VIRTUAL LEARNING TO ENHANCE NON-TECHNICAL NURSING SKILLS: A BASIC QUALITATIVE STUDY

by

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Abstract

Nurse educators are currently facing restraints of limited space, time, availability, conflicting schedules, and increased demands on in-person learning experiences. Due to these restraints, the COVID-19 pandemic, and the rapid technological increase, nursing educators have been tasked with incorporating virtual learning opportunities into traditionally in-person programs. There is a gap in the literature on the faculty experiences of teaching non-technical skills in a virtual environment. This basic qualitative study aimed to explore the experiences of nursing faculty in the state who have incorporated education activities into their virtual learning classroom to improve nursing students' non-technical skills. The sample consisted of nine nurse educators with experience teaching non-technical skills in a virtual and in-person learning environment in the state. Data were collected through semi-structured, individual virtual interviews, a virtual focus group, and field notes. Three themes emerged from the thematic data analysis: (a) barriers to faculty effectiveness, (b) clear expectations, and (c) identifying the gaps in the classroom. The findings suggest that nurse educators revert to a novice stage when transitioning to online educators; however, learning from their experiences and continued implementation and adaption of their teaching strategies proves beneficial. The knowledge gained from these findings encourages increased support for administration for continued education focusing on virtual instruction and better technology support systems for faculty and students and provides faculty with anticipated challenges that they may be able to plan for before implementation. Further research exploring faculty experiences outside of the state and comparing the experiences of faculty with the success of the virtual implementation is recommended to understand what additional challenges or successes future nurse educators may face.

Dedication

I dedicate this dissertation to my family and friends, who have constantly supported this crazy journey. To my husband, Pat, who has been through this journey from the start and has given up countless nights and weekends to support me. To my little girls, Camryn and Addison, for being the driving force to complete this degree. You can achieve anything your hearts desire! To my grandmother, Emma, this dissertation would not have been possible without your support over the past four years. I could not have made it this far without you. To my parents, Dan and Cindy, who have supported me every step of the way. To my in-laws, Dr. Jim Murtagh and Marypat, you have always supported my dream and given me the best advice. Can the family handle two Dr. Murtaghs? To Jasper and Jim, I know you are celebrating this accomplishment with me in spirit. To Patty, you have believed in me more than I believed in myself. I may have lost you three during this journey, but I know you are always near!

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CHAPTER 1. INTRODUCTION

Traditionally, nursing education has been completed in lecture halls and in-person clinical experiences. Limited in-person clinical sites, an increase in the number of students entering nursing programs, and the sudden rise of the Coronavirus Disease 2019 (COVID-19) pandemic resulted in a major shift to virtual learning (Dames, 2019). Many nursing programs escalated their timelines for moving to virtual learning to meet the increased demand for nurses within the United States healthcare system (Abuatiq, 2019). Non-technical skills historically taught in a traditional learning environment needed to be adapted to ensure that students were developing these skills to prevent unintended adverse events in the hospital (Loh et al., 2019). Non-technical skills are defined as the essential skills that improve performance related to communication, decision-making ability, situational awareness, leadership, clinical reasoning, and teamwork (Pires et al., 2018). Non-technical skills can be separated into two broad groups, cognitive skills, and social or interpersonal skills (Radhakrishnan et al., 2022). Developing the critical thinking and teamwork skills of nursing students entering the workforce has been a focus of nursing programs due to patients' increasing complexities and comorbidities in the complex healthcare system (Johnson & Aggarwal, 2019). The expansion of the role of nurses within healthcare, the demand for more nurses in the field, and the decrease in available in-person locations for courses and clinical have resulted in a significant shift to online learning.

The focus of the study was on the experiences of faculty developing and implementing their educational activities focusing on non-technical skills in a virtual environment. Nurse

educators must effectively teach virtually related non-technical skills to meet the needs of the healthcare system for their students upon successful graduation. Chapter 1 includes a description of the background and needs for the study. This chapter also consists of the key definition of terms related to the research questions. This chapter will also discuss the purpose and significance of the study.

Background of the Study

The research was conducted as a basic qualitative study focusing on nursing faculty experiences implementing non-technical skill development educational activities in a virtual learning environment. Current restraints on clinical and traditional placements have impacted how nursing education is provided. The restraints of limited space, time, availability, conflicting schedules, and increased demands have impacted how educational activities are provided to students within the nursing discipline (Fowler et al., 2018). Nursing education has also been forced to change due to the rapid increase in technology within the healthcare environment and the lack of in-person placements (Abuatiq, 2019). The lack of clinical placements has resulted in multiple challenges for faculty (Taylor et al., 2017). According to Abuatiq (2019), nursing faculty have had to utilize virtual learning environments to meet learners' demands. The shift to virtual learning has benefited the learners, faculty, and nursing departments. The transition and growth from traditional to virtual has allowed programs to increase enrollment and admit students from a larger geographical radius. The learners have more flexible schedules when decreasing the amount of travel time to and from campus and clinical placements.

While the National Council of State Boards of Nursing (2008) requires nurse educators to be innovative in their educational methods, many educators were required to switch from traditional to virtual classrooms without receiving proper education and tools. The literature has

shown that the often-abrupt change from traditional, in-person nursing education to a virtual, highly digital transition has disrupted teaching and learning (Leigh et al., 2020). Nursing faculty transitioning to teaching non-technical skills in a virtual environment are faced with choosing which activities to implement, creating support processes for these activities, and developing a way to deliver them remotely (Leigh et al., 2020). There has been increased pressure on nursing faculty to improve students' non-technical skills since effective non-technical skill training can decrease the likelihood of a nurse making an error in the medical field (Clarke et al., 2021).

The research is sparse in the literature that addresses the phenomenon of the experiences that faculty had when making the transition to a virtual environment when teaching non-technical skills. Earlier researchers questioned how the effects and acceptance of technology into nursing education shaped how faculty delivered material, their overall satisfaction with teaching, and how the struggles may have impacted their intention to stay within education (Tacy et al., 2016). An interest in further investigating how faculty perceived their experiences teaching non-technical skills in a virtual environment using unfamiliar technologies arouse. Kotcherlakota et al. (2017) found barriers to nursing faculty technology use to be a lack of knowledge, insufficient resources, and the use of outdated learning platforms. Kotcherlakota et al. (2017) listed reluctance towards change as a barrier to nurse educators shifting from in-person to virtual. However, over the past few years, faculty have yet to have the option to opt out of virtual learning since many programs conducted virtual learning during the pandemic. The focus of the study was around the northeast region of the United States, where the early months of the pandemic placed a complete halt on all in-person learning.

The theoretical frameworks used were Kolb's (1984) experiential learning theory (ELT) and Benner's (1982) novice-to-expert theory. Kolb's (1984) ELT supports the cyclic nature of

learning through concrete experiences, reflection, conceptualization, and experimentation. Novice-to-expert developmental stages show the progression or regression of faculty learning when adapting a new teaching methodology. Nursing faculty who previously taught non-technical skills in a traditional environment may regress in the novice-to-expert theory based on experiences and adjustment to teaching virtually.

Need for the Study

Nursing education is currently facing restraints on in-person learning that impacts how educators meet the needs of the students and the program outcomes. Limited space, availability conflicts, and increased demands have impacted how educational activities are provided to nursing students (Fowler et al., 2018). The COVID-19 pandemic has further limited the in-person resources for many healthcare disciplines. Faculty experiences are generally overlooked as the learning environment for nursing education shifts from in-person classes and clinical to a virtual setting. Understanding the student perspective on virtual learning has been studied in detail, including Fogg et al. (2020), who concluded that many students found valuable opportunities to enhance learning in a virtual environment but not specific to technical versus non-technical skills.

Nursing education has adapted to virtual learning in full force, but there needs to be more understanding of what it is like for faculty to teach online from the perspective of faculty. Gazza (2017) focused on the single lived experience of faculty who teach at least fifty percent of their load online. Gazza (2017) concluded that faculty pedagogical approaches to teaching needed to be adjusted for a back-and-forth interaction when teaching virtually. Gazza (2017) recommended that more research be completed focusing on what it is like to teach online.

Transitioning from traditional learning to a virtual environment can be challenging for many faculty. Research has shown that faculty feel more prepared when transitioning to teaching virtually if they have support systems and initiatives to help (Roney et al., 2017). There is abundant literature focusing on teaching technical skills within a virtual environment with limited focus on non-technical skills, despite the research showing that non-technical skill development is essential to safe healthcare (Johnson & Aggarwal, 2019). For example, Esposito and Sullivan (2020) concluded that virtual simulations within nursing education created an engaging environment for students to learn crucial nursing skills. A better understanding of nursing faculty experiences teaching non-technical skills in a virtual nursing classroom can add to the current literature and close research gaps within nursing education.

The basic qualitative study is intended to contribute to a better understanding of the nursing faculty's experiences and perspectives on teaching non-technical skills in a virtual environment to pre-licensure nursing students. Failure to develop non-technical skills has been linked to poor outcomes for patients within the healthcare system (Johnson & Aggarwal, 2019). Understanding faculty perspectives while implementing non-technical skill development activities within a virtual learning environment can offer new insight to future educators developing strategies to optimize their use of these activities (Peddle et al., 2020). Understanding not only the barriers to change but also the facilitators of change teaching non-technical skills can help improve how nursing faculty develop educational tools (Abahuje et al., 2021). The researcher aimed to explore and describe the perspectives of nursing faculty within the Northeastern region of the United States who had taught or were teaching non-technical skills in a virtual learning environment at the associate and bachelor's degree levels of nursing programs.

Significance of the Study

The significance of the results of this study were focused on providing insight into the phenomena of nursing faculty transitioning to virtual learning to teach non-technical skills. The results from this study contribute to closing the gap in nursing literature related to faculty perspectives on teaching non-technical skills virtually, which benefits current and future nurse educators. Providing future nurse educators with the advantages and struggles of previous educators' experiences can help them shape how they teach non-technical skills and their teaching pedagogies. The findings from the study have a consequential effect on improving the experiences of future nurse educators (Peddle et al., 2020). The themes and subthemes constructed support the future development of professional programs to help support nursing faculty before they implement educational activities within a virtual classroom to promote non-technical skill development.

The results of the study contributed to the knowledge base of the experiences that faculty had when attempting to overcome challenges while implementating these educational activities. The results and experiences of faculty may be able to be replicated in other virtual learning approaches (Cabral & Baptista, 2019). Nursing faculty who understands better what to expect when teaching non-technical skills virtually will be better prepared to transition during their career.

Research Questions

The research questions for this study were based on the lack of understanding of nursing faculty members' experiences teaching non-clinical skills in a virtual environment. The following two research questions were used to understand better the phenomenon of adapting non-technical skill development to a virtual setting from the faculty perspective:

RQ 1. What experiences have nursing faculty had when implementing educational activities to assist nursing students in developing non-technical skills in a virtual learning environment?

RQ 2. What have faculty learned from their experiences implementing education activities to assist nursing students in developing non-technical skills in a virtual learning environment that would impact their future teaching strategies?

Definition of Terms

Varying definitions of concepts exist within healthcare, the literature, and other disciplines. A clear understanding of the specific terms used in the study was essential to understanding the research. The following are definitions of terms related to the research questions and research study.

Educational Activities. For purpose of the study, *educational activities* were defined as instructional tools used by faculty to promote learning for students and impart knowledge or skills (Princeton University, 2010).

Non-technical Skills. *Non-technical skills* within healthcare are defined as the essential skills that improve performance related to communication, decision-making ability, situational awareness, leadership, clinical reasoning, and teamwork (Pires et al., 2018). Originating in aviation, non-technical skills have a vague, universal definition within nursing literature.

