected as a possible participant as a current occupational therapy, speech language pathology and/or registered nurse student.

#### **Introduction**

The purpose of this study is to determine if the use of a guided reflection tool in the collaborative healthcare setting following simulated learning experiences increases individual knowledge. The research will be carried out over approximately 3 months between May 2018-August 2018. Participants will:

- Participate in an interprofessional simulation scenario learning experience [20-30 minutes in length: This segment of the study will be the only segment that will be video-taped]
- Participate in an immediately to follow simulation scenario debriefing session utilizing the WSCR-T guided reflection tool [40 minutes in length]
- Participate in a post-debriefing online survey [10 questions/ Likert-style]

#### **Benefits and Risks of this Study**

The risks of participating in this study are minimal. Your name will not appear on the debriefing notes, the simulation scenario paperwork, or on the survey. Confidentiality will be maintained. The researcher will conduct simulation scenarios with written and audio-visual recordings and compile detailed notes from the debriefing feedback of the study participants. Privacy and confidentiality will be maintained. The documentation will not contain names or any identifier, or demographics of subject. Online surveys will be anonymously accessed per an online web-based provider link. The site filters have been designed so no tracking of IP addresses will be allowed. Video data will be stored on the institutional database which for 5 years which will be password protected by the researcher, eliminating access to other personnel, staff or students. The archived videos will be destroyed at the 5-year time-frame. Volunteer sample signed consents and research notes in written form will be stored in the researchers locked file cabinet within the researcher's locked office. Data will be used in research and data compilations in the effort to test the research question presented in this study. Participation in this study may not benefit you individually, however findings from this study will seek to inform the healthcare community of potential benefits of using a guided reflection tool in conjunction with collaborative simulation education.

#### **Voluntary Participation and Withdrawal**

Participation is strongly encouraged, but strictly volunteer. All participants may choose to withdraw from simulation activity, debriefing or online surveys. There will be no penalty for non-participatory choices.

Decision to complete or not complete the study will not affect the student status in any way. Each student agreeing to be part of the study will be required to sign the consent upon agreement to the study prior to the simulated learning experience.

Your decision whether to participate would not affect your current or future relationship with the candidate-researcher or the associated University. If you decide to participate, you are free to withdraw at any time without prejudice. You will also be provided with a copy of the concluded dissertation so that you have an opportunity to examine the manner in which the data are being applied.

**Compensation**

Participation in this study is completely voluntary. You would not receive monetary compensation-reward for your participation. The personal benefits of your participation are as mentioned in the previous section.

**Contacts and Questions**

You may ask any questions you have by contacting the researcher by telephone at 630-337-0754 or by e-mail at lbwestbury@comcast.net.

Sincerely,  
  
 Laury A. Westbury  
 Doctor of Education Candidate

**Statement of Consent**

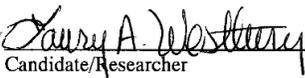
I have read the information herein, I have asked questions and received answers, and I have received a copy of this form. I consent to participate in this study.

\_\_\_\_\_  
 Participant/Subject Date

*If you have any complaints about your treatment as a participant in this study, please call or write to the chair of the Institutional Review Board: Elaine Fetyko Page, Institutional Review Board, Elmhurst College, 190 Prospect Avenue Elmhurst, IL 60126, (630) 617-3166. Although Ms. Page will ask your name, all complaints are kept in confidence.*

**Candidate/Researcher Statement**

All information contained herein is accurate. I have provided the participant with a copy of this form.

  
 Candidate/Researcher 4/16/18  
Date

**APPENDIX D****Script for Research Study Prebriefing, Simulation, Debriefing and Survey****Scripted Introduction: 5 minutes**

Thank you for your participation in this research study. I am the principal researcher Laury Westbury. In 2010, the IOM called for a radical change in healthcare education. Literature is unclear on what teaching strategies meet these needed changes to foster improved patient outcomes to reflect needs in the professional environment. Simulation and the use of reflection and reflective theory within the debriefing phase (post simulation scenario) has been approached as the most important component of training where students reflect on the scenario.

