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A structured, intentional simulation delivery method: Development of a best practice faculty teaching policy

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Executive Summary

Consistent, structured, intentional simulation teaching methods for best practice

Problem: Observation at two nursing programs indicated inconsistent, simulation faculty teaching methods and absence of training and orientation for faculty development and competency evaluation.

Project purpose: Create a structured, consistent faculty development training program utilizing the International Nursing Association for Clinical Simulation Learning standards (INACSL) and using the Debriefing Assessment for Simulation in Healthcare (DASH) measurement instrument for annual competency review.

Project Goals: Support positive faculty role modeling, professional development, increased self-efficacy and decreased faculty and student confusion.

Project Objectives: Both identified schools will have a system in place for quality improvement in simulation teaching methods through training, mentoring and education.

Plan sequence: Plan consisted of a project introduction email, information sheet, pre-survey followed by faculty participation in three simulation teaching sessions with the DNP leader. A 30-minute simulation best practice webinar presentation and posttest followed with a post survey.

Outcome and Results**:** Quantitative paired t-test using ordinal level data from a convenience sample of faculty participants resulted in a reliable positive correlation between the pretreatment and post treatment measurements. Instrument reliability and validity supported recommending consistent structured simulation teaching methods to all faculty teaching in simulation at both schools. Development of confident, knowledgeable faculty teaching and debriefing methods involves instituting INACSL and literature recommendations for best practice outcomes

Acknowledgement

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Problem Recognition and Definition

Simulation technology has become a feasible instructional option for nursing faculty in today's changing healthcare. Patient conditions are more complex, nursing enrollment is expanding, student clinical site placements are decreasing and have become more competitive. Simulation continues to be a growing practice in nursing curriculum nationally. Simulation should no longer be thought of as an "add on" but should be used as a teaching strategy integrated into curriculum. According to the Society for Simulation for Healthcare (SSH) simulation will help meet the demands for safe practice, reducing risk in disaster response, changes in nursing practice, preparation for infectious diseases or pediatric emergencies (SSH, 2019). According to Masters (2014) faculty are challenged to integrate the simulation experience into curriculum in a way that promotes optimal achievement of student learning objectives and relies on trained simulation faculty to work collaboratively with classroom faculty. Achievement requires a process in place to orient, and measure simulation faculty teaching methods for consistency and intention. Jeffries (2012) suggests new faculty entering teaching positions directly from nursing practice need preparation and mentored for the complexities of teaching. Simulation facilitator contributions have emerged as far more complex than initially thought (Jeffries, 2012). There is a need to understand theory underpinnings, pedagogy, self-awareness and possible threats that may hinder participant learning (Jeffries, 2012). Simulation is not only for students it is essential for preparing faculty for clinical teaching, training for emergency situations, or even leadership opportunities. Intentional focus on faculty teaching development with purposefully designed objectives help achieve expected outcomes utilizing the standardized International Nursing Association for Clinical Simulation Learning (INACSL) to fulfill best practice recommendations.

Statement of purpose

The project purpose was to create a structured faculty development training policy utilizing consistent, intentional teaching methodologies in simulation. The project was a quality improvement initiative not meant to develop new knowledge outside of the two identified project agencies. Skills and simulation labs are part of the regulatory program requirements by the Commission on Collegiate Education (CCNE) accrediting body. CCNE ensures the quality and integrity of baccalaureate, graduate and residency programs in nursing. The purpose of an intentional, structured simulation teaching policy is to improve teaching methods and encourage professional development understanding INACSL recommendations. According to Jeffries (2012) lack of structured teaching methods and techniques, potentially leaves room for increased faculty and student confusion, performance anxiety, preparation gaps and the ability to critically think. The International Nursing Association for Clinical Simulation Learning (2018) suggests simulation-based experiences that are purposefully designed and executed will meet identified objectives and optimize achievement of expected outcomes. According to INACSL standard five implementing the facilitator standard when conducting simulation will help faculty manage and support participants in their thought process and decision making as they progress through a simulation scenario. Faculty should have specific education in facilitator coursework to lead participants in their actions or reasons for lack of action.

The central point of the project was to determine if an orientation teaching policy will reduce faculty confusion, anxiety and promote self-efficacy in teaching. It is the belief of this author that faculty development will promote strong confident faculty in program readiness to participate in future substitute plans for the replacement of traditional clinical experience utilizing simulation. International Nursing Association for Clinical Simulation Learning best

practice standards addressed in this project paper is standards V and VI.

Current INACSL Standards (2018)

- I: Terminology Standard
- II: Professional Integrity of Participant Standard
- III: Participant Objectives Standard
- IV: Facilitation Methods Standard
- V: Facilitator Standard
- VI: The Debriefing Process Standard
- VII: Evaluation of Expected Outcomes Standard
- VIII: Simulation Design Standard
- IX: Inter-professional Education

Problem and intended change

This project was chosen through intuition, observation, theory, research, intelligent analysis and judgment after observing the absence of structured, intentional faculty teaching methods in two identified programs. Gaps were found at both schools related to long-term strategic planning of their simulation labs. For the purposes of this project the schools will be identified as school #1, a pre-licensure baccalaureate nursing program and school #2 a community college RN refresher program. Lab budgets, business plans, long-term faculty training, teaching methods and long-term faculty sustainability are important priorities for the success of any simulation center. School #1 has increased in student numbers admitting cohorts twice a year with approximately 100-110 students. There is a six-month overlap cohort of approximately 35-42 students who graduate each spring. The approximate number of students who use the

simulation lab yearly is 145-150 students. The college raises funds through private organizations and individual donors. The nursing program is part of the graduate college. School #1 is hiring new affiliate lab faculty who are practicing nurses many with little or no teaching experience. According to Crocetti (2014) newly hired faculty members often have minimal experience or formal preparation for their role as an educator, often leaving them in a precarious position of learning how to be an educator on the job. School #2 is a community college RN refresher program. The school offers two one semester programs each year with approximately 20-30 enrolled RN refresher nurses. The RN refresher program uses the colleges large state-of-the-art simulation lab that is not consistently used more than one day a week for approximately three years. Currently, both institutions do not have simulation lab directors although school #1 is seeking a new director. Both schools do not have a formalized simulation faculty orientation program addressing consistent teaching methodologies. The intended change for conducting the quality improvement project was through data collection and statistical analysis in order to recommend changes in simulation faculty teaching methods.

Kardong-Edgren (2012) believes that vendor representatives who sell simulation equipment have trained more faculty teaching simulation than by trainers who have received formal education. Crocetti (2014) suggests orientation for clinical lab faculty and clinical teaching faulty is a priority; affiliate faculty have limited opportunities for connecting with the schools' full-time faculty. Learning-based simulations provide opportunity to enhance higher-order thinking and critical problem solving while supporting the assessment of conceptual learning. Jeffries (2015) suggests schools are still not completely focusing on the facilitator and how to teach suggesting there is an ongoing gap relating to the development of simulation faculty orientation programs. Simulation, combined with technologies, provides a unique educational

strategy to facilitate the development of competencies and clinical judgments that are mandatory for safe, quality patient care. According to The Institute of Medicine's report *Keeping Patient's Safe* (2004) simulation is the most useful approach for developing skills related to unpredictable situations and crises. The simulation experience reinforces the development of skills in assessment, psychomotor activity, critical thinking, problem solving, decision-making, and team collaboration. INACSL (2018) suggests that faculty trained in simulation utilizing the standards help reduce faculty and student confusion, help define scenario goals and result in higher student engagement. There are many new technologies and ideas that schools are using however, the complexity of choices in software programs, new technology, debriefing experiences, teaching pedagogies and finding highly qualified simulation experts can be overwhelming for schools. These issues are also overwhelming for new and existing lab faculty teaching simulation trying to navigate this growing specialty without clear guidelines.

Inconsistent teaching methods could contribute to students who focus on the "right and wrong" of their performance instead of real participant involvement. This project has adapted the current research and literature reviews to help make program recommendations. This author's background is in teaching pre-licensure students and RN refresher nurses in simulation with over 4,000 simulation teaching hours.

Problem, Intervention, Comparison, Outcome (PICO)

P: Nursing faculty teaching simulation at BSN (#1) program and community college RN refresher program (#2) in the Denver Metropolitan area

I: Faculty facilitation development for best practice in simulation

C: Faculty understanding of the role of a simulation facilitator

O: Best practice organizational policy with improved simulation teaching prior to simulation

faculty development training and faculty understanding post faculty development

PICO Question: Will consistent structured simulation-based teaching methodologies improve faculty comfort and self-efficacy, and contribute to a willingness to understand and apply the International Nursing Association for Clinical Simulation and Learning (INACSL) recommended guidelines?

Project significance

The belief of this author is that limitations exist if there is no method in place to evaluate effectiveness of productivity in teaching. It was anticipated that intentional structured and consistent simulation teaching methods will reduce faculty confusion and anxiety and increase faculty communication and comfort, student engagement and self-efficacy. The project also included the importance of refining faculty debriefing skills. The premise for faculty prepared in teaching methods help students transition in skills, knowledge and attitudes for the delivery of safe patient care. There may be a secondary outcome for better student clinical judgement through purposeful debriefing related to INACSL Standard VI. Faculty who are skilled in simulation debriefing know how to create a positive experience and model expectations for participants. Debrief faculty experts guide participants to address frustrations and invite engaging and self-reflective discussions.

Competency based education prepares students for the healthcare setting. If schools require student competencies, faculty should participate in annual competencies. Faculty competency in simulation should include innovation for making the experience as real as possible, intelligent risk-taking, challenge the status quo with updated knowledge, and have strong perceptive skills for student learning techniques. It is important for faculty to achieve comfort in realistic role-play, encourage learning by doing, and trial new knowledge in a risk-free environment.

Throughout every simulation it is important there is a willingness to apply the INACSL guidelines. A positive outcome for both schools is to have confident self-assured faculty in their teaching and leadership skills. Expert trained faculty understand that it is acceptable to learn from their mistakes and learn to identify gaps in knowledge and ability to handle the unexpected.

According to Bandura's (1977) self-efficacy theory it is personal judgment of how well one's social, cognitive and behavioral skills can be organized to execute a course of action required to deal with prospective situations. Expectations of self-efficacy determine whether an individual will be able to exhibit coping behaviors and how long effort will be sustained in the face of obstacles. High self-efficacy will lead to successful outcomes, where individuals with low self-efficacy are likely to cease effort early and fail (Bandura, 1977). Bandura (1977) suggests those who judge themselves ineffective in coping with environmental demands dwell on their personal deficiencies resulting in the feeling that things are worse than they are. Faculty who understand Bandura's strategy help instill stronger self-efficacy in students for self-realization to help the student sustain the effort needed for optimal performance and less self-doubt. Creating a positive learning environment and understanding how to provide feedback and clarification of incorrect decisions by students contributes to safe and appropriate future clinical performance (INACSL, 2018).

Project Scope

The project scope involved speaking with upper leadership at both schools to support the project for best practice teaching methodology in simulation. The scope of the project and statement binds the agreement between the project leader, project sponsor and the organization (Zaccagnini & White 2014). First, a meeting took place with both nursing directors at each identified school. During the meeting a one-page information sheet summary was presented to

each nursing administrator, each listened to the idea evaluated the project leader's justification and agreed to allow the project to be conducted at their institutions. Both nursing leaders understood there would be a final evaluation plan presented at the completion of the project with the potential for a simulation teaching change. According to Houser and Oman (2011) it is important to understand how to present to school administrators how evidence-based systems bring value to an organization. Importantly, some changes may be more readily accepted than others; conversely the threat exists that this project may not impact change. According to Houser and Oman (2011) it cannot be assumed that everyone in an organization will automatically recognize and support the need for evidence-based practice. Houser and Oman (2011) suggest the discovery of evidence may be the impetus for a process or practice change that will ultimately lead to quality improvement.

Quality improvement projects can uncover situations that need clarification. Quality is "never an accident" it is always the result of intelligent effort (Houser and Oman, 2011). Both schools have already made the investment in infrastructure of simulation labs, the most important next step is to train faculty in teaching with intention, understanding and learning to apply the recommendations according to INACSL standards. A corporate investment of significant cost and magnitude such as a simulation lab does not mean faculty are prepared and qualified to teach simulation without training. Both institutions had no cost invested in payment to this author for data-based searches, documentation or a faculty development training program.

Rationale

The direct outcome was from evidence-based facts in teaching theory and learning. Hospitals and organizations that practice with evidence-based focus have higher levels of employee and patient satisfaction rates (Bickmore & Merdley, 2019). Evidence based practices

have been shown to reduce short-and-long term costs. Finally, at the core of best practice are the organization's policies, procedures, guidelines and standards. The project objectives align well with Zaccagnini and White's definition that a policy is a guiding document that is prescriptive and governed by a regulatory agency or organization (Zaccagnini & White, 2014). Policy development will assist new and current faculty teaching in simulation and may also be the practice to optimize building a foundation for the development of collaborative team relationship among faculty simulation members. Recognizing opportunities for policy development helps bring teams together to serve a specific purpose (Zaccagnini & White, 2014).

According to Houser and Oman (2011) quality indicator monitoring and measurement must be accomplished at both the macro (organization) and micro (unit) levels. The micro level involves process reflection such as annual evaluation review. On the organizational level visual monitoring and documentation can be used to communicate monthly updates to help keep faculty focused on outcomes, and adherence to guidelines. Peer support, empowerment and process accountability equate to success with quality (Houser and Oman, 2011). The Society for Simulation Healthcare (SSH, 2018) proposes faculty alone cannot develop research without someone to help guide and mentor them. For simulations programs to grow and gain recognition it is critical for the simulation leader to understand how to conduct research or quality improvement projects for professional faculty development. Executive leadership should also recognize the importance of this and allow time and support faculty development to further their roles. Lastly, professional practice requires knowledge of evidence-based interventions that lead to positive change and quality outcomes.

Theoretical Foundational Theories in Support of the Project

Theories used in the project were based on research and reflections from Tanner's model of

debriefing with good judgement, Kolb's Experiential Learning Theory, NLN Jeffries Theory, Knowles Adult Learning Theory of Self-Efficacy and Kotter's Model. Theory based nursing practice is the application of various models, theories and principles from nursing science and biological, behavioral, medical and sociocultural disciplines to clinical nursing practice. Conceptual theories provide a broad-based understanding to plan nursing actions and achieve a desired outcome. Jeffries (2015) believes nurses are becoming more aware of the value of theories and models yet continue to have a lack of understanding on how to apply theory to evidence-based projects that affect change. Jeffries advocates professional nurses can effectively use theories to influence the nursing profession through data collection, analysis and interpretation of health situations. Theory selection is based on six criteria according to Meleis, Sawyer, Im, Messias, & Schumacher (2000); personal comfort, experience with mentoring, theory reputation, supporting literature, theory acceptability, and the nurses understanding to apply the model or theory into a practice setting.

Faculty development is a critical step toward preparing faculty for teaching, and for the role of mentor and leader in the discipline of nursing. Faculty leadership qualities includes behavioral, developmental cognitive and knowledge experiences. The influence of simulation and preparing faculty to teach requires a transformation of teaching paradigms in nursing education from traditional thinking to recognizing how the practice of simulation exerts influence across multiple facets of health care.

The Society for Simulation in Healthcare (SSH, 2018) proposes that faculty-teaching simulation should adopt the simulationist code of ethics. This code includes integrity, transparency, mutual respect, professionalism, accountability and is results orientated. SSH (2019) suggests re-thinking how simulation is taught and supports shifting the old philosophy of

dismissing simulation behavior of "what happens in simulation stays in simulation" to a new philosophy that simulation is a safe place for learning with expectations for performance resulting in increased knowledge and confidence. SSH (2019) recommends simulation faculty be deliberate in holding students accountable and subscribe to a philosophy that all simulation faculty will be evaluated annually for teaching competency utilizing reliable measurement tools. It is important for healthcare simulation experts to perform all activities to the highest ethical standards across the globe (SSH, 2019). Simulation faculty are responsible to promote and support an ethical culture among all participating individuals (SSH, 2019).

Tanner Model

The Tanner concept is being used here prior to discussing other theories as a point of reference for the importance and value of clinical judgement, problem solving and decision making within the simulation experience. Faculty teaching in simulation have an opportunity to influence this essential skill. This concept is to teach students to "think like a nurse." (Tanner, 2006). Tanner model helps provide a perspective and a point of reference for faculty in understanding how students use clinical judgment and how it can be influenced by reflective practice. Clinical judgment is a complex skill that will help the learner make conclusions about patient needs, concerns or health problems. Ultimately, it will result in the nurse taking action or not given the situation. However, clinical judgment is not the focus of this project although, simulation faculty should be familiar with various types of terms such as how culture, the nursing process, reasoning patterns, expectations and reflection may influence a nursing decision. Faculty should possess skills in how to help students by understanding the use of Socratic questioning for rationale, interconnectedness and inter-relationships from the participants learned knowledge.

Tanner (2006) submits simulation is a compliment, not a substitute for actual patient care and should integrate theory into every simulation scenario to help participants practice learned knowledge in the delivery of safe patient care. Learning in a simulated environment is transferable to clinical practice while educators monitor the participant's progress in a setting without risk to patients or students (Tanner, 2006). The growing body of research, higher patient acuity and disease complexities demand higher order thinking skills (Benner, Hughes, Stuphen, 2008). Often nurses have unspoken values that may be unrecognized but profoundly influence how they make a decision in a particular situation. Educators who display the virtues of critical thinking and independence of thought, courage, humility, empathy, integrity and perseverance have the ability to cultivate these skills in their students (Benner, Hughes, Stuphen, 2008). Tanner (2006) advises nurses use a variety of reasoning patterns alone or in combination based from theory. According to Tanner (2006) clinical judgment of experienced nurses involves four steps, (1) Grasping or "noticing" the situation at hand. Students use observation of the situation, knowledge of the patient and experience to begin an action. Noticing is where the participant is aware of a change in a clinical situation that may demand attention according to the patient situation. (2) Interpreting and deciding a course of action that is appropriate for the situation. The interpreting step is the initial grasp of the clinical or scenario situation as it unfolds that might trigger a reasoning pattern where the student records data and determines a plan or course of action (Tanner, 2006). If the student is uncertain regarding a typical course of action, the debrief time allows them to try to make sense through hypothesis "rule out" until reaching an interpretation that supports the data collected with an appropriate response (Tanner, 2006). (3) Responding is acting on the situation or implementing a plan while beginning to reflect on the action and results that may occur. (4) Lastly, reflection during action and beyond action

allows the nurse to reflect on problematic experiences, learn and integrate knowledge for future situations (Tanner, 2006). Tanner (2006) defines reflection as the ability to engage with a sense of responsibility, connecting one's actions with outcomes. Reflection requires knowledge outcomes and knowing what occurred as a result of nursing actions.

