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Research Article

Improving the Competency of Nurse Educators in the Use of Simulation

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Abstract

Simulation in nursing education programs is widely used as an active clinical learning strategy. This teaching methodology is a standard supplement to clinical experiences for nursing students to meet the requirements of clinical components within their program degree. However, the faculty at a small liberal arts-based bachelor of science nursing program was not using simulation to its fullest potential. Therefore, the purpose of this project was to introduce the use of evidence-based practice simulation guidelines recommended by the National Council of State Boards of Nursing (NCSBN). The study sample of 16 included 10 full-time faculty, five part-time faculty adjuncts, and one simulation lab coordinator. Implementing the educational training using the guidelines took place over three months in the Spring of 2021. In addition, participants completed the Faculty Attitudes and Adoption of Simulation (FAAS) assessment before and after implementing the education program.

Additionally, after the educational training was completed, the participants completed an Educator's Self-efficacy questionnaire. The study was successful in identifying that formal educational training positively affects attitudes and the adoption of simulation. Thus, this project proves that continuing education works and is necessary to develop new knowledge based on evidence-based practice.

Keywords: BSN pre-licensure program; NCLEX-RN pass rates; Simulation guidelines; Nursing clinical judgment; Accredited simulation programs; Nursing simulation education

Introduction

Newly licensed nurses, who enter practice, encounter significant challenges adapting to nursing practice, including high acuity patients, fast patient turnover, and legal accountability through documentation. New graduates and nurse executives recognize ongoing challenges and have implemented nurse residency programs for transition to practice. [1]. In addition, the number of clinical hours for nursing students is limited as traditional hospitals and other clinical facilities have become inundated with healthcare students from many disciplines. As a result, many hospitals, faced with their own financial and staffing challenges, have limited the number of clinical rotation hours offered to nursing schools. Thus, the limited number of clinical spots decreases the student's chance to get the kinesthetic opportunity to apply theory and practice. This barrier causes a significant problem for nurse educators who need to produce quality and innovative clinical experiences for students to enter the profession at the expected level.

This problem has been exacerbated by the COVID-19 pandemic, with clinical assignments being canceled and nursing students having limited access to the facilities. As a result, some clinical hours have become virtual clinicals using simulation, which places the students even farther away from hands-on instruction. Educators prepare these virtual simulation clinicals with the hope of only temporary arrangements. However, the unknown of the situation separates new graduates from rich learning experiences.

These factors have forced educators to utilize simulation as a supplement or replacement for clinical activities. The critical issue for educators is how to maximize simulation instruction as an alternative to clinical experiences. Some clinical faculty are hesitant to use simulation as a replacement teaching opportunity

[2]. Understanding the faculty's perceptions and attitudes toward simulation can improve and advocate for simulation as an innovative teaching tool. Identifying the faculty's needs and providing evidence-based practice education is a positive step toward building a consistent and effective simulation program [2].

Statement of the Problem

With the increased utilization of the simulation pedagogy, nursing educators have largely accepted its integration into the nursing curriculum [3]. Often without formal training, educators are left with figuring out the best deployment of this mode of active learning. Barriers such as lack of experience, fear of technology, and limited training lead to educators' hesitancy and negative perceptions and attitudes adopting this pedagogy [3]. There is recognition among the faculty in this small liberal-arts BSN program of a need for additional education and support for the simulation program. There is no formal training process on the National Council of State Boards of Nursing (NCSBN) simulation guidelines for pre-licensure nursing programs [4] to guide the development of nurse educators.

Without consistent guidelines within the simulation program, each faculty member is assigned a didactic course to teach and is left to manage their own simulation lab experience and clinical. From personal experience and teaching in this particular program, the simulation program's overarching attitude is rudimentary and inconsistent among all the courses taught using this pedagogy. This problem has led to the faculty goal of devising a strategic educational plan implementing the changes necessary to meet standardized guidelines for a consistent, high-quality simulation experience for faculty and students. EBP simulation guidelines would help improve faculty perceptions, attitudes, and self-efficacy on the use of simulation.

Background

Traditional models of nursing education have changed as simulation-based learning grows. Experiential learning naturally relates to the elements of simulation through a concrete experience of a clinical scenario with immediate debriefing [5]. This teaching method is an opportunity for educators to customize clinical opportunities for nursing students who otherwise may or may not experience them with a live patient. Also, simulation has proven efficacious in clinical learning [6]. For example, a national study conducted by the NCSBN (2014) publicized best practices in simulation use. The NCSBN established that simulation can replace up to 50% of clinical hours in all prelicensure nursing clinical courses [7]. As nursing faculty take on the obligation of filling the profession with adequately prepared nurses, this leaves them speculating on maximizing the simulation experience. The education and support of simulation experiences should evaluate the faculty members' perception of simulation to address gaps in acceptance and change the cultural attitude towards this effective pedagogy.

Educators must believe in what they are teaching to provide effective use of this type of active learning. Literature supports that effective simulation education is achieved by attending symposiums on advances in simulation technology, scenario writing resources, established simulation "champions," advancing education in simulation and reaching certification or accreditation [8].The literature advocates for acclimating faculty to simulation by establishing a resource person who can provide guidance and support through consistent simulation use under a framework or structure such as the guidelines established by the NCSBN [8].

In the early days of adopting simulation, faculty questioned: "the efficacy of replacing learning in traditional clinical environments with simulation" [2]. Some of this hesitancy evolved from barriers reported, such as time, resources, lack of professional development, and training. Faculty even speculated a contribution to high anxiety levels from students, leading to adverse learning outcomes [2]. As simulation evolved, researchers looked back and realized that faculty members were skeptical because high-fidelity simulation was unconvincing and did not deliver consistent and positive learning outcomes [7]. For ten years, simulation has evolved into a standard integration of curricula among thousands of nursing programs across the nation. The setting for this project is an educational institution where simulation accounts for up to 50% of the student's clinical hours.

In light of this pandemic and clinical displacements, simulation is crucial to providing real-life simulated experiences for all healthcare trainees to learn how to practice safely while remaining in a harmless environment themselves [9]. This unprecedented time of alternative learning is pivotal for the rebirth of simulation. If simulation equates to up to 50% of clinical hours, educators must ensure quality clinical experiences correlate to real patient care. To create a formal process of regulatory standards, the NCSBN, in collaboration with the International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practice in Simulation, developed national simulation guidelines for prelicensure nursing programs [4]. The purpose of the standards and guidelines is to promote high-quality simulation experiences that can enhance the clinical platform for nursing education.

Purpose of the Study

The purpose of this educational intervention was to provide formal education using the INACSL Standards of Best Practice in Simulation [6]. This process is the first step in the formal process of becoming an Accredited Simulation Facility, which is a longer-term goal of the faculty and administration.

Mackey and Bassendowski (2017) [10] suggested tangible ways to improve nursing as an educated discipline. These improvements include using best-practice procedures, applying valid research evidence, and utilizing technological advances [10]. The purpose of transforming simulation labs using best practice is to bridge the gap between learning the content and implementing the application in the clinical setting. With the Next Generation National Council Licensure Examination (NCLEX NGN) design emerging and simulation acknowledged as an established teaching modality, educators must learn to combine them to improve students' clinical reasoning and judgment [11]. Proper faculty training and continued faculty development based on national guidelines such as the Standards of Best Practice: Simulation (INACSL) results in the effectiveness and quality outcomes of nursing simulation [12].

Significance

Engaging faculty and supporting their teaching efforts create a healthy learning environment and workplace. The importance of working together as a team to educate students improves the effectiveness and quality outcomes of nursing education. Setting goals, collaborating, and educating faculty leads to a successful program [13]. The significance of creating a stable and effective simulation program is that it benefits the nursing program and the university. Achieving accreditation as a certified simulation center will also set the institution apart from all the other schools when marketing to potential applicants. This level of approval contributes to the esteem of the institution when evaluated by accrediting boards such as the Commission on Collegiate Nursing Education or CCNE. Not only will the program and university benefit from this project, but so will the students.

The goal of all faculty members is to provide excellent foundational education for nursing practice. Faculty educators have access to many tools to deliver necessary information to the learner. Active learning is an integral part of nursing education through interactive case studies, group work, and various benefits of technology. According to a meta-narrative review, simulation is also active learning simulation replacing clinical hours in nursing [14]. Roberts et al. (2019) [14] reviewed the importance of simulations in clinical education and found that it produced positive student outcomes and learning. This form of active learning provides a rich learning experience for students by submerging them into a non-intimidating, controlled, and perhaps repetitive situation that teaches them transferrable skills and knowledge for actual clinical practice. The students benefit from simulation when the instructor has a sense of realism and investment. The learner can relate to the purpose of simulation when deployed with confidence and knowledge from the facilitator. Investing in faculty development through simulation training and evidence-based practice ultimately affects positive student outcomes.

Nature of the Project

This project used a program evaluative design (Min et al., 2017) [15], for an educational intervention to improve the faculty's knowledge, perception, attitudes, and self-efficacy using EBP guidelines recommended by the NCSBN and the International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practice: Simulation [4]. The goal was to improve simulation program outcomes as well as faculty perceptions and attitudes. According to the DNP Essential II, the DNP nurse's role encompasses organizational and systems leadership to quality improvement and advancing nursing practice. Therefore, educating and properly training confident faculty to utilize teaching strategies structured by practice guidelines can also enhance program outcomes.