Measurement and evaluation of debriefing and reflection using a reflective tool aimed at collaborative learning reveals a gap in research. Promotion of interprofessional education of the healthcare team is desired in current healthcare practice with the assumption that learning is facilitated by group interactions, however, a focused format, or tool, for guided reflection to evaluate individual learning in multi-team approaches in the educational setting does not exist. *Thus, this research stands to answer four questions regarding the use of a guided reflection tool in a collaborative setting following simulated learning experiences and perceived individual knowledge attainment and exchange*

**WSCR-T tool: 5 -7 minutes**

I will now distribute the guided reflection tool to be used for this study. Please note you will have time to read through this tool in a few minutes. You will also keep this tool with you during the simulation scenario and will be given time (approximately 7 minutes)

post simulation scenario to individually journal your reflections upon this tool. You will bring the tool to open discussion debriefing to group-share learner focused thoughts based on the objectives of the learning scenario that are on the opposite side of the tool. Please do not place your name on this tool, but please do make sure you are journaling your reflective feelings on this sheet, as I will be collecting these sheets after the online survey portion of this study is completed. Please take about 7 minutes to read through the tool at this time.

**Orientation to the Patient/Clinical Environment: 10 minutes**

Participant roles established

Manikin usage, monitor, supplies for patient care, 7a in am [scenario time], focus on patient status, assessment, care planning for patient with education for patient and family.

No emergency situations will occur on this patient, calling depts. May be necessary but probably not.

Family member: briefing, coaching for ½ time of sim only

**SBAR Report: 15 minutes**

All participants will listen to the report of the patient status as a group. Following this report, each team of professionals will be allowed time to look at patient orders that are needed for your patient. The simulation will begin after the teams are prepared.

**Simulation Scenario: Interprofessional team participation: 20 minutes**

**Post-Simulation Scenario: Reflective journaling using WSCR-T tool: 7 minutes**

Researcher send participants link to survey at this time

**Open discussion team Debriefing: 40 minutes**

- If you did not have the tool in front of you would you know how to efficiently reflect individually on topics of leadership etc. on your own? Do you find this important in your learning about how to function in a team-based environment?
- Do you think having the tool pre-simulation scenario and reflective journaling post sim scenario assists in developing individual knowledge during collaborative simulated learning experiences?
- Would repetitious use of the tool during all collaborative simulated learning experiences provide you with a format for growth in learning and prioritizing patient care and expected outcomes?
- Did the time for reflective thoughts/journaling utilizing the tool provide a foundation for inner observation of learning in your role as well as the roles of other healthcare professionals?
- Did the tool assist in learning the important reflective content for an individual within a group?
- Did you like having the tool with objectives both interprofessional and intraprofessional for positive reflection?

Questions and reflective feedback of peers and faculty in interprofessional manner

Use too for progression of thoughts

Discussion accentuated and kept on focus by researcher

**(Total time allowed= 105 minutes/ timing posted above=104 minutes)**

**Online Survey: 10 minutes**

Allow participants time to get their electronic devices for survey; extra computers at research site if needed

Define anonymous nature of the survey, please complete all questions, comments are optional: if you use this section, please keep comments specific to questions and experience without the use of proper names of individuals, faculty, and familiar

comments.

**Thank You to Participants: Collecting of WSCR-T tool with participant comments  
upon: 3 minutes**

**APPENDIX E****Eva Valentino SBAR report for Simulation Scenario**

It is 0630 am.

**S:**

This is Eva Valentino, 63 (2/10/19xx) who was admitted to the nursing unit status post ischemic stroke: 18 hours post intervention. She has symptoms of right sided residual weakness of the arm and leg, and difficulty speaking and swallowing. Allergic to Enalapril. Full Code status

**B:**

Eva came to the hospital with complaints of numbness of the right lower extremity for several hours and subsequently became aphasic and presented with an elevated blood pressure assessment of 180/110. A neuro assessment was performed which identified right-sided facial droop, right arm drift and slurred speech. A STROKE ALERT was initiated. Patient was taken to the CT imaging center within 15 minutes and given Alteplase/tPA for clot dissolving. Eva is now status post ischemic stroke. Most muscle movement and speech/language function has returned but there is residual weakness with bilateral right sided extremities and also evidence of dysphagia and dysarthria.