Experienced educators recognize that reflection beyond action allows the participant to adapt and refine patient management skills in an existing or changing situation with new information. Reflection beyond action includes the ability of the learner to view practice as holistic and through this lens the reflection process can elicit feelings, thoughts, values and actions. Faculty who understand how to implement this model help students prepare by evaluating the knowledge they have and recognize the insufficiencies that still exist. Deep reflection encourages students to ask questions such as, "what do I still need to learn, or "what did I bring to the situation that made an impact?" (Dreifuerst, 2015). Ongoing faculty development in simulation guides the facilitator in transformative education to prepare new learners for the complexities of the healthcare environment (Peisachovich, 2016).

Reflection is critical for the development of clinical knowledge and improvement in clinical reasoning (Tanner, 2006). Dreifuerst (2015) proposed Debriefing for Meaningful Learning (DML) using Socratic questioning and guided reflection to help teach students to challenge what they take for granted. Socratic questioning is an approach to teaching and learning where the instructor does not provide the answers to a student but guides the student to uncover the answers for themselves (AHDEL, 2011). Faculty can help students recognize specific questions that guide deeper awareness of their own knowledge limitations. Guided reflection directs the student to determine the assumptions they were making and learn to replace them with experience through new learned knowledge. All experienced nurses remember their

breakdown in clinical judgment ("mistakes") as if it was yesterday. New nursing participants do not have to make mistakes on real patients to learn the same lessons when simulation is available. DML is only one method of debriefing among several others. However, DML is grounded in well-established, constructivist, and problem-based learning theories and has demonstrated positive student thinking and learning outcomes (Dreifuerst, Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries 2014).

Simulation using this model help students adapt and gain clinical knowledge related to various patient populations, understand textbook signs and symptoms, observe changes in patient conditions and a range of other experiences. Simulation educators must learn to be expert coaches and guide students to develop as moral agents, advanced thinkers and to learn how to use clinical knowledge to respond and "think like a nurse." (Tanner, 2006).

Kolb's Experiential Learning Theory

The experiential learning theory proposed by Kolb (1984) uses a holistic philosophical approach emphasizing how experiences like cognition, environment and emotions influence the learning process. Kolb describes holism as action, reflection, experience, and abstractions that equate to the individual and environment. Knowledge is created by emphasizing experiences and results from the combination of grasping and transforming the experience (Kolb, 1984). Grasping the experience may be through a concrete experience or through conceptualization. Transforming the experience happens with a reflective process or active experimentation (Kolb, 1984). Experiential learning differs from cognitive and behavioral theories, cognitive theory emphasizes the role of the mental processes. Behavioral theory uses internal and external responses to stimuli (Kolb, 1984). The question here is, how do individuals decide which mode of experiential learning will work best for themselves. Kolb (1984) believes that individuals will decide for

themselves what works in their own learning process. Kolb (1984) concludes a number of different factors influence preferred learning styles such as personality type, educational specialization, career choice, current job role, and adaptive competencies. People who are "doers" are more likely to engage in active experimentation, while others who are "watchers" (assimilators) first "take it all in" by watching and thinking, they may prefer to reflect on the observation and then take action when they feel comfortable. According to Kolb (1984) this learning style is important for effectiveness in information and science careers. These individuals contribute to the preference of informal learning situations preferring reading, lectures, exploring analytical models, and having time to think things through the process. Kolb (1984) believes that people cannot perform both variables on a single axis at the same time such as thinking and feeling. Most individuals perform best in their own personal preferred learning styles. Some need concrete viewpoints and others need brainstorming sessions of new ideas that promote broad cultural interests. Some learners like small work groups, some prefer to listen with an open mind and others need to receive personal feedback. Our past experiences and demands of our environment contribute to preferred preferences (Kolb, 1984).

Kolb's four style learning model include the following: (1) concrete phase, where a new experience or situation is encountered (2) reflective phase, to understand there may be inconsistencies between experience and understanding (3) abstract reflection phase, gives rise to new ideas or modification of an existing concept that the individual has learned from past experience, and (4) active experimentation phase, where the learner applies their ideas to the world around them to see what happens. Undoubtedly, it is important to recognize that there is a processing continuum on how to approach a task and a perception continuum on how the learner thinks or feels about something.

Accommodating style individuals learn by a 'hands-on" practical approach to learning. The accommodator style is the opposite of the assimilator style. Accommodators enjoy performing experiments and carrying out plans in the real world. Accommodators tend to be risk-takers and are good at thinking on their feet and changing their plans spontaneously in response to new information (Kolb, 1984). It takes both types of people to work together as a team with their different abilities.

Kolb's learning dimensions share a great deal in common with the dimensions found on the Myers-Briggs Scale. Simulation faculty knowledgeable in learning styles will be able to recognize when students need help in how to approach the outside world of healthcare in a flexible, logical, organized perceptive, and reflective lens.

Criticism of Kolb's theory proposes that the theory does not address the role of the deep reflective experience and how it affects learning. Pashler et al. (2009) suggests that there are educators that believe the concept of learning styles have little evidence to support the existence of learning. According to Pashler et al. (2009) learning styles may not be stable over time as individuals advance in age. Pashler et al. (2009) suggests as we get older learning tends to become more observant and reflective than active learning. Program #1 students range in age from approximately 21-68 years old. Students in program #2 range in age from approximately 30-68 years old. The Pashler et al. discussion needs further research testing to determine how this applies to the identified project schools. Nevertheless, each school may require the use of different learning theories based on age variables.

Jeffries Simulation Theory

According to Jefferies (2005) the use of simulation in education should be based on selected principles and techniques from a variety of theoretical perspectives and empirical literature.

These insights can be applied to simulation in nursing, medicine, and other health care disciples, as well as non-health care disciplines. Jeffries (2005) uses person, environment, health and nursing process in simulation activities designed to demonstrate decision-making and critical thinking through techniques and role-play. Jeffries framework was a pivotal step for developing structure for how to conduct simulation teaching. In response to Jeffries framework the National League for Nursing (NLN) set out to develop and test the Jeffries simulation framework design of its five conceptual components, each of which is operationalized through a number of variables (Jeffries, 2005). The concept components consist of facilitator factors, participant factors, educational practices, simulation design characteristics and expected student outcomes (Jeffries, 2005). The simulation context is the overarching purpose of the simulation exercise or whether the simulation is for participant evaluation or instructional purposes (Jeffries, 2005). Simulation design includes specific learning objectives that guide the development or selection of activities and scenario(s) with appropriate content and problem-solving complexity (Jeffries (2005). Elements of physical and conceptual fidelity are important, including decisions about equipment and appropriate moulage.

Many of Jeffries articles describe attributes that are innate to the participant such as age, anxiety, self-confidence, preparedness and role assignment which all impact the learning experience. Jeffries (2005) believes the facilitator's educational practices of the simulation experience is within the control of the teacher who is able to influence how the participant will be motivated for best learning outcomes. INACSL facilitator standard V recommends faculty have experience and a willingness to help the learner suspend disbelief and immerse themselves into the simulation environment. Trained faculty understand how to adjust educational teaching strategies, alter the planned progression and timing of activities and provide appropriate

feedback in the form of verbal cues. Trained facilitator responses help the student explore and develop clinical judgement and apply their theoretical knowledge. Potential consequences could exist when there is a lack of facilitation understanding that include impairing the participants engagement in the scenario and possible reduction in meeting the expected objectives (INACSL, facilitation 2019). Jeffries (2015) believes nursing faculties that understand the basis of learning theory and educational practices will be more prepared recognizing the importance of directing and interacting in the simulation as a knowledgeable facilitator (Jeffries, 2015). A systematic review of literature related to the NLN Jeffries framework reported from 153 resources, suggesting there are recurring themes when addressing simulation educational objectives. Simulation improves performance in students, generally participants are satisfied with simulation and believe it improves intuition, learning, and confidence. Simulation is a good companion to traditional class, and lecture. There is mixed evidence that high, medium or low fidelity makes a difference in superiority although several studies found higher performance and more positive participant attitudes with high fidelity simulations. Zu and Wu (2016) found high fidelity simulation when using the Jeffries theoretical framework was most effective in self-confidence and self-efficacy by students participating in a high-fidelity simulation. Highest correlations were found when faculty provides clear learning objectives, and support with pre-brief information prior to the beginning of a scenario (Zu & Wu, 2016). Fidelity and realism are a large part of ensuring that high-quality simulation is being used in nursing education. It is best to use the appropriate level of fidelity to meet the objectives of the specific simulation activity. Comparatively, Jeffries suggests debriefing is essential to simulation using different ways to conduct debriefing such as short sessions or longer sessions depending on the level of the participant or the use of an observer role. Use of videography, progression of activities, pre-

briefing/debriefing strategies are all aspects of the simulation design (Jeffries, Rodgers and Adamson, 2012).

In 2011 the International Nursing Association for Clinical Simulation and Learning (INACSL) developed a research task force to review the Jeffries simulation framework, its constructs and to consider if the framework could be moved to a theory. Twenty expert nurse researchers and educators formed five teams to review the framework to make recommendations. As of 2012, the NLN Jeffries Framework is now referred to as the Jeffries Simulation Theory (Jeffries, Rodgers and Adamson, 2012). The NLN theory has a specific application to nursing education with concrete concepts and relationships between propositions that qualify it as a middle-range theory (Jeffries, Rodgers and Adamson, 2012). This theory also has a predictive component that when best educational practices and simulation design characteristics are employed there will be information to evaluate, assess and draw a conclusion outcome.

According to Jeffries (2015) most of the focus has been on participant outcomes including reaction, satisfaction, self-confidence, and changes in knowledge, skills, attitudes, and behavior. As a result of Jeffries theory the project included mentoring faculty on the importance of facilitator behaviors such as less talking during debriefing, more debrief structure that includes inviting student reactions, listening, response realism, role play, comfort in manikin computerized voice operation, instilling realism, competence in nursing skills, interpersonal abilities, equipment knowledge, and student feedback.

Knowles Adult Learning Theory

Knowles theory (1968) as it relates to simulation includes the creation of an active, and collaborative learning environment. Knowles' theory of andragogy is an attempt to develop a theory specifically for adult learning. Knowles suggests that adults come into the educational

setting as self-directed individuals who can and expect to take responsibility for their own decisions and use their prior experience as a resource for learning. Adults must be ready to learn, and the application of knowledge should relate to the problem at hand (Knowles, 1968). Knowles theory is based on the characteristics that mature adults are different than pre-adults in their learning abilities. Knowles theory (1968) illustrates the relativity in its relationship to simulation, that instruction for adults should focus on the process and less on the content being taught. Adults relate to strategies such as case studies, role playing, simulations, and self-evaluation. Depending on the situation instructors may need to adapt to a role of facilitator or instructor resource rather than lecturer. Knowles has been criticized for indicating all mature adults learn the same way. Adults tend to be motivated by internal drivers more than external ones. Internal pressures can be self- imposed, other pressures may include the pressure to find a good job, achieve life satisfaction, increase self-esteem, improve quality of life and self-efficacy (Knowles, 1968). Adults desire to know "why they need to learn something" before making the effort to learn it. Adult learners like to engage prior experiences early and employ ongoing reflection. In addition, adults will focus not only on the end process, but on the assessment that improves their practice (Knowles, 1995). Knowles advocates adults like to learn new material immediately so they can apply it right away.

According to Clapper (2010) trained expert facilitators may impact and be more conducive to the simulation learning environment. Clapper (2010) suggests learners should become actively engaged with the construction of their learning, not a passive tool of teaching. Application of active engagement is important for simulation learning. The simulation facilitator must provide clear objectives to the learner, so they understand and know what is expected in their simulation role. This aligns well with INACSL standard VI. Part of active

learning within simulation involves participant roles pre-determined by the faculty, however roles should include leadership actions, decision making abilities, a participant who can observe the scenario and, nursing skills. Care must be taken to rotate roles so that all students get a chance to practice functioning in different roles with new responsibilities. The facilitator should expect learners in each active role to make decisions and help provide direct patient care. The observer role can be present in the simulation room or observed through audio-visual rooms and should have facilitator guidance to increase learning outcomes dependent on recommended pedagogy practice. According to AACN (2018) students in the observer role still report valuable learning. Although, confusion continues to exist about the value of the observer role due the lack of discipline-specific research that determines whether the observer role uses active experiential learning and underpinnings to theory in the simulation experience (Johnson, 2018).

Faculty in this study reported that there were gaps in understanding theory supporting the observer role value, and believe personal opinions inhibits how to make a correct decision. This author believes questions still remain surrounding the observer role structure and how to motivate participants to become actively involved in the experience. Kolb (2015) suggests experiential learning is defined as the transformation of a grasped experience, therefore simulation does provide the observer to take in a new experience. According to Johnson (2019) a recommended outcome from a simulation observer study advocates that faculty must be experts to guide both the active participant and the observer into deliberate thinking in assimilation, accommodation, and application of pre-determined scenario goals. Johnson recommends the facilitator of simulation must be the same debrief facilitator for consistency in student learning and decreasing facilitator confusion.

Simulation allows the learner to be self-directed to interpret data, perform tasks and learn to allocate time. Learning entails powerful positive or negative emotions. According to Clapper (2010) MacLean's theory (1990) proposes higher-order learning may not take place when learning is not positive. MacLean believes the brain is divided into three parts: R-complex responsible for basic survival, limbic system, responsible for memory and emotion and lastly the neocortex associated with higher order thinking. According to MacLean (1990) most learning occurs in the limbic system. If learning is negative the learner will move up and down this system and potentially "downshift" into the survival mode. It is important that the facilitator take great care to provide a safe environment for the learner to remain in the middle-brain or third level system. For example, the survival mode is where a facilitator who is debriefing students publicly degrades them. Good learning occurs in an environment that should allow for experimentation and possible failure without public display. How faculty pre-brief and set up the scenario allows the participant to be in the mode of "deliberate practice" to problem solve, and work through a situation with a "spirit of inquiry".

Kotter Model

The Kotter model (1995) fit this project, it was concise and adapts well to any organizational structure. The Kotter model is easy to use, and it incorporates management as an integral part of the change concept. According to Kotter (1995) a successful change is dependent on management "buy-in." It is important to incorporate opinions from staff and stakeholders throughout the 8-step process (Small et al. 2016). Kotter suggests leadership and change first begin with, creating a sense of urgency, form a powerful coalition, create a vision, communicate the vision, empower action on the vision, create quick wins, build on change and make the change part of the culture. (1) Urgency is the ability to recognize pressing problems as

opportunities. Urgency requires honesty and convincing dialogue about what is really happening within an organization or in this case the school setting. Reacting without sufficient preparation can lead to increased resistance and conflict. (2) Forming a powerful coalition relies on strong leadership, commitment and support. It is important to seek out a team of influential people throughout the organization whose power comes from status, expertise, connection or political importance This is the stage where "buy-in" is crucial (Kotter, 1995). (3) Third, shape a vision to steer the change and develop strategic initiatives to achieve the vision. It is important to practice sharing in the new vision often, and in a variety of ways. (4) Once the vision has been established, the message should be shared with individuals who can help execute the plan. Communication for something new needs to be over communicated so that others hear it in their day-to-day messages from the project leader (Kotter, 1995). A simulation educator or director will want to use the change message daily as a compass to make decisions and solve problems. It is essential for leadership to demonstrate behavior that will make the vision a reality. (4) This is a good time to include stakeholder concerns openly and honestly. (5) Empower action, the leader will need to try and remove the obstacles for the change by discovering and managing resistance to the change attitude of "the way it has always been done" can slow or stop progress. The empowering action step should allow team members autonomy to act on the vision by identifying a "champion" who can help with the change process through segmental reevaluations of the organizational structure and job descriptions. (5) This is the time to add a position to benefit the organization and outweigh the cost of potential turnover and frustrated staff or faculty. (6) Success motivates more success and gives the change agent small victories and "quick wins!" (Kotter, 1995). Celebrate small wins, stay on target moving forward, and make each step achievable with little room for failure, and recognize and reward the people who help

make the change possible. (7) Try not to declare victory too early, in order not to undo achievements already made. Change needs to be embedded into the culture. This is a good time to add new change agents; include others in the values and vision on a daily basis and that the change was not made by a hierarchical decision. (8) Finally, make the change part of the culture. The change should be visible in every aspect of the organization. Share success stories; ask for stories from staff about the change and how it helped their work situation. Make sure all staff are trained in the new methods.

Once each school secures a simulation director it will be important for the leader to know how to make changes when the time is right. Both schools are looking for better quality and this project is timely for a simulation faculty development teaching policy to support and grow new faculty. Driving people out of their comfort zones will drive change if it is performed and executed in an organized manner. According to Kotter (1995) at least 75% of management must believe change is absolutely necessary for the transformation to work.

Literature Selection/Systematic Process Supporting the Problem

Searching for relevant evidence to support the project problem involved a two-phase literature review which introduced context and current thinking for the proposed question (s) and provided ideas for direction and defining the project focus, and vision. The literature review is helpful to evaluate, classify and compare the topic with what has already been published. The initial literature selection evaluated different data collection methods and data extractions tools. Evidence table format was used from Houser and Oman (2011) for a place to start in the literature selection process. The literature review completed for this project included article updates and a review of 220 articles retrieved through databases, CINHL, OVID, PubMed, (EBSCO browser), COCHRANE, Google Scholar, INACSL, SSH and NLN. *Keywords* search

terms and phrases used for simulation faculty development included: *faculty development, simulation, psychological responsibility, faculty training, nurse educators, simulation teaching methods, evidence based practice, learning theory, clinical teaching, patient safety, performance evaluation, clinical reasoning, manikin teaching strategies, train the trainer, constructivist, simulation studies, adult learning theory, teacher facilitator, debriefing methods, teacher framework and problem based learning, debriefing facilitator, simulation standards, measurement tools, meaningful learning, Socratic pedagogy, learning theories, simulation evidence based practice, measuring care, high-fidelity simulation, national simulation studies, best practice in student learning, quantitative design.* The search was limited to English language research and nursing journals. Keywords usually get the highest attention in a search. Distilling the search involved narrowing the topic from broader words to ideas or related topics however, care must be taken not to apply too many filters, which may cause the loss of potential articles that could affect the eventual outcome.