The setting of the current simulation program consisted of a simulation coordinator, three high-fidelity simulators, 16 midlevel simulators, and various partial task trainers. Coffman et al. (2015) [16] concluded that it is not the type or level of the equipment that makes simulation successful; it is the teamwork and delivery of objectives that create an optimal learning environment. The development of tools, program evaluations, and good team training improve program outcomes [16]. Using the established standards of the NCSBN Simulation Guidelines for Prelicensure Nursing Education Programs as a framework tool, the plan was to provide the faculty participants EBP education, using the INACSL Standards of Best Practice in Simulation ("INACSL Standards of Best Practice: Simulation Design," 2016) and to evaluate the results of the training using Kirkpatrick's model for evaluation of continuing education: attitude, knowledge gain, and self-efficacy (MindTools, n.d.) [17]. The final step of evaluating the implementation in simulation practice is beyond the scope of this study. The goal was to improve the simulation program, lay the foundation for future education and practice support, and provide superior education to improve student outcomes.

Research Questions

The NextGen NCLEX (NGN) research is evolving to measure new graduate nurses on a higher level of clinical judgment or "think like a nurse" as soon as they enter practice. The questions that serve as the basis for this study include: 1) Is nursing simulation supported through faculty development and continuing education to meet the objectives of a higher level of clinical judgment? 2) Do faculty attitudes reflect knowledge and confidence in this teaching modality?

- P- Due to limited clinical experiences and simulation as a substitute for 50% of clinical requirements, simulation programs, and faculty need to be supported and educated to standards that establish a higher level of clinical judgment in new graduate nurses to meet the demands of nursing practice.

- I-An educational training for faculty in simulation using the INACSL Standards of Best Practice in Simulation criterion for simulation design, accompanied by video examples of full-scale simulation scenarios and virtual simulations and a taped demonstration of a well-run and expertly debriefed simulation grounded in critical theory
- C-Pre/post-test scores on the Faculty Attitudes and Adoption of Simulation (FAAS) and a survey of educator's self-efficacy in using simulation [18].
- O-Improved faculty competence with education on the consistent use of guidelines within the Simulation program (National Simulation Guidelines for Prelicensure Nursing Programs | NCSBN, n.d.).
- T- Over a 6-month semester

Question Guiding the Inquiry

The practice question is: Does the provision of best practice simulation education improve faculty's attitudes, knowledge, and self-efficacy?

Research revealed challenges that new graduate nurses face as they transition into practice. Educational programs face pressure from the governing boards and hospital nurse executives to produce practice-ready, critically thinking new nurses [19]. This research applies to evolving nursing schools with a simulation program open to assessing the need for improving educational practices to execute quality simulated experiences to enhance clinical judgment in new graduate nurses. The NLN/Jeffries Simulation Framework states that simulation used in nursing education programs produces superior outcomes than traditional teaching strategies [20]. Therefore, with permission from the creator, the validated Faculty Attitudes and Adoption of Simulation (FAAS) tool was used and assisted in evaluating attitudes on simulation [15]. After the educational training sessions, an educator's self-efficacy in simulation training questionnaire was given to each participant to measure the training's adequacy (Appendix D). Bandura stated that the purpose of self-efficacy is "one's capabilities to organize and execute the courses of action required to manage prospective situations" [18]. The result of implementing an education practice plan for regulatory standards of simulation in a developing nursing program can improve critical thinking in new graduate nurses while improving faculty attitudes toward this educational pedagogy [20].

Conceptual Framework

This project utilized a conceptual framework based on the ACE star model of knowledge transformation [21] created by Dr. Kathleen Stevens of the University of Texas Health Science Center School of Nursing in San Antonio, Texas (Fig 1). This model helps organize EBP processes and approaches by connecting the transformation of new knowledge from research into practice and informing the faculty development of simulation guidelines. Healthcare teams use this tool nationwide to guide organizational policy change [22]. The ACE star model of knowledge transformation, in this study, allowed for the faculty to assess and apply research about simulation through the implementation of the evidence-based practice guidelines, which could lead to curricular policy improvements. As a model for implementation, analysis about the NCSBN simulation guidelines can be applied through inquiry and training while impacting outcomes through evidence-based practice [22]. This process is vital because faculty educators are more motivated by evidence-based research and a structure that guides them to best practice.

The NLN education programs use adult learning theory that applies to simulation, known as experiential learning (Fig 3). Professor and theorist Dr. David A. Kolb formulated the experiential learning theory [23], which relates to simulation concepts in nursing. Interpersonal interaction, paired with theory practices within the kinesthetic learning environment, such as simulation, is the basis of this framework [23]. It is applicable in all healthcare educational disciplines. Experiential learning allows the learner to build knowledge while experiencing a situation to process for future use [5]. Students can comfortably experiment with life-like scenarios in a situated setting and practice how they would administer care in an actual situation. As cognitive adult learners, they control the hands-on experience, reinforcing comprehension through reflective thinking [5].

The evaluation design for this project used the Kirkpatrick model for the evaluation of continuing education (Fig 3). The Kirkpatrick model analyzes training effectiveness and provides valuable feedback to improve the success of a training program (MindTools, n.d.) [17]. In the literature review, a relevant article about using this model in an organization reinforces the purpose of training and its efficacy. The four levels include reaction, learning, behavior, and results. Level 1(Reaction) is used to evaluate how participants respond to the training. Level 2 (Learning) is used to measure if they learned the material, Level 3 is used to measure whether the learning is transferred into practice in the workplace, and Level 4 is used to determine the tangible results of the training. This framework was appropriate to this study as the faculty perceptions before and after implementing the guidelines guided the success of the practice plan. Researched and educated training in simulation was instrumental in the application of this study.

Scope and Limitations

The few parameters of this project included the inclusion criteria of faculty members that have used simulation in their teaching experience. There was not a set amount of experience determined. A limitation of the project was the convenience sampling of only the faculty directly related to simulation at one liberal arts-based BSN program. Other limitations to the project

included COVID-19 restrictions, which necessitated the delivery of education via Zoom using videos of simulations rather than face-to-face instruction.

Faculty involvement and investment are essential for quality simulation-based education to be effective. Therefore, adequate preparation and support for the faculty must be in place to foster positive perceptions and attitudes about this type of teaching modality. The purpose of this educational intervention was to provide formal education using the INACSL Standards of Best Practice in Simulation ("INACSL Standards of Best Practice: Simulation Design," 2016) [12]. This is the first step in the formal process of becoming a Certified Simulation Facility, which is a longer-term goal of the faculty. This intervention was significant because research suggests that educators can learn about best standards of practice, the structure of a program and help students learn in a well-organized and evidence-based environment [2]. Raising the standard of simulation pedagogy can help students transfer clinical skills and hopefully decrease the transitional gaps for new graduate nurses.

Literature Review

This chapter provides a literature review that will guide this project investigating current faculty perceptions and attitudes about simulation before and after a formal educational training on evidence-based simulation standards in baccalaureate nursing programs. There are two areas of growing concern in nursing education: an increase in simulation and clinical experiences and the elevating standards of clinical judgment as measured by the National Council Licensure Examination for registered nurses (NCLEX-RN). A systematic review and quality appraisal of multiple studies by Bogossian et al. (2019) [25] revealed there was no difference in evaluation outcomes between healthcare simulation education and those of real-life clinical experiences. Therefore, the suggestion to increase the use of simulation education in nursing education has been implemented.

Another concern for nursing educators is elevating standards evolving on the NCLEX-RN to measure a higher clinical reasoning or judgment level. Evidence shows the current rigor of the standardized exam does not adequately measure clinical judgment or clinical readiness for the new graduate nurse [26]. Starting in 2018, the NCSBN examination committee began a formal analytical process to examine the amount of clinical judgment in novice nurses. This study yielded the conclusion that the "current NCLEX does measure clinical judgment, but the test could be improved to measure it more effectively" [27]. These concerns lead to the practice problem of the increased use of simulation and its effectiveness in achieving a higher level of clinical judgment expectations necessary to meet the standards of the new changes of the NCLEX. Therefore, there is a need to pause and evaluate faculty perceptions about simulation and fix the gaps now. With the promising future established in simulation and advancing technology, educators must be updated and progress effectively in the pedagogy of simulation education. Researchers suggest mandatory training courses, continuing education, and specific mentorship with a simulation champion is necessary to ensure an adequate level of simulation education for nurse educators [6].

Literature Search Methods

Several database searches were used, including CINAHL, EBSCOhost, Google Scholar, Medline, and PubMed. Various sources contain peer-reviewed articles, research projects, editorial reviews, peer commentaries, and websites of professional bodies such as the NCSBN and the National League for Nursing (NLN). A systematic search strategy within these databases consists of "BSN pre-licensure programs," "simulation education," "NCLEX-RN pass rates," "simulation guidelines," "nursing clinical judgment," and "accredited simulation programs." A refined advanced search using "and" reveals a more specific result using "nursing simulation education" and "clinical judgment," yielding 145 results narrowed down to English peer-reviewed sources dated between 2010-2020. Professional guidelines included the NCSBN Simulation Guidelines for Prelicensure Nursing Education Programs, the International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practice: Simulation, and the National League for Nursing (NLN) Jeffries Simulation Theory [16].

Theoretical Framework

David Kolb's Experiential Learning Theory (ELT) provides the theoretical framework of this project in conjunction with The ACE star model of knowledge transformation created by Dr. Stevens [28]. In the literature review, a relevant article about the effects of Kolb's theory in simulation design emerged and how it can affect clinical nursing judgment development. Experiential learning encompasses all types of learning elements, and the student's mindfulness of these elements is mainly applied to simulation [5]. Metacognition is known as the learner's awareness of conscious learning [5]. This theory applies to the teaching of clinical judgment in nursing students.

