NURSING SIMULATION: THE ART AND SCIENCE OF DEBRIEFING WITH A DEMONSTRATION FOR ADVANCED EDUCATION

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Abstract

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"Objective perspective" and "genuine curiosity" are key phrases by authors of *The 3D model of Debriefing: Defusing, Discovering and Deepening*, based on Kolb's theory of experiential learning. These phrases represent a mindset, attitude and education base that is necessary for successful debriefing after nurse simulations. Nurse educators use this type of learning most often for practical application of skills and knowledge. Experiential learning is used in the clinical setting with real patients and recently used for simulation training in a controlled laboratory atmosphere disguised as a patient room in a hospital or clinic setting. Education and training for simulation use is different from traditional practical application learning as the laboratory is a controlled environment that enhances learning and limits safety concerns for the patient. Utilizing a literature search as evidence, data are shown to demonstrate the art and science of debriefing and the need for specific nurse educator training for the current and future nurse educator faculty.

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Introduction

Nurse simulation is an art as demonstrated by each simulation experience being unique to the group and scenario. The science portion is the study of an educational tool that is meant to be reproducible repeatedly in a controlled atmosphere. Nurse simulation is on the rise due to multiple factors and educators are using it more frequently yet without distinctive training. Optimizing clinical learning and decision-making are key pieces to simulation and educators need to have specialized training for this avenue of education.

Simulation devices that mimic a human or medical situation are key tools of a nursing simulation, and are known as human patient simulators. These are available with a range of technical functions: a plastic arm with veins enables intravenous catheter insertion practice (known as a task trainer); a partial mannequin with anatomical features allows for cardiopulmonary resuscitation (CPR) teaching; or a computer programmed, life-sized mannequin may exhibit a hazardous life-threatening situation.

In 1910 a doll maker and physician's wife, was commissioned by Miss A. Lauder Sutherland, the "principal of the Hartford, CT Hospital Training School for Nurses" (Herrman, 2008, p. 53), to develop an adult-sized mannequin, and in 1911 the mannequin was sent to the nursing school for use. Simulation of patient situations began at that time, characterized by several steps, finishing with debriefing following the simulated scenario and pre-brief. However the process of debriefing was not formalized until an article in favor of critical incidence debriefing by Mitchel (1984) established debriefing as a paramount learning step for critical patient situations, thus formalizing the need for focus on different elements of the simulation.

High Fidelity nursing simulation is in its infancy compared to simulation use in other professions. The military has utilized simulation education since the 1930s after flight safety

issues were identified (Rosen, 2008). With the birth of “analog computers” (Rosen, 2008, p. 158), simulations advanced in the 1950s to include more complex and realistic scenarios with interactive features. The nursing profession has utilized specific nurse related scenarios since the 1960s, when the first cardiopulmonary resuscitation (CPR) guidelines were developed and the use of Rescue Annie® (soft life-like mannequin) began. Further development for advanced mannequin use in the late 1980s focused on medical safety. Two companies, CAE Health Care and the Stanford Medical School affiliated Veterans’ Affairs Palo Alto Health Care System, simultaneously developed mannequins capable of manipulation of body functions such as vital signs. CAE developed the first high fidelity manikin/computer capable of many bodily functions after the advent around 1996 of computer software programs, designed and implemented by a trained operator (Cooper & Taqueti, 2004). Laerdal Medical continued development of high fidelity mannequins in 2000 and by 2004 medical simulations commonly utilized in hospitals and military installations (Laerdal Medical, 2012).

Nursing programs and educational curriculum across the country are increasingly applying simulation training to enhance educational opportunities (Kardong-Edgren, Willhaus, Bennett, & Hayden, 2012), as well as to address reduced clinical site availability and reduced patient experiences (Dreifuerst, 2011; Pauly-O’Neil; 2012, Harder, 2010; Kardong-Edgren et al., 2012). The need to utilize simulations in conjunction with traditional education or in place of some clinical experiences was also emphasized in a dissertation by Dreifuerst (2010, 2011).

Simulations attempt to mimic a human situation without causing danger to the patient, while allowing the students to take risks and go “beyond their safety zone” in order to facilitate enhanced learning (The INASCL Board of Directors [INASCL], 2011, p. 6). Nursing simulation begins with a story or situation with three descriptive elements or phases: pre-brief; simulation

administration; and debrief. Each element has a specific focus with distinctive features; any deviation from these may result in poor outcomes.