Quality improvement projects primarily have a comparative data focus since they are used in clinical program settings or practices (Houser & Oman, 2011). According to Houser & Oman the data could include protocols from intuitions to help other institutions with design or help with improvement plans.

Scope of Evidence Summary

Phase-two was the recognition that there were expert authors involved in landmark or pivotal studies defined as seminal works in their influential research that provides importance to the topic of consistent simulation teaching methods. There is abundant evidence of literature related to opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees. Identifying seminal works, pivotal or landmark studies reduced the

number of articles to fifty-eight. Theses primary articles were used to evaluate importance and influence in the discipline of simulation teaching methodologies.

The higher the quality of evidence, the more likely a strong recommendation can be made. The intentions of evidence-based research are to improve outcomes through problem solving approaches to clinical decision-making. The literature review contrasted a wide range of available research on various simulation topics as well as gaps in existing evidence. The review directs the investigator to the best information from articles, books, and relevant resources for making decisions about available knowledge on the simulation topic. Article evidence was obtained through qualitative studies, quantitative studies, expert opinions from regulatory agencies, and simulation organizations.

Simulation allows health care professionals and students to practice patient safety strategies in a safe learning environment with specific objectives that should be practiced repetitively with each new scenario (AHRQ, 2016). Emerging literature related to consistent simulation teaching methods should include safety outcomes. Quality, Safety, Education for Nurses (QSEN) and Team Strategy and Tools to Enhance Performance and Patient Safety (TeamSTEPS) are examples of simulation being used to heighten the delivery of safe patient care. Components of TeamSTEPS include learning how to teach participants to use communication techniques properly, increase safety awareness, clarity in team roles and responsibilities, and reinforce high level patient safety strategies (AHRQ, 2016).

Learning safety concepts is best when the student has a checklist to use in every simulation scenario that includes checking specific steps such as the patient bed is in the low position, making sure the call light is in reach, bed brakes are on, bedside table is near to the patient, reminding the patient not get up alone, and asking the patient if the restroom is needed before the

student nurse leaves the scenario. A checklist provides the facilitator a measurement tool to evaluate the participant's ability to demonstrate patient safety performance within the simulation. Jeffries believes the concept of learning is a cognitive skill for experiential growth and instruction that focuses on experience and activities that promote the development of cognitive networks and understanding (Jeffries, 2005).

Review of Evidence

Background of the Problem

According to the International Nursing Association for Clinical Simulation Learning (INACSL, 2018) the recommended standards of best practice are to advance the science of simulation. Growing evidence supports efficacy of simulation pedagogy and best practice standards have been developed to support faculty implementing simulation (INACSL, 2018). INACSL recommends using standards for all simulation programs and scenarios. There is still concerns among faculty that "real-world" quality simulation can be difficult to achieve. A dedicated director, educator, coordinator should be the expert to support the simulation faculty team in learning how to implement structured consistent simulation teaching methodologies.

According to Zaccagnini & White (2014) the DNP project focuses on a practice problem with evidence-based solutions. This project focused on available evidence using a rigorous application approach for conducting facilitation and debriefing according to the INACSL guidelines. The DNP project is a real-world project that cannot control extraneous influences like a PhD narrow and tightly controlled project (Zaccagnini & White 2014). Faculty simulation training varies among programs (Shellenbarger, 2012). Some faculty attend national workshops, while others learn through one-on-one training within institutions. The costly expense to build and manage a simulation lab should require faculty expertise in teaching. The investigator

question was to find other reports or previous investigations that sought to answer the same or similar research question. Fisher and King (2013) submit simulation still needs to be studied for higher levels of outcome evaluations that will inform schools whether or not learners are ready for practice and faculty is adequately trained. Technology is a tool to be used in conjunction with an organized learning plan that promotes the need for action and engagement activities. According to Jeffries, Dreifuerst, Kardong-Edgren and Hayden (2015) in the NCSBN study, simulation is providing high-quality practice that absolutely should include faculty development, creation of instructional materials, references, and extensive faculty training. NCSBN results reported that simulation education is favorable, but the literature is limited in its generalized ability (Jeffries, Dreifuerst, Kardong-Edgren and Hayden, 2015). There still is variability in the way simulations are structured, conducted and validated. Jeffries (2015) believes that assessment instruments are not consistently being used.

Well-run simulation scenarios require qualified knowledgeable faculty. Jeffries, Dreifuerst, Kardong-Edgren and Hayden (2015) suggest the level of evidence needed by the Board of Nursing and nurse educators to determine if simulation can replace a portion of traditional clinical learning experiences is still lacking. Even today schools struggle with time and cost to create or purchase rigorous scenarios used to replace the traditional clinical experience. Many schools believe that writing their own scenarios takes too much time, too complex and need to be peer reviewed for best practice standards.

Systematic Review of the Literature

According to Roger, Williams and Oman (2011) there are different leveling models and grading systems rated from levels I-VII. The project focus was to search for application of quality of evidence and strength of recommendations for improving simulation teaching

methods. During this step it is important to review the research question for precision along with inclusion and exclusion criteria. The initial question was revised several times to determine the qualitatitative and quantitative findings. The systematic literature review is the preliminary step to review background knowledge that prepares for the next step in the project process outline. During this phase of the project published article themes began to emerge which included: use of fidelity, educational teaching practices, teaching mastery with deliberate practice, teaching theories, INACSL standards, faculty training, simulation debrief measurement instruments, value of simulation learning objectives and outcomes and relationships between confidence/self-efficacy and teaching performance. Voids found in the literature included: (1) Not enough schools keeping data on simulation outcomes (Jeffries, 2015). (2) Instruments intended to assess self-efficacy for safer behavior often measure constructs other than self-efficacy (Kardong-Edgren, 2014). (3) There is limited support and resources supporting the need for faculty annual competency in debriefing (Jeffries, 2015). (4) Not enough training in teaching methodologies even though the literature is available, schools are not doing it (Adamson, 2015). (5) The need for more longitudinal research on faculty training and evaluation (Jeffries, 2015). (6) Poor use of assessment measurement instruments (Jeffries, 2015). (7) Training should be done by an experienced educator not by equipment representatives (Crocetti, 2014). Finally, (8) simulation faculty should consciously assist students to learn clinical judgement, critical thinking, problem solving and clinical reasoning (Tanner, 2006, Dreifuerst, 2014). Schools using simulation need to become more active in simulation research and data collection through their directors who can help provide research efforts for faculty.

Finally, the project focused on using the Seven-Tiered Levels of Evidence table (Melnyk and Fine-Overhold, 2005). The table suggests that the critical appraisal process focuses on the

evaluation of the work or quality of the scientific evidence to clinical practice. Levels four through seven emerged as the best source of evidence ratings that represented the literature review and sample findings. The majority of the article studies for this project were not controlled trial randomized studies. Theory framework, key concepts, conclusions from other studies and insights was the scope of the review. This action helped to direct the methodology, gaps in research and point out existing trends.

Table 1. Levels of Evidence (Melnyk and Overholt, 2005)

Levels of Evidence		
Number of articles reviewed- 220		
Number of articles used- 58		
		TOTAL
Level 1		3
Level 2		3
Level 3		4
Level 4		6
Level 5		12
Level 6		6
Level 7		22
Cross-sectional		2

Project Plan

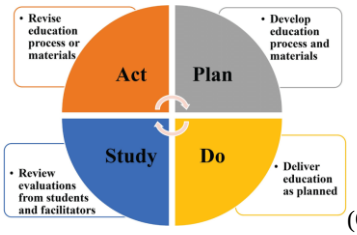
The Quality Improvement (QI) Model, Plan-Do-Study-Act (Deming cycle) was used to help conduct the project. According to the Agency for Healthcare Quality (AHRQ, 2018) this approach is a useful and easy model to use for the healthcare and business environments. Three benchmarks domains must be considered when evaluating evidence, quality, quantity, and consistency (Agency for Healthcare Research and Quality (AHRQ), 2002, as cited in Melnyk & Fineout-Overholt, 2005). Quality refers to the absence of biases due to errors in selection, measurement and internal validity. Quantity refers to the number of relevant related studies, sample size, treatment effect and risk. Consistency refers to the similarity of findings of multiple studies regardless of study design. Zaccagnini & White (2014 p. 84).

The model was considered one of the most important early stage process improvement perspectives created by Edward W. Deming originally in the 1920's (Henshall, 2017). The

Deming model approach is not solely for improving the process for success but additionally for the improvement of the entire business or program. This type of model can be incorporated into a quality improvement project that will help reduce defects through higher levels of quality uniformity and understanding that quality should be the degree of excellence of a product. The model aligns with the earlier mentioned project research question.

The use of the Deming cycle could be applied when a project has defined repetitive work process where there is a need to develop or improve a design, a need to implement change, a reason to work toward a continuous improvement of a process or planning data collection and analysis in order to verify and prioritize problems or root causes. The graphic below brings attention to the strategies and activities needed to achieve project goals for practice improvement.

Figure 1. Plan, do, act, study



(Quality Resources, 2020)

Planning is phase one of the Deming Model that helps determine and understand what needs to be achieved through asking the question whether an improvement should be made, defines the extent of the problem, and determines whether a change will improve the outcomes of the program. The planning stage is both an attempt to improve the outcomes and a scientific investigation of the leaders' own capacity to understand the organization (Henshall, 2017). Phase two is "Do" and consists of starting the project on a small scale, collecting data, and documentation. Phase three, "Study" consists of the best place to incorporate theory according to Deming (1948). The study phase allows the project leader to review outcomes to determine

whether they match the prediction and evaluate in what ways the outcomes differ. Finally, phase four "Act" requires action. This is the implementation phase where the changes take place. The long-term goal is that the project will encourage other simulation faculty to get involved with quality improvement and take a lead role. The goal of this author is to think bigger than just making "an adjustment" it is to improve the processes long-term for quality simulation teaching.

The Deming cycle recommends there is clear and compelling intention of improving something within a business or organization, be it operational or concerning a product (Deming, 1948). Testing a project is investigating one's own predictive and analytical methods. The project goal was to analyze what currently was a challenge and what changes would make the simulation teaching experience better and determine how the improvement can be managed for the future.

Market Risk Analysis

It was important to evaluate the community for competing schools as it related to the two project schools. There are three to four leading baccalaureate nursing programs in the metropolitan area. Statewide there are 16 nursing schools ranging from small size classes of approximately 140 students per year to 400 or more students per year. Approximate average NCLEX pass rates are 79.4%- 99.62% with no correlation between numbers of students (Nurse Explorer, BSN Colorado programs, 2019). Most all schools have simulation labs of varying levels. This author has observed several well-organized programs in the metro and state area with highly trained simulation faculty.

According to Altbach (2019) it is common for campus departments and divisions to be siloed; marketing may not be in touch enough outside of college walls to be aware of the growing competition for technology in nursing. Leaders in nursing programs need to have an expanded

role in business and marketing strategies for their programs. There should be an ongoing active presence with the college marketing department so that the same strategies are not used year after year, but actively coordinate with the nursing program that "show cases" innovation in healthcare teaching. Desired growth requires the ability to move quickly with the correct knowledge and strategic plan in place to expand and diversify curriculum to meet new societal needs for long-term sustainability. A strategic plan according to the Small Business Association (SBA, 2019) should include every faculty employee, frequent revisions, flexibility, openness, encouragement of new ideas, challenge assumptions and cultivate teamwork.

Table 2. Best colleges of nursing in Colorado

	Metropolitan Unversity	Regis University	Platt College	University of Colorado	Colorado Christian Unversity
Ratings	B-	B+	B-	A-	B-
Tuition	$12,175	$25,615	$36,598	$14,458	$25,198
Acceptance Rate	64%	60%	80%	65%	98%-100%
(2020 Best Colleges of Nursing in Coloradohttps://www.niche.com/colleges/search/best-colleges-for-nursing /s/colorado/)					

There is an inevitable tension between ideas of autonomy ingrained in academic institutions and pressures from society (Altbach, 2019). According to Altbach (2019) in the twenty-first century, external pressures of all kinds, economic, political, and others characterize the higher education system. No school wants to produce students who need extra support and training on the job over and beyond the normal hospital new grad program expectations.

Strengths, Weaknesses, Opportunities, Threats

According to Zaccagnini & White (2014) a strength, weakness, opportunities and treats (SWOT) analysis is a needs assessment tool to help the project leader discern where the strengths of the project lie, make plans to address the weaknesses, know where to look for opportunities and be aware of the threats. Simulation-based nursing education is an increasingly popular pedagogical approach. It provides students with opportunities to practice their clinical and

decision-making skills through various real-life situational experiences. Strengths and weaknesses relate to the internal environment while opportunities and threats relate to the external environment. SWOT can be effective in the analysis of how an institutions product are marketed (Fortenberry 2010, p 186). The political, economic, social, technological (PEST) analysis is another type of tool beneficial to help companies analyze what opportunities may be the best to help a business shape change ideas, avoid starting projects that are likely to fail, and develop an objective view of the what the new environment could look like during the change process (Fortenberry 2010, p 181). PEST also helps address any important political factors, government policy or specific regulations that could affect a business. SWOT and PEST analysis can be used together for better results and a more complete analysis if desired. SWOT was a better choice for this project since it may offer better assistance on the local level, although changes in government policies or economic downturns may dictate otherwise.

Strengths for the project included a core group of dedicated affiliate faculty, state of the art equipment, and university support for excellence in teaching faculty. The direct target market for the simulation project was college leadership, simulation faculty members and, ultimately students. Consideration was given to the healthcare population as the agencies and patients are the ones who depend on excellent care from new nurses. School #1 is actively hiring faculty for lab and simulation. It is important for nursing leadership to understand the value of a strategic plan to help streamline a simulation orientation practice to direct the program future with a workable framework for expansion and long-term sustainability (SBA, 2019). There is a possibility that the student market wants to know that the identified project schools are striving to provide the highest quality education for undergraduate and graduate nursing students and faculty members who teach are qualified and align with the school vision and mission

statements. Ethical responsibility of the nursing program is supported by existing evidence-based practice in the use of simulation in nursing curriculum. Faculty satisfaction and maintenance of a talented work force and keeping employees already in place often can be easier than recruiting and hiring new talent.

According to Robinson (2019) many employers fall short when it comes to learning and development opportunities. Simulation has become a well-accepted method of learning by students. A well-organized simulation experience is a positive driving force and a reason to include simulation expenses into the yearly budget. Behaviors addressed in Doolen et al., (2016) included the benefits of simulation for medication safety, handwashing, communication, patient safety, knowledge acquisition, and knowledge transfer.

Nursing is one of the fastest growing professions within the United States, with an unemployment rate of only 2% and a median salary of nearly $66,000 each year (Nursingschoolhub, 2019). There is an abundance of exceptional nursing programs available, both online and traditional. It is important to distinguish one program from the others. As mentioned earlier, metro area competition has several private and state programs including the University Health Science Center rated one of the top 30 cutting edge schools in the nation (Nursingschoolhub, 2019). In order for schools #1 and #2 to be competitive, it requires rigorous faculty development and ongoing training. Once simulation faculty are trained, becoming a "train the trainer leader can reward existing faculty already in place with high level teaching skills. Schools with high-level reputations and forward-thinking leadership have an advantage for securing outside funding and understand the need to have faculty who are innovative and passionate about their profession.

Marketing strengths of a nursing program require highlighting creative ways of learning.

Fortenberry (2012) suggests that healthcare marketers target desirable customer populations and position their products in a manner that will be attractive to designated customer groups. According to Fortenberry (2012), Everett Roger's Diffusion of Innovations Model of marketing describes that innovators represent approximately 2.5% of individuals that are comfortable with risk and uncertainty. The school's college leadership could be classified as late majority according to Everett Roger's Diffusion of Innovations Model. These groups are traditional, skeptical adopters and, can be leery of new ideas and use "waiting" due to scarce resources, or resistance to changes. Administration will need to understand that simulation is an event or situation made to resemble clinical practice as closely as possible and can be used to teach theory, assessment, technology, pharmacology skills, and acute care skills (Rauen, 2004).

Primary goals of nursing education are for nurses to be prepared to meet diverse patient needs, function as leaders and advance science that benefits patients and the capacity of health professionals to deliver safe quality patient care. A review by Cant and Cooper (2016) found that simulation has become a well-accepted method of learning by students, a method which enables them to reconcile theory with practice. It is important for the nursing dean or leader to work with the college executive leadership to secure enough yearly funding for continued faculty educational emphasis in simulation teaching for the application and integration of knowledge, skills, and critical thinking consistent with the guidelines of the International Nursing Association for Clinical Simulation and Learning (INACSL) and the Simulation Society for Healthcare (SSH) (INACSL, 2018). The following SWOT analysis table is specific to schools #1 and #2 related to changing and strengthening their simulation programs.