Nursing Faculty. For the purpose of the study, *nursing faculty* refers to individuals licensed to practice nursing within the Northeastern region of the United States and provides instruction to pre-licensed nursing students enrolled in a nursing degree program (National Council of State Boards of Nursing, 2008). While the faculty's roles may differ slightly, all

faculty involved had developed, collaborated with, or implemented educational activities in a virtual environment.

Virtual Learning Environment. The *virtual learning environment* is an electronically mediated space where faculty use technology to educate nursing students remotely (Nagel et al., 2017).

Research Design

This study was conducted using a basic qualitative research design to explore the perspectives of nursing faculty when implementing non-technical skill educational activities in a virtual classroom. A study design that aligns with the research question must be selected (Merriam & Tisdell, 2016). A basic qualitative study's tenants and assumptions vary slightly from other qualitative methods. All qualitative studies share some common attributes and have some variations that set them apart. Qualitative studies are used to seek a better understanding of a phenomenon or experience and extend knowledge about that phenomenon. Basic qualitative studies are focused on contributing to an understanding of how people interpret their experiences, what meaning they attribute to those lived experiences, and how they construct an understanding of their world. Basic qualitative studies are a type of qualitative research that does not declare a single established methodology, like phenomenological or ethnographic (Kahlke, 2014; Merriam & Tisdell, 2016). The key concern was to understand from the experiences of faculty who implemented online activities to develop non-technical skills. The focus was not on how the activities impacted the students or how the activities were implemented but rather on their experiences with the process. The research question did not fit neatly into the confines of other qualitative studies (Kahlke, 2014). A basic qualitative design was chosen as it allowed the

purpose of the study to be addressed, focusing on understanding how faculty have interpreted their experiences teaching non-technical skills in a virtual learning environment.

The research study aimed to uncover themes based on faculty experiences when virtually implementing non-technical skill development activities. The basic design is the most common qualitative research study used in applied fields like education (Dames, 2019; Merriam & Tisdell, 2016). The design encouraged reflection from faculty on their experiences to help identify common themes within the data to deepen their understanding of the experience (Dames, 2019). Basic qualitative design allowed the use of various methods to collect participants' data. Using a basic qualitative design allowed the inclusion of semi-structured interviews and focus groups to help the researcher understand how faculty make meaning of their experiences implementing non-technical skills in a virtual environment (Merriam & Tisdell, 2016). Field notes were used and participants were asked for samples of their educational activities. The addition of these types of data collection used for the research led away from other qualitative methods. For example, a phenomenological study would be used to contribute to an understanding of the lived experience of participants but would not focus on the use of supplemental data.

Basic qualitative research studies are used when there is an interest in how people interpret their experiences, establish their worlds, and make sense of their experiences (Merriam & Tisdell, 2016). Other qualitative studies add to this overall purpose by adding an additional dimension, such as an understanding of how the participant interacts with their culture or society, for example, in an ethnography study (Merriam & Tisdell, 2016). Basic qualitative studies are flexible in their regulation and methodology, making them a good choice for researchers seeking to describe and understand an under-researched topic (Squires & Dorsen, 2018). The basic

qualitative design inductively allows the deviation from methodology guidelines and blends congruent techniques (Kahlke, 2014).

Assumptions and Limitations

Before starting the study, self-reflection on assumptions and interests in the topic ensured the limited influence of those assumptions on the data (Merriam & Tisdell, 2016). Identifying and bracketing assumptions was essential to reach a deeper understanding of the collected data (Braun & Clarke, 2013). Reflection on possible limitations was used as an attempt to overcome those limitations.

Assumptions

Assumptions are ideas or stances on a particular topic that can be taken for granted throughout the research as a reasonably accepted belief (Theofanidis & Fountouki, 2018). One of the main assumptions was that all faculty would answer the open-ended questions openly and honestly based on their experiences with virtual learning and non-technical skills. Another assumption was that faculty would be able to separate their experiences teaching non-technical skills in a traditional learning environment from their virtual learning environment experiences. Additionally, the assumption was made that faculty from different schools had varied yet similar experiences transitioning to teaching non-technical skills in a virtual environment. The final assumption relates to the theoretical assumption using Benner's (1982) novice-to-expert theory. It was assumed that faculty would resort to a previous step in the novice-to-expert theory based on shifting from in-person to virtual learning.

Limitations

One of the main limitations was the lack of generalizability of the findings across nursing professions. Loh et al. (2019) completed their study in a small surgical center that only focused

on one type of surgery in which all nurses were trained. It could not be guaranteed from the study that the results showing improved patient outcomes due to an increase in non-technical skill development could be replicated in other areas of nursing (Loh et al., 2019). This current study faced similar generalizability concerns since the participants are located in the northeast region of the United States, where the switch to virtual learning happened quickly and without warning. The sudden change forced many faculty to produce virtual activities to teach non-technical skills without sufficient time to evaluate them.

Another limitation of the study revolved around the transferability of the data, which could be impacted by the timeframe of data collection and the geographical location of the study (Johnson et al., 2020). Transferability may be affected by the continuing COVID-19 pandemic restrictions within the Northeastern region of the United States and the small sample size of participants. One of the limitations focused on how non-technical skill communication can develop over time and may be out of the research window. Interviewing faculty and studying their experiences helped the researcher better understand how they implemented non-technical skill activities in the classroom. Still, the educators may not have concrete proof that the activities are helping.

An anticipated limitation of the study was using Zoom™ software to audio-record the participants but not video record. Audio recording protected the participants' confidentiality, but it may be challenging to identify different nonverbal cues that may have been present during the interviews and focus groups. Conducting the study using Zoom software allowed the participants to participate in the research at the convenience of their own homes or offices. Distractions or disruptions were anticipated to arise during the interviews.

Organization of the Remainder of the Study

Chapter 1 introduced the study's background, need, and purpose while highlighting how the study was significant. The research questions were listed, along with the definition of terms. The assumptions and limitations of the research design were also reviewed. Chapter 2 includes a thorough review and report of the literature focusing on the studied topic. The gap in nursing literature related to understanding the phenomena of faculty experiences teaching non-technical skills in a virtual learning environment is provided.

Chapter 3 provided a detailed description of the basic qualitative research methodology used. This includes a more in-depth look at the research questions and design. Chapter 3 also consists of any ethical considerations that arose during the study. Chapter 4 contained a detailed explanation of the results of the study, including data analysis. The final chapter focused on summarizing the results, describing the implications of the study, and proposing further recommendations for research.

CHAPTER 2. LITERATURE REVIEW

This qualitative study was conducted to identify the faculty perspectives on teaching non-technical skills in a virtual environment. Chapter 2 describes the search methods used for the literature review. A discussion of the theoretical framework and scholarly support for selecting a basic qualitative design and methodology choice is included. Chapter 2 concludes with a synthesis of the research findings and a critique of the research findings related to the topic of study.

Methods of Searching

The literature review search aimed to identify articles related to teaching non-technical skills and teaching in a virtual setting. The online Capella University library was used extensively to search for relevant literature. The databases searched included the Cumulative Index to Nursing and Health-Related Literature (CINAHL), ProQuest, Ovid Nursing, Science Direct, and Dissertations at Capella. Google Scholar was also used for the literature review. The use of advanced search options to narrow down the offerings included peer-reviewed online and specific dates for recent literature. The use of "AND" and "OR" were also used with various combinations to guide the literature review using the following search terms: *non-technical skills, nursing, nursing education, virtual learning, communication, critical thinking, interdisciplinary teamwork, COVID pandemic, clinical reasoning, faculty perspectives, nurse faculty, perspectives, associate degree nursing, bachelor's degree nursing, prelicensure nursing students,* and *flipped classroom.* The search results were narrowed down using the date and type of publication as filters to provide journal articles, dissertations, and systematic reviews.

Professional organizations such as the National Council of State Boards of Nursing (NCSBN) were used to access information and assist with determining expectations of nursing

faculty teaching virtually. An author search was used to include Kolb's (1984) ELT and Benner's (1982) novice-to-expert theory. Much of the literature focused on student perspectives on learning non-technical skills in both a virtual and traditional learning environment. There was a noted gap in the literature related to faculty perspectives and experiences teaching non-technical skills in a virtual environment. The literature gap supported the need for the study to explore the faculty perspectives.

Theoretical Orientation for the Study

Non-technical skills impact a person's decision-making, cognitive process, communication, and behavior (Pires et al., 2018). Teaching non-technical skills such as teamwork, communication, and critical thinking is vital for nursing education to adapt to a changing healthcare environment. A better understanding of how faculty who have taught non-technical skill development have altered their teaching from in-person to virtual allows nurse educators to meet virtual students' needs better. Several nursing and educational theories have driven the research focusing on non-technical skill development and virtual learning environments. Theoretical frameworks that guide the learning process as learners adapt and evolve are aligned with the study. Novice researchers must be able to see the interconnectedness of their research with the theoretical foundation. This research study used experiential learning theory and the novice-to-expert theory as the theoretical framework and foundation for the research. Discussing the concepts related to these theories was vital in the beginning stages of the research process through the end of the research study.

Kolb's Experiential Learning Theory

The theoretical framework that aligns with the study focusing on faculty experiences teaching non-technical skills in a virtual environment was Kolb's (1984) experiential learning

theory (ELT). Kolb (1984) introduced a new learning model emphasizing the experience as the learning process's focal point. The ELT learning cycle is described as a cyclic event focusing on four stages, concrete experiences, observation and reflection, abstract conceptualization, and active experimentation (Kolb, 1984). Kolb's (1984) ELT work is a seminal piece that influenced this study's methodology.

Kolb's (1984) ELT stages are concrete experiences, reflections and observations, generalizations or abstract conceptualizations, and active experimentation. The title experiential learning implies that the learning process occurs through experiences which is the cornerstone of nursing education. The ELT framework is used as a guide to allow for focus on learning through experiences and reforming ideas based on those experiences (Kolb, 1984). Kolb (1984) discussed that learning occurs when concepts are not concrete but continuously modified by past and current experiences (Kolb, 1984). Another assumption is that learning is adapting to the environment (Kolb, 1984). Experiential learning focused on learning as a central process of human adaptation to their physical and social environments (Kolb, 1984). Learning occurs in all environmental settings, not just the traditional lecture hall.

The ELT framework aligned with the research study by guiding the researcher as they attempted to understand how experienced faculty members have used their past experiences to create new or adapt current educational activities in a virtual setting. It also aligned with what faculty have learned from these experiences to guide the next generation of nurse educators. The tenets of Kolb's (1984) ELT are briefly discussed below, focusing on how they serve as an orientating lens for the study.

The first part of Kolb's (1984) ELT is the concrete experience stage, where learners draw on their previous experiences to develop a focal point. For nurse educators, the first stage is

drawing on their past experiences teaching to create an environment that they envision will promote positive learning. Part of the inclusion criteria required faculty to have experience teaching non-technical skills in a traditional in-person setting and a virtual learning environment. The second part focuses on what is and is not working, known as the reflection stage. Learners review their past experiences and reflect on how they were impacted and others. The reflection stage for nurse educators is looking for clues from past experiences on how to implement education best, focusing on non-technical skills within a virtual learning environment. The third stage is the conceptualization phase, where educators think of ways to improve their activities. The educators may have researched best practices and used their past experiences to create or strengthen learning opportunities. The fourth stage is the improvement through the active experimentation phase. Learners create new experiences, converge past and learning experiences, and initiate the four stages repeatedly based on their new experiences (Kolb, 1984).

The theoretical framework is embedded throughout nursing education and the literature. Kolb's (1984) ELT framework focuses on learning through forming and reforming ideas through experiences. The use of the theory within the scope of this study allowed the analysis of the data to align with the four stages of learning and discuss how it relates to existing knowledge (Merriam & Tisdell, 2016).