The pre-brief includes learning objectives and environmental orientation, including equipment location and simulation lab capabilities. An inadequate pre-brief can lead to anxiety for the learner and absent patient information necessary for the scenario. Laboratory personnel introductions take place establishing a safe, non-judgmental, and non-accusatory learning environment (Wikers, 2010).

Simulation administration includes case scenarios, developed prior to the simulation day and written to mimic patient situations. Poorly written scenarios may provide erroneous information that confuses the learner. The simulation experience often involves several students, a clinical instructor at the bedside (mimicking a real clinical situation) and a simulation trained educator at the controls of the simulator. During this time, certain tasks are expected of the students, as identified by objectives, and critical thinking is anticipated for the particular scenario.

Debriefing takes place immediately after the session utilizing guided reflection, in which the instructor allows time for the learner to explore outcomes in relation to objectives as well as to explore optional patient outcomes and critical decision-making choices (Shinnick, Woo, Horwich, & Steadman, 2011, The INASCL Board of Directors [INASCL], 2011). An accusatory or unstructured debriefing session is disadvantageous to the learner. Educational models, such as Benner's framework of novice to expert and Kolb's Experiential Learning model, (Kolb, 1984, Waxman & Telles, 2009), guide the debriefing process by specifying the learning methods and levels to facilitate optimum learning outcomes from the simulation experience. The instructor

who was at the bedside leads the debriefing, thus allowing for genuine curiosity and objective perspective to enhance the learning environment.

Debriefing has now developed into a discipline of its own with training models, specific formats and tools for evaluation of trainer and participants (Cantrell, 2008, Shinnick et al., 2011). It has been demonstrated in the nursing literature as a vital phase of simulation (Cantrell, 2008; Shinnick, Woo, Horwich, & Steadman, 2011) and "the cornerstone to experiential learning" (Neill & Wotton, 2011, p. 162). The literature debates the extent to which instructors and trainers are receiving adequate education necessary to enhance the art and science of debriefing as well as conducting all phases of simulation. Factors limiting effectiveness include fear of new technology, lack of continued education, excess demands on faculty due to shortages of staff and "lack of faculty compensation" (Starkweather & Kardong-Edgren, 2008, p. 2). Graduate and post-graduate programs are exploring the use of simulations to train future educators. The graduate students are the learners conducting simulations with undergraduate nursing students while experienced faculty provides oversight and feedback in a debriefing session following the undergraduate debriefing (Shellenbarger & Edwards, 2011).

The International Nursing Association for Clinical Simulation and Learning Council of Deans has identified the need to include simulation 15% of the time in a clinical course for undergraduate nurses (Murphy, 2012). Some nursing programs offer simulation training in diverse ways, but standardization is infrequent and often exhibited as participation in undergraduate simulation education without prior training or utilization of education models or the debriefing process (Shellenbarger & Edwards, 2011). Dreifuerst (2010, 2011) stated the need for consistent preparation of nurse educators for the debriefing element of simulation.

Debriefing establishes the simulation in the learner's practices by integrating the learner's emotional responses, behavior and thoughts into deepening the learner's experience and thus has been demonstrated as the most important part of a simulation exercise (Shinnick et al., 2011). This paper specifically reviews the process of debriefing in high fidelity simulation and offers suggestions for preparation of nurse educators to integrate high quality debriefing techniques into simulation experiences for nursing students. The purpose is to demonstrate the need for simulation debriefing training for nursing faculty to facilitate nursing student education. A review of literature strives to highlight debriefing as a pivotal part in development of debriefing expertise for educators engaged in the use of simulation.

Purpose statement

Review the process of debriefing in high fidelity simulation to demonstrate the specificity of simulation educational elements and the need for distinctive training for current and future nurse educators.

Literature Review

A review of literature strives to highlight debriefing as a particular need for development of debriefing expertise for educators engaged in the use of simulation.