She has a history of HTN, and hyperlipidemia, cholecystectomy 20 years ago. She lives at home with her husband and has a daughter who lives nearby.

**A:**

Status: awake, withdrawn, oriented x 3 with communication difficulties with speech  
Last Vitals: 98.7, 82, 16, 140/88, 97% on room air, denies pain at present time

Lung sounds clear bilaterally upon auscultation

Bowel sounds + in all four quadrants, LBM= 2 days ago

Voiding spontaneously: bedpan use, work to ambulate with assistance today after evaluation

Right Peripheral IV infusing 0.9 NS @75ml/hr

Diet: NPO: SLP to consult to assess feeding: Accuchecks while NPO; This am Blood Sugar at 5a was 80

Activity: Need OT and PT evaluations

**R:**

Manage and evaluate changes in patient status and increased risk of aspiration related to swallowing difficulties and communication difficulties related to changes in speech, limited arterial sticks for next 8 hours related to Alteplase, Manage B/P with med therapy as needed, Dr. Ulstrup has not activated anticoagulant/antiplatelet therapy orders for after the 24-hour timing. We may need to contact her to stay within the protocol for core measure compliance. Spiritual and emotional assessment of needs related to changes in condition for patient and family.

**APPENDIX F****Simulation Scenario for Westbury Research Study****SECTION I: SCENARIO OVERVIEW**

<b>Scenario Title:</b>	Interprofessional Collaboration in Healthcare Simulation: Eva Valentino
Original Scenario Developer(s): (name and credentials)	Laury A. Westbury MSN, RN, CHSE, CNOR
Date - original scenario	2/2018
Revision Dates:	
Pilot testing:	3/2018
<p><u>Estimated Scenario Time: 20-30 minutes</u> <u>Debriefing time: 40 minutes</u></p> <p><u>Target group:</u> Prelicensure students in registered nursing program, students of occupational therapy, students of speech-language pathology</p> <p><u>Brief Summary of Case:</u> Eva V. is a 63-year-old woman who is status-post Ischemic Stroke: 24 hours post-interventions or stroke onset.</p>	

<b>EVIDENCE BASE / REFERENCES (APA Format)</b>
TeamStepps
Potter, P. & Perry, A. (2017). <i>Basic Nursing Essential for Practice</i> 9 <sup>th</sup> ed. Mosby Elsevier. St. Louis, MO.
<b>Chapter 45:</b> Nutrition: p. 1080
<b>Chapter 49:</b> Sensory Alterations: p. 1243-1258
NIH Stroke scale
Lewis, S.L., Dirksen, S. R., Heitkemper, M.M., Bucher, L. & Harding, M.M. (2014). <i>Medical-Surgical Nursing: Assessments and Management of Clinical Problems</i> . 9 <sup>th</sup> ed. St. Louis, MO. Elsevier.
<b>Chapter 49:</b> Diabetes Mellitus: p. 1179-1186; <b>Chapter 58:</b> Nursing Management of Stroke: p. 1388-1412

ALL DATA IN THIS SCENARIO IS FICTICIOUS

<p><b>Specific Learning Objectives: After participation in the simulation scenario, the interprofessional team will:</b></p>
<p>7. Develop understanding and knowledge of the scope of practice of other disciplines in providing quality patient care by demonstrating similarities,</p>

differences and role redundancy in care.
8. Increase understanding and respect for the values and ethics that differentiate within the health professions.
9. Develop the ability to effectively represent one's own profession in patient-centered care and towards healthcare colleagues.
10. Understand the relationship and communication needs between one's own profession and the background, scope and roles of other healthcare professionals, patients and family members.
11. Demonstrate understanding of collaborative teamwork needs and team dynamics that are significant to situations and plans of care in the healthcare setting.
12. Reflect and evaluate one's own ability to work effectively in a team and evaluate knowledge into transition to practice.
<b>B. PRE-SCENARIO LEARNER ACTIVITIES</b>
<p><b>Prerequisite Competencies</b></p> <p>Student status per defined study population parameters, prebriefing of research study objectives, format, goals and consent</p> <p>Orientation to sim environment, human patient simulator and roles to be played in the simulation scenario</p>
<b>Healthcare Discipline Goals</b>
4. <b>Nursing Students:</b> Recognize mental and physical status changes in the client; Identify, assess and safely implement priority nursing care for a client with status changes: including medication administration[ability to take p.o. meds or define need of change in route] patient education and neurological assessment.
5. <b>OT Students:</b> Recognize status changes in ADL's, mobility and movement in the client; Communicate and educate client and family towards activity devices, building strength and modifications towards activities of daily living while identifying activities to meet patient goals.
6. <b>SLP Students:</b> Recognition status changes in the client in communication, feeding/eating/swallowing, aspiration risk, speech ability and quality.