The theoretical framework was chosen to guide the research study focused on learning and adapting to a changing environment. The experience of implementing non-technical skill activities in a virtual learning environment is at the center of the learning process. Limited traditional face-to-face clinical experiences within nursing education have forced many nurse educators to offer their students virtual learning experiences that allow them to develop the skills needed to be safe practitioners following graduation (Gu et al., 2017). Faculty and students must

be active partners in the learning process, which aligns with Kolb's ELT (Fewster-Thuente & Batteson, 2018). The cyclic nature of ELT allows the learner to use their past experiences to guide their learning opportunities, reflect on those opportunities, construct new experiences, and experiment with new activities based on what they have learned (Fewster-Thuente & Batteson, 2018).

Kolb's (1984) ELT served as a theoretical framework that guided the researcher in better understanding how faculty developed their education activities while improving their knowledge of teaching non-technical skills. Thus, becoming more comfortable with the material and developing the skills necessary to promote learning (Sowko et al., 2019). Roney et al. (2017) stated that traditional nursing education models reflect how faculty members were taught when they were in school. The interview and focus group questions revolved around the four stages of Kolb's (1984) ELT.

Kolb's (1984) ELT framework provided a guide to how the studied concepts were approached. One central tenet of experiential learning is that learning through experiences can construct new ideas and knowledge (Arseven, 2018). There are concepts that the research problem has guided the researcher to focus on, but the data may lead to the construction of new concepts related to faculty experiences. Nursing education has traditionally focused on teaching non-technical skills through face-to-face clinical experience. The development of non-technical skills benefits the nursing student personally and professionally (Kaiafas, 2021). Non-technical skill was a term first used by the aviation industry that healthcare fields have slowly adopted (Murray et al., 2016). Constraints on nursing clinical locations and limitations on in-person classes have limited in-person non-technical skill development opportunities (Abuatiq, 2019).

The lack of information about non-technical skill development in a remote environment or how faculty have transitioned to remote learning has guided the choice of research concepts.

Teaching nursing theory in a virtual setting may not be new to nurse educators, but teaching non-technical skills in a virtual environment may lead to new challenges. The theoretical framework impacted the research concepts of time and experience as an educator. Kolb's (1984) ELT can be interpreted to reflect that nurses formulate learning activities based on previous teaching experiences and continue revising the education tools following implementation. The research concept of how their experience teaching virtually changed their future approach aligns with the ELT.

One of the main concepts of this study was the differences in faculty experiences teaching non-technical skills in a virtual setting. Kolb's (1984) ELT guided the research by focusing on the difference between experiences during different stages of ELT. Does an instructor's previous concrete experiences impact their experience transitioning to a virtual setting? Kolb's (1984) ELT was influential in guiding how faculty self-reflected on the implementation and started the cyclic experiential learning process over again.

Kolb's (1984) focus on experiential learning is prominent throughout nursing education. The repeating cyclic nature of the learning stages can be used by educators to critically evaluate their classroom activities and develop more appropriate learning opportunities within the virtual, in-person, or blended environment. The concepts of faculty experiences, their differences, their similarities, and their impact on educators are studied. Nursing education consists of theory and practice to help students develop their skills (Arkan et al., 2018). Educators must have a solid understanding of the theory they need to present to students while also having the ability to implement that education into practice. Educators who transition to virtual learning are often left

with little support to make the transition (Howe et al., 2018). The concept of faculty experiences implementing educational activities into practice provides future nurse educators with a better understanding of how faculty are impacted by the experience of implementing non-technical skill activities into a virtual environment. The research study added to the literature on experiential learning by showing how it can be applied to nurse educators implementing non-technical skill development activities in a virtual learning environment. Faculty participants must have experience teaching non-technical skills in-person and online to show the progression and cyclic nature of their learning through experiences in both settings. The pandemic shift in nursing education was abrupt for many programs, faculty, and students. Kolb's (1984) theoretical framework can be applied to teaching activities during the pandemic, where faculty were required to engage the learner in activities where they can challenge their knowledge (Kaylor et al., 2018). Faculty must also create and implement activities that allow creativity to flow and the students to have authentic learning experiences (Kaylor et al., 2018).

Benner's Theoretical Framework

The nursing-specific educational theory used to guide the research study focused on Benner's (1982) novice-to-expert model. The novice-to-expert model focuses on a person's skill development through different proficiency levels. The stages are novice, advanced beginner, competent, proficient, and expert (Benner, 1982). Benner's (1982) novice-to-expert model has been used throughout nursing education to show the progression of new students with no experience as a novice, advancing through to the advanced beginner stage upon graduation, where they are safe practitioners. After around two years in the profession, one is considered competent and advancing through proficient and expert stages based on the learner's ability to grow and adapt their skills to a changing environment. Benner's (1982) novice-to-expert theory

provides a breakdown of experience by years. Still, learners should understand that experiences are the driving force behind the stages, not solely the passage of years.

Benner's (1982) novice-to-expert model provides an overview on how nursing students progress to experienced nurses through knowledge acquisition and learned experiences. Benner's model was applied to the research study focusing on faculty experiences teaching non-technical skills in a virtual setting by examining how the faculty progressed through the different phases. Faculty with limited experience teaching non-technical skills in a virtual setting revert to the novice stage even though they may be experienced experts in their traditional education field (Thomas & Kellgren, 2017).

As nursing faculty continue to experience shortages of traditional, in-person learning placements, it is critical to understand and explore the faculty perspectives on teaching non-technical skills in a virtual environment. The findings of the study are of value to other nurse educators as they adapt to teaching non-technical skills virtually. Many experienced faculty may revert to a novice teaching stage, and newer faculty can learn from the experiences of faculty before them who have adapted their teaching based on the stages of ELT (Benner, 1982; Kolb, 1984).

Review of the Literature

To add to nursing education's scientific body of knowledge, a researcher must be up to date with current literature on a topic. The literature review aimed to summarize the key findings from relevant literature related to faculty perspectives teaching non-technical skills focusing on a virtual environment. The literature was limited to articles published in the past seven years while also including seminal literature to support the methodology and theory that extend beyond those seven years. The research is diverse in the topics being addressed but aids in understanding gaps

within the literature. The shift from traditional to virtual learning, including challenges and successes, is addressed. There is a noted gap in the literature related to faculty perspectives when teaching virtually, related explicitly to non-technical nursing skills.

The sections are organized using headers and sub-headers that focus on the main factors that influenced the need for this study. The literature review began with a thorough review of how non-technical skills are represented throughout healthcare and then specific to nursing literature. The aspects of virtual learning within nursing education and then specific literature focusing on non-technical skills taught virtually follow. Studies were sought out that compared a traditional classroom with activities that can be used in the online experience. Student and faculty perspectives related to learning and teaching virtually are addressed before looking specifically at how the experience of teaching impacts an educator's perspective. The barriers that have arisen when teaching non-technical skills in a virtual environment are addressed. A quick look at evaluating the effectiveness of teaching non-technical skills virtually is included to show that teaching virtually is effective. The literature review continued by looking at post-licensure studies since the study focused on faculty educators in associate and bachelor's degree programs that are understudied. The following section summarizes the post-pandemic research that is relatively new to the nursing literature. A literature review of methodology options are summarized. Breaking the factors apart logically helps the reader better understand the main points that lead to the focus on the faculty perspectives teaching non-technical skills in a virtual environment.

Non-technical Skills

Not all skills can be taught and learned in one nursing education class. Many skills within nursing take time to learn, develop, and nurture. Historically, nursing education focused on

technical skill development, learning new skills, and increasing students' knowledge levels (Johnson & Aggarwal, 2019). Interest in non-technical skills related to the healthcare professions was limited before 2008 (Murray et al., 2016). Non-technical skills were reported by students, educators, and licensed nurses as important and relevant in maintaining a safe healthcare environment (Murray et al., 2016). Jirativanont et al. (2017) completed a study focusing on non-technical skill assessments in a healthcare crisis. Non-technical skills were desirable for healthcare team members in a crisis situation and essential for the safe care and effective treatment of patients (Jirativanont et al., 2017). The focus of the study was on post-licensure team members but is essential in showing the historical progression of the important non-technical skill development in research and healthcare literature. The following year, Porter et al. (2018) published a research study that focused on assessing the non-technical skills of the healthcare team in an emergency department. The goal was to determine how to improve the non-technical skills of the healthcare team. Porter et al. (2018) discussed the need for formal feedback to create new learning opportunities for the team. This aligns with the stages of Kolb's (1984) ELT while also showing the importance of studying non-technical skills in a critical healthcare environment.

Following a limited number of studies that looked at current non-technical skill development, Johnson and Aggarwal (2019) addressed the importance of determining a clear definition of healthcare-related non-technical skills. Johnson and Aggarwal (2019) stated that healthcare disciplines significantly lack non-technical skill development despite the link to better outcomes and safer care. They focused their information on the lack of standardized definitions of non-technical skills for disciplines in healthcare. Without a clear, standardized definition, healthcare cannot improve non-technical skills (Johnson & Aggarwal, 2019). After completing a

thorough review, Johnson and Aggarwal (2019) found a substantial overlap of non-technical skill definitions in communication, teamwork, leadership, and decision-making. Johnson and Aggarwal (2019) recommended that future studies focus on how non-technical skill development can impact patient outcomes with real-time data collection.

Nursing Specific

Non-technical skills have been studied in other disciplines, but it has been a slower process for nursing specifically. Studies have shown that non-technical skills help the healthcare team make collaborative decisions and are crucial in deciding the quality of care provided to patients. However, limited studies focus specifically on prelicensure nursing skill development (Amudha et al., 2018). Widad and Abdellah (2022) discussed teaching non-technical and "soft skills" in undergraduate nursing education. The researchers showed how several nursing educational programs have begun introducing initiatives to teach non-technical skills using active learning. The review found that the nursing literature revealed a heightened awareness of the importance of non-technical skills from 2017 to the present (Widad & Abdellah, 2022). How skills are taught in nursing education has entered a new era that requires nurse educators to be innovative and integrate strategies that promote active learning (Widad & Abdellah, 2022). Various learning strategies have been incorporated into nursing education to promote non-technical skill development, including debates, virtual simulation, and escape rooms (Widad & Abdellah, 2022). The focus of the study was on addressing how education programs have adapted to teaching non-technical skills but fails to address how faculty adapted to the changing educational endeavors.

Virtual Learning

The past decade has seen a transformation in how education is delivered due to the expansion of globalization, the diversity of student learning styles, and the demand for the use of technologies in the classroom (Lopes et al., 2018). Before the COVID-19 pandemic, Posey and Pintz (2017) studied the success and challenges of transitioning nursing education from entirely in-person to a blended, accelerated model. There is no set definition for what encompasses a blended learning environment. Still, it is broadly defined by many educators as a mix of traditional in-person and online learning (Halasa et al., 2020). Posey and Pintz (2017) looked at the ability of faculty to redesign their in-person classes to remote or a blended learning format. The faculty perspective concluded from this study results was eye-opening. One of the significant themes that arose was the importance of the faculty member's role in designing and preparing materials that can be successfully implemented into a blended learning environment (Posey & Pintz, 2017). Faculty expressed that more thoughtful planning of activities led to a more positive learning experience (Posey & Pintz, 2017).

Posey and Pintz (2017) added to the literature on nursing education by showing how program outcomes are met using a blended learning style. However, one of the main issues noted with this study was the limited information regarding the faculty's training and guidance before transitioning to a blended learning style. The study results expanded the nursing literature related to how faculty experience the transition from in-person to virtual learning when implementing non-technical skill activities.