Utilizing the databases CINAHL (EBSCO), PubMed and PsychINFO, over 15,000 articles were found, spanning 11 years, beginning in 2001 to current. Search items included debriefing, instructors, simulation and instruction. Google search engine was included for available evaluative tools and referenced for specific simulation education groups/schools; these included the National League for Nursing, Regis, and Harvard Medical School. The simulation reference ages ranged from 1947 to current. Further refining the search to include nursing simulation, education and debriefing, resulted in 60 additional articles. The articles included in this paper are those that address the purpose statement.

Simulation

Simulation has been shown to be an effective educational tool in the aviation industry and United States military (Rosen, 2008). The health care industry has been slower to acquire its use. Similar to aviation history, nursing and health care use simulation in response to safety concerns (Pauly-O'Neil, 2012; Rosen, 2008). Nursing has taken the next step by including simulation training to augment actual human interaction. Best practices and standards, which are created by methods established to be trustworthy and reproducible, are utilized ("Cambridge Dictionaries online," 2011). Utilizing best practices and standards of simulation with appropriate debriefing, simulation training can be a complimentary tool to active participation in the clinical setting (Pauly-O'Neil, 2012).

Simulation includes the phases of pre-brief, scenario and debrief, all of which are specific in character and require equal attention with learning, utilized in each phase; models are those

previously mentioned. Standards for pre-brief include establishing trust and safety with the utilization of objectives in order to provide, structure, and purpose for the exercise (Wikers, 2010). The scenario phase uses case studies, based on realistic human situations with accurate data requiring appropriate responses by a high-fidelity mannequin or communication and collaboration by the students to solve a situation. The expected standard for this phase includes utilization of the nursing process: assessment; utilization of nursing diagnosis; implementation of chosen actions; and re-evaluation post implementation (Pacific Lutheran University Website, n.d.). Debriefing has been described as the most important element of a simulation and the "most valuable in producing gains in knowledge" (Shinnick et al., 2011, p. 109), further suggesting sufficient time and attention is allowed for this particular phase. Best practices and standards are becoming established for this phase, yet essential knowledge and tools for educators scarcely exist. Established debriefing methods include video-reviewed feedback and structured and unstructured review with objective questions to ensure removal of subjective behavior by the instructor. The structure inclusion allows for impassive, fact-based feedback to promote the learning process. The phase of debriefing occurs after subjective data is presented and the instructor utilizes guided reflection to assist the learner's reflection on the experience.

Theoretical Model for debriefing

Utilization of the 3D model and assimilation of the new experience are encouraged by Kolb's discussion of experiential learning. The 3D model of debriefing: defusing, discovering and deepening (Zigmont, Kappus, & Sudikoff, 2011) utilizes Kolb's Experiential theory as a basis for debriefing and model development. Kolb's theory is described as enhanced learning through an experience by way of the perceptions and behaviors that accompanied the newly acquired encounter and approaches taken.

The 3D model captures the debriefing experience from the simulation and uses a guided encounter with specific questions to enhance the learning. This model, a "structured framework for facilitators of debriefing" (Zignont et al., 2011, p. 52), focuses on the emotional responses, behavior and thoughts, deepening the learning experience. Participants utilize not only their own experience but others as well through observation and interaction. Debriefing involves emotional recognition from all participants with or without vocalization of that experience and of the actions taken and the overall experience.

Defusing, a necessity for maintaining both technical and emotional entirety of the experience, takes place immediately after the simulation. If time is allowed without guidance then the experience can be distracted into whatever the student may have previously experienced, negative or positive, and may allow self-doubt to emerge. Simulations include making mistakes or perceived mistakes, and subsequently learning from them. Emotional release is encouraged during this phase, which aids in reduction of "anxiety and stress" (Zignont et al., 2011, p. 55) and encourages learning. Defusing with the team, including the attending instructor, allows for honest observations and insight.

The *Discovering* phase involves the instructor assisting with reflection, usually through "objective perspective" (Zignont et al., 2011, p. 56) and uses specific open-ended questions to allow articulation of students' decision-making processes. The instructor may then fill in gaps in knowledge by assisting with improved or different decision making for future reference. Learners are allowed to explore the experience and their feelings in a safe environment created by the instructor. The United States Army utilizes a specific format of Subject, Discussion, Solutions and Suggestions with two positive and two negative comments for each, (S. M. Punch 1st Leiut, personal communication, January 1, 2012). A key to the discovery phase as stated by

the 3D model authors is “genuine curiosity throughout the debriefing” (Zignont et al., 2011, p. 56); this concept is in reference to the instructor or the debriefor and allows for open observation and decreased burnout. The concepts of maintaining genuine curiosity and objective perspective are imperative for a positive learning experience.