**SECTION III: SCENARIO SCRIPT****A. Case summary**

It is 0630 am.

**S:**

This is Eva Valentino, 63 who was admitted to the nursing unit status post ischemic stroke: 18 hours post intervention. She has symptoms of right sided residual weakness of the arm and leg, and difficulty speaking and swallowing.

**B:**

Eva came to the hospital with complaints of numbness of the right lower extremity for several hours and

subsequently became aphasic and presented with an elevated blood pressure assessment of 180/110. A neuro assessment was performed which identified right-sided facial droop, right arm drift and slurred speech. A STROKE ALERT was initiated. Patient was take to the CT imaging center within 15 minutes and given Alteplase for clot dissolving. Eva is now status post ischemic stroke. Most muscle movement and speech/language function has returned but there is residual weakness with bilateral right sided extremities and also evidence of dysphagia and dysarthria.

She has a history of HTN, and hyperlipidemia, cholecystectomy 20 years ago. She lives at home with her husband and has a daughter who lives nearby.

**A:**

Status: awake, withdrawn, oriented x 3 with communication difficulties with speech

Last Vitals: 98.7, 82, 16, 140/88, 97% on room air, denies pain at present time

Lung sounds clear bilaterally upon auscultation

Bowel sounds + in all four quadrants, LBM= 2 days ago

Voiding spontaneously: bedpan use, work to ambulate with assistance today after evaluation

Right Peripheral IV infusing 0.9 NS @100ml/hr

Diet: NPO: SLP to consult to assess feeding; Accuchecks while NPO q 6 hours. This am Blood Sugar at 5a was 80.

Activity: Need OT and PT evaluations

**R:**

Manage and evaluate changes in patient status and increased risk of aspiration related to swallowing difficulties and communication difficulties related to changes in speech, limited arterial sticks for next 8 hours related to Alteplase, Manage B/P with med therapy as needed, Spiritual and emotional assessment of needs related to changes in condition for patient and family.

	<b>C. Scenario Cast</b>	
<b>Patient/ Client</b>	High fidelity simulator	
<b>Role</b>		
RN 1/RN 2		
OT 1/ OT 2		

SLP 1/ SLP 2
Family

**E. Baseline Simulator/Standardized Patient State**  
(This may vary from the baseline data provided to learners)

**1. Initial physical appearance**

Gender: <i>Female</i>	Attire: <i>Hospital Gown</i>
-----------------------	---------------------------------

Sim equipment needs:

Sim manikin, wig, glasses, female genitalia PPE, stethoscope, EMR, syringes, needles, alcohol swab, IV, SCD's, IV pump with .9NS at 75ml/hr

Blood glucose monitors...values

Pyxis and med cart for medication administration needs

Patient ID band, allergy band, feeding/consumables, water, juice, thickening agent

Med book, online source

X	ID band present, accurate information		ID band present, inaccurate information		ID band absent or not applicable
X	Allergy band present, accurate information		Allergy band present, inaccurate		Allergy band absent or not applicable

	<i>Enalapril</i>		information		
--	------------------	--	-------------	--	--

<b>2. Initial Vital Signs Monitor display in simulation action room:</b>					
X	Monitor on, standard display				
BP: <b>155/99</b>		HR: <b>87</b>		RR: <b>18</b>	
			T: <b>98.7</b>		SpO2: <b>97% room air</b>
Lungs: Sounds/mechanics		Left: <i>Clear</i>		Right: <i>clear</i>	
Heart:		Sounds:		<i>Regular rate</i>	
		ECG rhythm:		<i>Normal sinus rhythm</i>	
		Other:			
Bowel sounds:		<i>Positive all 4 quadrants</i>		Other:	