Gdanetz et al. (2018) completed an influential study on how the transition from in-person to online learning impacts student and faculty interactions. Online educational courses and programs have grown significantly in the past decade, allowing programs to graduate more

students without sacrificing the quality of education (Gdanetz et al., 2018). However, the proficiencies of the educator to teach online impacted the success of an online program (Gdanetz et al., 2018). While Gdanetz et al. (2018) did not focus specifically on non-technical skill development, they were instrumental in identifying where online nursing programs can succeed and struggle. The common themes that arose from the data were regarding the openness of a nurse educator to embrace change, meet the needs of the learners, and use technology that aligns with the curriculum (Gdanetz et al., 2018). Nurse educators play a crucial role in facilitating learning and must be open to changing modalities (Cabral & Baptista, 2019). Gdanetz et al. (2018) recommend further research on ways to assist faculty in creating and teaching in a virtual learning environment. A better understanding of what challenges faculty need to overcome when teaching online helps programs offer supportive professional practice educational opportunities to expand learning.

Non-technical Skills Virtually

With a rapidly changing education environment, the training of nursing students on non-technical skills needs to include the use of new technologies that can support student learning (Isidori et al., 2022). Peddle et al. (2019) completed an influential study that explored how undergraduate nursing students develop their non-technical skills in a virtual learning environment. Peddle et al. (2019) discussed the limited literature on nursing students' non-technical skill development in a virtual setting. Peddle et al. (2019) concluded that virtual patients could improve nursing students' non-technical skills, but it is not without its challenges. One of the main themes of the study focused on learning through mistakes. Peddle et al. (2019) themes can be applied to the faculty experiences study using Kolb's (1984) ELT. Students develop non-technical skills by learning through their mistakes and reflecting on their practice

(Peddle et al., 2019). Kolb's (1984) ELT focuses on learning from previous experiences, having new experiences, and implementing reflection. Peddle et al. (2019) concluded that student learning virtually happened through a connection with their learning content.

Peddle et al. (2019) was influential in another way; it pointed out barriers to student learning in a virtual setting. Kotcherlakota et al. (2017) discussed faculty barriers to virtual learning, whereas Peddle et al. (2019) focused on possible student barriers. One of the ethical dilemmas with this study is that the faculty researcher was part of the faculty members who taught the study's students (Peddle et al., 2019). For the research study, faculty volunteers with whom they are not currently associated on a work or personal level were chosen. Peddle et al. (2019) used a faculty researcher on leave to gather the data to limit any possible ethical issues within the study.

Sezer and Sezer (2019) completed a study that focused on teaching communication skills with technology in another healthcare discipline to pre-licensure students. Sezer and Sezer (2019) stated that non-technical skills are not skills people are born with but instead the skills are taught and learned. Sezer and Sezer (2019) sought to study how healthcare students' communication skills virtually developed to allow future researchers to learn from their efforts when implementing similar activities (Sezer & Sezer, 2019). The researchers concluded that students who participated in a virtual simulation learning experience improved their communication skills, equal to those who completed in-person simulations (Sezer & Sezer, 2019).

Sezer and Sezer (2019) were influential in healthcare education by adding that virtual learning can be at least as effective as in-person learning. Part of the interview process of the study focused on evaluating the faculty perspectives on the usefulness of the virtual activities

they used to improve non-technical skills. If no studies concluded that virtual learning was equally as effective as in-person learning, there would be significantly more challenges with its implementation in nursing education. One of the limitations focused on how the development of non-technical skill communication can develop over time and may be out of the research window (Sezer & Sezer, 2019). Interviewing faculty and studying their experiences helps the researcher better understand how they implemented non-technical skill activities in the classroom. Still, the educators may not have concrete proof that the activities are helping.

Comparing Flipped and Traditional Classroom Learning

The literature review has shown how non-technical skills are becoming a focus in the nursing literature and how virtual learning can effectively teach nursing theory (Johnson & Aggarwal, 2019; Posey & Pintz, 2017). It is important to include in the literature review that traditional and flipped learning may have differences that can be overcome within nursing education. Technology has allowed more innovative teaching methods into the classroom that allow students to learn actively while developing autonomy (Mekler et al., 2017). Halasa et al. (2020) completed a study with a traditionally taught control group and a flipped classroom experimental group. Faculty need to be able to use different approaches to their teaching and adapt to new activities when teaching non-technical skills in a virtual environment (Sezer & Sezer, 2019). Using flipped classroom approaches in a virtual environment is needed to integrate non-technical skills into the virtual classroom. Flipped classrooms are shown to have better results on student grades compared to traditional learning (Halasa et al., 2020). Based on students' performance and satisfaction, Halasa et al. (2020) stated that flipped classroom approaches and innovative teaching strategies promote student satisfaction and learning. Non-nursing studies have shown that students who participate in the flipped classroom and virtual

learning have the same satisfaction rate as those who participate in traditional learning (Fortin et al., 2019). The results of these studies are helpful in understanding faculty perspectives to improve teaching in a virtual classroom. The student perspectives across multiple disciplines have been studied in great depth, but there is a gap in understanding faculty satisfaction using flipped classrooms.

Making the Transition

It was important to understand the activities that could be implemented virtually to help teach non-technical skills. The use of technology in a virtual environment allows innovative methods to be used to promote collaborative learning (Cunha et al., 2022). Major et al. (2022) completed a study that focused on transitioning face-to-face simulations to remote learning. The study relied heavily on technology platforms that allowed video and audio capabilities for students and faculty. The students were split into healthcare teams and completed the activities synchronously (Major et al., 2022). Major et al. (2022) conducted their study internationally with a focus on all healthcare disciplines. The results of the study included that team-based learning for non-technical skills could be an alternative model to the traditional in-person learning that many educators were used to (Major et al., 2022). Major et al. (2022) aligned with Fogg et al. (2020) that access to reliable internet may be a significant battle to overcome when trying to teach non-technical skills virtually. Fogg et al. (2020) completed a study that focused on learning in a virtual environment by replacing in-person simulation with a virtual experience. Fogg et al. (2020) concluded that the flexibility in completing these learning activities support the students' learning experiences, and the utilization of virtual simulation was an adequate substitution.

Katlen et al. (2022) discussed the differences between the two main types of virtual learning. Asynchronous learning models are a more flexible method for learners to decide when

and where they want to learn. Synchronous models are used when instructors and learners want to gather in real-time to learn together (Katlen et al., 2022). When transitioning to online learning, it is essential to be aware of various learning environments. It is important to create activities that promote learning and are not used just for convenience (Katlen et al., 2022). The Katlen et al, (2022) study allowed for a better understanding the appropriateness of different activities in a virtual environment compared to face-to-face and hybrid alternatives.

Student Perspectives

The literature review revealed extensive research focused on non-technical skill development from a student perspective. Peddle et al. (2019) focused on the student perspective of learning non-technical skills, while Fogg et al. (2020) focused on the student experience of learning virtually. Morrell et al. (2020) determined that students found non-technical skill development activities that replicated real-life scenarios aided their ability to develop communication, active listening, and critical thinking skills. Other student perspective studies important to the research study include Howard et al. (2021). Howard et al. (2021) completed a qualitative study that focused on the student's perspectives on learning non-technical skills outside of the traditional clinical setting. The students felt that non-technical skills could be taught outside the conventional face-to-face clinical setting. Esposito and Sullivan (2020) concluded from their qualitative research study that students had overwhelmingly positive experiences using interactive activities in their virtual clinical placements. The use of technology can be a productive way to teach non-technical skills in nursing education (Esposito & Sullivan, 2020; Howard et al., 2021). Beno et al. (2020) found that while students enjoyed the independence of learning online, many did struggle with the limited structure provided.

Educators need to be aware that some students may not be willing to use new technologies to learn virtually despite studies showing an overall positive experience from students (Pence, 2022). The nursing literature is saturated with student experiences and perspectives when learning in a blended or virtual environment. There is a significant gap in the literature related to the faculty perspectives on teaching in a blended or virtual environment related to nursing programs.

Faculty Perspectives

Peddle et al. (2019) completed a study that focused on student experiences learning non-technical skills virtually. One year later, Peddle et al. (2020) followed that study with faculty perspectives of learning non-technical skills within a virtual nursing classroom. Peddle et al. (2020) completed a qualitative study focusing on interviews with faculty members currently teaching non-technical skills using virtual patients. Some of the themes that resulted from the interviews were the faculty's appreciation of flexibility when teaching virtual patients and the opinion that non-technical skills are often not the focus of many nursing educational activities, leaving the faculty room to expand on these prebuilt activities (Peddle et al., 2020).

The conclusions from the study showed faculty experiences and perspectives teaching non-technical skills with prebuilt virtual patients (Peddle et al., 2020). Peddle et al. (2020) aligned with Kolb's (1984) ELT cyclic nature of learning from past experiences through reflection and adaption. A gap in the literature addressed how faculty experience teaching or learning virtually impacted their experiences, aligning with Benner's (1982) novice-to-expert theory.

Experience Teaching Virtually

Traditional nursing education pedagogies are centered around teaching the same way the faculty members were trained (Roney et al., 2017). Roney et al. (2017) completed a quantitative study that focused on technology used for new faculty based on self-efficacy. The researchers concluded that faculty felt they taught themselves how to incorporate technology into the classroom and did not receive specific training (Roney et al., 2017). They recommended more research be completed that included studying how faculty responded to technology challenges. Shortly following that study, Gdanetz et al. (2018) discussed that an effective online nurse educator is proficient with online learning. Kotcherlakota et al. (2017) sought to determine how years of experience impacted nurse educators' preferences and experiences with technology in online education. Insufficient training and knowledge related to technology platforms were listed as barriers to virtual teaching for nurse educators (Kotcherlakota et al., 2017). Kotcherlakota et al. (2017) found that the increase in the number of years a person has been an educator directly impacted their negative view on integrating new technologies and virtual learning into the nursing curriculum.

Future research recommendations included studying how faculty experiences using new technologies were affected by their age and years of experience teaching (Kotcherlakota et al., 2017). Kolb's (1984) ELT framework provides a process for exploring how faculty initially implemented education online compared to their growth after gaining experience. Foote et al. (2022) completed a study focusing on the nursing faculty impacted by the forced disruption of traditional nursing education. The survey results showed that nearly three-quarters of the faculty surveyed had no formal online teaching training. Those who stated they had received training were primarily trained during their advanced degree courses. A supportive culture and

professional development are necessary for online teaching (Morrison & Shemberger, 2022). A nurse educator needs to be at an expert level of teaching to be an effective virtual educator where there is uncertainty, like the COVID-19 pandemic (Foote et al., 2022). By studying the experiences of faculty teaching non-technical skills in a virtual environment, the researcher better understood what nurse educators need to ensure they are effective educators. Identifying best practices for teaching non-technical skills can aid nurse educators in how to adapt to changes in the learning environment (Hardie et al., 2022). The research results added to the literature related to faculty perspectives teaching non-technical skills virtually in a repetitive nature where they could learn from and adapt their teaching style.

Barriers

The literature review produced many studies that identified barriers outside the faculty member's control and impacted their teaching experiences virtually. Kotcherlakota et al. (2017) discussed the barriers to faculty usage of technology. With the results of that study and Posey and Pintz's (2017) study blended, nursing education may better understand how to offer education to faculty transitioning to online learning. Both studies showed a deficit in nursing education related to faculty training on technology implementation in the classroom. The results from the study added to the literature by focusing on faculty experiences when implementing virtual learning activities.