Kolb's ELT emphasizes the learner's transformation through experience and knowledge acquisition by utilizing all of the senses. This theory has four essential components: abstract conceptualization, active experimentation, concrete experience, and reflective observation [23]. Research is ongoing, and discoveries in ELT reveal that learning styles contribute to integrated learning that goes back to the basics of the theory. Simulation is a perfect platform to use all of the senses to connect the content with applicable situations to reinforce specific objectives. The ACE star model of knowledge transformation, paired with simulation, can achieve the standards required by the next generation of licensing

examinations. Stevens (2012) [28] recognizes the purpose of the NCLEX-RN as a standard to measure and ensure safe nursing practice. However, with the increasing complexities of patient acuity and the imperative need for graduates to achieve appropriate clinical decisions, the standards of the measurements have been elevated. Educators must meet this challenge head-on with adaptations to their teaching. Adjusting the educational strategies to accommodate the increasing complexity of standardized exams correlates with adapting to healthcare system changes.

Thus, Stevens from the University of Texas in San Antonio Health Science Center created the ACE star model to assist the learner in discovering and transforming this newfound knowledge into practice (Stevens, 2012) [28]. This model consists of five phases: discovery, summary, translation, integration, and evaluation [22]. Much like the nursing process, this tool proves to be effective in facilitating scenarios and simulation-based education. Kolb's ELT and the ACE star model frameworks help guide the idea of elevating standards and improvements to simulation programs across the nation to achieve improved clinical judgment and clinical readiness for graduate nurses.

The Kirkpatrick model guided this project's educational design evaluating the formal training process of simulation utilizing the INACSL Standards of Best Practice in Simulation ("INACSL Standards of Best Practice: Simulation Design," 2016).

Literature Review

Transition to Practice

Nursing programs are growing exponentially across the United States to answer what used to be a nursing shortage. With the large volume of nurses entering practice, the profession is saturated with new graduates who carry the expectation of having a higher level of clinical judgment. Some challenges of recent graduates entering practice, also known as "transition shock" [29], include increased patient load, complex conditions with multiple comorbidities, lack of experienced trainers, pressures to perform at higher levels, generational differences, and the inability to reason past the advanced beginner stage [19]. Graduating from college at a young age and having the new responsibility of the adult world is a daunting realization.

The reality of this transition can be intimidating and hinder the shift from student to professional nurse. A new graduate nurse can take the licensure exam within weeks of graduation and begin practicing rather quickly. The ramification of this convenient possibility means rapid employment in clinical settings where they "are expected to navigate the complexities of the healthcare environment" [1]. The literature spoke to the new graduate nurses' first year of practice. It referenced the dichotomy of achieving legal requirements to practice. At the same time, studies showed that many new nurses are weak in clinical skills and judgment necessary to provide safe and effective care to patients [1]. Consistent discussion among nursing education includes the need for new graduate nurses to be prepared to enter practice with clinical readiness or a higher level of clinical judgment. However, research does not support how this transpires. Limitations included the correlation between student's educational training and the concrete transition into practice [1].

Simulation Pedagogy

In the literature review, searches revealed practice gaps between the perceptions of clinical preparedness of graduate nurses and increasing healthcare demands. A qualitative study on new graduates and their observation of their educational preparation for clinical readiness suggested nursing faculty improve practice-oriented, active-learning educational experiences to better prepare graduates [1]. This study's findings suggested additional educational experiences, such as increased clinical hours, help prepare entry-level graduates for various healthcare settings (2018). The authors revealed that this solution is not feasible due to limited clinical placement sites and qualified nurses or faculty [1]. In the United States, the National Council of State Boards of Nursing (NCSBN's) study officially validated the approval for nursing simulation for up to 50% of clinical hours required by the state's governing boards of nursing [7]. Through the NCSBN report, researchers found that 7% of nursing programs across the United States used simulation in their curriculum [21]. Therefore, nursing schools need to understand faculty's attitudes about the use of simulation in nursing programs.

The simulation modality is a perfect platform to deliver this "hands-on" experiential learning that can bridge the gap between content and practice. Researchers reinforce the importance of educators to implement practice-oriented educational experiences into not just the classroom but simulation. A simulated learning experience "assists and challenges students to develop higher-level clinical reasoning skills that are fundamental to successfully transition to professional clinical practice" [1]. The increased utilization of this type of active learning raises how faculty perceive the simulation pedagogy.

To effectively use this teaching tool, inquiring, equipping, and promoting faculty investment is imperative. Simulation can fall into the category of active learning. Active learning is used in nursing education frequently as a tool to reinforce the application of the content. Simulation offers students a safe place to apply vital clinical concepts in a secure environment without threatening the patient or clinical facility. Literature supports "simulation as a key tool to clinical education regarding positive outcomes for students and learning" [14]. With evidence that simulation is being implemented into the curriculum of over half of the nursing programs nationwide, an intervention to raise the standards of quality simulation is critical. Accreditation of Nursing programs is

one way to assess if criteria are being met.

Benefit of Accreditation

When simulation began over two decades ago, a suggestion was borrowed from successful military training [3]. Healthcare institutions tried this educational modality to help nurses continue acquiring knowledge and skills used in practice [3]. Today, it is used in many nursing programs as a substitution for clinical hours mandated by the governing state boards of nursing. Therefore, simulation has recognition as an effective pedagogy just as much as actual bedside training.

As published by the NCSBN, the NCLEX plans to implement changes to the examination to measure better clinical judgment [27]. Tools such as the Clinical Judgment Model (CJM) can help educators increase the rigor needed to meet these anticipated standards of the new NCLEX plan. The CJM "offers a new approach to bedside decision-making" [26]. Clinical judgment encompasses comprehending and processing patient cues, anticipating outcomes, prioritizing interventions, acting, and evaluating the process outcome. Critical thinking should be implemented in the classroom and in the simulation lab, where there is ample opportunity to create precise objectives to help facilitate clinical judgment thinking.

A comprehensive analysis conducted by the NCSBN in October 2015 produced supporting evidence that simulation was suitable for substituting up to 50% of traditional clinical practice across the pre-licensure nursing curriculum [4]. The study done by NCSBN confidently advocated for the substitution of clinical experiences contingent upon adequately trained and committed faculty who have sufficient access to a dedicated lab with necessary resources [4]. The expert researchers developed guidelines based on data from previous simulation studies. These guidelines help (1) boards of nursing in evaluating the readiness of pre-licensure nursing programs in using simulation as a substitute for traditional clinical experience, (2) nursing education programs in the establishment of evidence-based simulation programs for the undergraduate nursing curriculum [4] (Table 1). The expert panel of researchers included the INACSL and the NLN. Together, the researchers added their contribution to the Standards of Best Practice: Simulation in adjunct to high-quality simulations, best debriefing models, educational theory integration, and dedicated simulation educators [6].

	Question 1		**Question 2**		**Question 3**		**Question 4**		**Question 5**	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Mean	4.636	4.182	4.636	4.18	4.545	4.091	4.364	4.091	4.273	4.091
Variance	1.455	2.564	1.455	2.56	1.473	2.491	1.455	2.491	1.618	2.491
Observations	11.000	11.000	11	11	11	11	11	11	11	11
Pearson Correlation	0.659		0.659		0.598		0.559		0.534	
Hypothesized Mean Diff	0.000		0		0		0		0	
df	10.000		10		10		10		10	
t Stat	1.242		1.242		1.166		0.671		0.43	
P(T<=t) one-tail	0.121		0.121		0.135		0.259		0.338	
t Critical one-tail	1.812		1.812		1.812		1.812		1.812	
P(T<=t) two-tail	0.242		0.242		0.271		0.518		0.676	
t Critical two-tail	2.228		2.228		2.228		2.228		2.228	

Table 1: Pre/Post FAAS survey t-Test: Paired Two Sample for Means.

From Min, H., & O'Rourke, J. (2017). Faculty attitudes and adoption of simulation: Pilot testing of a new instrument. Journal of Nursing Education, 56: 356–359.

To achieve the next level of best practice, The Society for Simulation in Healthcare (SSH) offers a possibility for simulation programs to become accredited and reach simulation certification. Accreditation can provide a basis for simulation centers to implement best practices and promote uniformity within the educational institution [6]. This ambitious goal of accreditation empowers average nursing programs with basic simulation programs to reach higher standards and better educational experiences for their students. Pairing higher standards for simulation programs with the implementation of the clinical judgment model into the curriculum will promote success towards the higher expectations of the NextGen NCLEX. Ultimately, we can expect better clinically prepared graduate nurses and an increase in positive patient outcomes.

NCLEX Pass Rates

A limitation noted in the literature review was the lack of correlation of NCLEX pass rates and the use of simulation. Only a few peer-reviewed articles reinforced the study of the NCSBN. Curiosity prompts the thought about accredited simulation programs and the correlation to their NCLEX pass rates. The literature search did not yield a large number of sources to investigate this question. An article about strategies to improve NCLEX-RN success suggested more research is needed about teaching clinical judgment and student success [30]. The literature about standardized testing recommended a change in practice to accommodate nurses' national licensure exam improvement known as the NCLEX [26]. The author predicted that many educators would encounter challenges in teaching the next generation of nursing students.

With the documented changes of the NextGen NCLEX, educators have to transform teaching strategies from learning the content to pass the exam to facilitating clinical judgment to make patient-centered decisions. Caputi, a renowned author and nurse educator, explains that the revised NCLEX-RN aims to present more practical situations through testing to portray actual patient scenarios instead of traditional testing items [11]. This reasoning revisits the clinical judgment model that connects simulation experiences and real-life patient scenarios to improve learning through situational application.