Deepening is the synthesis of the new information. The learner will choose to preserve the new knowledge and behaviors or to abandon them in future use. Alternative behaviors can be explored and true adaptation can take place. Synthesis takes place with the connection of reasoning and experience to emotion, cementing the learned behavior into experiential learning continuing as a base for future experiences. The experiential learning similarly occurs with the instructor and the methods utilized for debriefing. Simulations enhance the instructor’s experiences with educational techniques and similar steps can be taken to improve or enhance the debriefors knowledge and techniques. Waxman & Telles (2009) describes the application of Benner’s Framework, novice to expert, in reference to necessary faculty development.

Application of debriefing tools and methods

Established tools and techniques specifically designed for debriefing and assessment currently exist. One tool is the Debriefing Assessment for Simulation in Healthcare (DASH) developed by Harvard Medical School (Center for Medical Simulation website, n.d.). This assessment tool was developed to rate the debriefer either as a self-evaluation or by the student. The subjective tool includes specific questions regarding “how people learn and change in experiential contexts” (Simon, Raemer, & Rudolph, 2009). Documentation in the utilization of this tool is clarified in an article stressing the need for trainer education (Larsen, 2011). Larsen’s training consisted of supervised experiences by expert trainers in an “immersive simulation learning experience” conducted in Southern California at Loma Linda University’s Medical

Simulation Center. The immersion training included all aspects of simulation with timely evaluation of her actions as the educator.

A second tool, the Health Sciences Reasoning Test HSRT (Facione & Facione, 2006), measures critical thinking skills aimed at health sciences knowledge acquisition. Dreifuerst (2011) utilized both tools (HRST and DASH®), to evaluate effective debriefing with the use of specific pedagogy. The study involved 238 nursing students who participated in simulation. Both tools were found to be effective for development of critical thinking acquisition and perceived perception of the "quality of the debriefing" (Dreifuerst, 2011, p. 250), providing evidence for the necessity for utilization of a structured tool to evaluate the effectiveness of structured debriefing.

Another type of debriefing tool, video tape feedback, allows learners to revisit their actions and decisions through a discussion type feedback session (Chronister & Brown, 2011). Video assisted plus verbal feedback was found to be useful because "quality and speed of student skills may be positively affected" (Chronister & Brown, 2011, p. 7), yet showed no higher results for knowledge acquisition over verbal debriefing alone. Ultimately, the study demonstrated: video-feedback alone is less effective than if used in conjunction with verbal feedback, as well as increased time is needed for debriefing for singular use of video-feedback. Demonstrating video feedback alone is an ineffective technique for optimum knowledge acquisition. Grant et al. (2011) identified that "scenario feedback" (p. 178) is necessary for simulation education; however, video assisted feedback is insufficiently addressed in the literature. Their study involved 40 students of differing disciplines (nursing and nurse anesthetist); one grouped utilized verbal feedback and the other utilized video feedback in addition to verbal. The results

demonstrated higher scores on pre-determined desirable behaviors and increased student satisfaction in the combined feedback group versus the verbal technique alone.

Merits of simulation and structured or unstructured debriefing were explored by Mariani et al. (2012), utilizing the Lasater Clinical Judgment Rubric® which measures "clinical judgment" (p. 3). In her study, "Structured" was defined as facilitator organized with the use of a test or tool, such as the DASH tool, designed for debriefing and described utilizing nursing and educational theories as a basis for questioning. "Unstructured" debriefing was demonstrated to offer, "no specific format for faculty to follow" (Mariani et al., 2012, p. 4), usually including what did or did not occur during the simulation. This study found no statistical differences between the groups, yet data revealed distinct opinions from the student perspectives that warrant mention here.

The unstructured debriefing group experienced a discretionary response by the instructor, involved obvious questions regarding what went well, and what would be done differently. Perceptions from the students regarding structured debriefing were stated as "assist in recognizing the affective component of learning" (Mariani et al., 2012, p. 6). The unstructured model revealed challenges including shy or inexperienced learners who were unable to discern the answers and therefore favored the typical teaching pedagogical teaching style, instead of androgical, when learning is driven by the curiosity and desire of the student.