While Posey and Pintz (2017) studied the challenges and success of implementing blended learning, they did not specifically focus on faculty experiences. Gazza (2017) focused their study on the experiences of teaching online in nursing education. The study was groundbreaking because although online education was becoming a key component of nursing education, there was a gap in the literature focusing on faculty experiences. Online programs

within nursing were growing, ranging from associate degree programs to doctoral degrees (Frazer et al., 2017). Gazza (2017) focused on the lived experiences of teaching online within nursing education from faculty members teaching at the bachelor's level or higher. Like Posey and Pintz (2017), the results revealed that all faculty had to learn new teaching methods to support online learning (Gazza, 2017). Faculty transitioning to online education had to change their pedagogical approach to learning and interacting with the students (Gazza, 2017). Faculty listed communication and engagement struggles as their main issues (Gazza, 2017). Gazza (2017) concluded that more studies needed to be completed that focused on the faculty experiences teaching online to close the gap in the literature as online teaching continues to grow within the profession due to multiple factors.

A more current literature search uncovered a qualitative study by Abahuje's et al. (2021) which focused on barriers to implementing non-technical skill training in post-licensure programs. The researchers concluded that obstacles to effective teaching include inconsistency with the changing working environment and work overload (Abahuje et al., 2021). The NCSBN (2008) lists joint efforts and teamwork as nursing educators' roles, but Abahuje et al. (2021) discussed limited educators as a limitation in effectively developing non-technical skills. Foote et al. (2022) added to the literature with their study by showing the importance of clear, documented guidance for faculty as they transition to online learning. Clear expectations of working at home in a virtual environment may help faculty feel less overwhelmed by the transition and retain more faculty.

Evaluating Effectiveness

Although multiple studies have concluded that non-technical skills are integral in safe patient outcomes, there is little standardization assessment of these skills (Flynn et al., 2022).

While this research study did not focus on the effectiveness of teaching non-technical skills in a virtual environment, it is essential to address that nursing theory and skills can effectively be taught in a virtual environment. Understanding faculty perspectives on teaching virtually would be a moot point if they could not successfully educate the next generation of nurses in a virtual environment. Abuatiq (2019) studied how nursing educators could evaluate the use of their virtual patient activities. Faculty are required to create online learning experiences to meet the needs of the changing healthcare system and expanding virtual classrooms. It is essential to nursing education that these educational activities are evaluated to ensure they help produce safe nurses in the workforce (Marquez-Hernandez et al., 2019). Abuatiq (2019) implemented a virtual learning system evaluation tool to determine the effectiveness of virtual patients on nursing students' skill development. The study showed that the evaluation tool was a good indicator of competency development among nursing students (Abuatiq, 2019).

Abuatiq (2019) concluded that virtual learning activities need to be evaluated for their effectiveness to help guide the online nursing education shift in pedagogies. The study results guided the researcher in seeking out faculty perspectives on their educational activities' effectiveness. It is important to understand how effective faculty thought their implemented activities were and their impact on the non-technical skill development of students. Abuatiq's (2019) evaluation tool is not specific to non-technical skills; however, it includes many non-technical skill components, such as communication and critical thinking.

The interest in evaluating non-technical skill development also aligns with studying ways to enhance non-technical skills among the interdisciplinary healthcare team (Higham et al., 2019). The choice of which type of learning activity to help improve non-technical skills is essential in many high-stakes healthcare settings (Higham et al., 2019). Research focusing on

this topic has been studied in the literature throughout many healthcare disciplines. While the literature is not abundant on this topic, many ongoing studies focus on evaluating the effectiveness of non-technical skill development activities post-licensure (Higham et al., 2019). The Higham et al. (2019) study aided in closing the gap in the literature by determining what, if any, evaluation methods faculty included in their non-technical skill implementation activities.

Post-licensure

The results of the literature review showed the shift in focus on non-technical skills in nursing education, how the virtual learning shift has impacted students and educators, and barriers that may arise when teaching non-technical skills virtually. It is also important to address that non-technical skills are not solely developed during nursing school but instead, build the foundation for the skills to be developed post-licensure. Loh et al. (2019) completed a study focused on the non-technical skill development of healthcare workers post-licensure. The results of the study allowed future nurse educators to develop interventions that would better educate post-licensure nurses on non-technical skill development based on the experiences of the participants in the study (Loh et al., 2019). A conclusion of the study was that using a specific tool designed for healthcare workers in the operating room can assess and improve post-licensure nurses' non-technical skills, improving patient outcomes and safety (Loh et al., 2019). Loh et al. (2019) focused on in-person learning and nurses' assessments in the operating room. The study was included in the literature review because it shows how vital non-technical skills are to patient safety. Non-technical skills, like communication, are invaluable to nurses within the profession (Crawford et al., 2020). Similar to Loh et al. (2019), Lin et al. (2019) concluded that non-technical skills could be improved using a variety of educational activities, and non-technical skills improve patient care and outcomes (Johnson & Aggarwal, 2019).

There is extensive literature on post-licensure non-technical skill development but limited research on pre-licensure nursing students. With non-technical skill development linked to positive patient outcomes and safety, nursing researchers must look for ways better to implement non-technical skill development within the nursing curriculum. One of the study's main limitations was its lack of generalizability across nursing professions. Loh et al. (2019) completed their study in a minor surgical center that only focused on one type of surgery in which all nurses were trained. Loh et al. (2019) could not guarantee that the results showing improved patient outcomes due to an increase in non-technical skill development could be replicated in other areas of nursing.

Pandemic Impact

In the literature review for this study, it was important to include a section related to the COVID-19 pandemic. The literature review has included a mixture of before-the-pandemic and post-pandemic studies. It is important to note how the pandemic has impacted nursing education. Online learning became more prominent in nursing education to maintain social distancing during the pandemic (Cunha et al., 2022). Nurses, graduating nurses, and nurse educators faced pandemic-related uncertainties that included potential educational gaps related to lack of experience and the rapid transfer of education from in-person to virtual (Foote et al., 2022; Lancaster et al., 2021). The COVID-19 pandemic forced nurse educators to develop and implement interactive online learning environments to teach the next generation of nurses (Garvey et al., 2022). The nurse educators created a nurse residency program for recent graduates focused on Kolb's (1984) ELT (Garvey et al., 2022). Their virtual learning components included short breaks to keep the students engaged and participating using flipped classroom activities adapted for online learning from traditional in-person activities. Garvey et

al. (2022) learned that remote learning post-pandemic offered a variety of challenges related to student engagement and variations in student learning types. The conclusion from the program focused on the need to continue to respond to the challenges of the COVID-19 pandemic by creating innovative learning activities that focus on non-technical skills, like critical thinking and communication. In addition, having support for faculty as they make the necessary adjustments to transition from the pandemic learning is essential to meeting their educational needs (Foote et al., 2022).

Powers et al. (2022) completed a study that focused on faculty perceptions of the pandemic's impact on the new graduate nursing class. The qualitative approach allowed the researchers to fully understand the faculty's perception of how the pandemic impacted the new class of nurses. The study focused on Spring 2020 to Spring 2021 semesters, with a more notable shift to online learning across many traditional face-to-face programs (Powers et al., 2022). The study addressed learning restrictions on the new nurses' preparedness for post-licensure practice. Powers et al. (2022) concluded that faculty felt there was a gap in the learning process where the new nurses would benefit from additional experiences in the clinical setting with a focus on technical and non-technical skills. Research studies similar to this one are beneficial because learn the educators they allow nurse educators to learn from previous educators' lived experiences.

The ability of nursing education to return entirely to the pre-pandemic state is unclear and unknown for many programs (Fogg et al., 2020). The pandemic forced many changes that allowed programs to evolve to meet the needs of the changing learning environment (Zhou et al., 2022). Nursing faculty need to explore integrating new learning activities and methodologies into virtual learning environments to accommodate the new normal. Professional development

for nurse educators is an ongoing process that needs to be provided in the post-pandemic academic environment (Foote et al., 2022).

Methodological Choices in the Design of the Study

The research study aimed to uncover themes based on faculty experiences when virtually implementing non-technical skill development activities. The basic qualitative design is the most common type of research study used in applied fields like education (Dames, 2019; Merriam & Tisdell, 2016). The design of the study encouraged reflection from faculty on their experiences to help identify common themes within the data to deepen their understanding of the experience (Dames, 2019). The basic qualitative injury design inductively allows the research to deviate from methodology guidelines and blend congruent techniques (Kahlke, 2014). The benefits of a basic qualitative design include gathering thick and rich results that focuses on the meaning and not numbers from the interview (Braun & Clarke, 2013). Although there is a limitation to the sample that can be interviewed using qualitative research, the semi-structured nature of the individual interviews allowed the participants to share their experiences and the researcher to ask probing questions based on their responses. According to Ward et al. (2018), qualitative methodology evolves to address the research question, and additional questions are often discovered. The research study contains integrated stories and spoken words of the participants into themes that depict the participants' lived experiences (Braun & Clarke, 2013).

The qualitative nature of the study allowed the researcher to gain an in-depth knowledge of the participants' experiences, allowing readers to understand better the common themes shared among the participants (Nabolsi et al., 2021). The results also showed the need for future research focusing on this topic to fully understand the phenomenon of the faculty perspectives

teaching non-technical skills virtually. The findings could offer support for the need to change how current and future nurse educators construct their classrooms and how administrators provide professional development opportunities (Cabral & Baptista, 2019).

Synthesis of the Research Findings

The idea of studying non-technical skill development in a virtual setting evolved over many years into the current study. The literature review resulted in a limited number of studies specifically addressing the perspectives of nursing faculty teaching non-technical skills in a virtual learning environment. Reviewing Posey and Pintz's (2017) study on transitioning to blended learning was eye-opening when combined with the Kotcherlakota et al. (2017) study which identified barriers to faculty usage of technology. Both studies were conducted when nursing education was virtual and blended learning became more prevalent. Foote et al. (2022) showed the gap in professional development related to educators being trained to teach in a virtual environment. Foot et al. (2022) concluded that 70% percent of educators who survived had no previous online training and many who did have training completed training during their degree programs. Gdanetz et al. (2018) concluded that successful online nurse educators were prepared and thoughtful. However, many educators did not have the time to make that easy transition.

Lancaster et al. (2021), Garvey et al. (2022), and Powers et al. (2022) have all addressed how the pandemic has shifted nursing education. However, similarly to studies like Howard et al. (2021), the focus is not primarily on understanding the phenomena of faculty experience teaching non-technical skills in a virtual environment. The results of the study added to the nursing and education literature surrounding the experiences of faculty teaching virtually. The findings added to the scientific body of nursing and education knowledge by explaining how

educators implemented, adapted, and re-evaluated virtual learning activities to enhance student development of non-technical skills. As online courses and programs grow, nurse educators must be appropriately trained to teach virtually non-technical skills (Gazza, 2017). The development and improvement of non-technical skills are linked to improved outcomes and patient safety within healthcare (Sezer & Sezer, 2019). Loh et al. (2019) focused on non-technical skill development in post-licensure nurses. Lin et al. (2019) also added to the literature, concluding that non-technical skills can be improved by continuing education for post-licensure students. There is a literature gap related to non-technical skill development in pre-licensure students using a virtual learning environment.

In the last decade, nursing education has been forced to change its programs to meet the needs and demand for nursing within healthcare (Abuatiq, 2019). Nursing programs have started to admit more nursing students than in previous years, forcing them to utilize different learning formats to meet the needs of their growing student body (Abuatiq, 2019). The COVID-19 pandemic further pushed nurse educators to use other learning formats. The literature is abundant with studies focusing on replacing clinical hours with simulation or virtual patients to help students develop their technical skills (Peddle et al., 2019; Sezer & Sezer, 2019). A minimal amount of literature focuses on enhancing non-technical skills in a virtual learning environment. There is more of a gap in the literature related to faculty experiences implementing virtual learning activities to strengthen non-technical skill development.