Perception of Simulation

Since simulation is a growing teaching methodology, reflecting on past and present insight is beneficial to nursing education. A related literature search revealed one study that identified faculty perceptions of simulation in an undergraduate program [31]. A vital assessment of this study is identifying perceptions of simulation and the advantages and challenges of introducing this active learning method into the curriculum [31]. Some benefits included simulation as a useful teaching tool, freedom for students to make safe mistakes, and opportunities for the learners to work in teams [31]. The disadvantages were insightful and offered perceptive ideas. More than half of the faculty reported time and resources problematic in delivering effective teaching [31]. Preparation and planning were mentioned as obstacles and learning the technological equipment [31]. This valuable perspective supports this study's purpose to obtain further information within the past five years and how simulation can become a more successful and effective teaching method in nursing education.

The literature review contributed to this capstone project by laying the historical background about simulation and its evolution in nursing education. As the literature supports a more substantial integration of simulation into the nursing curriculum and the complexity of the licensure examinations, nursing education must evolve accordingly. Current and historical research findings help defend that higher levels of simulation expectations are needed to achieve the projected goal of teaching graduate nurses a higher level of clinical judgment and clinical readiness. The lack of literature that proves this gap between simulation education and clinical judgment of graduate nurses is necessary to implement changes in simulation programs to prepare graduate nurses for advancing practice expectations. With faculty educators being such an integral part of nursing education, their insight and educational training must be considered in the evolution of simulation. The next chapter discusses the methods and planned evaluation of the project goals.

Research Method

The mixed perceptions among faculty members of the active learning strategy for simulation have prompted an interest in investigating improvements for simulation programs. This study's overall approach was an educational intervention aimed at improving the competency of undergraduate educators in the use of clinical simulation. The plan was to educate the faculty on implementing EBP guidelines that will provide structure and consistency to an existing simulation curriculum and then evaluate the same faculty for feedback. Data collection and analysis showed how education on EBP guidelines impacts faculty attitudes toward simulation, knowledge gain, and self-efficacy using simulation as a teaching/learning strategy.

Purpose

The purpose of this educational intervention was to provide formal education using the INACSL Standards of Best Practice in Simulation as EBP guidelines [16]. This is the first step in the formal process of becoming a Certified Simulation Facility, which

is a longer-term goal of the faculty.

Project Design

The faculty participants were recruited via email from one nursing school. They were informed of the educational intervention's purpose and gave individual permission to complete the assessment tools. Each participant was de-identified for the pre/post comparison data. All participants were informed of their right to withdraw at any time. Permission to use this team within the study facility and administrative support for this project was obtained.

The educational administrator prepared for the development of the teaching program using the Faculty Development Resource offered by the National League for Nursing Simulation Innovation Resource Center. Description:

"Faculty and staff development are essential for successful simulation experiences. Education on developing support for using simulation and ways to incorporate simulation as a teaching strategy is critical to achieving curricular goals. In Developing Faculty, you will learn about models for faculty development and strategies for gaining faculty support. You will be shown examples and create your plan for attaining your aims. The Educator's Toolkit offers 17 job descriptions, as well as templates and checklists to stimulate ideas. 2 Contact Hours/.2 Continuing Education (CE) credits are offered at the completion of this course [32]."

The educational intervention is an approved continuing online education module developed and offered by the National League for Nursing Simulation Innovation Resource Center-Integrating Simulation as a Teaching and Learning Strategy. This course was provided online and supplemented by videos of exemplary simulation activities due to COVID guidelines.

"In this course, you will be focusing on teaching/learning strategies. Guidelines and considerations for incorporating simulations as a teaching/learning strategy will be discussed. Integrating simulation into class, clinical and laboratory experiences will be explored. Field-tested strategies will be offered. Resources offered in this course will include a directory of organizations, and their list serves and web-based moulage resources. The Educator's Toolkit for this course includes a recipe book for homemade moulage, an example of a commercial basic and advanced scenario, a sample rotation schedule for rotating student groups through simulations, and a sample confidentiality statement. 2 Contact Hours/.2 Continuing Education (CE) credits are offered at the completion of this course [32]."

Adhering to Kirkpatrick's evaluation model for continuing education, the faculty participants were asked to complete pre/post-assessments. The first assessment, the Faculty Attitudes, and Adoption of Simulation (FAAS) tool was created to identify faculty attitudes and levels of perceived knowledge and adoption of simulation [15]. In conjunction with the Kirkpatrick Model [17], the FAAS tool will reveal the foundational position of the learner where proper training should begin. Level 1 of the training model helps the trainer identify what is necessary to include and what gaps exist in the foundational knowledge of the subject. The reaction within Level 1 is the degree to which the participants find the training pertinent to their job [17]. Level 2 involves the learning process and the degree to which the participants acquire the intended knowledge, skills, attitude, confidence, and commitment based on their participation in the training [17]. The FAAS tool relates to the Kirkpatrick Model levels one and two by providing essential information in the initial baseline of faculty involvement and simulation investment.

Self-efficacy is a concept that guides our ability to succeed, set goals, and go about accomplishing those goals [18]. Bandura explains that the purpose of self-efficacy is one's capabilities to organize and execute the courses of action required to manage the prospective situation" [18]. Using such a concept in the deployment of an educational intervention will ensure the intent of the new knowledge and its effect on practice changes.

Comparative data analysis on the pre/post assessments began with a t-test. Further statistical analysis wasn't necessary due to the sample size of 13 participants. The results will be compiled and presented to all the faculty members and the dean and recommendations on the next steps of the path towards excellence. Simulation accreditation is the desired goal for accredited nursing programs nationwide "to ensure that the program adheres to a high standard by providing quality healthcare education".

Methodology Appropriateness

The established problem is that there is recognition among the faculty in this small liberal-arts BSN program that requires additional education and support for the simulation program. Currently, there is no formal training process on the use of simulation following NCSBN guidelines. This educational intervention was based upon the ACE star cycle of quality improvement [28]. A core value of the nursing profession is continuous learning to improve practice. Thus, educational intervention is an appropriate methodology for improving faculty competency in simulation in providing an exceptional education for nursing students. The continuing education pedagogy calls for enhancing knowledge and the use of expertise in changing educational practice.

Feasibility and Appropriateness

Being an employee in the study facility increased the feasibility of this project. There was ample access to the project setting and study participants. The feasibility and appropriateness of the IRB process addressed the consideration of essential elements sensitive to the project, such as my colleagues' use.

Permission was requested and granted by the dean and the program director of the school of nursing. An affiliation agreement was deemed unnecessary by the Dissertation and Project Managers. Considering any conflict of interest with using colleagues is appropriate and was reviewed and approved by the IRB.

IRB Approval Process

IRB approval was obtained from Abilene Christian University before the implementation of the project. The researcher submitted an Exempt Research Determination Request. De-identified data collected during this project was stored in a secure university drive under the project researcher's name. The university own's the data in case access needed at a future date. This storage system was provided by the online graduate school for doctoral student research data and supported by the university's IT department for security purposes. The data is kept for the minimum required time according to IRB guidelines. The IRB completed a review of using colleagues as participants in the study. The response reassured the board that there is no hierarchy of position between the researcher and participants.

Interprofessional Collaboration

This project involved the faculty who teach at an accredited BSN nursing program. This project was completed in collaboration with the faculty who teach in the simulation program. Interprofessional collaboration included the involvement of the simulation coordinator with IT experience. Established evidence-based guidelines were utilized from the NCSBN in coordination with the INACSL. Students were not participants in the study due to their classification of a vulnerable population.

Practice Setting for EBP

The setting took place via ZOOM meeting due to the enforcement of the CDC COVID-19 guidelines. Since this venue is a familiar place of employment, approval was requested from the BSN director and the Dean. There were not any barriers to physical resources or the need for any additional expenses. A potential barrier was time for faculty education due to the participant's different schedules. There was no conflict with leadership as permission was granted within the school of nursing.

Target Population

The population of interest for this study was the faculty of a BSN program at a local university. There were nine full-time faculty members and three adjunct faculty who were assigned to simulation. The Simulation Lab Coordinator (SLC) was included in the sample since this person works alongside the faculty in the lab. The total population was projected at 13 participants to include faculty, faculty adjunct educators, and one simulation lab coordinator who teaches simulation at least twice per semester each semester. There was a large amount of simulation experience from this institution or other places they have worked among this population. During the Spring 2021 semester, the EBP Simulation guidelines were taught via Zoom through three educational sessions. These guidelines will be piloted with permission from the BSN director and dean of the program in the near future; however, this is beyond the scope of the study.

Risks

The threat of COVID-19 forcing virtual learning posed a challenge. The risks included faculty not providing honest perceptions that could skew the results. There was a potential that faculty could have schedule conflicts with the educational sessions, which would make the post-assessment of the training incomplete. Since distance learning was enforced, zoom meetings were scheduled with the faculty participants to complete the training, and recorded sessions were available for later viewing.

Benefits

Professionals and administrators acknowledge and encourage nurse educators to become competent in their role of teaching future nurses. Standards of competence are measured by meeting program outcomes through accreditation processes such as the American Association for Colleges of Nursing (AACN). Improved student outcomes are also evaluated to measure a program's success. Budgetary money is spent annually in promoting nurse educators and their continuing professional development to achieve these goals. However, a recognized gap in simulation training and competency among nurse educators needs to be addressed [33]. Simulation is a beneficial active learning tool but is only as effective as the facilitator and their comfort level [13]. An evaluation of facilitator knowledge and investment in a tool such as simulation is expected to support and enhance the simulation program and positive student outcomes.