Structured debriefing will aid the inexperienced instructor and the student; Mariani et al (2012) alluded to necessary structuring with the comment "knowing how to debrief" is imperative to the experience. The students in this study perceived structured debriefing to be the ideal method; the authors stressed the need for instructor understanding and training to ensure similar outcomes. Inexperienced instructors who demonstrate inconsistent behavior during

debriefing will therefore have students who demonstrate decreased leaning and satisfaction with the simulation experience.

Cantrell (2008) found structured debriefing allows the educator to be properly trained while demonstrating "caring, nurturing and unbiased feedback" (p. 22) in order to facilitate increased learning. This theme was stressed as a best practice for undergraduate nursing simulation education. Students (n=11) identified in her "education-focused" (p. 19) study, the need for instructor "direction and assistance" (p.22). Structure and standardization techniques allowed supervision and support providing optimum learning for the students. The study utilized video feedback in addition to verbal with its aim at answering two questions: 1) Does structure "increase student's awareness of their skill level?" and, 2) Does structured debriefing "enhance student's perceived value of clinical simulation?" (p. 20). Both questions found that the manner in which debriefing is conducted has a direct correlation with the value of the experience, and that the instructor's demeanor is as important as how the debriefing is managed.

Education

Courses have been designed to educate debriefers for simulation experiences, yet few nurse educator programs include simulation or debriefing training. Faculty has identified their paramount role in the important phase of simulation debriefing (Neill & Wotton, 2011). Of the sixteen articles presented in the review, seven referenced debriefing as imperative to the experience and expressed the need for increased education while the other five referred to the importance of nurse educator knowledge to the debriefing process. The articles are correlated in the included table.

Debriefing has been documented in published literature as the most important element in simulation and as essential to the hands-on learning portion of simulation. Confirming the need

for sufficient allotment of time for debriefing and focus on adequate training for the nurse educator (Shinnick et al., 2011). This "two group repeated measures" (p. 106) study examined all three phases of simulation and found a higher knowledge acquisition demonstrated on post-tests after the debriefing phase in contrast to those tested without the use of debriefing.

The importance of debriefing was further described in an article by Wickers (2009) who states, "structuring a seemingly unstructured learning event is paramount to the effectiveness of the debriefing session" (2009 p. 83). The multiple elements of debriefing, including creating a safe environment, utilizing theories as basis for questions, and using positive feedback, creates the need for debriefer training. Without training, many opportunities will be lost during this important phase. The National League for Nursing (NLN), specifically the Society for Simulation in Healthcare (SSH), emphasizes utilization of best practices through education and collaboration. Online courses provide training in all aspects of simulation. Certification in simulation is offered through SSH. Acquisition of the Certified Healthcare Simulation Educator (CHSE) demonstrates proficiency and dedication to the appropriate use of this technological approach to nurse education. As stated by SSH certification committee, certification "improves healthcare simulation education through the identification of best practices and recognition of practice" (Society for Simulation in Healthcare [SSH], 2012, p.6).

An immersion experience at Loma Linda University's Medical Simulation Center, by a seasoned educator (Larsen, 2011), identified the need for specialized training for simulation and the debriefing phase. Even with thirty-two years of nursing experience, she felt ill prepared to lead simulation training. After two years of practical experience with simulation training, formalized education was facilitated through immersion training; understanding and knowledge

beyond her imagination ensued. The education involved all facets of simulation education with the emphasis that each was a necessary piece of the puzzle.

Many authors document the importance of debriefer training. Elizabeth Hallmark (2010) demonstrates in her doctoral dissertation the correlation of debriefer training and the understanding of student refection on learning during the debriefing process. Eighty-four students participated in her study that attempted to find a correlation between instructor preparation and student outcomes along with an increased student satisfaction. Students were found to be more satisfied with the prepared instructors; quantitative student outcomes were not statistically significant. Students' comments via qualitative questioning; identified an increase in "self-confidence, improved situational awareness, improved critical thinking skills and improved communication skills" (Dreifuerst, 2010, p. 2)

Dreifuerst (2010) discusses the significance of quality debriefing and the impact on the learner's experience. Two hundred and thirty-eight students participated in this quasi-experimental study that sought to demonstrate the necessity for faculty debriefer training through the evaluation of student pre and post simulation understanding in contrast to those who experienced reflective faculty led debriefing. The study explored the use of a particular teaching strategy in which debriefing was conducted for meaningful leaning. The HRST tool was utilized in conjunction with the DASH, and statistically significant results showed increased clinical reasoning in the control group that experienced the meaningful debriefing versus standardized of no particular debriefing method.