Non-technical skills are important for nurses entering a healthcare environment with sicker patients and a growing number of responsibilities (Holder, 2018; Johnson & Aggarwal, 2019). As older nurses retire, they are soon replaced with nurses who may have limited hands-on experience with patients due to online or blended learning. Fukuta and Iitsuka (2018) estimated

that over three-fourths of medical errors within healthcare could be attributed to a breakdown in non-technical skills such as teamwork, decision-making, and situational awareness. If nurse educators cannot assist new nurses in developing non-technical skills, nurses may fail to recognize deteriorating patient conditions (Holder, 2018). Adding to the existing literature on the best ways to improve non-technical skill development in an online environment from faculty perspectives can guide future educators on the most effective ways to train nursing students and possibly improve nursing practice.

The advancement of technology in the classroom and the shift to a blended and virtual learning environment has inevitability transformed the way nursing is taught (Murray et al., 2016). Murray et al. (2016) questioned how long nursing education could support these changes without shifting pedagogical practices. Understanding how faculty adapt to the shift in nursing education is crucial in challenging the fundamental teaching models within nursing that may be unable to transition into the future of technology-based teaching. Kolb's (1984) ELT discussed the importance of adjusting one's learning and understanding based on the cyclic nature of observation and experimentation. Murray et al. (2016) expanded on the findings from Kotcherlakota et al. (2017) on the understanding of faculty challenges while adding to Posey and Pintz's (2017) study on faculty implementation of activities in a blended learning environment. Peddle et al. (2020) added to the literature on faculty perspectives teaching non-technical skills virtually but were limited by narrowing their focus to virtual patient experiences. Peddle et al. (2020) and Foote et al. (2022) demonstrate the strengths behind qualitative methods when seeking to understand faculty members' perspectives better.

Data were gathered on the perspectives of faculty related to their experiences when implementing educational activities in a virtual environment to teach non-technical skills to

prelicensure students. Future and experienced nurse educators can learn from their peers who experienced challenges, readapted their learning activities, and taught non-technical skills in a non-traditional online nursing setting. Higher educational institutions can adjust their faculty education programs to focus more on meeting the needs of their faculty based the experiences of the faculty.

Critique of Previous Research Methods

The literature review conducted before the data collection began had various study methodologies within the realms of quantitative, qualitative, and mixed methods. The studies were evaluated for their credibility, dependability, confirmability, transferability, and authenticity (Connelly, 2016). Both qualitative and quantitative methodologies can be used to support nursing educational research that focuses on answering research questions with a range of sample participants (Merriam & Tisdell, 2016). The qualitative methodology lends itself to research questions that seek a better understanding of participants' experiences rather than collecting numerical data (Braun & Clarke, 2013). Quantitative studies are better suited for research questions that can be answered by collecting numerical data and performing statistical analysis. The following paragraphs will include a critique of several studies found during the literature review process that provided the fundamental foundation for the planning of the research study.

Quantitative Design

A qualitative methodology aligned with the research questions aimed at better understanding faculty perspectives. However, several quantitative studies provided a background for the study. A quantitative study design focuses on numerical values to tell a story rather than the written word (Merriam & Tisdell, 2016). Sowko et al. (2019) completed a quantitative study

that focused on understanding undergraduate nursing students' experiences learning the non-technical skill of communication. A Likert-type survey was conducted over four months to collect data on the student's comfort level with non-technical skill communication. The study included 88 participants who were in an undergraduate nursing program where they were transitioning to practice. The faculty developed the survey to focus on the areas of communication specifically. Although the study had enough participants to provide sufficient data, there is an overall weakness related to the generalizability of the study. The generalizability of the results of a study focuses on the ability of a reader to transfer the results of the research and apply them to a broader group of learners (Merriam & Tisdell, 2016). The results from the Soowko et al. (2019) study was limited in its generalizability because of its short collection time during one semester and its localization of participants to one university and one specific course. Another weakness of the study was that not all participants completed both studies (Sowko et al., 2019).

Although the methodology has several weaknesses, the research completed by Sowko et al. (2019) benefited the nursing education community. The findings were beneficial to the education community because it showed the integration of Kolb's (1984) ELT theory into practice when understanding nursing students' experiences with non-technical skills. The study results led to the conclusion that students learn best when multiple learning strategies are incorporated into teaching. Future nurse educators can use this study to support their need to adapt their teaching to provide innovative learning strategies.

Jirativanont et al. (2017) completed quantitative research addressing the use of non-technical skills assessment instruments among post-licensure anesthetists. Although the researchers did not focus on nursing students, it was one of the influential studies that determined

that non-technical skills are desirable and essential to healthcare. Quantitative data were collected to determine the effectiveness of two evaluation instruments in showing the progression of non-technical skill development. While the interpretation of the results do not address the effectiveness of teaching non-technical skills in a quantitative nature, it does allow the participants to reflect on what they find to be practical tools to teach non-technical skills. Jirativanont et al. (2017) showed high levels of credibility but the results may not be generalizable across disciplines in nursing education. However, the data analysis assisted in closing the gap in the literature by being able to conclude that non-technical skills are teachable and can be implemented effectively into healthcare training (Jirativanont et al., 2017).

Qualitative Design

The use of quantitative methodology to study non-technical skills is limited in the research; however, many qualitative research studies explore variations in non-technical skill development. The qualitative research methodology seeks to understand participants' experiences better using the written word (Braun & Clarke, 2013; Merriam & Tisdell, 2016). When evaluating the research throughout the literature review process, the credibility and dependability are being constantly assessed (Connelly, 2016). The transferability within a qualitative study can be a struggle due to the differences when moving research from one setting to another (Connelly, 2016). The following studies influenced this chosen methodology in several ways that will be addressed.

Dames (2019) completed a basic qualitative study focusing on the novice nurse's journey to manage stress. While Dames (2019) was not focused on non-technical skills or faculty perspectives, they did outline a basic qualitative methodology within nursing. The data collection included semi-structured interviews to provide insight into the experiences and allow for the

analysis process where common themes among the 24 participants are identified (Dames, 2019). The interviews were completed via a videoconferencing service that allowed sufficient time to collect data. Field notes were also incorporated into the data collection process. The limitations included a smaller sample size than quantitative studies and a limited geographical range impacting transferability (Connelly, 2016; Dames, 2019). Although there were some limitations, the data collection process was open to all participants through a third-party site, allowing for variety in the participant recruitment process. The data saturation process was met after the sixth participant; it was determined that the sample size was adequate to meet the needs of the research questions (Dames, 2019).

The second qualitative research study that influenced the methodology used within the study was Peddle et al. (2020). Peddle et al. (2020) conducted a qualitative study focusing on understanding faculty perspectives in teaching non-technical skills primarily through virtual patients. The data were collected through semi-structured interviews and focus groups. The thematic analysis was completed after each interview and coded independently by two researchers (Peddle et al., 2020). Each code was reexamined for coherency and consistency within the study. Ten participants in the study were identified using convenience sampling from two schools in a small geographical range. The strength of the research study was the qualitative design. The focus was on the data collected and developing a deep and detailed understanding of the faculty experiences from both the focus group and the interview (Merriam & Tisdell, 2016; Peddle et al., 2020).

Similar limitations existed with Peddle et al. (2020) and Dames (2019), mainly the ability to transfer the findings to a different setting. The implications of the study on the gap in nursing literature were profound. By better understanding the faculty perspectives, nurse educators may

improve their ability to teach effective non-technical skills virtually (Peddle et al., 2019). This study was one of the few studies within nursing literature that genuinely focuses on the faculty perspectives on teaching non-technical skills virtually. While Peddle et al. (2019) limited themselves to just the study of virtual patients. Peddle et al. (2019) identified main themes related to teaching non-technical skills, including "getting it wrong to get it right", transfer of learning, and privileging teaching and learning non-technical skills. Peddle et al. (2019) listed connecting to the person as a theme during the data collection. The human aspect of connecting with a person was lost while teaching non-technical skills in a virtual environment. The data were collected using phone interviews. Connecting with the person at the other end of the phone may be challenging due to the inability to see their non-verbal communication styles. Using phone-style interviews may result in a loss of a human connection without the ability to experience a person's non-verbal cues. While the results contributed significantly to nursing literature, some flaws within the design resulted in a possible loss of transferability (Connelly, 2016).

Powers et al. (2022) conducted a qualitative study focused on faculty perceptions of the impact of the pandemic on nursing graduates. The methodology used surveys to collect data and used multiple nursing programs to strengthen the finding's transferability (Connelly, 2016; Powers et al., 2022). However, being able to control who participated in the study, a diverse faculty regarding race and ethnicity were included. The sample size was over 100 faculty members who taught prelicensure students. Using a larger sample size allowed the researchers to mirror the faculty demographics within the country without seeking a specific diversity within the participants (Powers et al., 2022). The data collection process included reporting consensus on themes and subthemes among the participants. One of the main limitations was the

dependability of the results over time and changing conditions (Connelly, 2016; Powers et al., 2022). Since the study was conducted during the pandemic, faculty who had a strong belief related to the experiences of new graduates and the pandemic may have chosen to participate, which could impact the ability of the data to be dependable outside of the immediate pandemic environment (Merriam & Tisdell, 2016; Powers et al., 2022). Another limitation was the inability to ask further questions to the participants outside the survey because the data were collected using one-time, online surveys. Powers et al. (2022) added to the nursing literature by showing the potential impact that faculty perceive the pandemic had on new graduate nurses. Understanding the impact of experience on the graduates' non-technical and technical skill development allowed nursing educators to adjust their education activities to address the gaps. It also allowed nursing administrators to see the need for professional development within nursing education.

The strengths of the qualitative methodology guided the design of the basic qualitative study. The strengths of acquiring an adequate sample size and meeting data saturation were evident in all three studies (Dames, 2019; Peddle et al., 2019; Powers et al., 2022). The triangulation of data using thematic analysis was evident throughout the studies. The research questions focused on understanding faculty perspectives of teaching non-technical skill development activities in a virtual environment. The research question lent itself to a qualitative methodology based on the desire to truly understand the experiences of the faculty (Braun & Clarke, 2013).

Summary

Chapter 2 provided an overview of the detailed search methods used to perform the literature review for the concepts related to faculty experiences and perspectives teaching non-

technical skills in a virtual setting. The theoretical framework from the fields of education and nursing has been explored. The literature review noted several studies on non-technical skills in a virtual nursing environment, faculty perspectives on virtual teaching, and the importance of non-technical skill development in healthcare. The research focusing on faculty perspectives when teaching non-technical skills in a virtual environment, including studies from pre, intra, and post-pandemic, are limited. The noted gap in the literature focusing on faculty perspectives supported the need for this dissertation study. There is an overwhelming need for research to address the views of nursing faculty members as they transition to virtual learning for non-technical skills.

Chapter 3 will expand on the methodology section from Chapter 2 and include how a basic qualitative study design was crucial in exploring faculty perspectives. The purpose of the study and the methodological impact on the design, sampling, and procedures will be discussed in detail. In addition, the research question, data collection process, and ethical considerations are also discussed.

CHAPTER 3. METHODOLOGY

The basic qualitative study aimed to contribute to an understanding of nursing faculties' perspectives on teaching non-technical skills in a virtual learning environment. The basic qualitative design was used to aid in the understanding of how the faculty interpret their experiences and make sense of their experiences (Merriam & Tisdell, 2016). Chapter 3 includes the purpose of the study, the research questions that guided the study, and the design of the study, including the target population and sample, which are discussed in detail. The ethical considerations are also addressed in Chapter 3.