The predicted outcome of my intervention correlated improved faculty perceptions and attitudes with a structured simulation program after formal educational simulation training and the application of the NCSBN Simulation guidelines. Research and evidence-based teaching strategies such as these provide educators with a framework to stay on task and know they are meeting expected outcomes. As an educator, empowerment comes from understanding expectations, having guidance through a structure, and achieving expected outcomes. In a study about teaching and learning strategies, researchers demonstrate that "if faculty feel empowered within the organization, it can positively affect the faculty's behavior, attitude and, therefore, their teaching" [34].

The NCSBN Simulation Guidelines for Prelicensure Nursing Programs were chosen because of the rigor displayed from a comprehensive national study concerning the use of

simulation as a substitution for up to 50% of clinical hours [4]. For example, results published in 2014 showed high-quality simulation experiences could be used in exchange for half of the required traditional clinical hours across the prelicensure nursing curriculum [4]. With multiple nursing programs nationwide implementing these guidelines and evidence to support successful simulation, these results provide this study's framework. This project will be completed over six months.

Instruments and Measurement Tools

In a pre-/posttest format, the faculty participants completed a quantitative 5-item list of questions based on a Likert scale rating about individual attitudes related to the adoption of simulation. This tool is O'Rourke's Faculty Attitudes and Adoption of Simulation (FAAS) and was used with permission from the author (Appendix C). The content validity of this tool was found to be .91 [15]. The participants answered from"1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree [15]. After the education on implementing the simulation guidelines, the participants were asked the same questions through the same format for consistency to compare for any difference in attitude, knowledge gain, and self-efficacy toward simulation. Based on the Kirkpatrick Model, a post-evaluation questionnaire on the educator's self-efficacy was given to participants to complete. See Appendix D. This quantitative questionnaire measured the outcome of the educational training.

Data Collection Management

Consent was given to all the participants after IRB approval. This information was scanned into a file stored in a secured university drive with a protected passcode for participant privacy. The quantitative tool, the Faculty Attitudes and Adoption of Simulation (FAAS) was used with permission from the author, Dr. Jenny O'Rourke, Ph.D., APN-BC, CHSE (Appendix C). In addition, the Educator Self-efficacy questionnaire collected data and feedback about the educational training (Appendix D).

Please indicate your level of agreement with each of the following statements using the

following scale: 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree

Perceptions of Simulation	**1**	**2**	**3**	**4**	**5**
I believe that using simulation in teaching could have a positive effect on student learning					
I believe that using simulation in teaching could have a positive effect on students' depth of understanding of course content					
I believe that using simulation in teaching could have a positive effect on students' use of problem-solving strategies					
I believe that using simulation in teaching could have a positive effect on students' ability to analyze data					
I believe that using simulation in teaching could have a positive effect on student participation and feedback					

Please circle the term that best describes your knowledge of simulation and your adoption of simulation:

	Novice	**Advanced Beginner**	**Competent**	**Proficient**	**Expert**
My knowledge of simulation can best be described as:	I have little to no knowledge of simulation	I have a basic knowledge of simulation	I have an average understanding of simulation principles	I have a solid understanding of simulation principles	I have a deep understanding of simulation principles
	Awareness	**Learning the Process**	**Understanding and Applying the Process**	**Facilitating the Process**	**Leading the Process**

My level of adoption of simulation can best be described as:	I rarely use simulation to teach students	I am learning how to use basic simulation experiences with my students	I use all levels of simulation (low to high-fidelity) in my instructional delivery, and evaluation of students	I am comfortable experimenting with various uses of simulation for teaching and have used simulation to teach a variety of nursing concepts and to get students to analyze and synthesize information	I am eager to share my knowledge of simulation with my colleagues and I encourage student/ faculty interactions in discovering and utilizing different ways to use simulation that are beneficial to learning

Appendix C: Faculty Attitudes and Adoption of Simulation (FAAS).

O'Rourke's Faculty Attitudes and Adoption of Simulation (FAAS). Used with permission. ©2017 O'Rourke.
After completing this training of the INACSL Standards of Best Practice in Simulation, please score your level of understanding about EBP guidelines in simulation.

Please rate your answer by recording a number from 0 to 5 using the scale below:

0	1	2	3	4
Strongly Disagree	**Disagree**	**Neither disagree or agree**	**Agree**	**Strongly Agree**

1. I understand what INACSL is and does in nursing education.
2. I understand the Standards of Best Practice in Simulation.
3. The 11 criteria of Simulation Design were clearly explained to me.
4. I was introduced to all the components of Best Practice in Simulation:

a. Outcomes and objectives

b. Simulation facilitation

c. Simulation Debriefing

d. Simulation Participant Evaluation

e. Simulation Professional Integrity

f. Simulation-Enhanced Interprofessional Education

5. Simulation Operations
6. I am more confident in my knowledge about simulation in nursing education.
7. Overall, I feel that the educational training of the INACSL Best Practice in Simulation was informative.

Appendix D: Educator Self-Efficacy Scale.

Timeline

The timeline for this project took place over six months. Starting in December of 2020, the initial recruitment of faculty participants began. The researcher/educator completed the NLN education in December 2020. In January Spring 2021, the pre-test FAAS was collected. The educational training sessions of the INACSL simulation guidelines were completed once a month from February through April of 2021. Then post-test data from the FAAS and the Educator's Self-efficacy questionnaire were collected in May 2021. The Summer of 2021 was used to finalize the results and prepare for the final project's defense. See Appendix E for a complete timeline.

September 2020	Recruit faculty
September - December	Start pre-implementation planning for educational training
November – December	Take NLN course myself to know how to formally educate participants about simulation guidelines
January	Gather pre-implementation data: pre-test FAAS tool
February	Implement educational training #1
March	Implement educational training #2
April	Implement educational training #3
May	Gather post-implementation data: post-test FAAS & Self-efficacy questionnaire
June	Analyze data
July	Analyze data
August	Write chapter 4 & 5
September-November?	Organize and complete DNP project

Appendix E: Project Timeline and Task List.

Analysis Plan

Once the pre/post-study interviews were completed, organizing the data was the first step. The responses were placed in an organized format based on 11 responses and entered into an Excel spreadsheet.

After the data were collected, the pre-study results were compared to the post-study results using an excel spreadsheet to sort information. A pre/post FAAS survey t-test paired two sample for means was performed. The data determined how effective the educational training was for the faculty and how it improved their simulation attitudes. The de-identified data collected was confidentially stored in a secure university drive under the project researcher's name. The university owns the data in case access is needed at a future date. This storage system was suggested by the online graduate school for doctoral student research data and supported by the university's IT department for security purposes, and kept for the minimum required time according to IRB guidelines. Each participant did not get to see each other's responses.

Permission to use the classrooms, the simulation lab facility, and the faculty as participants was requested and granted by the dean and the program director. An affiliation agreement was deemed unnecessary by the Dissertation and Project manager.

This project intended to reveal how education on EBP guidelines impacts faculty attitudes toward simulation, knowledge gain, and self-efficacy using simulation as a teaching/learning strategy. The need for a formal simulation educational process in this small liberal-arts-based nursing program was identified as the problem that served as the basis for this study. Investing in evidence-based education about faculty development and simulation, then implementing this formal educational training is crucial in this project's practice change. I took an NLN course in faculty development in simulation, then formally educated the existing faculty participants in this nursing program on the evidence-based practice simulation guidelines established by the NCSBN and INACSL ("INACSL Standards of Best Practice: Simulation Design," 2016) [35]. The tools used to measure this intervention's effectiveness were the Faculty Attitudes and Adoption of Simulation (Min & O'Rourke, 2017) [15] and the Educator's Self-efficacy questionnaire.

Results

Identifying the gaps in nursing education, specifically within simulation, was the goal behind this study. Improving the competency of nurse educators in the use of simulation was the motivation. It is vital to evaluate the current perspective of simulation among nurse educators to identify where improvement is needed. With the use of evidence-based practice, the purpose of this educational intervention was to provide formal education using the INACSL Standards of Best Practice in Simulation ("INACSL Standards of Best Practice: Simulation Design," 2016) [35], to nurse educators at a small, private, liberal arts university.

Purpose of the Project

The project determination was to evaluate a small liberal arts BSN program and its faculty concerning simulation pedagogy. Educational training provided evidence-based guidelines with the intent to improve the perceptions of the faculty. Proper training and

continued faculty development based on national guidelines such as the Standards of Best Practice: Simulation (INACSL) results in nursing simulation's effectiveness and quality outcomes [12].

Discussion of Demographics

The population targeted for this study was the faculty of a BSN program at a small liberal arts university. There were nine full-time faculty members and three adjunct faculty assigned to simulation at the university. The Simulation Lab Coordinator (SLC) was included in the sample since this person works alongside the faculty in the lab. The total population for the study was 13 participants, including faculty, faculty adjunct educators, and one simulation lab coordinator who teaches simulation at least two times per week each semester. Among the participant population, there was a variety of simulation experiences.

Data Analysis

This quantitative study was performed virtually due to COVID-19 restrictions and was successfully completed without any earlier addressed risks. The faculty participants were recruited via email from one nursing school. There were 13 participants that agreed and gave consent to participate in the study. Each participant was de-identified for the pre/post comparison data and was informed of their right to withdraw at any time. The participants were all sent a google form consent that anonymously assigned them a participation number. Once the consent was secured, the Faculty Attitudes and Adoption of Simulation Tool pre-survey (FAAS) (Min & O'Rourke, 2017) [15] was sent to each de-identified participant to complete. Of the 13 de-identified participants, 11 responded to the pre-survey FAAS tool.

Pearson Correlation shows this study is statistically significant and that there is a strong correlation between education and increased attitudes and adoption of simulation because the r of .559-.659 exceeds the a-level of 0.05. The population standard deviation is unknown, and the sample size is small (n <30).