Table 3. Strengths, weaknesses, opportunities, threats

Strengths	Weaknesses
▪ Dedicated core group of lab faculty ▪ State of the art simulation equipment ▪ University support committed to building a simulation lab ▪ Student activities fees help underwrite supply costs. ▪ School #1 program doubled in size in 2019 ▪ Competitive tuition for BSN students and RN refresher nurses ▪ New IT tech appointed in school #1- 2019	▪ Space calculated too small at school #1 ▪ Potential faculty burnout due to not enough affiliate faculty in the simulation lab ▪ Frequent technical problems ▪ Lack of long-term faculty plan- both schools ▪ Possible limited budget for equipment, maintenance, faculty training-both schools ▪ New sim director at school #1 and no sim leader at school #2 ▪ No faculty development, growth plan or sustainability at either school ▪ No annual evaluation competency process at either school
Opportunities (both schools)	**Threats**
▪ Commitment to develop simulation and lab teams by leadership ▪ Opportunity for credentialing staff and lab accreditation ▪ Availability of INACSL resources ▪ Bridge the gap between education and clinical experience ▪ Improve future reputation ▪ Partner with community facility healthcare agencies ▪ Ongoing expansion opportunity ▪ Growing emphasis on experiential learning prior to and in conjunction with the clinical experience.	▪ No faculty leadership ▪ Lack of consistent Lab/Simulation Director ▪ Inexperienced director ▪ Potential budget cuts ▪ Economic downturn in healthcare ▪ Lack of desire and imagination to integrate IPE into curriculum ▪ Difficulty hiring faculty or retention ▪ Costs for ongoing faculty simulation training ▪ Other area nursing schools ▪ Possible drop in quality education at both schools

Driving Forces, Restraining Forces and Sustainability

The goal of the project was to encourage a long-term model to help evaluate the simulation program for improvements in simulation teaching methods. The driving forces for this project include abundance of available simulation resources from professional associations and organizations, and the desire to enhance faculty self-efficacy and reduce faculty anxiety are drivers that could yield high returns for both schools. Since schools #1 and #2 have full existing simulation equipment both schools need to develop strong knowledgeable simulation teams. Development of strong simulation teams provides a sense of ownership and vision. Several

factors have been driving the rapid increase of simulation training, including an increase in the number of undergraduate nursing programs, which has led to more competition for clinical site placements.

Referenced earlier in this paper the National Council of State Boards of Nursing (NCSBN) in their two part study conducted a randomized, controlled trial looking at the effectiveness of simulation in undergraduate nursing; part two of the study was to survey new graduates and their managers during their first six months of employment (Hayden, Smiley, Alexander, Kardong-Edgren and Jeffries, 2014). The NCSBN study measured the effect of simulation as a replacement of clinical hours for 25% or 50% of total clinical hours. The control group could have no more than 10% of student clinical hours replaced by simulation. Findings indicated for students who had 25% or 50% of their hours replaced with simulation, there was no difference in NCLEX pass rates or end of program educational outcomes when compared with students who had more clinical time. Students also perceived that simulation enabled their learning needs to be met; they could perform well on tests; they could synthesize content learned, and they did well in all core nursing subject content areas (Hayden, Smiley, Alexander, Kardong-Edgren and Jeffries, 2014). According to Bogossian et al. (2017) simulation program hours are inconsistently reported and underutilized in terms of a potential contribution to clinical learning.

The benefits from conducting consistent structured simulation may increase nursing program reputations, and more potential for recruitment of students. The high costs of tuition should require schools to provide state of the art training in the area of simulation learning when evidence-based resources exist and are readily available. The question becomes do nursing programs have an obligation to provide academic best practice in simulation for students who pay the high cost of tuition? This author believes that both nursing programs have a corporate

responsibility for structured best practice simulation teaching methods. School #2 is facing difficulty with clinical placements and hiring trained simulation faculty educated in the INACSL recommendations and familiar with measurement tools. Benefits of capital investment in simulation physical resources have already been realized in each school, however other barriers include; student confusion, low faculty confidence, faculty uncertainty about role-play and the psychological realm of realism.

Restraining forces are resistance issues to change such as, faculty resistance even after education and training or faculty feelings of insecurity or lack of comfort and familiarity related to the change. Faculty and students may feel anxious implementing the project teaching methodologies. Faculty could have a lack of understanding about the project goals resulting in confusion, or faculty may decide there is no "buy-in" to perform the recommended changes. Finally, competitive forces from other area programs such as quality, reputation or lower tuition may affect the change process. Other concerns may relate to costs associated with training that could prohibit organizations to go beyond the initial training and not hire a lab coordinator, director or any ongoing educational support for simulation faculty. Leadership may resist the project for not being worthwhile for their organization. There is always a risk that student and teacher interactions and relationships could be a negative or a positive experience during a simulation event.

Needs, Resources and Sustainability

When leadership is trying to make a difficult and challenging decision it helps to use an effective, structured decision-making technique that will improve the quality of the decisions and increase the chances of success. Kurt Lewin created Force Field Analysis in the 1940s. Lewin originally used it in his work as a social psychologist. It continues to remain helpful today, used

in business decision strategies (Mind Tools, 2016).

Table 4. Simulation Force Field Analysis

Forces **for** change →	Score	Proposed Change Faculty development-training program for consistent, intentional simulation-based teaching methodologies utilizing INACSL recommendations	Forces **against** change ←	Score
Ethical responciblity of the nurisng program	5		Cost of on-going faculty development	4
Faculty satisfaction and maintenance of a talented work force	5		Lack of leadership support/understanding	4
State of the art simulation equipment	5		Inconsistent Simulation team	4
Student desire for course simulation experiences	4		Faculty fear of change	3
Metro area competition	5		Lack of external funding for expansion	4
The need for a qualified Sim director/coordinator	5			
Total	29		Total	19

(Image adapted from "Tools for Knowledge and Learning A Guide for Development and Humanitarian Organizations" by Ben Ramalingamc Overseas Development Institute 2006. Adapted with permission from Ben Ramalingam.)

Competition in higher education has drastically changed not only by generalized competition but also through competitive schemes in the last decades (Rasmi, 2019). There is competition for students, competition for budgets and competition for professors. Academic institutions with nursing programs should complete program expansion like any other business and follow the startup steps for new programs or business development.

Sustaining forces include leadership support and a clear policy that will be initiated and updated annually. Mentoring relationships have the ability to help boost knowledge and skills needed to sustain program and faculty success. Sustainability will be dependent on both institutions recognizing the need for a professional experienced simulation coordinator who will be responsible for implementing the project recommendations along with incorporating INACSL recommendations, participating in local committees, and staying current with regulatory changes for a robust program. Sustainable growth is dependent on the nursing department's business

plan which should encompasses a model that creates value consistent with the long-term preservation and enhancement of the program's financial environment and faculty team. Organizational sustainability might require developing an underlying culture of change rather than the creation of policies to address crisis management.

Feasibility, Risks, Intended, Unintended, Consequences

The intended consequences are the development of a structured simulation faculty teaching policy applying the recommended INACSL standards, methods and outcomes. The goal is for faculty to experience increased self-efficacy, become organized in simulation teaching and using consistent methods. Other intended consequences are faculty who feel supported by nursing leaders and a possible secondary outcome of faculty development is student growth in critical thinking skills. The unintended consequences may be continued inconsistency in faculty teaching methods leading to ongoing faculty confusion, frustration, anxiety, and lack of student higher-level critical thinking and skill knowledge. Risks could also include cost or training, lack of administrative support, no faculty "buy-in," or faculty feeling anxious about participating in something new. There could be possible mild psychological distress related to perceived evaluations for simulation teaching competency.

Healthcare facilities today are seeking graduates who can exhibit competency in critical thinking skills and demonstrate skills in an environment where patient acuity is more complex and patient expectations are higher than in the past (Maloney, Haines, 2017). According to Maloney, & Haines (2017), the 2010 Institute of Medicine Report calls for nurses to take the lead as change agents to improve and advance the health care delivery and health outcomes across the nation. The DNP prepared nurse has a responsibility to lead the way; however, it will be important to be aware of the signs and trends in the organization. As a DNP leader, there is a

responsibility to be accurate, concise and clear. In any organization it is essential to create trust in order to have effective collaboration across disciplines. The complexities of healthcare require more sophisticated thinking about the relationship of the problem and how various professions interpret it (Bayne-Smith, Mizrahi, Korazim-Korosy, Garcia, 2014).

Stakeholders and the project team

Faculty, students, patients, and clinical agencies are the primary stakeholders. It is important to have faculty involved as a group in professional development workshops to review current simulation research and to encourage them to understand the importance of clear objectives and consistent teaching methods to achieve successful student learning outcomes. If faculty come together as a team for the intended simulation training content and brainstorming sessions, they will be more likely to buy into a faculty development policy. It is important for faculty to adopt a learning theory so that everyone is consistent in holding students accountable for their part in learning and the faculty see themselves as facilitators to help students achieve a high level of various skills in the core nursing courses (Jeffries, 2012, p 16-17).

Patient safety is a priority in today's changing health care system. Complexity of health care environments require health care professionals to have varied skill sets. It is essential to involve simulation faculty to work together and participate in team-based problem-solving techniques related to patient safety and error reductions as it applies to simulation scenarios. Nurse educators are responsible for preparing nursing graduates for the reality of health care and to be proactive about patient safety, possess competent nursing skills, and able to provide quality care (Jeffries, 2012).

According to Zaccagnini & White (2014) the project team can be assembled with no defined number or composition. The DNP project leader is always the team leader. The faculty team is

part of the forming stage. If team members do not know each other it is important to be welcoming in order for individuals to feel comfortable to offer opinions and suggestions. This is a good time for the DNP project leader to evaluate individual skills and personalities. Some of the team members may not accept the project and the necessary tasks or express doubts to complete the project. It is important for the team leader to support and work with individuals who express insecurities with team relationships. Norming is the phase that brings the team to a strong commitment of goals and group harmony. The team may socialize more in this phase and emerge with more unity for the project objectives. Houser and Oman (2011) recommend time to facilitate team collaboration. Most of the project faculty were affiliate lab faculty hired to work exclusively in the lab and simulation. There were two full-time faculty who joined the team although according to Houser and Oman may display less project commitment due to other classroom responsibilities and time constraints.

According to nurse scientists at the University of Colorado Hospital (Houser and Oman, 2011) respectful learning, knowledge sharing, open communication, sharing of experiences, working together and letting go is a framework for a solid mentoring program for evidence-based projects.

Identification of the project team

- Project DNP leader
- DNP mentor (available by phone)
- All new simulation faculty at school #1 and school #2
- All current simulation faculty at school #1 and school #2
- RN refresher simulation faculty at school #2

Director of Simulation role: The simulation director is the leader and overseer of the department.

The simulation director has the responsibility of conducting research according to INACL guidelines to keep the unit progressing and innovative. The director should conduct quality improvement projects yearly and initiate new opportunities by including staff. The success of the center will be determined by the director having adequate protected time to advance the causes of simulation (Jeffries, 2012). There are priority tasks that are important to oversight on a day-to-day basis that include: student scheduling, observation of curriculum gaps, faculty recruitment and retention, technology advances and community outreach for interprofessional scenarios (IPE). The director sets the expected level of faculty competency, faculty annual reviews, budget management and constraints, ongoing strategic planning for a constant competitive edge, involvement and observation of marketing efficiencies and inefficiencies and, follow-up on student graduate competency and research.

The director should not be solely involved in all these tasks, if possible, it is recommended that each school hires an education coordinator. The education coordinator has responsibility in operational tasks and should report directly to the lab director. The director has responsibility and oversight for all employees within the simulation unit. Director characteristics include, a leader who will trust their staff, possess knowledge of business planning and strategic planning, one who is accurate, clear, and concise in their communication style and knows how to build teams, and is flexible and self-reflective.

Faculty education coordinator: It is critical to have a full-time manger if possible, who is designated to manage the day-to-day operations of the simulation center. This individual should have administrative skill sets to manage employees and provide mentoring and coaching. They must also possess an advanced knowledge of medicine, simulation planning, programming, education, debriefing knowledge, and know how to manage equipment and simulation

technology. The education coordinator is the faculty mentor for teaching structured intentional teaching methods and to create lab center policies and procedures. Careful tracking of center statistics will help to justify adding faculty. Education coordinator characteristics should consist of someone who is flexible with expert nursing knowledge, strong decision-making skills and excellent management and budgeting skills. The educator should be consistently up to date with healthcare changes and the day-to-day operational skills are critical in running a smooth unit for students and faculty.

Simulation technician: A simulation technician is an important position and will need some key skills, such as the ability to understand medical terminology, interact with simulator technology, possess good interpersonal skills, computer skills, and be able to prioritize and organized. The technician should manage and follow up on equipment maintenance and warranty programs. Generally, they cannot be responsible for running the lab or giving direction to students or faculty and have the ability to take direction.

Multiple affiliate faculty positions: Staffing the simulation center is critical to the success of any operation. This will be dependent on center size, organizational structure and technology capabilities. Staffing can include a mix of part-time, full-time and affiliate faculty. According to Jeffries (2012) a center should not rely on flex affiliate faculty as the backbone of the educational services provided. All centers need to determine their workforce mix. Some schools offer contracts for this type of employee. It is important that there is a good mix of affiliate faculty skills in health assessment, adult medicine, pharmacology, pediatrics, obstetrics, leadership and mental health courses. Most centers use affiliate faculty as needed basis and are not eligible for benefits. Providing a comprehensive orientation program and ongoing team building and communication will allow them to gain experience, confidence and become loyal and

dependable staff members who support the mission, vision and goals of the center (Jeffries, 2012).

Cost/Benefit Analysis

Using simulation in place of traditional learning has required nursing schools to increase budgets for incorporating funding of simulation labs. Direct expenses include purchase of low and high-fidelity manikin simulator equipment, specialty manikins such as mom/baby for labor and deliver and neonatal practice or pediatric manikins that range from toddler size to youth sizes. Other types of simulator examples are virtual simulators, gaming simulators, standardized patients, debriefing areas with video capabilities, and intravenous (IV) arms as added accessories. There are several simulator products companies. According to Laerdal (2018), high fidelity simulator cost is approximately $68,000-$160,000 each. Baby simulator cost is approximately $7,000-$25,000 each, IV arm cost is approximately $600- $1,000 each (Laerdal, 2018). There are ways to keep costs within a budget by purchasing refurbished equipment, however care should be taken to investigate the age and warranty of resale equipment. The fixed cost and variable costs to build a simulation center is $350,000-1.5 million depending on size, equipment and space. Fixed costs for simulation faculty development should remain constant regardless of how many goods are produced. The simulation coordinator for any lab is a direct cost and requires consistent simulation professional development along with building a professional simulation team. The director should be part of the nursing curriculum team for consistency in content threading and for annual faculty evaluation. However, the director should have full responsibility and accountability for running the lab on a day to day basis.

Variable costs are costs that include consumables, maintenance of equipment already purchased, office supplies, printers, copy machines, and computer equipment for running the

simulation "computer board" or video equipment maintenance. There are accessories such as headsets, microphones and video equipment that may be indirect costs and require maintenance from year to year. Finally, there are supply costs for student practice and scenario realism. Staffing could be a variable cost depending on the number of students enrolled in each class annually requiring simulation education. High quality simulation education is a significant benefit to students in both school sites. According to Jeffries (2015) students will graduate with higher skill abilities and cognitive knowledge when faculty teaching in simulation have been oriented, mentored and evaluated. The overall benefit outweighs the costs over time.

The budget for this study was not complicated and required a calculation of faculty training hours, educational presentation hours and project leader hours. All faculty were trained on the job during their already scheduled simulation teaching contract. The author was not paid for any project time and taught with each simulation faculty member three times including teaching together in debriefing.

Table 5. Simulation Budget

Anticipated Totals	Estimated Fixed Cost	Training Hours	Total
Sim Conference Fees- Rater training	$475.00	0	$475.00
Webinar PP Preparation	8 hours x $54/hr	$54/hr x 8	$432
Faculty Hourly Salary @ School #2	Faculty x 5 @ $54/hr	$54/hr x 3hrs x 5 Faculty	$810
Faculty Hourly Salary @ school #1	Faculty x 13 @$45/hr	$45/hr x 3hrs x 13 Faculty	$1,755
Project Lead Salary @ school #1 For Training	$45/hr	$45/hr x 3hrs x 5 Faculty	$675
Project Leader Salary @ school #2 For Training	$54/hr	$54/hr x 3hrs x 7 Faculty	$1,134
Project leader salary for PP training x 18 faculty	45$/hr	45$/hr x 12 hours	$540
Total:			$5,821
	Estimated Indirect Costs		
House Keeping	$300/Month		$300
Variable Costs - copies	$25		$25
Mannikin/Equipment	0		0
Utility Costs	0		0
Total:			$325.00
		TOTAL	$6,146

Table 6. Simulation Employee Budget

			Employee Salary Calculations- Sim Lab				
		Employer Portion paid for taxes					Employer paid benefits
STAFF POSITIONS	YEARLY SALARY	SS TAX 6.2%	MEDICARE TAX 1.45%	FED. UNEMPL 0.6%	ST UNEMPL 4%	HRS PER WEEK	30.85% Benefit Compensation Pckg.
					1ST $14,000		8.5%=Health Insurance, 0.5%=Life insur, 2.4%=Bonuses, 4.8%=Pension, 7%=Paid leave, 7.65%= SS, Medicare
Lab Director 1 FTE	$60,000	$3,720	$870	$360	$560	$40	$18,510
		60,000X.062=372	60,000X0145=870	60,000X.006=360	PRE-DETERMINED		
Total tax deductions= $5,510							
Total benefits paid=$18,510							
RN Education Coor. PT	$40,000	$2,480	$580	$240	$560	$20	$12,340
		40,000x.062=248	40,000x.0145=580	40,000x.006=240	PRE-DETERMINED		
Total tax deductions=$3860							
Total benefits paid=$12,340							
RN Adjunct Faculty	$30,720	$1,904	445	184	560	16	$9,477
		30,720x.062=190	30,720x.0145=445	30,720x.0006=240	PRE-DETERMINED		
Total tax deduction= $3093							
Total benefits paid=$9,477							
RN Adjunct Faculty	$30,720	$1,904	445	184	560	16	$9,477
		30,720x.062=190	30,720x.0145=445	30,720x.0006=240	PRE-DETERMINED		
Total tax deduction= $3093							
Total benefits paid=$9,477							
RN Adjunct Faculty	$30,720	$1,904	445	184	560	16	$9,477
Total tax deduction= $3093		30,720x.062=190	30,720x.0145=445	30,720x.0006=240	PRE-DETERMINED		
Total benefits paid=$9,477							
Totals	$192,160	$11,912	$2,785	$1,152	$2,800		$59,281
Total cost of salaries=$192,160							
Total cost of benefits=$59,281							
Total cost of taxes=$18,649							
includes (SS, Medicare, fed. unemployment, state taxes)							
Final total: $270,090							
192,160+59,281+18,649=$270,090							

Mission and Vision

When developing a business plan strategy, the mission and vision statement is the first place to start. Mission and vision statements help identify gaps early on in the process and should align with the organization's strategic business focus in order to ensure the attainment of excellence. The mission statement should have a purpose and reflect a core value. According to Skrabanek (2018) the mission statement focuses on today and what the organization does, who the organization serves and how they serve. Best results will be obtained if the leader or manager includes a few stakeholders in the drafting process and gets buy-in from all those concerned, in this case it should include faculty. A solid mission motivates a team toward a common goal (Skrabanek, 2018). A mission statement also becomes part of the organizational branding and advertising that offers a quick, clear message for social media and other platforms.