<b>3. Initial Intravenous line set up</b>						
	IV #1	Site: Right Peripheral forearm		Fluid Type: 0.9NS	Initial Rate: 100mL/hr	IV patent (Y/N)
<b>4. Initial Non-invasive monitors set up</b>						
	NIBP	X	ECG First lead	X	ECG Second Lead	
X	Pulse Oximeter	X	Temp Monitor/type		Other:	
<b>6. Other monitors/devices</b>						
	Foley catheter Epidural catheter	Amount: Infusion pump:	Appearance of urine: Pump settings:			
	Fetal Heart rate monitor/tocometer	Internal	External			

<b>Environment, Equipment, Essential props</b>	
Recommend standardized set ups for each commonly simulated environment	
<b>1. Scenario setting:</b>	
Inpatient Acute Care Hospital Setting	

--

<b>2. Equipment, supplies, monitors (In simulation action room or available in adjacent core storage rooms)</b>						
X	Bedpan/ Urinal		Foley catheter kit		Straight cath. kit	Incentive spirometer
X	IV Infusion pump		Feeding pump		Pressure bag	X Wall suction
	Nasogastric tube		ETT suction catheters	X	Oral suction catheters  Ready PRN for increased risk of aspiration	Chest tube insertion kit
	Defibrillator		Code Cart		12-lead ECG	Chest tube equip
	PCA infusion pump		Epidural infusion pump		Central line Insertion Kit	Dressing Δ equipment
X	IV fluid Type:				Tubes/drains Type:	Blood product ABO Type: # of units:

<b>3. Respiratory therapy equipment/devices</b>							
	Nasal cannula		Face tent		Simple Face Mask		Non-rebreather mask
	BVM/Ambu bag		Nebulizer tx kit		Flowmeters (extra supply)		
<b>7. Documentation and Order Forms: See EMR on computer</b>							
<b><u>SEE ELECTRONIC CHART FOR PATIENT DETAILS</u></b>							

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES		
<p><b>Initiation of Scenario:</b></p> <p><b>Student learners will hear report of patient before initiating their scene. Electronic medical record will also be available for review.</b></p>		
STATE / PATIENT STATUS	DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE	
<p><b>1. Baseline</b></p> <p>98.7, 82, 16, 140/88, 97% on room air, denies pain at present time</p> <p><b>Lungs: normal</b></p> <p><b>EKG sinus</b></p> <p><b>Abdomen:</b></p>	<p><b>Operator</b></p> <p><b>Withdrawn</b></p> <p><b>patient, sad,</b></p> <p><b>speaking</b></p> <p><b>with some</b></p> <p><b>difficulty,</b></p> <p><b>slurring,</b></p> <p><b>swallowing</b></p> <p><b>difficulties</b></p>	<p><b>Expected Learner Actions/Interventions</b></p> <p><b>Highlight interprofessional interactions towards simulation objectives.</b></p> <ul style="list-style-type: none"> <li>• <b>Hand hygiene, Introduction of healthcare team to patient and family</b></li> <li>• <b>Establish teamwork approach within the patient with change in status</b></li> <li>• <b>Education by discipline as needed</b></li> <li>• <b>Teamwork towards patient needs</b></li> <li>• <b>Patient goals and message board communication filled out.</b></li> </ul> <p><b>Debriefing Points:</b></p>