The sample size of 11 completed a pre/post-FAAS survey for the data results. The participants also completed an Educator self-efficacy questionnaire, based on the Kirkpatrick model, about the educational training to test the effectiveness of the intervention [18]. The first tool used was a quantitative 5-item list of questions based on a Likert scale rating about individual attitudes related to the adoption of simulation. This tool is O'Rourke's Faculty Attitudes and Adoption of Simulation (FAAS), used with permission from the author (Appendix B). The participants answered from"1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree [15]. The first question of the FAAS tool asked the participants if they believe that using simulation in teaching could positively affect student learning. Of the participants, 90.9% strongly agreed with this statement, and 9.1% strongly disagreed. The next question asked if the participant believed that using simulation in teaching could positively affect students' understanding of course content. Again, 90.9% (n=10) of the participants strongly agreed with this statement, and 9.1% strongly disagreed. The third question asked the participant if they believed that using simulation in teaching could positively affect students' problem-solving strategies. 81.8% strongly agreed, 9.1% (n=1) agreed, and 9.1% strongly disagreed. The fourth question asked the participant if they believed that using simulation in teaching could positively affect students' ability to analyze data.

The results revealed 63.6% of the participants strongly agreed, 27.3% agreed, and 9.1% strongly disagreed. The last question that surveyed the participants' perception of simulation and student involvement asked the participants if using simulation in teaching could positively affect student participation and feedback. Among the 11 responses, 72.7% strongly agreed with this statement, 9.1% were neutral, 9.1% agreed, and 9.1% strongly disagreed.

The next set of questions using the FAAS tool measured the participant's current knowledge of simulation and their adoption of the pedagogy before the educational sessions. The current knowledge results showed 36.4% of the participants felt competent with an average understanding of simulation pedagogy, 27.3% felt they were proficient in a solid understanding of simulation pedagogy, 27.3% felt they were advanced beginners having basic knowledge of simulation pedagogy, and 9.1% describing themselves as an expert with a deep understanding of simulation pedagogy. The adoption results revealed that 63.6% of the participants understand simulation and its application using all levels of simulation pedagogy. This outcome means the faculty comprehends what simulation is used for and how to put it into practice using various types of simulation equipment. Of the participants, 36.4% stated they had an awareness and rarely used simulation to teach students.

In February 2021, I completed an online course from the National League for Nursing (NLN), and the Simulation Innovation Research Center (SIRC) titled Developing Faculty in Simulation (National League for Nursing [NLN], n.d.) [32]. I earned two contact hours for continuing education and established the educational administrator role, which facilitated the development of the teaching program. After the completion of the FAAS pre-survey, three educational sessions were scheduled virtually with the participants. Each session was approximately an hour and a half to two hours long and was recorded and sent to all participants. The few participants that had a conflict were able to view the presentation at their convenience.

The sessions consisted of a PowerPoint presentation of the material learned from the NLN's online course. The most important information was the NCSBN study and EBP guidelines in simulation. After the guidelines were introduced, each section

was broken down and discussed among the participants. Some participants voiced recognition of gaps in knowledge and even new information learned. The first session occurred in February 2021. A Zoom invite was sent via email to every participant initially selected due to the actual participants being de-identified. Eleven of the 13 participants responded to the invite for educational session #1. Eleven participants attended the session virtually, and it was recorded for those who could not attend. Two more educational sessions occurred in March and April of 2021. Ten of 13 participants attended the recorded session on March 25, 2021, and 5 of 13 participants attended the recorded session on April 27, 2021. All three recorded sessions were sent vial email to all 16 original participants due to the anonymity of the study. This concluded the educational intervention of the study.

The post-survey FAAS survey was sent to the initial participants who consented to the study due to the de-identification process. The same participants were also sent an Educator Self-efficacy scale. Of the 13 de-identified participants, 11 responded to the pre-survey FAAS tool.

The first question of the FAAS tool asked the participants if they believe that using simulation in teaching could positively affect student learning. After the educational intervention, 72.7% of the participants strongly agreed with this statement, 9.1% agreed, and 18.2% strongly disagreed. The next question asked if the participant believed that using simulation in teaching could positively affect students' understanding of course content.72.7% of the participants strongly agreed with this statement, 9.1% agreed, and 18.2% strongly disagreed. The third question asked the participant if they believed that using simulation in teaching could positively affect students' problem-solving strategies. 63.6% strongly agreed, 18.2% agreed, and 18.2% strongly disagreed. The fourth question asked the participant if they believed that using simulation in teaching could positively affect students' ability to analyze data. The results revealed 63.6% of the participants strongly agreed, 18.2% agreed, and 18.2% strongly disagreed. The last question that surveyed the participant's perception of simulation and student involvement asked the participants if using simulation in teaching could positively affect student participation and feedback. Among the 11 responses, 63.6% strongly agreed with this statement, 18.2% agreed, and 18.2% strongly disagreed. The next set of questions measured the participant's knowledge of simulation and their adoption of this pedagogy after the educational sessions. The knowledge results showed that 45.5% of the participants felt competent with an average understanding of simulation pedagogy, 27.3% felt they were proficient with a solid understanding of simulation pedagogy, and 27.3% felt they were advanced beginners with basic knowledge of simulation pedagogy. The adoption results revealed that 45.5% of the participants understand simulation and applying the process using all levels of simulation pedagogy. 45.5% stated that they facilitate the process and are comfortable with experimenting with the simulation pedagogy. 9.1% reported they are learning the process of how to use basic simulation.

The Educator Self-efficacy scale is a quantitative questionnaire that measures the outcome of the educational training. Nine of the 13 participants completed this 12-item questionnaire. The first question revealed that 55.6% strongly agree that they understand what INACSL is and does in nursing education. 33.3% agree with this statement, while 11.1% neither agree nor disagree. When asked the second question about their understanding of Best Practice Standards in Simulation, 55.6% strongly agreed, and 33.3% agreed. Next, the participants were asked how clearly the 11 criteria of Simulation Design were explained. 55.6% strongly agreed, and 44.4% agreed. The following questions asked the participants specifically if they were introduced to all the components of Best Practice in Simulation, including outcomes and objectives, simulation facilitation, simulation debriefing, simulation participant evaluation, simulation professional integrity, simulation-enhanced interprofessional education, and simulation operations. The results were evenly reported at 55.6% strongly agreed, and 44.4% agreed that these components were introduced. The last two questions of this questionnaire evaluated the participant's confidence and overall feelings about simulation in nursing education. 33.3% reported that they strongly agreed with feeling more confident in their knowledge about simulation in nursing education. Interestingly, 66.7% only agreed with their confidence level. Overall, 55.6% strongly agreed that the educational training of the INACSL Best Practice in Simulation was informative. 44.4% agreed with this statement. Figure 9.

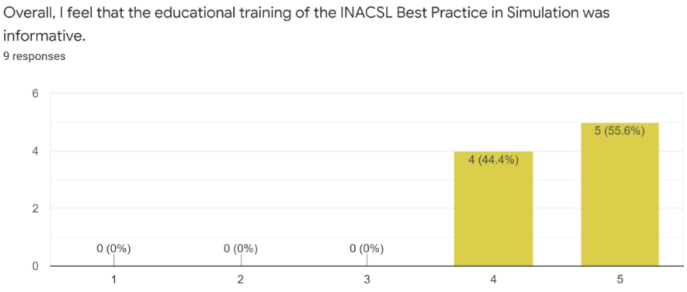

Figure 9: Educator Self-efficacy Questionnaire.

Question Guiding the Inquiry

Does the provision of best practice simulation education improve the attitudes, knowledge, and self-efficacy of faculty? According to the study results, 45.5% (n=5) of the faculty attitudes toward the adoption of simulation changed from 36.4% (n=4) due to the educational information about EBP simulation guidelines that were presented. These faculty attitudes reported they were

comfortable with simulation and even experimenting with various simulation uses for teaching. The faculty knowledge increased from 36.4 % (n=4) to 45.5% (n=5) after the EBP simulation guidelines were presented. The participants felt competent and had an average understanding of simulation principles. When the EBP guidelines were explained, some faculty perceptions were validated and corrected by the research behind the guidelines. There could be speculation that once the EBP guidelines were explained, attitudes toward simulation were challenged as to how this program is currently operating and could improve. This perhaps could be why some of the attitudes changed.

The findings of this study were fascinating and revealed that educational training based on evidence-based practice could improve faculty attitudes and the adoption of simulation. The results also showed that continuing education is needed for faculty to consistently integrate the proper simulation deployment in nursing education. The Educator Self-efficacy questionnaire showed that the training was effective, thus validating the results of the surveys.

Discussion of Findings

The importance of assessing nurse educator's attitudes and readiness to adopt into their curriculum was proven through this study. The results from this particular BSN program showed that informal training as a foundation for this faculty was correlational to the study's results. The data revealed variable perceptions before and after the evidence-based guidelines were presented to the faculty participants. The findings revealed that being educated in the EBP of simulation can improve faculty knowledge and readiness to adopt this pedagogy into their curriculum.

Literature supports the acclimation of faculty to simulation based on best practices to ensure quality simulation pedagogy. Researchers advocate for consistent simulation use by nurse educators within a structure such as the guidelines established by the NCSBN [8]. Nurse leaders need to identify barriers such as time, resources, lack of professional development, and training. The literature also contributes to high levels of anxiety from students, leading to adverse learning outcomes [2]. Proper faculty training and continued faculty development based on national guidelines such as the Standards of Best Practice: Simulation (INACSL) results in the effectiveness and quality outcomes of nursing simulation [12]. This study shows nurse leaders that faculty may be missing the best-practice structure and necessary tools to reach a higher level of optimal outcomes. Nurse leaders must advocate for evidence-based training for faculty working in simulation to improve nursing education for the future.