It is important to revisit mission and vision statements yearly to refresh and re-energize employees.

The simulation mission statement serves as a guide for leadership and faculty to follow in their operational pursuits (Fortenberry, 2010). The growing practice of simulation in nursing curriculum nationally, provides a wealth of opportunities to challenge clinicians in a safe learning environment, where they are given permission to make mistakes without patient harm (Dodson & Stone, 2016). Simulation is more effective when it is part of a larger curriculum, rather than a stand-alone activity. Any simulation program should be committed to creating and accomplishing a mission and vision statement.

According to Smith (2016) there are seven reasons why a mission statement is important. (1) It provides direction for the business. Smart leaders use this idea to remind their teams why the company exists. A mission statement is a "North Star" that keeps everyone clearly on the directional path of the organization. (2) The company gains focus for addressing their future goals. The mission tells us what we are doing today that will take us where we want to go in the future. (3) It provides a template for decision-making about strategy, sets important boundaries which enable business owners to delegate both responsibility and authority. (4) The mission is the basis for priority alignment. When a new employee is hired, it is critical that the new hire understand what the company does and where the company is going. (5) According to Smith (2016) if the mission is clear, team members are more likely to see the value of changes and how the changes will help the organization accomplish the mission. In turn this will create a culture that welcomes change when necessary. (6) A mission shapes strategy, wise leaders create the most effective strategies possible to achieve the mission of their company. (Smith, 2016). Lastly, the mission facilitates evaluation and improvement. The mission and vision statements

are a key component of the strategic business plan (SBA, 2019). According to Smith (2016), if there is a clearly, written mission statement, all employees know exactly what is expected, where the organization is going and what the priorities are for the business. There are several "schools of thought" regarding changing mission and vision statements in an organization once they have been created. If an organization undergoes radical changes, the business will want to update either or both statements (SmartSheet, 2019).

Simulation project mission statement

Through the use of best practices in simulation education, students will experience ways to improve patient safety, patient care, and experience a realistic, safe, hands on learning environment. Innovative immersion and reflective practice will guide students to learn problem solving and decision-making skills.

Vision Statement

A vision statement is a view into the future with the hope of a positive future outlook. The vision statement describes a company's inspirational, long-term plan for what they will be able to accomplish and what they are working towards, whom they will help, and how the organization will be perceived. An effective vision for the simulation teaching program is through the use of diverse instructional methods that encompass both traditional as well as technology-based strategies.

A vision statement looks toward the future; a mission statement talks about what the company is doing in the present. The vision is a foundational document that will guide the company's direction for years to come (Ray, 2018). A vision statement should be achievable with a goal that has a reasonable expectation of success despite economic, technological, or other shifts. The vision statement is the future hopes for the business and include foreseeable questions the

business may need to solve and what the business is inspiring to change (Ray, 2018). Vision statements set a broader strategic plan for the organization. It is important to navigate around getting bogged down in the day-to-day details of running a program or organization. The vision statement will help leaders focus time and attention on the long-term business plan. Ray (2018) recommends eight traits to writing a vision statement. The traits should be concise, clear, have a timeline, future oriented, be stable, challenging, abstract and inspiring. According to Skrabanek (2018) vision statements promote growth internally and externally. A strong vision helps the team focus on what matters the most for the business. A good motivational vision statement will motivate existing employees and drive external talent to the company or organization (Ray, 2018).

Simulation project vision statement

The simulation program is committed to providing high quality instructional teaching methods that encompass both traditional as well as high-level technology-based strategies that prepare nursing students to face the challenges of current and future complexities in healthcare.

Goals

The project goal is for a structured consistent simulation faculty development teaching policy at both institutions that will encourage a cultural change. A change in teaching methods will enable faculty to achieve increased facilitator comfort related to role-play, decreased anxiety and a willingness to understand and implement the INACSL guidelines. High self-efficacy will lead to successful outcomes, whereas individuals with low self-efficacy are likely to cease effort early and fail (McLeod, 2016). It is important for faculty to learn how to create a positive learning environment and provide feedback and clarification on incorrect student decisions so future clinical performance is appropriate and safe (INACSL, 2018).

The project goals were to implement a policy at both identified schools for an ongoing quality improvement simulation faculty development program for consistent teaching methodologies and annual competencies. (2) provide an intentional framework for conducting simulation according to INACSL standards, focusing on V and VI. (3) Encourage positive faculty role modeling and ongoing professional development to contribute to confidant, consistent simulation teaching.

Process Outcome Strategic Objectives and Rationale

Generally, objectives have a specific completion date. Nagy and Fawcett (2019) suggest that objectives provide a program or organization with setting a benchmark to show progress. Objectives answer the questions of who, what, where, when, how, and why. Completed objectives serve, as a marker to show the members of the organization, stakeholders, community and funders what is being accomplished. Objectives are used to meet the organizational goals and help members of an organization work toward the same long-term goals. According to Feliciano (2008) a goal example of an organization could be, "the goal of the business is to grow profitability, maximize net income, improve customer loyalty."

Simulation objectives

Clear, realistic, specific, measurable and time-limited objective statements of action will move the project toward its goals (Houser and Oman, 2011). The following objectives were identified for this project:

Objective 1: *Faculty will be able to demonstrate 50% more confidence in simulation teaching by integrating two standards of best practice into curriculum explaining INACSL standard V, and INACSL standard VI measured by annual competency evaluation within one year.*

Incorporating and communicating with faculty early on in the simulation plan helps to build

a sense of team and provides to roles in the process. According to Johnson (2016) team building involves, focusing on roles, beliefs and values, how to work together, learning strong communication skills with each other and, celebrating together in success and failures and the process of getting to know each other.

The popularity of simulation has caused some schools to rush in, create and build simulation labs without long-term recognition for how and why to use the center. Simulation is a teaching strategy to mirror, anticipate or amplify real situations with guided experiences in a fully interactive way. The trend in nursing education is to provide new technology, provide experiential learning, place more emphasis on outcome-based learning and more evidence-based strategies in curriculum (Jeffries, 2012).

Objective 2: *Trained faculty will be evaluated using the DASH evaluation tool and a post-test to identify knowledge retention within one year from orientation.*

According to the Center for Medical Simulation (2108) it is important to train faculty using a benchmark tool like the Debriefing Assessment for Simulation in Healthcare (DASH) to measure and evaluate instructor understanding on the importance of debriefing. The DASH instrument helps faculty engage with the learners, encourage discussions and explore performance gaps.

Objective 3: *New Simulation directors at each school will be able to identify variables that correlate with faculty and student confusion when there is no simulation orientation teaching policy in place.*

It is important to have a leader who can recognize when simulation faculty are not teaching with excellence in subject knowledge and need assistance with INACSL recommendations. Working with students requires the use of active teaching strategies and confidence in new technology. The simulation director must be able to visualize the future of healthcare and

encourage faculty discussion and involvement for future ideas. According to David Stein in Benson's (2016) article the current healthcare system is full of confusion, global change and complexities and system chaos. The past allowed for order and predictability, unfortunately the past is gone, and the future is unknown. A leader with vision and strategic abilities is needed to mentor faculty in preparation for constant healthcare system changes.

Objective 4: *Trained faculty will understand and apply the INACSL recommendations for conducting simulation within three months of the orientation program with the assistance of a simulation director or educator.*

Learning is dependent on the integration of experience and reflection. According to INACSL (2018) recommendations there is clear evidence that learning occurs in the debrief phase of simulation. Reflection is a conscious skill that requests the learner to reflect on the meaning and implication of an action. Debriefing faculty should encourage the student to communicate rationale for each nursing intervention by observing for knowledge, skills and attitudes. An important priority for the facilitator is to observe for gaps in learning from classroom to the simulation setting. Expert, competent debriefing is important to ensure best possible learning outcomes. The International Nursing Association for Clinical Learning is the global leader transforming practice to improve patient safety through excellence in health care simulation (INACSL, 2019).

Leaders who are intimately involved in the creation and design of a new program help guide and implement the plan and fulfill the vision (Jeffries, 2012). Strategy is thoughtful, intentional and deliberate planning to achieve consistent faculty teaching methods. Examples include replication of clinical reality, fine-tune nursing skills in patient safety, practice skills in a safe learning environment and bridge the gap between didactic and clinical practice.

The increase in the DNP role in healthcare and education has helped to advance competencies for increasing complex clinical demands on faculty and leadership roles. According to Chipps, et al. (2018) the DNP role needs more documentation on how it is impacting new areas of healthcare and education. There is a need in nursing schools for more robust outcome studies, and refined business models. Simulation units with DNP leaders have the ability to impact colleges and organizations to achieve new goals in curriculum and maximize contributions to healthcare organizations (Chipp et al. 2018).

Logic Model 2019 (Appendix-A)

Zaccagnini and White (2014) suggest using the logic model to clarify the path of activities, effects and outcomes, keep track of useful links, record goals, recognize milestones, establish boundaries of the project and reframe the goals. According to Zaccagnini and White (2014) the system way of thinking is to see interrelationships and patterns change rather than individual issues. The logic model helped to get the project off to a good start and helped with clarity to modify and enhance the proposed project. The logic model is an outline of all the considerations for developing a project. It included short and long-term outcomes that carry hope for achievement. Both identified programs were already established, the logic model is useful for new and existing programs and initiatives. During the planning phase the logic model was helpful for clarifying the team and timeframes, IRB approval dates, leadership conversations and budget planning. As the project took shape the logic model was adjusted, improved and realigned frequently. The overall logic model content included resources, equipment, time constraints, cultural issues, required personnel, technology needs, threats, barriers and intended outcomes.

According to W.K. Kellogg Foundation (2004) the logic model is a systematic and visual

way to present and share an understanding of relationships and resources that a project leader needs or has available. The model also helps with the activities and plan for prospective changes or results that are hoped to be achieved. The model used for this project was the W. K. Kellogg Foundation (2004) template.

Population Sampling Parameters

Population sampling was a convenience sample of all faculty teaching simulation and faculty interested in teaching simulation at school #1 and school #2. There was diversity in the lab population that included years in practice, age and experience. Inclusion: All nursing faculty with an RN license teaching in simulation and those that want to learn how to teach simulation. Exclusion: no children or adults <18 yo. No allied health care faculty. The control group was the same group of nurses prior to the education experience and post education experience (quasi-experimental). Twenty faculty were originally recruited, 2 faculty began the project and were eventually lost to follow up resulting in a total of eighteen. Simulation faculty were recruited using a letter outlining the project intent, explanation of the project purpose, expectations, maintenance of confidentiality, leader contact information, contact information for leader's Capstone Chair, and the contact information for the Regis University IRB. Faculty were informed that their participation was voluntary, that they may cease participation at any time without penalty or loss of benefits, and that their responses remained confidential. A project information sheet was emailed to all participants that included how the leader would use the quantitative results of the data analysis to accept or reject the project question. The project timeline for data collection, surveys, faculty training and an educational webinar presentation was 3.5 months beginning August 28, 2019, ending December 20, 2019. The timeline was appropriate to collect data in core nursing courses that incorporated simulations; Adult I,

Pharmacology, Health Assessment and Foundations. According to Terry (2014) a project should be concerned with the process meaning and understanding that is gained.

Project Setting

Both schools had fully equipped high fidelity technology simulation units. School #1 consisted of pre-licensure students who had varying levels of simulation exposure and school #2 consisted of RN refresher nurses who had never been exposed to the simulation experience.

Methodology Design and Measurement

The study design was a quantitative quasi-experimental design using a convenience sample of 18 faculty participants. Methodology was a pretest posttest design associated with a repeated measure. Each volunteer faculty was assigned a number to remain anonymous. The test was a paired sample t-test to see if the outcome variable would be affected by the independent variable. This study presents the independent variable as the intervention. The dependent variable is the test scores. Variables such as self-efficacy, less faculty confusion and anxiety were extraneous variables which could be considered independent variables if there was intentionality for this purpose. The measure of central tendency is the mean or average score. Interval data can provide the value of each item however a ratio in percentages can provide descriptive and inferential statistics (Polit, 2010). The test was given an inferential statistic to determine if the pre group and post group differed significantly, meaning not be chance.

All faculty had different demographics, there is always a possibility that groups may or may not be comparable or that the outcome will be attributed to the faculty education program or it might not be attributed to the educational program. The data collection instrument used was the Debriefing Assessment for Simulation in Healthcare (DASH) Instructor long version (Center for Medical Simulation, 2010). Data analysis was performed using the Statistical Package for

the Social Sciences (SPSS).

Table 7. Faculty teaching experience

Prior sim experience in school #2	How many faculty were students in simulation before becoming an instructor?
Legend	Legend
no=2	0-5=1
yes=1	5-10=2
	10-15=3
	15-18=4
Results	Results
1=5	1-5=4
	5-10=0
	10-15=0
	15-18=0

The quantitative research study was a two paired t- test analysis. According to the study question the sample numbers can be measured in levels. The pre-post survey used was similar to a Likert scale which reflected categorical ranked variables. Data collection level was ordinal and interval since the ranking tool used had a similar rating from high performance to moderate level performance or needing improvement. Survey research was used as the research methodology to answer the research question. Care was taken to align the overall survey with the purpose for the project. The survey fit the target audience which were all licensed nursing affiliate lab faculty. The project survey used written questions provided to participates, other ways of using surveys could be online polls or online surveys. This type of research can be done with a specific target audience in mind or conducted across several groups along with a comparative analysis (Bhat, 2020). This allows the investigator to maintain the accuracy of the obtained results. All requirements were maintained throughout the data collection process.

Correlational methods using mathematical analysis to evaluate patterns, relationships, and trends between the variables was used. Since the project was quasi-experimental, it used methods to depend on the factors of comparison and depend on the cause and effect equation between two or more variables, where one variable is dependent on the other independent variable.

Protection of Human Subjects (Appendix K)

This project did not meet the federal definition of research, it was intended to add to the knowledge of the institutions. Determination of Human Subjects Quality Improvement form was used and all questions on the human subject form resulted in a positive answer that complied with the Regis University Internal Review Board (IRB). IRB was required at school #1 and school #2. Level of Review: quality improvement research includes interaction involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior. The project met one requirement from the Regis IRB exempt form that the information obtained was recorded by the project leader in such a manner that the identity of human subjects cannot be readily identified, directly or through identifiers linked to the subjects (Exempt form IRB@regis.edu). All forms were destroyed at the final completion presentation.

Instrument Reliability and Validity of the Debriefing Assessment for Simulation in Healthcare © (DASH) Instrument Model Measurement Tool (appendix C)

The Debriefing Assessment for Simulation in Healthcare (DASH) measurement instrument was used to assess faculty behaviors that facilitate learning and change in experiential contexts. The behaviors described in the DASH were derived from relevant theory and evidence in previous research along with reported expert observations of hundreds of debriefings (Center for Medical Simulation, 2019). The project objectives aligned to the International Association of Clinical Simulation Learning recommendations (INACSL). The DASH was designed to guide a simulation debriefing in a variety of healthcare disciplines, courses and, different number of participants and different educational objectives (CMS, 2019). According to the Center for Medical Simulation this allows for a comparison between a desired level of performance and the

level of performance that is observed in a simulation. The differences identified could be considered the gap. This is a good place for an educator or director to spend time analyzing ways to help faculty with teaching improvements. The DASH is a behaviorally anchored rating scale with six main elements and a total of twenty-three sub elements that are used for scoring from high level performance to needing improvement (CMS, 2019). The DASH element categories include how the instructor: (1) establishes an engaging learning environment, (2) maintains an engaging learning environment, (3) structures debriefing in an organized way, (4) provokes engaging discussions, (5) identifies and explores performance gaps, and (6) helps trainees achieve or sustain good future performance (Center for Medical Simulation, 2019).

Center for Medical Simulation defines an element as evaluating the behaviors needed to execute effective debriefing as well as those characteristics of poor debriefing. Therefore, an element is a high-level concept that describes a whole area of debriefing behavior. Each element has a dimension that reflects parts of the high-level and low-level competency in the elements (Center for Medical Simulation, 2019). The rating or scoring process is dependent on the leader to be familiar with and proficient in scoring and evaluation. The DASH tool rater score was not used for this project, although it is a potential second step in the process for use in annual review of teaching competency. CMS suggests the rater be trained through a certification course in order to become proficient in understanding all the elements. This author was certified in DASH rater scoring after attending an online learning course by the Harvard medical simulation team.

The DASH instructor long version (LV) was chosen for the pre and post DASH survey composition of the six elements and twenty-three behaviors within the elements. DASH-LV takes approximately five to seven minutes to complete and provides significant diagnostic information to the instructor. The DASH rating focus was used to evaluate communication,

observe the learning environment, engagement of the participant and how faculty encourage engaging discussion related to knowledge-based simulation scenarios. Debriefing is a learned skill according to the Center for Medical Simulation (2019) and can be improved with practice and feedback to benefit the participants in the learning process.

The DASH is based on evidence and theory related to how individuals learn and change in experiential context. The DASH tool was designed to assist in evaluating and developing debriefing skills. Initial reliability of the DASH was established during the creator's study, and Cronbach's alpha coefficient was determined to be 0.82 (N = 6, M = 29.537, variance = 24.259, SD = 4.925), indicating very good reliability." (Dreifuerst, 2012, p. 330). DASH instrument was scored for interrater reliability for consistency in ratings among different raters. The DASH validity is supported by (1) detailing the development process and the origins of its content and (2) showing data that demonstrate the DASH's ability to discriminate between varying levels of debriefing performance in an expected manner (Brett-Fleegler et al., 2012, p. 289). Validity "refers to the degree to which evidence and theory support the interpretations of test scores entailed by proposed uses of tests. (Brett-Fleegler et al., 2012, p. 289). The inter-rater reliability refers to consistency in ratings among different raters.