<p><b>normal</b> <b>SCD sleeves on</b></p>	<p><b>with thin</b> <b>liquids,</b> <b>sense of</b> <b>emotional</b> <b>needs</b> <b>related to</b> <b>new</b> <b>onset/acute</b> <b>ischemic</b> <b>stroke</b></p>	
<p><b>2.</b>  98.7, 78, 18, 167/100, 96% on room air, denies pain at present time</p>	<p><b>Operator</b>  <b>Increased</b> <b>B/P</b> <b>Difficulty</b> <b>speaking</b> <b>Family:</b> <b>“What’s</b> <b>wrong?”</b> <b>Family and</b> <b>patient</b> <b>frustrated</b> <b>with</b> <b>changes</b></p>	<p><b>Expected Learner Actions/Interventions</b>  <b>Highlight interprofessional interactions</b>  <b>towards simulation objectives.</b>  <b>RN Interventions in patient plan of care</b></p> <ul style="list-style-type: none"> <li>• <b>Hand hygiene</b></li> <li>• <b>Assessment of V.S. &amp; Neuro assessment</b></li> <li>• <b>Communication with patient and family</b></li> <li>• <b>Follow up on SLP consult/eval and communication with SLP team member regarding patient findings</b></li> <li>• <b>Speech therapy needs, diet advancements based on eval.</b></li> <li>• <b>Increased risk for aspiration: suction ready as PRN or emergency need.</b></li> <li>• <b>Med therapy management related to Increased B/P</b></li> <li>• <b>Patient and family education needs</b></li> <li>• <b>Assistance with mobility, transfers, up with assist, education related to condition/status changes Follow up with OT consult order.</b></li> <li>• <b>Reassessment post med admin of</b></li> </ul>

		<p>Labetolol 10mg by assessing B/P again, and med calculation and proper administration of compatible with fluid med.</p> <ul style="list-style-type: none"> <li>• Labetelol should prompt HR and BP check. Push undiluted over 2 minutes. Look up rate, compatibility</li> <li>• Include patient in explanations along with family.</li> <li>• Plavix/Aggrenox education</li> <li>• Address emotional needs based on the change of status of the client and family</li> <li>• Signs and symptom assessment for bleeding with anticoagulant therapy, head to toe, LOC assessment</li> <li>• SBAR report to physician and team members as needed in exchange of information or need of orders or evaluative updates.</li> <li>•</li> </ul> <p><i>Debriefing Points:</i></p>
<p>3.  98.7, 82, 16,  136/88, 97% on  room air, denies  pain at present</p>	<p>Patient tries  to relate to  movement  changes,  ADL  assistance,</p>	<p>Expected Learner Actions/Interventions</p> <p><b>Highlight interprofessional interactions towards simulation objectives.</b></p> <p><b>OT Interventions in patient plan of care</b></p> <ul style="list-style-type: none"> <li>• Hand hygiene</li> <li>• Communication with patient and family: history, goals, usage of assistive devices</li> </ul>

<p>time</p> <p><b>Lungs: normal</b></p> <p><b>EKG sinus</b></p> <p><b>Abdomen: normal</b></p> <p><b>SCD sleeves on</b></p>	<p>speaking,</p> <p>difficult to</p> <p>communica</p> <p>te</p> <p>Refuses</p> <p>some</p> <p>therapy</p> <p>needs</p> <p>related to</p> <p>frustration</p>	<ul style="list-style-type: none"> <li>• <b>Movement and ADL's, usage of assistive devices</b></li> <li>• <b>Communication with nurse and other disciplines regarding goals of patient and care needs</b></li> <li>• <b>Reaching devices and strength building exercises towards goals and ADL's with assessment</b></li> <li>• <b>Address emotional needs based on the change of status of the client and family</b></li> <li>• <b>SBAR report to physician and team members as needed in exchange of information or need of orders or evaluative updates.</b></li> </ul> <p><i>Debriefing Points:</i></p>
<p><b>4.</b></p> <p>98.7, 82, 16,</p> <p>136/88, 97% on</p> <p>room air, denies</p> <p>pain at present</p> <p>time</p>	<p><b>Patient and</b></p> <p><b>family try</b></p> <p><b>to relate to</b></p> <p><b>speech</b></p> <p><b>difficulties,</b></p> <p><b>needs in</b></p>	<p><b>Expected Learner Actions/Interventions</b></p> <p><b>Highlight interprofessional interactions towards simulation objectives.</b></p> <p><b>Intraprofessional SLP Interventions in patient plan of care</b></p> <ul style="list-style-type: none"> <li>• <b>Hand hygiene</b></li> <li>• <b>Communication with patient and family: history, goals, usage of assistive</b></li> </ul>