Purpose of the Study

This basic qualitative study aimed to explore the nursing faculty's experiences teaching non-technical skills in a virtual learning environment. The student perspective of learning in a virtual environment is abundant in the literature. Still, there is a lack of understanding of how faculty experienced teaching non-technical skills in a virtual environment (Fogg et al., 2020). The demand for nurses in the workforce, combined with the limited in-person learning spaces and the COVID-19 pandemic, has forced many nursing programs to implement virtual learning modalities (Fowler et al., 2018). The study adds to the nursing literature providing insight into the phenomena of nursing faculty members in the Northeastern region of the United States teaching non-technical skills in a virtual environment. Inquiring about faculty experiences teaching non-technical skills in a virtual environment may bridge the gap in the research by identifying approaches that faculty used to transition to a virtual environment and challenges they may have experienced. The American Nurses Association (ANA) (2021) stated that nurses must be innovative when teaching technical and non-technical skills to their nursing students.

The study findings may aid nurse educators in being creative in teaching non-technical skills in a virtual learning environment based on the experiences of the participants.

Research Questions

The following research questions guided this study.

RQ 1. What experiences have nursing faculty had when implementing educational activities to assist nursing students in developing non-technical skills in a virtual learning environment?

RQ 2. What have faculty learned from their experiences implementing education activities to assist nursing students in developing non-technical skills in a virtual learning environment that would impact their future teaching strategies?

Research Design

The basic qualitative design is useful when a researcher is interested in identifying relevant themes related to a phenomenon (Mihas, 2019). The choice of basic qualitative design was based on the research questions. The design was planned extensively before beginning data collection to account for challenges at each step (Cypress, 2019). The basic qualitative design was chosen to allow the researcher to study the participants' experiences more in-depth and focus on the meaning of the data with a rich, detailed understanding (Braun & Clarke, 2022). The interest in understanding the meaning of the phenomenon for the participants is the heart of the basic qualitative design (Merriam & Tisdell, 2016). The researcher sought to understand better the faculty experiences teaching non-technical skills in a virtual environment. After developing the research questions, the researcher focused on the sampling strategies that would yield the most appropriate participants (Moser & Korstjens, 2018). The inclusion and exclusion criteria limited the potential sample to educators in the Northeastern region of the United States

with both in-person and virtual teaching experience and were unknown to the researcher. The data were collected from the nine nursing faculty members through semi-structured individual interviews and a focus group. Chapter 3 provides a detailed description of the methodology used for this study.

Target Population and Sample

After identifying the research questions and design, qualitative researchers must determine the appropriate sample and target population. The qualitative paradigm focuses on smaller samples to gain a rich and in-depth understanding of the phenomenon (Braun & Clarke, 2022). The sample for the study represented the larger population (Merriam & Tisdell, 2016). The following section discusses the sample, population, inclusion, and exclusion criteria for the basic qualitative study.

Population

The population of the study included nursing faculty teaching in a state in the Northeastern region of the United States. The Bureau of Labor Statistics (2022) estimates 68,060 nursing instructors and postsecondary teachers in the United States. The target population in this study was specific to nurse educators in the Northeastern region of the United States who were teaching in an associate's or bachelor's program and had implemented virtual learning in the past two years. A target population is a specific group of educators who represent the larger population of educators in the Northeastern region of the United States.

Sample

The selected sample was based on the research questions (Merriam & Tisdell, 2016). This basic qualitative study used a nonprobability purposive sampling strategy for participant selection. Purposeful sampling is used in many qualitative studies because it allows the

researcher to select from a sample where the most can be learned (Merriam & Tisdell, 2016). Purposive sampling is used when the researcher aims to gain insight and an in-depth understanding of the research questions (Braun & Clarke, 2013). In this study, the purposive sample was used to recruit nurse educators licensed in the Northeastern region of the United States with experience teaching in both a virtual and in-person learning environment. The sample size in qualitative research tends to be smaller than in quantitative studies (Braun & Clarke, 2013). A sample size of eight to twelve participants was anticipated.

Inclusion Criteria

The inclusion criteria included nursing faculty currently teaching for an associate's or bachelor's degree nursing program in a state the Northeastern region of the United States. The faculty must have taught virtually in the past two years. The other inclusion criteria included that faculty must have taught in person in the past five years. The inclusion criteria ensured that participants had experience with both in-person and virtual learning experiences and could provide a comparison to answer the research questions.

Exclusion Criteria

The exclusion criteria were provided to faculty upon recruitment of participants. Nursing faculty who had a personal relationship with the researcher were excluded from the study. It also excluded faculty members who had previously taught in the same course as the researcher. The exclusion criteria ensured that the participants did not have a previous relationship with the researcher, which may have brought ethical concerns to the study.

Procedures

The study was a basic qualitative methodological design. The following sections include the processes used to understand the faculty perspectives on teaching non-technical skills in a

virtual environment. A description of the step-by-step procedures related to the data collection and analysis is included. All recruitment and sampling began following Capella University's Institutional Review Board (IRB) approval. Participants and the researcher signed informed consent before the data collection process.

Participant Selection

A purposive sampling was used to select the nursing faculty participants who are licensed in the Northeastern region of the United States and have taught non-technical skills in a virtual learning environment. Recruitment began after permission was received from Capella University's IRB committee. Participants were recruited from multiple colleges and universities in the Northeastern region of the United States, along with recruitment on a Facebook nurse educators' group. The IRB committees provided consent for recruitment for the nursing programs and the administrator for the Facebook group. The Facebook group Teachers Transforming Nursing Education was a closed group that required administrator approval before consent from the IRB committee to recruit on the site was approved. The recruitment materials included the inclusion and exclusion criteria, a description of how the study would be conducted, the purpose of the study, and the researcher's contact information to ask additional questions or volunteer to participate in the study. The recruitment materials included an IRB-approved recruitment email sent to the colleges and Universities. Five participants were recruited via Facebook, and four participants were recruited via email recruitment letters.

Participation in the study was voluntary. Once the participants expressed interest in participating, they were screened for the inclusion and exclusion criteria via email. If the inclusion criteria were met and they were not excluded based on the criteria, a consent form was sent via DocuSign. One interested participant was unable to participate due to the exclusion

criteria. The participants were allowed to review the form and ask any questions before signing the document. After the participant signed the informed consent, the researcher signed the consent form, and DocuSign automatically sent an electronic copy to both parties for their records.

Protection of Participants

The protection of the participants was of the utmost importance. The basic ethical principles of justice, beneficence, and respect for persons were used to guide the study design (Department of Health and Human Services, National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Based on Capella University's IRB requirements, the participants were provided an official informed consent before any data collection. The participants were informed that this was a minimal-risk study where they could choose to withdraw without question at any point. No vulnerable populations were used during the study. During the interview and focus group, participants were advised that they were not required to answer questions they did not feel comfortable answering.

The video conferencing software for the interviews and a focus group posed some potential concerns. The use of focus groups impacts the ability of the researcher to protect the participants' confidentiality. While measures were taken to protect the participants' identity, the researcher also instructed the participants to refrain from discussing the focus group outside of the scheduled time to address these privacy concerns and to stress caution to the participants (Hesse et al., 2019). The interviews and focus group were conducted in a private home office via Zoom with a locked door to avoid any risk of confidentiality violations. The audio portion of the interview was recorded and immediately deleted from the website storage once it was stored on a password-protected external hard drive. The external recording device was stored in a locked

cabinet in the researcher's home office that was not transported outside the office. The data were transcribed by the researcher alone. All correspondence with each participant was private and through a password-protected email address provided by the university. All personal information was removed from the transcriptions, and participants were assigned an alphanumeric name for confidentiality. An example of the alphanumeric naming system that was used is P1. The focus group was conducted using a different alphabetic naming system with the video cameras off during the entire focus group. The external hard drive and external recording device are physically destroyed following the seven-year minimum that the raw data must be maintained.

Expert Review

Preparing for the delivery of the interview questions is important for the success of the interview process. Braun and Clarke (2013) discussed that constructing and working questions is vital for effective interview questions. Using an expert panel can improve the quality of the interview questions (Yeong et al., 2018). An expert panel of three doctorate-prepared nurse educators reviewed the interview questions before conducting the first interview. All three expert panel members considered themselves experts in delivering nursing education in virtual and in-person settings. Their expertise and knowledge were crucial in the structure of the interview questions (Roberts, 2020). The questions were reviewed based on clarity, wordiness, negative wording, overlapping responses, balance, use of appropriate language, and relationship to the problem. The expert panel was chosen for their knowledge of the topic and their research experiences to aid the novice researcher in developing the interview questions (Doringer, 2021). The questions were then adapted based on the suggestions and feedback of the expert panel. The feedback was provided using a rubric that also allowed for additional comments. All three of the expert panel provided their suggestions via email, with one faculty using an additional phone call

to offer suggestions. The revised interview questions were submitted to the Capella University IRB for approval. The questions were then used during the interview to collect data following approval from the IRB committee.

Data Collection

The data collection process began following the IRB approval and a signed informed consent form from the participant. Following informed consent, the data collection process started with an explanation of the study's purpose and confirmation from the participants that they were ready to participate in the research study. The qualitative data collection came from interviews, focus groups, and field notes. The interview questions were asked in a semi-structured manner. The semi-structured interview process can seem overwhelming for novice researchers, but the flexibility allows for probing follow-up questions and data collection (DeJonckheere & Vaughn, 2018). The semi-structured nature encouraged the participants to expand their answers to provide more detailed data (Braun & Clarke, 2013; Merriam & Tisdell, 2016). The purpose was to better understand the experiences of nursing faculty teaching non-technical skills in a virtual learning environment. The semi-structured nature of the interview was an appropriate choice in data collection as it allowed the researcher to gather rich, descriptive data throughout the data collection process. An interview guide was approved by the Capella University IRB and used for the interview process.

Following the signed informed consent process, the interview data and time were set up using Zoom with an audio recording feature enabled. The researcher also recorded audio on a handheld recording stored in the researcher's home office in a locked drawer. The researcher could view the participants in real time and gather data using field notes. However, the participants were only audio recorded based on IRB approval. The researcher took handwritten

field notes and included the participants' facial expressions, body language, and background settings. The semi-structured interviews lasted between 25 to 70 minutes, depending on the experiences shared by the participants. Once all the questions were answered, the participants could revisit any previously answered questions or add additional information. The interviews were transcribed using Microsoft Word and the participants were labeled with an alphanumeric code to protect confidentiality (P1, P2, P3). All identifying information was removed from the transcripts. The files were saved to the password-protected external hard drive. The transcripts were sent to the participants for member checking. Two participants responded with minor changes to their transcripts. Following the member-checking process, the participants were emailed the date and times of the focus group.

The focus group meetings were conducted similarly to the interviews using Zoom for audio recording. All nine participants were invited back for a focus group. During the focus group, the participants were assigned a new alphabetic code in place of their names, and their cameras were turned off for the entire focus group. The focus group was conducted using questions formulated based on the anticipated main themes from the interviews and the topics important to expanding on following the thematic analysis. The IRB team approved the focus group guide. The informed consent from the interview process included the informed consent for the focus group. The audio recording was transcribed using Microsoft Word and stored on the same password-protected external hard drive. Following the focus group, the participants were thanked for their time and instructed to reach out via email if they had any follow-up questions or concerns.

Data Analysis

Data analysis is an essential step in qualitative research that requires significant effort. Data analysis explores the significance and meaning of the data as it relates to the research questions (Braun & Clarke, 2022). Braun and Clarke's (2022) thematic analysis was used to guide the data analysis portion of the study. Multiple books were purchased and read to help the novice researcher understand the thematic analysis approach. The use of inductive thematic analysis aligned with the basic qualitative nature of the research study.