Implications for advanced nursing education

Nurse educators have identified the desire for simulation and debriefing education. Key challenges for educators has included lack of mentoring or single attendee to training conferences with negative consequences of forgotten technique and lack of technical support (Anderson et al., 2012). Training avenues are available in several formats, with self-education available through NLN or SSH or attendance at conferences. In addition, inclusion of debriefer training during graduate degree programs would increase skill acquisition for future educators in a supportive atmosphere (Shellenbarger & Edwards, 2011).

Many nursing programs are experiencing cutbacks with seasoned educators in short supply so adequate faculty to manage simulation are lacking. One solution may be the use of graduate students. Active participation in simulations under guidance of an experienced and trained faculty member could be utilized to train students in the art of debriefing, particularly for graduate students focused on education.

Only one article described the training of graduate students in the process of debriefing for simulation. Video playback and specific “handler events” (p. 3), were designed to be identified by the graduate students and addressed during debriefing (Shellenbarger & Edwards, 2011). The simulation experience was monitored by experienced faculty who then debriefed the graduate students after completion of the debriefing of the undergraduates. Incorporating this type of training, would help prepare nurse educators to enter the academic workforce with experience and training for simulations and debriefing techniques. Scant literature or research supports this training avenue and only one article was found. Budget reductions are limiting faculty attendance at educational forums and as a result, trial and error appears to be the choice

for education and as demonstrated by multiple sources is less than desirable (Anderson, Bond, Holmes, & Cason, 2012).

Literature has identified the need for further research into different methods of debriefing. Additionally identified for further research is the need for innovative and varied educational techniques dependent on the type of simulation utilized and team present (Neill & Wotton, 2011). A survey in 2010 of 254 INASCL members, of which 48 were international, found less than 50% were utilizing "a conceptual framework or theory"(Gore, Gele, Ravert, & Mabire, 2012, p. 128). This survey alludes to that although the respondents had advanced degrees and simulation/debriefing experience they did not receive training that included the identification of particular theories or frameworks. The National League for Nursing has eight core competencies for nurse educator programs, two of which identify being part of continuous change and an innovator with "creative perspective" (NLN's Task Group on Nurse Educator Competencies [NLN], 2005, p. 5). Simulation training could be identified as a resourceful solution. Another competency refers to program design and evaluation of curriculum; a unique innovative approach might be graduate nurse programs to utilize simulation as an educational tool. The core competencies need to be applied in an innovative manner to nurse educator programs ensuring new technologies are addressed within the graduate programs.

Countless studies and literature reviews identify lack of clinical site availability (Dreifuerst, 2011, Pauly-O'Neil, 2012, Harder, 2010, Kardong-Edgren et al., 2012); therefore, utilizing simulation in place of some patient care assignments is an option. However, simulation laboratories are costly to build, maintain, and staff with competent trainers and educators. Another potential hurdle to simulation is ensuring cultural congruency of simulation scenarios; this is difficult because American authors wrote the majority of scenarios.

The use of graduate student nurses could assist with offsetting some of the costs and these hurdles. A Google search revealed over 312 nursing schools across the country offer nurse educator programs or postgraduate certificates. Of these schools, one from each state was contacted regarding the inclusion of simulation training for future nurse educators. Fewer than 15 offer training in simulation and most have only three education specific courses that contribute to the degree of nurse educator. Eddington (2011) identified in the literature that Notre Dame was one institution noted to have this type of education, but most programs with a focus on education are offered on-line through NLN, Simulation Innovation Resource Center and Center for Medical Simulation at Harvard.