Interpretation and Inference of the Findings

The findings can be interpreted in various ways. Looking at the Educator Self-efficacy tool adapted from Bandura 's theory of self-efficacy [18], this questionnaire shows that the administrative educator was effective in delivering the material. The specific results showed that for all five questions asked, five of the nine participants strongly agreed that the content was provided effectively and clearly explained. The other four agreed with these statements. Six participants agreed that they were more confident in their knowledge about simulation after the EBP guidelines were presented. The other three strongly agreed. Overall, five strongly agreed, and four agreed that the educational training of the INACSL Best Practice in Simulation was informative. Therefore, we can deduce that the educational training sessions were solid and effective in providing knowledge and sufficient information, thus validating the FAAS tool results.

We can gather from the FAAS surveys that the faculty had some misperceptions about simulation before the training. Whatever their foundational education about simulation had been, the survey results showed an improved or contemplative change in their attitude. Perhaps some faculty thought they knew what the best practices were and learned differently. When explicitly asked about their knowledge in simulation after the educational training sessions, one additional participant replied they felt competent, and one participant changed their response from being an expert. When explicitly asked about their adoption of simulation after the educational sessions, one participant responded that they were in the "Learning Process." The rest of the participants were split evenly between "Understanding and applying the process" and "Facilitating the process."

These results reveal that the faculty participants learned new information that influenced their knowledge and readiness to adopt simulation. Does the provision of best practice simulation education improve the attitudes, knowledge, and self-efficacy of faculty? I say yes. Regarding knowledge and self-efficacy, the results proved that whether they had an improvement or contemplative position, they enhanced their overall simulation assessment. Thus, educating professionals within any nursing field allows for change and benefits the practice (Institute of Medicine [IOM] et al., 2011) [35].

The limitations of the study involved COVID-19 restrictions, and the educational sessions delivered virtually. This barrier could have caused some disconnect between the participants and their surrounding environment. Also, the participant availability varied, as evidenced by a reduced attendance in the second and third sessions. Lastly, the small sample size could hinder the actual results of the subject matter.

The new knowledge derived from this study is very applicable in the field of nursing. Educating the experts in a particular subject is vital to contribute to the growing body of knowledge so the profession can thrive. Nurse educators may be considered experts in their field; however, they need continuing education to

keep such competency, especially in a world where technology changes daily and enhances the way nursing is taught. According to the ACE Star Model of Knowledge Transformation, this model allows the faculty to assess and apply research about simulation by implementing the evidence-based practice guidelines, which will lead to policy changes within this nursing program. As a model for implementation, research about the NCSBN simulation guidelines can be applied through inquiry and training while impacting outcomes through evidence-based practice [22]. As a result, faculty educators are more motivated by evidence-based research and a structure that guides them to best practice. As evidenced by the results of this study, the faculty had some changes in their attitudes and adoption of simulation after being adequately educated about the EBP guidelines of this pedagogy.

Implications of Analysis for Leaders

One of the mission statements and goals for the nursing program involved in this study states, "Ensure that the nursing program meets or exceeds the standards set by the Texas Board of Nursing, the American Association of Colleges of Nursing (AACN) [36], and Commission on Collegiate Nursing Education (CCNE)" (Abilene Christian University School of Nursing [ACU SON], 2021) [37]. As this is the institution's mission, the nursing leadership or administration of the program should understand the importance of this study. Implementing EBP guidelines into the policy of the simulation program is contributory to meeting the standards set by the Texas Board of Nursing and the other governing boards mentioned. Having a faculty immersed in continuing education about their field of practice, whether in simulation or teaching in the classroom, is of priority to the nursing leadership. Proper faculty training and continued faculty development based on national guidelines such as the Standards of Best Practice: Simulation (INACSL) results in the effectiveness and quality outcomes of nursing simulation [12].

The research study of educating the faculty in a BSN program on faculty attitudes and confidence in using simulation speaks volumes about how necessary enhanced simulation training is to nursing education. As EBP evolves, so must nurse educators' abilities to teach the best practices to our students. If continuing education and training in simulation can be incorporated into our nursing programs, this can ensure that EBP is being utilized and passed on to the students who are the future nurses who go into the field, community, and the world. In addition, this enhanced effort of EBP in simulation can translate to optimal student and patient outcomes.

It is recommended that nurse leaders invest in advancing their simulation programs as technology enhances this type of active learning. The purpose of transforming simulation labs using best practice is to bridge the gap between learning the content and implementing the application in the clinical setting. In addition, with the Next Generation National Council Licensure Examination (NCLEX NGN) design emerging and simulation acknowledged as an established teaching modality, educators must learn how to combine them to improve students' clinical reasoning and judgment [11].

According to the DNP Essential II, the DNP nurse's role encompasses organizational and systems leadership to quality improvement and advancing nursing practice. Educating and properly training confident faculty to utilize teaching strategies structured by practice guidelines can also enhance program outcomes. The outcomes from this study indicate that continuing education is needed for nurse faculty to deploy and utilize best practices in simulation adequately. As a nurse leader, I would implement this system change as a quality improvement initiative for this BSN program.

Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking

The foundation for any system or organizational change should be based on research and science. As previously mentioned, nurses and educators respond positively to the validity of research and evidence-based practice. This benchmark that sets a standard for how nurses operate correlates to Essential II and systems thinking. Making a change in a nursing program should follow sound evidence to ensure a trustworthy quality improvement process. According to Essential II and the AACN, nurse leaders such as a DNP possess the expertise in assessing organizations, identifying systems' issues, and facilitating organization-wide changes in practice delivery (American Association of Colleges of Nursing [AACN], 2006) [36]. As demonstrated by this study, an organization's assessment took place after identifying a system issue. This study will assist me in my goal to implement a policy change within this nursing program and their simulation program by establishing EBP guidelines into the curriculum and requiring continuing education for all simulation faculty.

Essential III: Clinical Scholarship and Analytical Methods for Evidence-based Practice

Clinical scholarship lends itself to the discovery of new knowledge through the application of research. Research leads to quality evidence-based practice that transforms nursing through real-world application. Evidence-based practice proves to be a pivotal change in how nursing continually evolves. According to Essential III and the AACN, nurse executives are identified as leaders that "require competence in knowledge application activities such as the translation of research in practice, the evaluation of practice, improvement of the reliability of health care practice and outcomes, and participation in collaborative research" (American Association of Colleges of Nursing [AACN], 2006) [36]. This study has allowed for scholarly research and

analytical methods for evidence-based practice to be a catalyst for an organizational quality improvement practice change.

Recommendations for Future Research

Education is a revolving door in Nursing. With newer and more advanced technologies in medicine, there is a demand for further knowledge inquiry. Nurse educators are at the forefront of learning these recent changes in medicine, which translates to our students and future nurses. As revealed in this study of nurse educators and the use of simulation, formal educational training affects attitudes and the adoption of simulation pedagogy. The results prove that continuing education works and is necessary for developing new knowledge based on EBP. Nurse educators must always be inquisitive and actively learn about the tools available to train new nurses [39]. With the limitation of clinical spots decreasing the student's chance of getting hands-on experiences in healthcare facilities and kinesthetic opportunities, nurse educators must be well-informed in the EBP of simulation to provide students with quality and innovative clinical experiences [40]. A recommendation for future research would be how effective continuing education among nursing faculty is on student performance and nursing theory application as they enter practice [41]. Also, does EBP simulation make a difference in NCLEX scores?

Literature supports the acclimation of faculty to simulation based on best practices to ensure the quality of this pedagogy. Researchers advocate for consistent simulation use by nurse educators within a structure such as the guidelines established by the NCSBN [8]. Nurse leaders need to identify barriers such as time, resources, lack of professional development, and training. The literature also contributes to high levels of anxiety from students, leading to adverse learning outcomes [2]. Proper faculty training and continued faculty development based on national guidelines such as the Standards of Best Practice: Simulation (INACSL) results in the effectiveness and quality outcomes of nursing simulation [12]. This study shows nurse leaders that some faculty are missing the best practice structure and necessary tools to reach optimal outcomes [42]. Nurse leaders must advocate for this pedagogy and improve nursing education for the future.

The purpose of this educational intervention was to provide formal education to current nursing educators using the INACSL Standards of Best Practice in Simulation [18]. This is the first step in the formal process of becoming a Certified Simulation Facility, which is a longer-term goal of the faculty and administration of the university in this study. Initially, an assessment was needed to gauge what the faculty of this nursing program perceived about simulation. Once the SWOT analysis was completed, the educational intervention could introduce the EBP guidelines recommended by the INACSL and NCSBN. After the educational intervention was deployed adequately, the results reflected a genuine understanding and attitude toward simulation among the faculty. The study's outcome also correlated to their readiness to adopt simulation as an active learning modality. The ultimate goal was to improve the school's simulation program by educating those who teach in simulation frequently and providing a research-based structure to guide their teaching utilizing EBP. This step leads to the long-term goal of meeting the requirements to reach a certification level of simulation education. As revealed in this study of nurse educators and the use of simulation, the hypothesis is confirmed that formal educational training positively affects attitudes and the adoption of this pedagogy. This project proves that continuing education works and is necessary to develop new knowledge based on EBP. As previously mentioned, the survey results showed an improved or contemplative change in their attitude. The faculty participants learned further information that influenced their knowledge and readiness to adopt simulation. Regarding knowledge and self-efficacy, the results proved that whether they had an improvement or contemplative position, they enhanced their overall simulation assessment.