<p>Lungs: normal EKG sinus Abdomen: normal SCD sleeves on</p>	<p>nutrition changes in the acute/sudden nature. Family asks many questions, can interfere with speech language therapy interventions with patient at times.</p>	<p>devices</p> <ul style="list-style-type: none"> <li>• Feeding assessment and suggestions for individualized needs: relay to healthcare team especially nurse and physician as to order diet order based on findings, needs for increased risk of aspiration</li> <li>• Speech language assessment for evaluation and need for therapy: relay information to healthcare team</li> <li>• Address emotional needs based on the change of status of the client and family</li> <li>• SBAR report to physician and team members as needed in exchange of information or need of orders or evaluative updates.</li> </ul> <p><i>Debriefing Points:</i></p>
<p><b>Scenario End Point:</b></p> <p>When all objectives presented for the scenario are accomplished or the team has exhausted the intervention potential</p>		

## APPENDIX G

### Simulation Standards

“The International Nursing Association for Clinical Simulation and Learning (INACSL) has developed the *INACSL Standards of Best Practice: Simulation<sup>SM</sup>*.

The INACSL Standards of Best Practice: Simulation were designed to advance the science of simulation, share best practices, and provide evidence-based guidelines for implementation and training” (INACSL, 2016, S1-S9).

INACSL provides a detailed process for evaluating and improving simulation operating procedures and delivery methods that every simulation team will benefit from. Adoption of the *INACSL Standards of Best Practice: Simulation<sup>SM</sup>* demonstrates a commitment to quality and implementation of rigorous evidence- based practices in healthcare education to improve patient care by complying with practice standards in the following areas:

- Simulation Design
- Outcomes and Objectives
- Facilitation
- Debriefing
- Participant Evaluation
- Professional Integrity
- Simulation-Enhanced Interprofessional Education (Sim-IPE)
- Simulation Operations (SimOps)
- Simulation Glossary

(INACSL, 2016)



**APPENDIX H****IRB Approval from College of Research Study**

April 12, 2018

**IRB Notice of Approval**

**Principal Investigators: Laury A. Westbury**  
**Project Title: The Use of a Guided Reflection Tool in a Collaborative Healthcare Setting**  
**Following Simulated Learning Experiences**  
**Renewal Date: April 12, 2019**

This letter certifies that this research study as described in the application been approved because the Elmhurst College Institutional Review Board has determined that the protocol fulfills all the necessary requirements for human subjects research.

This approval has been granted from April 12, 2018 until April 11, 2019. Should you need to continue this study beyond this period, please submit to the Chairperson of the Elmhurst College IRB a one-page continuation application by March 11, 2019. Include in this continuation application a brief description of the progress to date in the study.

Please note that this approval is for the protocol as described in your application. Should you desire to make any further modifications to your protocol, any and all modifications must be submitted to and approved by the Elmhurst College IRB prior to being initiated.

Sincerely,



Elaine Fetyko Page  
Chair, Institutional Review Board  
Associate Librarian  
630-617-3166  
elainep@elmhurst.edu

## APPENDIX I

## IRB Approval from William Howard Taft University



## IRB APPROVAL FORM

Name of Student: Laury A. Westbury  
 Dissertation Title: The Use of a Guided Reflection Tool in a Collaborative Healthcare Setting Following Simulated Learning Experiences

Date of Application: March 27, 2018

Application Type (The IRB Committee makes this determination):

- Exempt Review
- Expedited Review
- Full Review

(The Candidate may want to add a note to the application indicating a rationale for selecting an application type along with justification)

Application Status:

- Approved as Submitted
- Not Approved
- Approved with Amendment

The candidate-researcher understands and agrees to maintain the confidentiality of any entity agreeing to assist with providing data, to obtain informed consent from any human participants in the study, and to retain and safeguard written consents and the data for a period of five years from all entities, presenting copies to William Howard Taft University, the participants, and authoritative bodies when appropriate.

*Approval*

Robert Strouse Dean  
 IRB Representative Name and Title

Robert Strouse  
 Signature

3/30/18  
 Date

Completed forms and attachments should be submitted to the Academic Dean through the Dissertation Committee Chair.