Debriefing is a learned skill according to the Center for Medical Simulation (2019) and can be improved with practice and feedback to benefit the participants in the learning process. If faculty teaching simulation are not consistent in their methodology the debrief process will be affected. The instructor must understand that learners will come with their own experiences and timeframes. Faculty must learn to describe the purpose of the simulation and communicate the outcome objectives to the participant to help them understand the expectations of simulation including the ground rules and roles. Part of the education process is for faculty to understand a

list of terms that involve simulation teaching actions such as: design, building a simulation, how to predict a change, teaching constructs, demonstration, teaching organization, and planning (Center for Medical Simulation, 2019). This process could be done through educational in-services.

When using a measurement instrument the investigator should anticipate the possibility of psychological risk to the participant related to emotional stress or anxiety response to the simulation scenario or from being evaluated by the project leader. No phycological response was reported or observed, no counseling was offered for participating in the project.

Data Collection and Treatment Procedure

Sequence of the intervention plan

(1) Faculty received an introduction email, information sheet and pre-survey 1 week prior to the project start of scheduled simulations.

(2) After completion of 3 teaching sessions with each simulation faculty and the DNP project leader, faculty were asked to listen to a 30-minute simulation best practice presentation (webinar)

(3) Faculty completed a post-test, 1-week after the 30-minute presentation (looking for reinforcement of learning and retention).

(4) Faculty completed a post survey 2 weeks after the post-test. (Pre/post surveys were identical).

The webinar content consisted of reviewing simulation organizations, societies, and regulatory agencies. Introduction of INACSL standards five and six as they relate to the facilitator and debriefing expectations. Teaching review included simulation scenario template, purpose and summary of theory and rationale for simulation, and discussion of active and passive learning. The incorporation of a similar QSEN safety checklist helped educate the

faculty to incorporate teamwork and patient safety into every simulation scenario every time.

Table 8. Task Length Table (Houser and Oman, 2011).

Task at CCU and RRCC	Estimated start	Est. length to completion	Sequential or parallel
Pre-survey	Week 1	One week after emailing	#2 school- same
3 sessions of mentored teaching with DNP project leader	Week 2 Week 3 Week 4	3 weeks	#2 school- same
30-minute simulation presentation by webinar	Week 5	This may happen on different weeks at each school?	Depends on simulation schedule
Post-test	Week 6	1 week following presentation	Identical plan/study to be initiated and completed at #2 school
Post-survey	Week 8	2 weeks after post test	

*There were some groups running parallel at the same time at the different schools or at different times
*It was originally anticipated the project weeks would be different for each school depending on variables related to how many new faculty needed to be trained, how many faculty could be recruited and the frequency of scheduled simulations in each identified course.

Project Findings

Incorporating faculty early on in a simulation plan and communicating objectives helps to guide faculty in the same direction. Faculty understand their roles and requirements when they are involved in the process; in turn faculty feel part of a team.

The statistical analysis was run using the Statistical Package for the Social Sciences (SPSS) in order to determine if there was a reliable difference between the mean of the before-treatment and the mean of the after-treatment measurements. Comparison was made to the "before" scores and to the "after" scores to determine if the intervention had a statistically significant effect. A matched pairs t-test can be used in situations where two measurements are taken for each respondent. More commonly a t-test allows the investigator to draw inferences about the differences between two population means. In a paired sample t-test each subject is measured

twice resulting in paired observations for a variety of reasons. The t-test can be used for a correlated paired sample test evaluating the dependent sample for testing the same persons two different times. According to Polit (2010) the researcher can choose the paired t-test if there are two measurements on the same item, person or thing. The paired t-test allows for observations that are independent of one another, faculty in this case were independent of each other in the test. This type of test could also be used in healthcare or business, such as in a new employee orientation before and after training program. The author's intention was to evaluate if there would be a probable or improbable outcome.

Table 9. Description paired samples statistics

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre	4.36	414	1.881	.092
	Post	6.01	414	1.419	.070

The mean is the true center or average of the data was mentioned earlier. The higher post survey mean might indicate a tighter distribution. It is computed by adding the values and dividing by the number of values. N represents the number of values in the data set which was 414. According to Polit (2010) the t-test works with small or large N numbers because it automatically takes into account the number of cases in calculating the probability level. The magnitude of the t-statistic depends on the number of subjects. The t-statistic in conjunction with the degrees of freedom were used to calculate the probability that the difference between the means happened by chance or not. The above standard deviation reflects how measurements for a group are spread out from average or expected value and takes into consideration differences between every score in the distribution (Polit, 2010). A smaller standard deviation the better as mean is a summary of the typical score. Lastly, the standard of error is relatively low indicating when the test is perfectly reliable, the standard error of measurement equals 0.

Detailed Findings Related to Objectives

Objective 1: Faculty will demonstrate 50% more confidence in simulation teaching by integrating two standards of best practice into curriculum explaining the components of the simulation process; facilitator INACSL standard V, the debrief process- INACSL standard VI measured by annual competency evaluation by the end of the first year.

Table 10. Paired samples t-test

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Pre - Post	-1.657	1.831	.090	-1.834	-1.480	-18.409	413	.000

The confidence interval was determined at 95% taking into account for 5% standard of error. Evaluation of the results indicate possibly recognizing consideration of outliers such as those faculty who were more experienced or had more simulation teaching hours. Some faculty had never taught simulation, some teach once a semester and some teach every semester. Although this does not mean the data is incorrect, there may have been faculty who interpreted the questions differently from other faculty, some may have felt the questions needed to be answered in a specific way or possibly that answering with a high number was necessary. There could also be extraneous reasons such as faculty being stressed or under a time constraint at the time of the test.

The t- value here measures the size of the difference relative to the variation of the sample data. A large number in this case may indicate the greater the magnitude of the t-value the more significant the difference. The p-value is very low in this case, it would be reasonable to reject the research question and conclude that there's a statistically significant difference from pretest to post test and that the low p-value is good and indicates the data did not occur by chance.

However, there is a possibility that if the data was run again with the same population of random samples there could be other random variations. A negative t-value indicates a reversal in the directionality of the effect, which has no bearing on the significance of the difference between groups. It is possible that the degree of freedom allowed the data set numbers to vary in how faculty chose their answers in the measurement tool? According to Minitab blog (2016), observations or pieces of information in the data are free to vary when estimating statistical parameters.

Calculation of effect size and coding process

There was no coding process needed for this test. The calculation value of the effect size was 0.990342 from the Cohen D calculation computer. According to Cohen the calculation is an effect size used to indicate the appropriate differences between two means. Cohen describes the interpretation of the value as small effect, medium effect or large effect. In this case the value indicates there was a large effect between the pre survey and the post survey after treatment intervention.

Instrumentation Findings

Objective 2: Trained faculty will be evaluated using the Debriefing Assessment for Simulation in Healthcare (DASH) evaluation debrief tool and a post-test to identify knowledge retention.

The DASH validity and reliability test run showed a reliability statistic for internal consistency. Reliability is the consistency of a measure, and validity is the accuracy of a measure. Reliability refers to how dependable or consistent a test measures a characteristic.

Table 11. Paired samples statistics

Paired Samples Statistics

Element			Mean	N	Std. Deviation	Std. Error Mean
1	Pair 1	Pre	4.33	72	1.823	.215
		Post	5.49	72	2.258	.266
2	Pair 1	Pre	5.27	90	1.460	.154
		Post	6.32	90	.934	.098
3	Pair 1	Pre	3.97	72	1.703	.201
		Post	6.03	72	.993	.117
4	Pair 1	Pre	3.91	90	2.171	.229
		Post	5.91	90	1.526	.161
5	Pair 1	Pre	4.17	36	1.859	.310
		Post	6.19	36	.856	.143
6	Pair 1	Pre	4.26	54	1.865	.254
		Post	6.24	54	1.027	.140

The paired samples statistics test above is an evaluation of the Debriefing Assessment for Simulation Healthcare (DASH) measurement tool. Element #3: structuring the debriefing in an organized way had a 2.06 difference in the mean pre and post analysis. Element #5: identification and exploration of gaps and behaviors difference was 2.02. Element # 4: provokes engaging discussion mean difference was 2.00. Element # 5: helps trainees achieve or sustain good future performance mean difference was 1.98. Element #1: establishes an engaging learning environment difference mean difference was 1.16. Element #2: maintains an engaging learning environment behavior mean difference was 1.05. The standard deviation describes how groups are spread out from the average mean. A low standard deviation is defined as most of the numbers being closer to the average. The higher numbers in a standard deviation measurement suggests the groups are more spread out. Elements 2, 3, 5, 6, had the lowest post scores. Elements 1 and 4 had the highest post score suggesting there may need to be more faculty education in this area.

According to Polit (2010) if an individual takes the test again, he or she could get a similar test score, or possibly a much different score. A test that yields similar scores for an individual who repeats the test is said to measure a reliable characteristic. There are extraneous factors that could affect a test outcome such as environment, lighting, noise, temperature or even the test administrator. Other factors such as multiple raters, the individuals psychological state at the

time of the test can also affect the reliability of a score. These factors could contribute to random measurements of error. The degree to which test scores are unaffected by measurement errors is an indication of the reliability of the test.

Objective 3: New Simulation directors at each school will be able to identify elements that correlate with faculty and student confusion when there is no simulation orientation teaching policy in place.

Table 12. Paired samples correlations

Paired Samples Correlations

Element			N	Correlation	Sig.
1	Pair 1	Pre & Post	72	.740	.000
2	Pair 1	Pre & Post	90	.423	.000
3	Pair 1	Pre & Post	72	.234	.048
4	Pair 1	Pre & Post	90	.310	.003
5	Pair 1	Pre & Post	36	.320	.057
6	Pair 1	Pre & Post	54	.213	.122

The paired sample correlations indicate in this study that all correlations are under 1.0 with a 0.7 cutoff, all have a positive directional relationship. Elements 4 and 7 have a moderate relationship with elements 3, 4, 5, 6 being weak in relationship based on a value of 1.0 as being perfectly correlated. Correlations describe random variables of the values of one variable that tend to be associated in a linear way with the value of another variable. A p-value or the significance (sig.) is the probability of observing results when the project question is true. The p-values in this test are less than .05 except element 5, 6; since the majority are not greater than .05 they are statistically nonsignificant, therefore a nonsignificant result is one that, on the relevant theoretical distribution, does not lie in the critical region for rejecting the project question (Polit, 2010).

Table 13. Correlations

Correlations

		Pre	Post
Pre	Pearson Correlation	1	.412**
	Sig. (2-tailed)		.000
	N	414	414
Post	Pearson Correlation	.412**	1
	Sig. (2-tailed)	.000	
	N	414	414

**. Correlation is significant at the 0.01 level (2-tailed).

The Pearson correlation is considered good in this project results. It is a statistical calculation of the strengths of two variables relationship which could be positive or negative. In this case there was positive correlation between the pre and post survey. Correlation is moderately significant at the 0.01 level and supports the research question. Despite this strength, a strong correlation might not indicate causation, or a low correlation is not necessarily an indication of no relationship, but possibly a non-linear relationship in which the change in one variable will not bring about change in the other.

Objective 4: Trained faculty will understand and apply the INACSL recommendations for conducting simulation within six months of the orientation program with the assistance of a simulation director or educator.

Table 14. Paired samples differences test

Paired Samples Test

			Paired Differences							
						95% Confidence Interval of the Difference				
Element			Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
1	Pair 1	Pre - Post	-1.153	1.526	.180	-1.511	-.794	-6.410	71	.000
2	Pair 1	Pre - Post	-1.056	1.360	.143	-1.340	-.771	-7.361	89	.000
3	Pair 1	Pre - Post	-2.056	1.759	.207	-2.469	-1.642	-9.914	71	.000
4	Pair 1	Pre - Post	-2.000	2.234	.235	-2.468	-1.532	-8.495	89	.000
5	Pair 1	Pre - Post	-2.028	1.781	.297	-2.630	-1.425	-6.833	35	.000
6	Pair 1	Pre - Post	-1.981	1.928	.262	-2.508	-1.455	-7.553	53	.000

Legend: Element 1-Establishment of engagement. Element II-Maintains engaging learning environment. Element II-Structures the debriefing in a n organized way. Element IV-Provokes

engaging discussions. Element V- Identifies and explores performance gaps. Element VI-Helps trainees achieve or sustain good future performance. (CME, 2010)

The paired samples differences using the DASH elements pre and post helps to evaluate what occurred to make up the improvement for a 95% confidence level. Again, the negative t-value indicates a reversal in the directionality of the effect, which has no bearing on the significance of the difference between groups. The paired samples test overall indicates that the assumption could be made that consistent structured teaching is recommended for simulation faculty and that it works when it is organized, uses a measurement tool, with an education presentation to encourage faculty engagement and provide for faculty development for teaching in simulation.

Table 15. Cronbach's Reliability

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.567	.583	2

The reliability of the Cronbach's alpha in this study was .567 lower from the original reported DASH Cronbach value of 0.82. Cronbach alpha measures the internal consistency or coefficient of reliability; a score lower than .7 indicates that the items within the tool may not be measurement of the same construct. Possible reasons for this low value are how the measurement instrument was used for this pre-post survey versus the original study purpose for evaluating the growing expansion of health care simulations that support competency-based education (Fleegler et al., 2012). According to Fleegler et al. (2012) a tool that yields reliable data to support valid judgments of an instructor's debriefing competence was created. There are other tools available however, Fleegler believes the DASH tool is the only standardized instrument to assess preparation and debriefings in a wide variety of health care simulation contexts. This describes the reason for using the DASH tool for this authors study project. The

DASH has great value in simulation and should continue to be used in other simulation research questions.

Table 16. Correlation matrix

Inter-Item Correlation Matrix

	Pre	Post
Pre	1.000	.412
Post	.412	1.000

Inter-item correlations examine which scores on one item are related to scores on all other items in a scale. It provides an assessment of item redundancy. The closer correlation coefficients get to -1.0 or 1.0, the stronger the correlation. The results of the project inter-item correlation matrix of 1.00 pre and 1.00 post is a perfect positive directional relationship. Ordinal or interval ratio data should be used to obtain inter-item correlation data.

Results of Findings

Review of the original PICO study question: *will consistent structured simulation-based teaching methodologies improve faculty self-efficacy and contribute to a willingness to understand and apply the International Nursing Association of Clinical Simulation Learning (INACSL) recommended guidelines for simulation?* The overall results indicate that there is value in the development of a faculty orientation policy as it relates to simulation teaching. Additionally, along with statistical analysis there is a great deal of literature that supports this effort. Project findings show when a faculty orientation program is instituted faculty can be measured over the course of time for consistent structured teaching methods by incorporating INACSL recommendations through a consistent faculty development teaching policy in simulation. Faculty will gain knowledge in the use of measurement instruments when they are used for competency teaching evaluation. It is critical for a trained director to be available to mentor faculty and to recognize when struggles or confusion exist in order to support the faculty

learning and teaching process. There was moderate reliability of internal consistency that indicates how well the test measures what it should measure according to the research question. Overall the reliability is good therefore, faculty development and orientation are supported for consistent and structured simulation teaching methods. It is the belief of this author that the study question is supported by the outcome data discussed. There is a positive comparison of faculty prior to simulation education and mentoring and post education mentoring.

Limitations

The inference from this project cannot be 100% certain however, this author believes that the initial study shows promise in the probability that inferences using care can guide the investigator to accuracy. The limitations of the study require a simulation educator to be qualified and certified as a debriefing rater in the evaluation process. The cost of a certification course is a valuable benefit for achieving simulation faculty teaching improvements. Other latent variable such as attitude, openness, or conscious awareness of INACSL recommendations cannot be specifically measured using just one tool. The Cronbach reliability was lower than the original researchers score however, there is still value in using this measurement tool and the rater tool for future evaluation of faculty teaching competency. The DASH measurement tool which served as the survey items closely related to the subject material and measured similarities and was consistent.

Recommendations

Project results support a formalized faculty development policy for consistent teaching methods in simulation. Orientation is a time-consuming process however with some investment faculty members can learn to be proficient and consistent in their teaching methods utilizing the International Association for Clinical Simulation and Learning standards. This project

recommends faculty receive education and skills in simulation pedagogy and debriefing which is essential for successful student understanding of simulation, increased critical thinking abilities and the delivery of safe patient care in the clinical environment. School #1 and school #2 would benefit by hiring an expert in simulation. Further recommendations are to focus on other types of simulation measurement instruments to address latent variables such as faculty attitudes, openness or conscious awareness of the INACSL recommendations. It is recommended each school adopt a specific debriefing model that reflects its own program curriculum. Each school should make it a priority to conduct quality improvement studies annually to support and strengthen existing simulation team and teaching methods. Lastly, both schools could benefit by a strategic plan to include simulation faculty in the mission and vision of the simulation unit and encourage openness for new ideas, challenge assumptions and cultivate team building.

The survey method took effort to track and encourage participation responses in a timely manner. The initial project sequence was to receive pre-survey results in one week. Realistically, it took 2-3 weeks, mentoring took place on scheduled faculty contract days which made it easy for scheduling time with each individual faculty. Encouraging staff to participate in the online presentation took longer than anticipated and resulted in organizing participants in groups resulting in 1-3 weeks to accomplish. Conflicts occurred due to faculty outside work schedules. In the future the faculty timeline would need to be reevaluated. The project sample size was small however there are many more opportunities in this area for further study.

This study could provide a new simulation educator or coordinator a place to start for creating a faculty orientation and development policy. Hopefully, it will encourage administrative leadership to support research for quality improvement projects in the future at both schools. In addition, it could provide a foundation for building simulation teams and assist with

professionalism and encourage faculty to identify and lead future quality improvement projects within the simulation group.

Implications for Practice Change

DNP leaders have knowledge and leadership skills to face the challenges of the changing healthcare system. Nurse leaders are prepared to use theory in practice and evaluate new approaches to practice (AACN DNP Essentials, 2006). Impact can be made in curriculum standards, consistency in teaching methods, influence in education, advocate for the nursing profession, ethical policies and shape leaders. Practice issues in patient-centered care and clinical problems require theoretical underpinnings to conceptualize quality improvement initiatives and address organizational problems with well-tested innovative approaches for quality improvement. DNP leaders look at a wider level of evidence from both qualitative and quantitative research using clinical expertise, the appropriate setting and circumstances, patient values, preferences and beliefs (Chism, 2013). The DNP leader has the foundation and fundamentals of research methods, statistical principles and knowledge for critical appraisal of research literature. The IOM (2004) suggests the need for health care professionals to exhibit increased collaboration across the healthcare disciplines. Positive leadership styles impact patient care, employees, faculty, students and other providers who care for patients. Patient satisfaction and reduction in error occurs when all individuals caring for patients are prepared and proficient in skills, knowledge and attitudes.