After implementing the EBP guidelines and faculty development in the best practices of simulation, would there be more use and satisfaction in simulation pedagogy? Following nursing student's standardized exam scores after faculty use simulation based on the EBP guidelines may offer insight into the effectiveness of simulation and its impact on nursing board pass rates. Ongoing continuing education should be implemented for all faculty requiring the use of EBP guidelines to teach simulation. Lifelong learning is essential when teaching future nurses.

Appendix F: Figures

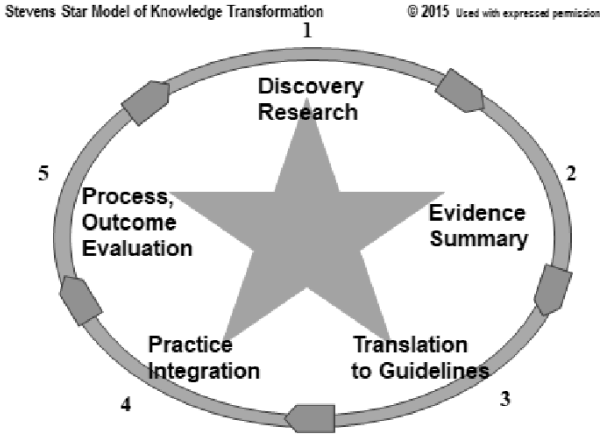

Figure 1: ACE Star Model of Knowledge Transformation.

Stevens' star model of knowledge transformation. Used with permission. ©2015 Stevens.

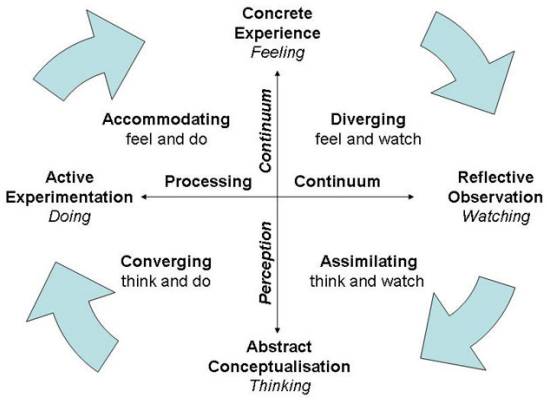

Figure 2: The Experiential Learning Cycle.

Figure 2. Kolb's experiential learning theory (ELT). (McLeod, 2017).

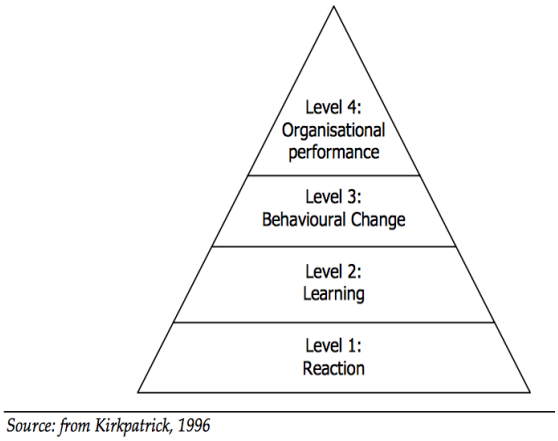

Figure 3: The Kirkpatrick Model.

Used with permission. ©2016 Dr. Donald Kirkpatrick

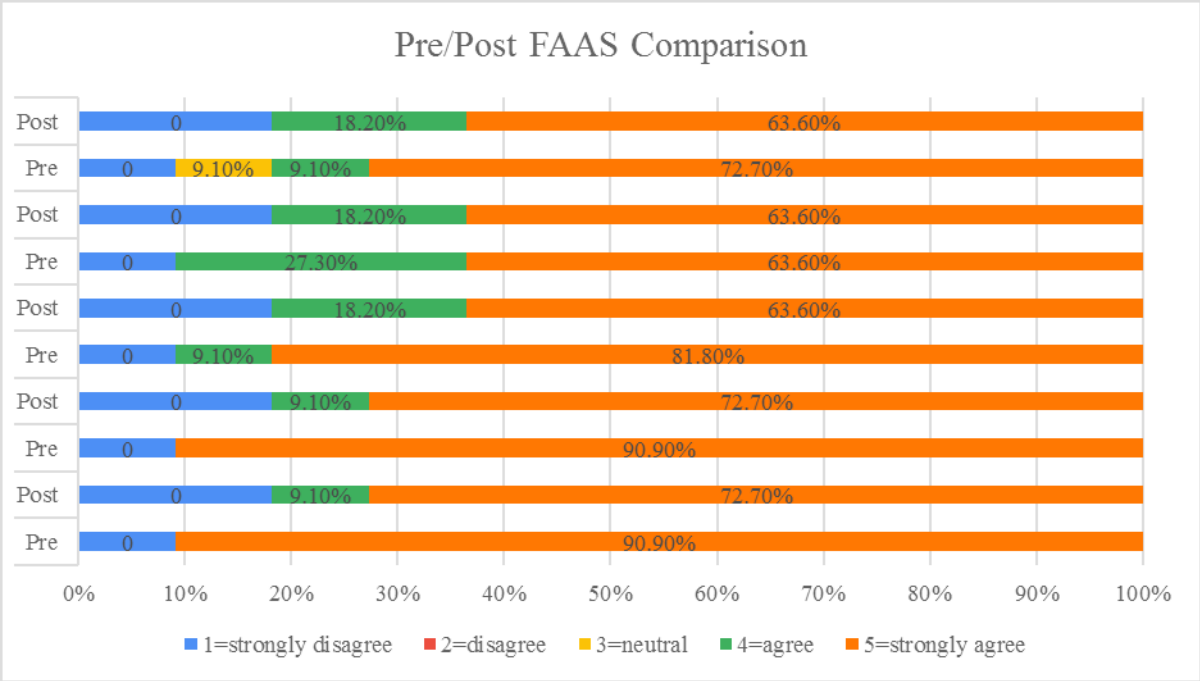

Figure 4: Pre-/Post FAAS Distribution Chart

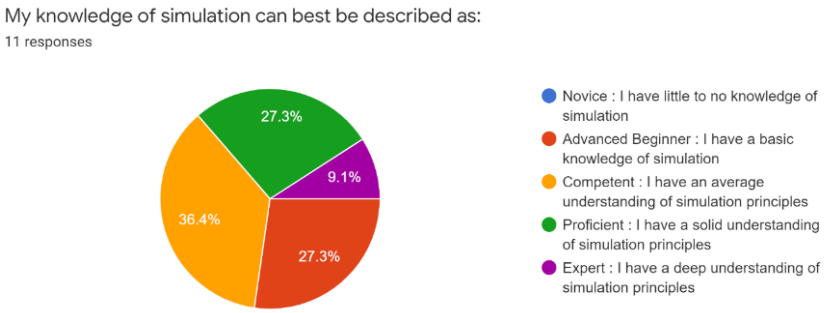

Figure 5: FAAS Pre-survey Level of Knowledge.

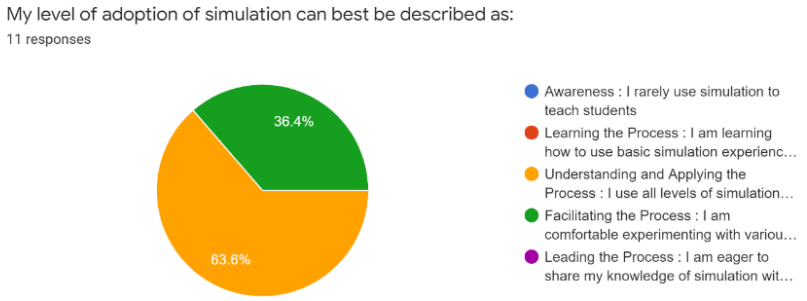

Figure 6: FAAS Pre-survey Level of Adoption.

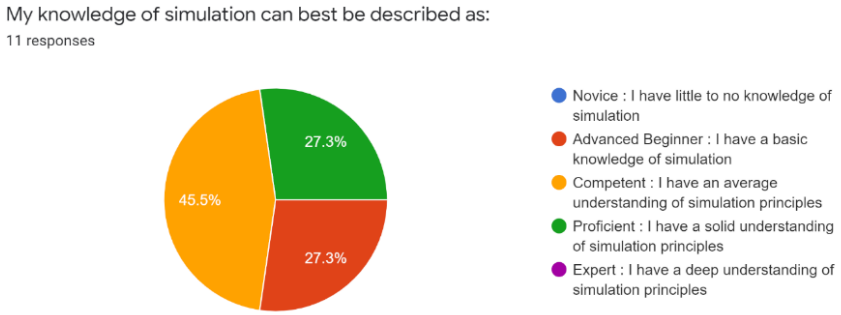

Figure 7: FAAS Post-survey Level of Knowledge.

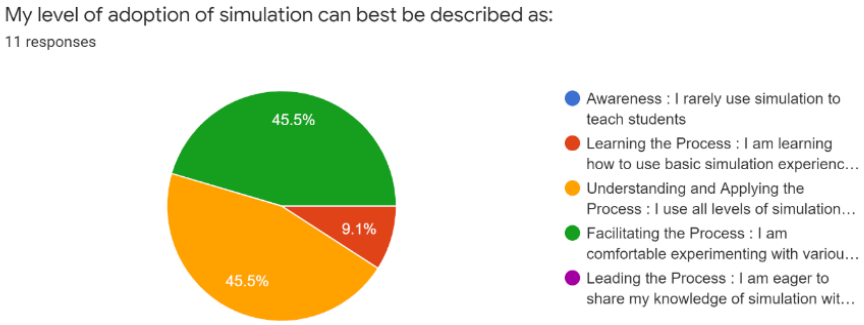

Figure 8: FAAS Post-survey Level of Adoption.

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