Nursing simulation is a structured learning process by design; so should be the debriefing process. Guiding learners through reflection includes rationale and thoughtful process. This type of education is a learned behavior and therefore requires specific training for the educator (Zigmont et al., 2011). Discussion facilitation begins with open-ended questions allowing the learner to explore the experience through reflection. Engagement occurs when all learners are engaged and allowed to share, therefore encouraging further reflection safeguarding the student against negative critiquing, is a priority. Reflection during debriefing is the stage facilitating critical thinking and clinical judgment formation (Wikers, 2010). All parts of the simulation and debriefing process, including facilitation, engagement, safety and reflection, provide appropriate educational opportunities for graduate nursing students prior to leaving graduate school. Without training in appropriate educational techniques, including theories and practice, the instructor may appear to lack interest or may give misleading feedback to the learner. Cantrell (2008) acknowledged student comments identifying the need for nurturing and caring feedback and direction during debriefing. Formation of comments can either assist or hinder the learning;

comments in a positive manner tend to foster learning (Cantrell, 2008). Simulation training: “has potential for use in master’s and doctoral-level education programs to train future faculty members,” (Durham & Alden, 2008, p. 228).

Future recommendations and implications

Essential tools for nursing educators utilizing simulation include adequate training and instruction; current scattered trends need to be continued and improved to contribute to utilization of this educational innovation. Tools include: structured debriefing sessions utilizing educational theories, qualitative evaluation tools for student and instructor, video-feedback and evaluation tools for critical thinking acquisition. Utilizing these tools will allow for increased knowledge for the student and increased satisfaction with the experience. The educator will continue to expand their knowledge base and experiences.

Future nurse educators should be trained to understand and use nursing simulation. Current graduate students should conduct all aspects of simulations using and applying educational models, evaluation techniques, varied learning styles, and debriefing techniques utilizing specific tools and structures all under the direction of senior faculty.

A single course could satisfy five areas identified in the NLN's core competency standards for nurse educators: "facilitate learning, facilitate learner development and socialization, use assessment and evaluation strategies, and participate in curriculum design and evaluation of program outcomes and function as a change agent and leader" (NLN's Task Group on Nurse Educator Competencies [NLN], 2005).

Debriefing necessitates incorporating specific elements; these parts have different educational needs than the other aspects of simulation. These debriefing essentials include the use of facilitation by an individual who viewed the simulation, use of a structured format, and presence of an experienced facilitator, (The INASCL Board of Directors, 2011, p. 17). Simulation education needs to infuse nurse educator programs nationwide with every aspect explored from pre-brief to de-brief, writing scenarios and theory basics. These criteria are

learned behaviors not currently basic to most nurse education programs. The need is present to pursue a paradigm shift for nurse educators, especially those whose pathway is formalized education.

Additionally, future research should include studies targeted toward nurse educators, their experiences with debriefing, and examination of currently available structured tools and methods. New tools need to be developed and tested to aid the educator in successfully utilizing debriefing as an educational modality in nursing simulation.

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Table 1
Reviewed Literature synopsis

Theme	**Author**	**Literature category**	**Findings**
Educator training	Anderson et al. (2012)	Research	"Active learning" is imperative to simulation training
	Durham & Alden (2008)	Book excerpt	Simulation can enhance faculty education for active learning
	Gore et al. (2012)	Survey	Continued research is needed for simulation education
	Hallmark (2010)	Research	Students were more satisfied when faculty was trained in debriefing
	Larsen (2011)	Article	Immersion education experience benefits an experienced simulation educator
	Wickers (2010)	Article	Proper facilitation as an adjunct to "active learning" (p. 86)
Generalized debriefing	Cantrell (2008)	Research	"debriefing is a teaching-learning process" (p. 22)
	Neil et al. (2011)	Literature review	Debriefing an essential element for simulations
	Shellenbarger & Edwards (2011)	Article	Utilizing simulation to train educators for clinical situations
	Shinnick (2011)	Research	Debriefing is when knowledge is best acquired
Structured debriefing	Chronister & Brown (2011)	Research	Video plus verbal feedback improves reaction time but unremarkable to knowledge acquisition over strictly verbal
	Dreifuerst (2010)	Research	Utilization of specific debriefing tools aids in student and teacher education

Theme	**Author**	**Literature category**	**Findings**
Structured debriefing	Grant et al. (2010)	Research	Improves desirable clinical behaviors
	Mariani et al. (2012)	Research	Students favored structured debriefing over unstructured to enhance learning
	Simon et al. (2009,2010)	Tool development	Evaluate student experience