Informal and unsolicited verbal comments related to the implications for change came from faculty participants after completion of the project: The following are a few examples:

- "I want to learn simulation teaching although have been afraid because I did not know where to begin."
- "I started a few years ago with "see one do one."
- "I always wondered, what happened in simulation?"

- "I cannot believe it is so helpful for nurse refreshers."
- "Competency evaluation in simulation scares me."
- "I never know what to say in debriefing, I have heard many different styles."
- "I never heard of the INACSL recommendations."
- "Do we follow INACSL guidelines at this school?"
- "Watching someone debrief is great! I am starting to understand that students should begin to analyze their own performance with faculty help."
- "We do not have faculty development at this school, I don't think?"
- "Debriefing is the best part, now I get it!"

Conclusion

We have entered a time in nursing education for reform, nursing instructors are now called to incorporate inter-professional learning and team-based care from didactic classroom to the clinical setting. This paper demonstrated the need for a consistent, intentional faculty development teaching policy in simulation. The success of the project promotes faculty to integrate the simulation experience and relies on trained knowledgeable simulation faculty to work collaboratively with classroom faculty. Without an intentional process in place this will be difficult to achieve. The data supports a faculty development orientation policy and the use of a measurement instrument for evaluating teaching competency. According to Chism (2003) it is safe to assume that the DNP leader has insight on various leadership attributes that are necessary to motivate and bring nurses together through the change process. Leading by example, understanding the job, being approachable, honest, open and trustworthy encourages trust among team members. Without trust, quality may be compromised. Leaders understands how to lead calmly, think about others, and inspire others to be involved in a shared mission. A qualified leader operates from the point of view of a Theory Y participatory style leader, one that assumes people are good at their core and are motivated by kindness and positivity (Cochran, cited McGregor 1960. p. 124). The DNP leader has the ability to adopt evidence-based practice in education, implement it, and institutionalize it as protocol (Zaginini & White, 2014).

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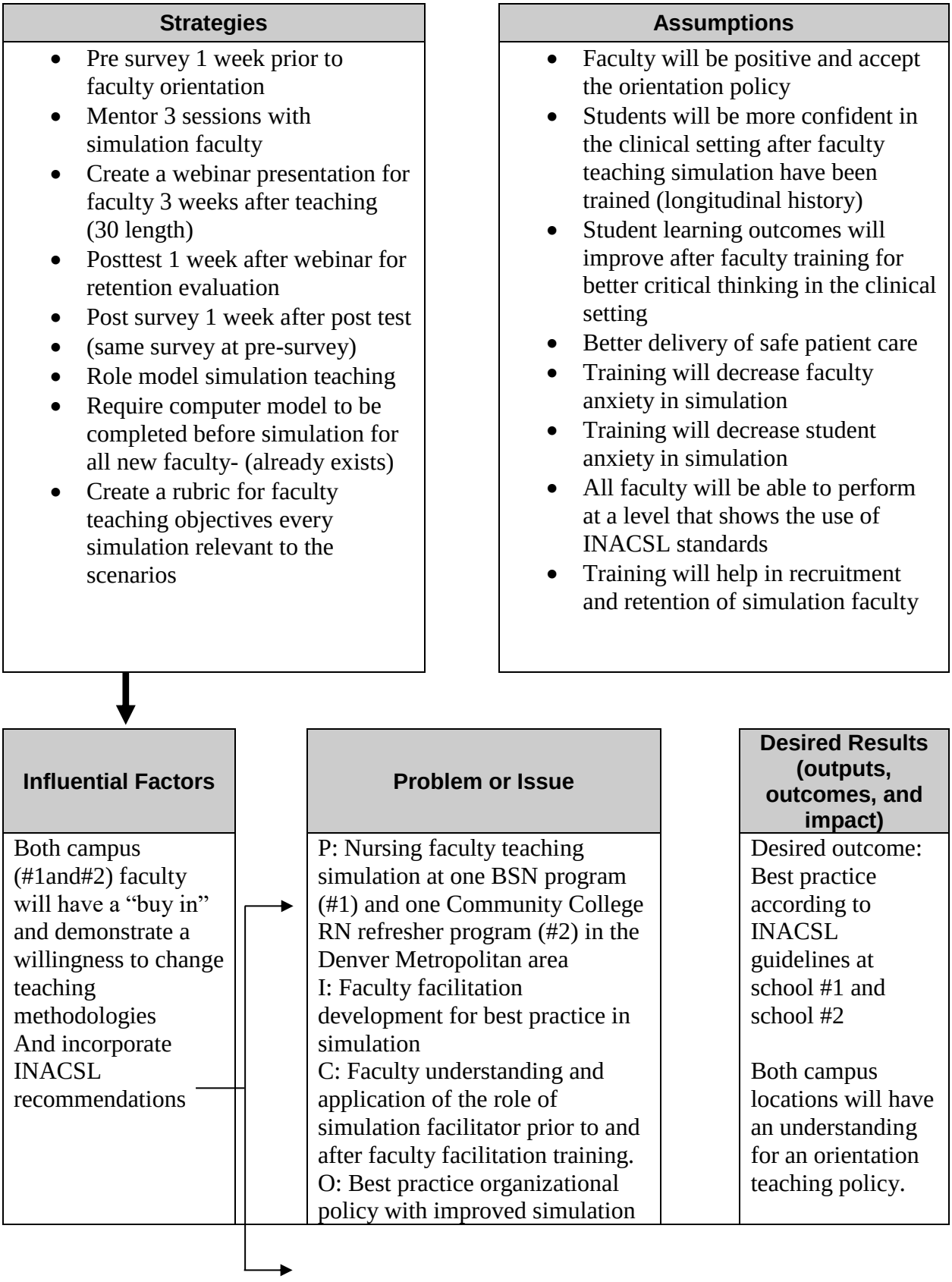
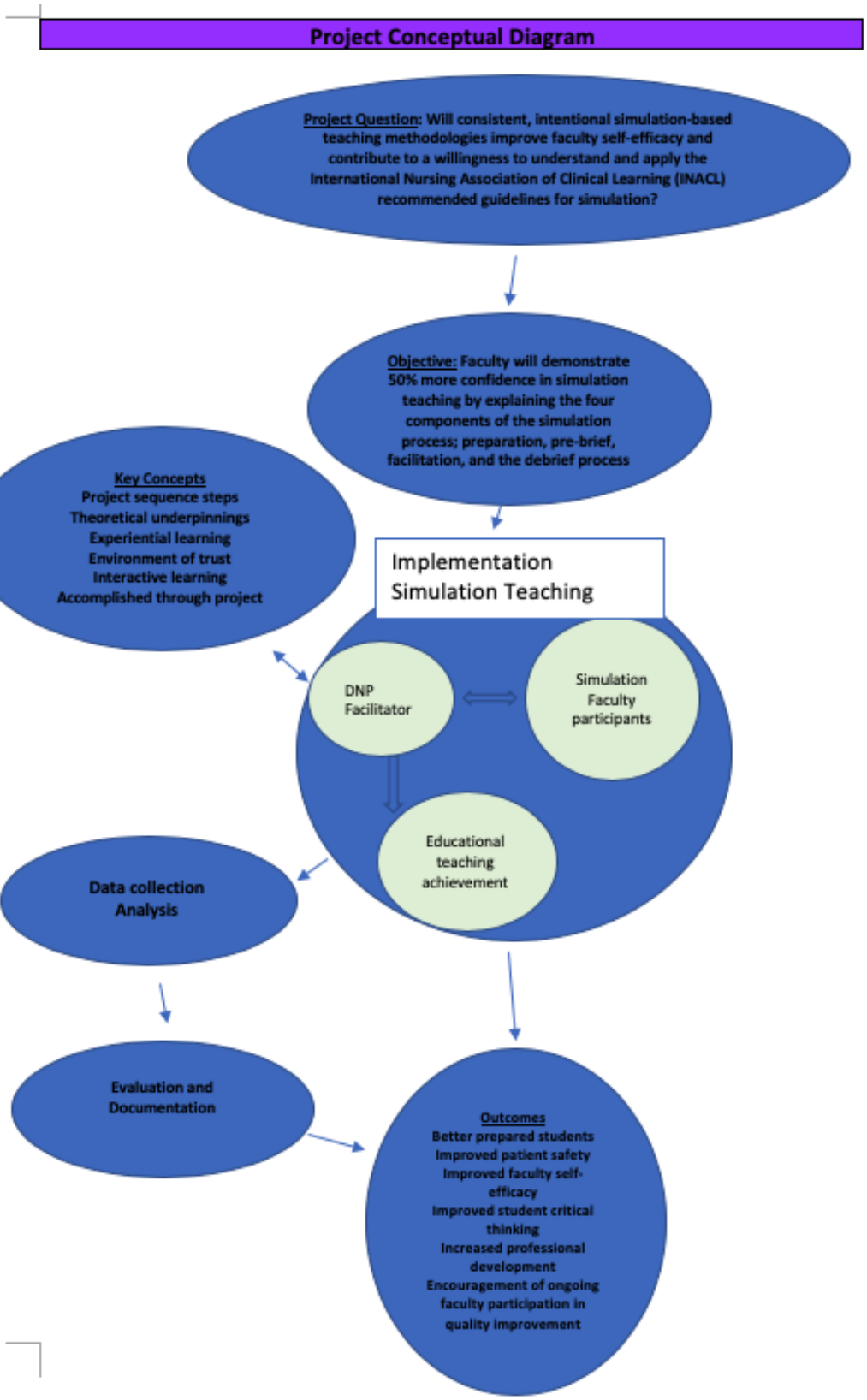
Appendix A- Logic Model (revised 12-1-2019)



		teaching at #1 BSN program and#2 RN refresher program Question: Will a structured faculty development orientation policy that recommends intentional structured teaching methods improve faculty comfort and show the use of INACSL standards?		
		Community Needs/Assets • #1 and #2 will adopt the project recommendation to provide best teaching practice to all nursing students. • Better performing students in the community lead to more student enrollment in the nursing program. • Possible project outcomes could lead to changes in classroom faculty to increase opportunities for simulation and better collaborate with the simulation teaching team.		


Project Conceptual Diagram
Project Question: Will consistent, intentional simulation-based teaching methodologies improve faculty self-efficacy and contribute to a willingness to understand and apply the International Nursing Association of Clinical Learning (INACL) recommended guidelines for simulation?
Objective: Faculty will demonstrate 50% more confidence in simulation teaching by explaining the four components of the simulation process; preparation, pre-brief, facilitation, and the debrief process
Key Concepts
Project sequence steps
Theoretical underpinnings
Experiential learning
Environment of trust
Interactive learning
Accomplished through project
Implementation
Simulation Teaching
DNP Facilitator
Simulation Faculty participants
Educational teaching achievement
Data collection
Analysis
Evaluation and Documentation
Outcomes
Better prepared students
Improved patient safety
Improved faculty self-efficacy
Improved student critical thinking
Increased professional development
Encouragement of ongoing faculty participation in quality improvement

Appendix-C

Debriefing Assessment for Simulation in Healthcare (DASH) Instructor Version©

Directions: Please provide a self-assessment of your performance for the introduction and debriefing in this simulation-based exercise. Use the following rating scale to rate the "Behaviors" and "Elements." Do your best to rate your ***overall effectiveness for the whole Element*** guided by the Behaviors that define it. If a listed Behavior is not applicable (e.g. how you handled upset people if no one got upset), just ignore it and don't let that influence your evaluation. You may have done some things well and some things not so well within each Element. The Element rating is your ***overall*** impression of how well you executed that particular Element.
Element 1 assesses the introduction at the beginning of the simulation-based exercise. Elements 2 through 6 assess the debriefing.

Rating Scale

Rating	1	2	3	4	5	6	7
Descriptor	**Extremely Ineffective / Detrimental**	Consistently Ineffective / Very Poor	Mostly Ineffective / Poor	Somewhat Effective / Average	Mostly Effective / Good	Consistently Effective / Very Good	**Extremely Effective / Outstanding**

Element 1 assesses the introduction at the beginning of a simulation-based exercise.

Skip this element if you did not participate in the introduction.

Element 1 **I set the stage for an engaging learning experience**	**Rating Element 1** _____
Behavior	**Behavior Score**
A. I introduced myself, described the simulation environment, what would be expected during the activity, and introduced the learning objectives, and clarified issues of confidentiality	
B. I explained the strengths and weaknesses of the simulation and what the participants could do to get the most out of simulated clinical experiences	
C. I attended to logistical details as necessary such as toilet location, food availability and schedule	
D. I stimulated the participants to share their thoughts and questions about the upcoming simulation and debriefing and reassured them that they wouldn't be shamed or humiliated in the process	

Elements 2 through 6 assess a debriefing.

Element 2 **I maintained an engaging context for learning**	**Rating Element 2** _____
Behavior	**Behavior Score**
A. I clarified the purpose of the debriefing, what was expected of the participants, and my role (as the instructor) in the debriefing	
B. I acknowledged concerns about realism and helped the participants learn even though the case(s) were simulated	
C. I showed respect towards the participants	
D. I ensured the focus was on learning and not on making people feel bad about making mistakes	
E. I empowered participants to share thoughts and emotions without fear of being shamed or humiliated	

Element 3 **I structured the debriefing in an organized way**	**Rating Element 3** _____
Behavior	**Behavior Score**
A. I guided the conversation such that it progressed logically rather than jumping around from point to point	
B. Near the beginning of the debriefing, I encouraged participants to share their genuine reactions to the case(s) and I took their remarks seriously	
C. In the middle, I helped the participants analyze actions and thought processes as we reviewed the case(s)	
D. At the end of the debriefing, there was a summary phase where I helped tie observations together and relate the case(s) to ways the participants could improve their future clinical practice	

Element 4 **I provoked in-depth discussions that led them to reflect on their performance**	**Rating Element 4** _____
Behavior	**Behavior Score**
A. I used concrete examples—not just abstract or generalized comments—to get participants to think about their performance	
B. My point of view was clear; I didn't force participants to guess what I was thinking	
C. I listened and made people feel heard by trying to include everyone, paraphrasing, and using non-verbal actions like eye contact and nodding etc	
D. I used video or recorded data to support analysis and learning	
E. If someone got upset during the debriefing, I was respectful and constructive in trying to help them deal with it	

Element 5 **I identified what they did well or poorly – and why**	**Rating Element 5** _____
Behavior	**Behavior Score**
A. I provided concrete feedback to participants on their performance or that of the team based on accurate statements of fact and my honest point of view	
B. I helped explore what participants were thinking or trying to accomplish at key moments	

Element 6 **I helped them see how to improve or how to sustain good performance**	**Rating Element 6** _____
Behavior	**Behavior Score**
A. I helped participants learn how to improve weak areas or how to repeat good performance	
B. I was knowledgeable and used that knowledge to help participants see how to perform well in the future	
C. I made sure we covered the most important topics	

Appendix-D

PLANNING, RESEARCH & INSTITUTIONAL EFFECTIVENESS
INSTITUTIONAL REVIEW BOARD
13300 West Sixth Avenue
Lakewood, CO 80228-1255

RE: Project Approval File Number 091019-01

September 10, 2019

Ms. Jody Panian
Nursing Department
Red Rocks Community College
13300 West Sixth Avenue
Lakewood, CO 80228-1255

Dear Ms. Panian,

Thank you for submitting your proposal for your project – Simulation-based Nursing Teaching Methodologies. After review of your materials, including the Regis University Human Subjects Research Form, the RRCC Institutional Review Board determined that your project meets the requirements outlined in 45 CFR 46 101 (b) categories (1) and (2) and qualifies for exemption from IRB review.

This study was approved on September 10, 2019 and is not subject to further IRB review, except in the event of any major changes to your study. If this occurs, please notify me.

Best wishes for your continuing success as you develop this project.

Sincerely,

Tim Griffin

Tim Griffin, Ph.D.
RRCC IRB Chair

Appendix-E

CAGS IRB # 1059

Colorado Christian University
Institutional Review Board

Human Subjects Project Review Form

If you are in the College of Adult and Graduate Studies, please submit completed forms to Sarah Scherling in the Office of the Vice President for Academic Affairs.

If you are in the College of Undergraduate Studies, please submit completed forms to Dr. Kyle Usrey in the Office of Academic Affairs.

PRINCIPAL INVESTIGATOR (CCU Faculty Member) INFORMATION

Name: Jody Panian RN, MSN_____ Email: jpanian@ccu.edu_____

College: Colorado Christian University_____ Department: Nursing_____

Mailing Address: _99 Lupine Way, Golden, CO 80401
_____

Project Title (Thesis): A structured, intentional simulation teaching method: best practice simulation faculty policy
_____

Proposed Start Date: August 28, 2019 Proposed End Date: _December 20, 2019_____

ADDITIONAL RESEARCH TEAM MEMBERS INFORMATION (If applicable):

Faculty Research Team Members: _Jody Panian, RN, MSN
Kristi Hargrave MSN- CCU oversight, all existing and new lab faculty and classroom teaching faculty interested in learning consistent intentional teaching methodology for simulation

Student Research Team Members: _None_____

Other Research Team Members: _None_____

FUNDING INFORMATION (If applicable):

Funding Agency or Research Sponsor: __None_____

Funding Agency Mailing Address: __N/A_____

Research Costs Involved: __Anticipated salary costs are related to faculty nursing contracts already in place for lab affilitates. Traning will be done during lab hours and during contracted lab faculty time teaching simulation. Possible extra cost for nursing faculty to participate in a 30 minute best practice webinar presentation by project leader. Dr. White is aware of this.
_____
_____
_____

PROJECT DESCRIPTION: To create a structured faculty development training in standardized simulation according to the International Nursing Association Clinical Simulation Learning (INACSL) guidelines. This is a quality improvement initiative not meant to develop new knowledge outside of the identified project agency.

ABSTRACT (Provide rationale/ background in 150 WORDS OR LESS):

This graduate project is to implement a quality improvement program for simulation faculty teaching at Colorado Christian University. Simulation is rapidly being integrated into nursing education as a replacement of traditional clinical hours and requires structure in faculty teaching according to the International Nursing Association for Clinical Simulation Learning (INACSL). It was recognized from observation over a period of time there is a lack of consistent structured intentional teaching methodologies used in teaching simulation. The goal is to implement structured teaching methods through a faculty development program. Evaluation will be conducted through a pre and post survey, 3 mentored simulation teaching sessions with each the DNP project leader and a best practice webinar presentation will examine if there is improvement of intentional simulation faculty teaching methods.

Project question: Will consistent, intentional simulation-based teaching methodologies improve faculty self-efficacy and contribute to a willingness to understand and apply the International Nursing Association of Clinical Learning (INACSL) recommended guidelines for simulation?

PROTOCOL (Describe procedures to which humans will be subjected; include survey copies): Debriefing Assessment for Simulation in Healthcare (DASH)© (see attached)

This project will compare faculty before simulation faculty development training and after training to evaluate if faculty understand the simulation environment is experiential, interactive, collaborative and learner-center and will apply the International Nursing Association of Clinical Learning (INACSL) recommended guidelines for simulation.

The project does not involve randomization of subjects or blinded interventions. The project is not funded externally as a human subjects research project. The project will not involve testing of any experimental intervention, methodology, drug, device (including medical software or assays), or biologic. The project will not involve vulnerable populations. A Debriefing Assessment for Simulation in Healthcare (DASH) measurement tool will be used to analyze simulation faculty teaching methods. Faculty training will focus on pre survey and post survey DASH evaluation.

1) Faculty will receive an introduction email, information sheet and pre-survey 1 week prior to the project start of scheduled simulations
2) After completion of 3 teaching sessions with each simulation faculty and the DNP project leader faculty will be asked to listen to a 30-minute simulation best practice presentation (webinar)
3) Faculty will complete a post-test 1 week after the 30-minute presentation (looking for reinforcement of learning and retention).
4) Faculty will complete a post survey 2 weeks after the post-test. (Pre/post survey are identical)

All responses will be confidential and the faculty participant may drop out at any time. All confidentiality will be maintained throughout our sessions together.

BENEFITS and RISKS: (Describe the benefits and risks to the individual and/or humankind.)

The benefit is for faculty to demonstrate an increase in self-efficacy, and knowledge teaching high fidelity simulation and application of recommended International Nursing Association for Clinical Simulation Learning guidelines. Faculty development in simulation will provide purposeful, intentional simulation teaching methods to students for safe patient care.

There could be mild psychological distress related to perceived evaluation of performance. There is no physical touch needed. There are no offered counseling services for study subjects

CONFIDENTIALITY OF DATA: (Describe the methods to be used to ensure the confidentiality of data obtained, including plans for final disposition or destruction, debriefing procedures, etc.)

This quality improvement project will use: pre survey and post survey Debriefing Assessment for Simulation in Healthcare (DASH)© measurement tool for evaluation (same tool for pre and post)- (see attached)

All survey's will be destroyed by shredding after data collection and statistical analysis. A letter of intent and information sheet will be provided for each participating faculty.

PARTICIPANTS:

A. This project involves the use of COLORADO CHRISTIAN UNIVERSITY STUDENTS:
___ Yes __x_ No

B. HUMAN SUBJECTS from the following population(s) will be involved in this Study: **NONE**
___ Minors ___ Pregnant Woman ___ Fetuses
___ Prisoners ___ Persons with Mental Disabilities

C. TOTAL NUMBER OF SUBJECTS TO BE STUDIED: _15 nursing faculty/lab_____

D. This project involves the use of Medical Procedures, Drugs, or Medical Treatment of any type: ___ Yes __x_ No
If Yes, specify the medical procedures/drugs/treatment involved below:
_____
_____

E. This project involves possible harm to the subjects in the study:
___ Yes _x__ No
If Yes, specify the possible harm that subjects may incur below:
_____
_____

CONSENT: Please attach a copy of the CONSENT FORM(S) to be signed by the participant, any INFORMATIONAL LETTER subjects will receive, or any STATEMENT subjects will listen to.

OFF-SITE APPROVAL (Complete only if the project will be completed off CCU grounds):
__ I certify that this project will be completed on my site and will follow CCU IRB guidelines.

Off-Site Administrator _____ Date _____

Printed Name _____ Title _____

Mailing Address _____

SIGNATURES (Please check each item below to acknowledge agreement):
_x_ I certify that I have reviewed and agree to abide by the ethical requirements and procedures established by the IRB.
_x_ I certify that the protocol and method of obtaining informed consent as approved by the IRB will be followed during the period covered by this research project.
_x_ I certify that any future changes will be submitted for IRB review and approval prior to implementation.
_x_ I certify that I will notify the IRB when this project is complete.

A. PRINCIPAL INVESTIGATOR(CCU Faculty Member):

Printed Name _Jody Panian RN, MSN_____ Date _August 21, 2019_____

B. RESEARCH TEAM MEMBERS:

1)___Jody Panian, RN, MSN_____ Date _August 21, 2019

2) __Kristi Hargrave, RN, MSN_(CCU Oversight)_____ Date _August 21, 2019_____

3) _____ Date _____

4) _____ Date _____

C. DEPARTMENT CHAIR _ _____ Date _ _____

D. DEAN OF SCHOOL __ Dr. Barbara White _____Date _August 21, 2019_____

IRB USE ONLY:

EXEMPTION REVIEW

PROJECT EXEMPT: ✓ PROJECT NOT EXEMPT: _____

IRB Member #1 Signature Sarah Jarvis Date: 23/Aug/19

IRB Member #2 Signature Marla J. Lohmann Date: 23 August 2019

EXPEDITED REVIEW

PROJECT APPROVED: _____ PROJECT NOT APPROVED: _____

IRB Member #1 Signature _____ Date: _____

IRB Member #2 Signature _____ Date: _____

IRB Member #3 Signature _____ Date: _____

FULL REVIEW

PROJECT APPROVED: _____ PROJECT NOT APPROVED: _____

IRB Member #1 Signature _____ Date: _____

IRB Member #2 Signature _____ Date: _____

IRB Member #3 Signature _____ Date: _____

Appendix-F

CITI PROGRAM

Completion Date 21-Aug-2019
Expiration Date 20-Aug-2022
Record ID 32843974

This is to certify that:

Jody Panian

Has completed the following CITI Program course:

Human Research (Curriculum Group)
Social Behavioral Research Investigators (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

Regis University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wf7c99f87-1b2c-494a-b56b-8e392b598795-32843974

Appendix-G

Jody
Thank you for the update from last Friday and for your leadership during this past summer semester.
I am now writing to confirm our verbal agreement regarding your DNP Project and use of the CCU Simulation Center and Faculty.

It is my understanding that your project relates to faculty development in simulation and that you want to train CCU faculty in best practice. You will be teaching faculty and developing a professional development program (manual). We agreed that if you used our Center and our faculty in this project, CCU would have use of the development program (manual) for our use in the future at no cost to us. Your teaching of our faculty is on your own time: I cannot pay you for this service since it directly relates to your DNP project. Our faculty will be scheduled at a convenient time, as agreed upon by both parties.

We you are aware, we have several faculty who have worked with Simulation in the past and we have hired several new Affiliate faculty who will be involved in Simulation in the future. You will need to clarify for us if you are interested in training both groups.

Here are the steps that need to occur for you to proceed –

1. Please submit your proposal for approval to the CCU IRB. Directions and documents are found at https://my.ccu.edu/academics/irb
2. Please coordinate all teaching sessions with Kristi Hargrave, Assistant Director, Lakewood and with Ron Bouchard, Simulation Operations Specialist.
3. The Simulation Center will be in use Monday – Thursday starting fall semester. Simulation is scheduled only on specific days.
4. Please keep Ron and Kristi informed as you proceed.

Please confirm these details and that my understanding is correct for your project.
We are looking forward to working with you on this excellent project.

Blessings
Barbara

Barbara J. White, RN, Ed.D., CNS
Dean, Nursing and Health Professions
Professor of Nursing
School of Nursing and Health Professions
College of Adult and Graduate Studies
Colorado Christian University
O: 720-872-5608 | M: 720-934-6565
www.ccu.edu

Christ-centered higher education transforming students
to impact the world with grace and truth.

Hi Jody---

We look forward to working with you and your DNP simulation project. It is my understanding that your project relates to faculty development in simulation and that you want to train RRCC faculty in best practice teaching methods. I understand that you will be teaching/mentoring faculty and developing a professional simulation development policy. This involves faculty teaching in the RN refresher program and possibly the PA program. The faculty training will take place in the RRCC simulation center during the scheduled hours of simulation. There is no cost to RRCC from your hours; teaching of our faculty is on your own time. I cannot pay you for this service since it directly relates to your DNP project. All policy information can be used by RRCC at no cost to us. Our faculty will be scheduled at a convenient time, as agreed upon by both parties.

Some of our faculty has worked in simulation in the past. It is my understanding you will work with all faculty, new and classroom if they would like to participate. It is my understanding you will train both groups. We will agree to work out a plan to pay faculty who will participate in your 30-minute webinar presentation. Please provide me the project details.

Here are the steps that need to occur for you to proceed:

1). Please coordinate all teaching sessions with myself.

2). The Simulation Center will be in use on Thursdays starting fall semester. Simulation is scheduled only on specific days.

We are looking forward to working with you on this excellent project.

Appendix-I

Project Information Sheet

Information Sheet

Purpose: This a graduate project to implement a quality improvement program for simulation faculty teaching at CCU in the Denver Metro area.

Background:
Lack of existing structured faculty training or competency evaluation in simulation at CCU nursing program. Simulation is rapidly being integrated into nursing education as replacement of traditional clinical hours and requires more structure and faculty training to standardize the simulation teaching process and build a foundation recommended by the International Nursing Association for Clinical Simulation Learning. (INACSL)

Clinical Question: Will consistent, intentional simulation-based teaching methodologies improve faculty self-efficacy and contribute to a willingness to understand and apply the International Nursing Association of Clinical Learning (INACSL) recommended guidelines for simulation?

Faculty Expectations:
A teaching Debriefing Assessment for Simulation in Healthcare (DASH) tool will be used to analyze simulation faculty teaching methods, debrief and system thinking.
Faculty training will focus on pre-brief; simulation intra-session (scenario) and the post debrief process of simulation.

Sequence of project intervention:
1) All Faculty participants will receive an introduction email, information sheet and pre-survey 1 week prior to the project start of scheduled simulations
2) After completion of 3 teaching sessions with each simulation faculty and the DNP project leader, faculty will be asked to listen to a 30-minute simulation best practice presentation (webinar)
3) Faculty will complete a post-test 1-week after the 30-minute presentation (looking for reinforcement of learning and retention).
4) Faculty will complete a post survey 2 weeks after the post-test. (Pre/post survey is identical)

All responses will be confidential, and the participant may drop out at any time. All confidentiality will be maintained throughout our sessions together.

Shredding after data collection and statistical analysis will destroy all surveys. A letter of intent will be provided for each faculty participating.

My Capstone Chair is Dr. Patsy Cullen. Dr. Cullen can be reached at: pcullen@regis.edu

Contact information for Regis University IRB is: IRB@regis.edu

Thank you for your participation and taking the time to help me complete my DNP project in evaluating the importance of a faculty development policy in simulation. I hope my data will be a benefit to your teaching career! *Jody Panian, RN, MSN*

Appendix-J

Determination of Human Subjects Research Form for Quality Improvement/Quality Assessment Activities

Project Description:

1. Submit a summary (one page or less) within IRBNet describing the project goals. The abstract must:
   1) Describe the reasons for conducting the proposed project,
   2) Provide a brief description of the project including objectives, and
   3) Describe the proposed activities for the project.

One page explanation is attached.

2. What organization or department will be reviewed during the quality improvement or quality assessment project? (If the organization or department is unaffiliated with Regis University, a site approval letter is required.)

Organizations to be review are Red Rocks Community College and Colorado Christian University- approval letters requested.

_____

3. Answer the questions below in **either** the Quality Improvement/Professional Development Projects section or the Program Evaluation Projects section to determine if your project is actually quality improvement or if it is program evaluation. ALL questions must be answered TRUE to be considered a Quality Improvement Project or a Program Evaluation Project.

Quality Improvement/Professional Development Projects	Program Evaluation Projects
The project is intended to improve or evaluate a practice or process within a particular institution, classroom, or specific program. ☒True ☐ False	The evaluation is being initiated based on the request and needs of a partner organization or department for internal purposes only. ☒True ☐ False
The primary intent of the project is not designed to expand knowledge of a scientific discipline or scholarly field of study. ☒ True ☐ False	The intent of the evaluation is to improve a specific program and/or to meet funding agency requirements. ☒ True ☐ False
All activities are "best practices", "routine care", or "standard practice" and conducted by staff where the project will take place. Untested methods and/or interventions are not being evaluated.	The program or intervention being evaluated has been tested and is evidence based (already shown to be effective).

☒True ☐ False	☒ True ☐ False
The project does not involve a control group or randomization of subjects or blinded interventions. ☒ True ☐ False	The evaluation does not involve randomization of participants, but may involve comparison of variations in programs. ☒True ☐ False
The project is not funded externally (outside Regis) as a human subjects research project. ☒ True ☐ False	The project is not funded externally (outside Regis) as a human subjects research project. ☒ True ☐ False
The project will not involve testing of an experimental intervention, methodology, drug, device (including medical software or assays), or biologic. ☒ True ☐ False	The project will not involve testing of an experimental drug, device (including medical software or assays), or biologic. ☒True ☐False

Determination of Human Subjects Research Abstract for Quality Improvement/Quality Assessment Activities- Jody Panian, RN MSN- DNP candidate

Reason for conducting the proposed project:

The purpose for this graduate project is to create a structured faculty development training policy in standardized simulation at Colorado Christian University Nursing Program. There is a lack of consistent intentional teaching methods in simulation. The goal is to implement intentional structured teaching methods in simulation through a faculty development policy. The benefit is for faculty to demonstrate an increase in self-efficacy, and knowledge teaching high fidelity simulation utilizing and understanding the recommended International Nursing Association for Clinical Simulation Learning (INACSL) guidelines. Faculty development in simulation will provide purposeful, intentional simulation teaching methods to students for safe patient care. Simulation is rapidly being integrated into nursing education for replacement of traditional clinical hours and requires intentional teaching methods to standardize the simulation teaching process.

Brief description of the project/objectives:

- Simulation director will be able to identify variables that correlate with faculty and student confusion when there is no simulation orientation teaching policy in place
- Faculty will demonstrate knowledge, skills and attitudes related to intentional structured teaching methodology in simulation

- Trained faculty will be evaluated using the DASH evaluation tool and a posttest to identify knowledge retention
- Faculty will demonstrate 50% more confidence in simulation teaching by explaining the four components of the simulation process; preparation, pre-brief, facilitation, and the debrief process The objective will be to evaluate the stakeholders, simulation faculty, current simulation processes, intended and unintended impact of not having a simulation teaching policy and the expected safety of patients, social, economic, ethical, political and legal issues related to this problem.

Proposed activities:

1) Faculty will receive an introduction email, information sheet and pre-survey 1 week prior to the project start of scheduled simulations

2) After completion of 3 teaching sessions with each simulation faculty and the DNP project leader faculty will be asked to listen to a 30-minute simulation best practice presentation (webinar)

3) Faculty will complete a post-test 1-week after the 30-minute presentation (looking for reinforcement of learning and retention).

4) Faculty will complete a post survey 2 weeks after the post-test. (Pre/post surveys are identical)

Faculty Letter-Appendix-K

August 20, 2019

School name deleted for the written paper appendix

Re: Participation in a DNP project on simulation faculty development teaching policy

To:

I am in the DNP program at Regis University in my project phase. The purpose for my project is to create a structured intentional faculty development training policy in standardized simulation. I would like to ask you to participate in my simulation teaching methodologies project to help improve faculty self-efficacy and contribute to the application and understanding of the International Nursing Association of Clinical Simulation Learning (INACSL) guidelines.

Your participation is voluntary in this project and you may discontinue your participation at any time without penalty or loss of benefits. Your confidentiality will be maintained throughout all of our sessions together.

1) All participating faculty will receive a pre-survey 1 week prior to the project start of scheduled simulations

2) After completion of 3 teaching sessions with each simulation faculty and myself the DNP project leader I will ask you to listen to a 30-minute simulation best practice presentation (webinar)

3) Faculty will complete a post-test 1-week after the 30-minute presentation

4) Faculty will complete a post survey 2 weeks after the post-test.

All written responses will be confidential and shredding after data collection and statistical analysis will destroy all surveys. There is no need to place your name on any survey however you will be assigned a random number.

My Capstone Chair is Dr. Patsy Cullen. Dr. Cullen can be reached at: pcullen@regis.edu

Contact information for Regis University IRB is: IRB@regis.edu

Thank you very much for your participation and taking the time to help me complete my DNP project. I hope my data will be a benefit to your teaching career!

Sincerely,

Jody Panian, RN, MSN

Appendix-L

Post-test from 30-minute power point discussion
A structured, intentional simulation delivery method: Development of a best practice faculty policy

Name: _____Date: _____

1). The term used for simulation known as experiential learning is defined as: the use of concrete experiences to gain knowledge more specifically the process of learning through experience and through reflection on the action taken.
True_____ False_____

2). To be proficient in simulation facilitation faculty should consider the following INACSL recommendations (Select all that apply).
a. Participant-centered
b. Preparation and pre-briefing
c. Deliver cues to support learning
d. Remember that learning occurs after the event and beyond
e. all of the above

3). What is one of the *most* important components in pre-brief before conducting a simulation scenario?
a. Communicating to the student the learning objectives of the scenario
b. Performing everything right
c. Embellishing the scenario situation
e. Problem-solving

4). Debriefing is a form of deliberate clinical teaching. Debriefing with meaningful learning (DML) uses 6 phases for debrief: engage, explore, explain, elaborate, evaluate, and extend. As teaching faculty what are the most important strategies for debrief facilitation? (Select all that apply).
a. Stop telling students, start asking questions
b. Pause and give students time to process
c. Teach as much as possible in a short period of time
d. Support students through what they already know and what resources are available to help them find the answers

5). What three learning theories were discussed in the PowerPoint relevant to reflective practice, experiential learning and predictive practice?
a. Kolb, Knowles and Jeffries
b. Erickson, Lewin and Jeffries
c. Jeffries
d. Rogers, Johnson and Nightingale