Following the data collection, the interviews and focus group were transcribed verbatim by the researcher. The transcripts were then anonymized and edited for accuracy once more. The transcripts were sent to the participants for member checking. The process was repeated for all interviews. The files were permanently deleted from the Zoom website and saved to a password-encrypted external hard drive. The member-checking process was used to aid in developing credibility by involving the participants (Adler, 2022; Stahl & King, 2020). Once the transcription process was complete, the data analysis became the focus (Braun & Clarke, 2022). Following the transcription process, phase one of Braun and Clarke's (2022) thematic analysis began.

Phase 1. Phase 1 focused on the researcher familiarizing themselves with the dataset. The recordings were listened to multiple times and notes were taken as the data were transcribed. Multiple readings of the transcriptions occurred to get a better understanding of the concepts. The novice researcher must immerse themselves in the data to make sense of the information (Azungah, 2018). Following the multiple readings, concepts started to unfold, and coding began.

Phase 2. Phase 2 of Braun and Clarke's (2022) thematic analysis began at this point in the research. The field notes and transcriptions were read through to identify data sections that were interesting and meaningful to answering the research questions (Braun & Clarke, 2022).

The raw data were coded using labels that started to unfold and present themselves in segments of data (Braun & Clarke, 2022). As the transcripts were read through, the codes evolved and shifted as themes were presented. As the analysis of the anonymized transcripts was reread, the related themes were grouped using a table in Microsoft Word (Denford et al., 2018). The coding evolved throughout revisiting the data as the researcher's insight developed (Braun & Clarke, 2022). The codes were grouped and regrouped as the themes emerged through the data analysis process.

Phase 3. Phase 3 of Braun and Clarke's (2022) thematic analysis began by generating initial themes from the cluster of codes generated in Phase 2. The data that aligned with each preliminary theme was added to the working thematic analysis tables in the Microsoft Word document. The use of visual mapping for theme generation and development aided the novice researcher in gaining a better understanding of the patterns (Braun & Clarke, 2022). The coded data were extensive and several subthemes presented themselves through the data analysis (Braun & Clarke, 2022). Once the nine interview transcriptions were read, additional readings took place to determine if new themes evolved or if themes may have been missed in the preliminary data analysis.

Phase 4. Phase 4 of Braun and Clarke's (2022) thematic analysis focused on reviewing the themes developed in Phase 3. At this point in the data analysis, the themes split into subthemes. The field notes were also reviewed to include body language and facial expressions that may have been missed from the audio recordings but were present during the video conferencing session.

Phase 5. Phase 5 of Braun and Clarke's (2022) thematic analysis included refining, defining, and naming the themes. The researcher referenced back to the research questions to

develop a concise name for the themes that developed. Chapter 4 contains the results of the thematic data analysis process.

Phase 6. Phase 6 of Braun and Clarke's (2022) thematic analysis was completed throughout the other five phases. As the themes emerged and developed, the researcher reflected on how all the data pieces fit together. Phase 6 included a continual process of review and reflection on the data as the themes arouse. The reflection on the data and the themes as they related to the research questions were the focus of Chapters 4 and 5.

Instruments

The basic qualitative study used the researcher as the primary instrument for data collection and thematic analysis (Merriam & Tisdell, 2016). As a novice researcher, one must reflect on and prepare for their role as a research instrument. The interviews were conducted virtually due to social distancing requirements and to reach more participants around the Northeastern region of the United States. The focus group and interviews were conducted, and audio recorded using the conferencing platform Zoom. Once the recordings were available, they were downloaded, saved on a password-encrypted computer, and deleted from the website platform. Since the recordings contained only audio, field notes to note body language, facial expressions, and background settings were used. The role of the researcher, the process for creating the guiding questions, and the interview protocols are discussed.

The Role of the Researcher

The primary method for data collection for the study took place using audio conferencing software with the participant and the researcher. The novice researcher can struggle with the interview process, data collection, and thematic analysis (Merriam & Tisdell, 2016). A qualitative study course was completed as part of the doctoral program to help prepare for

conducting their study. The researcher needed to prepare and practice their qualitative data collection and analysis skills under the supervision of experienced researchers to prevent their own biases from dictating the data analysis (Roberts, 2020). The researcher had the support of the Capella University IRB team and a doctoral mentor to guide them through the data collection and analysis portion.

Before starting the data collection process, the guiding interview questions were created and sent to an expert panel for review. This prevented the use of guiding questions that may lead the interviews in a specific manner. The interview protocol was approved by Capella University's IRB and used during the semi-structured interviews to gather the data. The interviews and focus group were audio-recorded and transcribed verbatim. The transcripts were then sent to the participants for member checking.

While the researcher is a nurse educator interviewing nurse educators, the skills from this practice do not equate to a good research experience (Geddis-Regan et al., 2021). The researcher had five years of experience nurse educator experience but limited experience interviewing faculty. The audio-conferencing software had been used prior to the data collection process. A practice interview with a fellow nursing educator using the audio-conferencing software was used to practice and develop interview skills. The researcher had experience teaching non-technical skills in virtual and in-person settings, which led them to have some assumptions before starting the data collection process. The assumption was that as an educator in the Northeastern region of the United States, where the COVID-19 pandemic caused an abrupt shift from in-person to virtual learning, all the participants would have similar experiences. Without self-reflection, the researcher may not have been aware of this bias and may have impacted the data analysis.

Guiding Interview Questions- Researcher Developed

The semi-structured interview questions to explore the faculty perspectives on teaching non-technical skills in a virtual learning environment were developed. The development of the questions started following the design of the research questions to ensure that they aligned. The ability of an interview question to acquire a detailed response from the participant is directly related to the value of the data collected (Roberts, 2020). The first question was an introduction question to learn more about the participants' teaching experiences, and the subsequent questions focused on teaching non-technical skills. Below are the revised interview questions following the expert panel review used for the interviews.

Open Ended Interview Questions

1. Please describe your teaching experience, both virtual and in-person, and define your role during this time, including adjunct vs. full-time, tenure vs. non-tenure track.
2. In your own words, define what non-technical skills are related to nursing education.
3. In as much detail as possible, describe your role in developing or implementing educational activities in a virtual learning environment that focused on non-technical skill development.
4. How did you feel when implementing the educational activities within a virtual environment? Please describe it in detail.
5. Which, if any, educational activities do you feel incorporated more learning opportunities for students to practice and develop their non-technical skills?
6. What, if any, challenges did you face when implementing your educational activities?
7. From the first time you implemented the activities what would you change for future subsequent implementations?

8. Describe your experiences implementing educational activities that improve non-technical skill development in a virtual setting compared to an in person learning environment.
9. If given the option, which non-technical skill development activities will you continue to implement in a virtual learning environment, include justification.

Open Ended Focus Group Questions

Following the interview process, a focus group was conducted with the research participants on a volunteer basis. The following focus group questions were developed based on anticipated themes from the interviews. The focus group questions were part of the Capella University IRB-approved focus group protocol developed and used throughout the focus group. A focus group was used as part of the data collection tools to gather data from multiple participants simultaneously (Braun & Clarke, 2013). The focus group protocol was used as a guide, but the focus group was less structured than the interviews to allow for a more fluid conversation between participants (Braun & Clarke, 2013). The focus group questions are listed below.

1. Do you feel that your definition of non-technical skills differs now from two years ago? Please discuss in detail.
2. How well did you feel prepared to implement educational activities to improve non-technical skills during the pandemic?
3. How did you need to change your delivery of instruction to adapt to a virtual environment?

4. Can you identify gaps in the learning environment and nursing education course quality that impacted your experience? Please discuss in detail.

Ethical Considerations

The validity and reliability of a basic qualitative study revolve around the ability of the researcher to conduct the study ethically (Merriam & Tisdell, 2016). Due to ethical concerns that may present themselves during the study, the researcher must plan for and try to account for ethical aspects before starting the study to handle them appropriately. As discussed by Braun and Clarke (2022), ethical thinking includes the ability to consider where, how, and whom to collect the data from in a manner that protects the participants due to ethical codes set by the research community. The ethical integrity is regulated through the ethical review process and the ability to follow the framework (Cascio & Racine, 2018). Capella University's IRB team approval was acquired before the data collection process. The IRB process included identifying possible risks and ways to minimize the risk using the basic principles of "doing no harm" (Braun & Clarke, 2013).

The participants were recruited using an invitational letter that addressed the purpose of the study and included personal disclosure of the researcher (Braun & Clarke, 2013). The participants and the researcher signed the IRB-approved informed consent form and adhered to it throughout the study. Informed consent was used to avoid deception of the participants and to help them understand their rights within the study (Braun & Clarke, 2013). As discussed, the participation was voluntary, and participants were aware that they might withdraw from the study at any time without reason. The benefits of the study outweighed the potential risks of participation; however, the potential risks and benefits were addressed in the consent form to maintain transparency. Transparent relationships allow the participants to feel empowered and

make more informed decisions when participating or continuing (Xu et al., 2020). All forms were emailed privately to each participant to protect their privacy and confidentiality. The participants were able to ask questions before signing the informed consent. Based on the inclusion and exclusion criteria, participants were recruited using a fair and ethical voluntary process within a state in the Northeastern region of the United States. There was no professional relationship with any participants used in the study. One potential participant was excluded due to a prior professional relationship.

The participants were made aware that the study was a minimal-risk study conducted virtually. The interview and focus group were run virtually due to COVID-19 pandemic social distancing restrictions that protected the participant and researcher from additional harm. The researcher was able to reach a broader geographical range of nurse educators. The interviews were conducted via Zoom and the researcher was alone in an office when conducting the interviews to protect the participant's confidentiality, along with assigning the participant an alphanumeric number known only to the researcher. Following the interviews and focus group, data were collected and transcribed using the coding system. All identifiable information was removed.

Additional ethical considerations were addressed by recognizing the recommendations of the Belmont Report of 1979 (Department of Health and Human Services, National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). The participants were not a part of a vulnerable population. Using a qualitative methodology may not place the participants in physical harm, but the participants may experience uncomfortable situations or have uncomfortable emotions triggered during the interviews (Dames, 2019). The participants were made aware in the interview and focus group protocols that they were not

required to answer questions they did not feel comfortable answering. During the focus group, the participants' names were changed to alphanumeric codes, and their cameras were turned off. However, there is an ethical risk for confidentiality issues during focus groups (Braun & Clarke, 2013). To minimize this risk, participants were asked not to discuss the information shared in the focus group outside of the parameters of the group (Braun & Clarke, 2013).

As discussed, the primary research instrument is the researcher in a basic qualitative study. Using the researcher as the human instrument can lead to biases and ethical challenges in qualitative studies (Merriam & Tisdell, 2016; Peddle et al., 2019). It is imperative for self-reflection on past experiences and the potential for biases. The researcher meets the inclusion criteria of teaching in the Northeastern region of the United States and has experience teaching non-technical skills in both an in-person and virtual environment. Since the researcher had experience implementing non-technical skills in a virtual setting, they need to be aware of their own biases before collecting and analyzing the data.

Social desirability bias is an ethical issue that may arise during interactions with participants in the study (Marquez-Hernandez et al., 2019). Participants feel the need to modify how they performed or implemented education activities when they think they are being observed (Marquez-Hernandez et al., 2019). Gazza (2017) accounted for possible biases from participants by building a trusting relationship where the participants felt that they could volunteer information openly. Building a trusting relationship with the participants can help avoid any ethical issues that may arise during the collection phase of the study (Creswell, 2013). The researcher attempted to negate these biases by starting the interviews with questions that helped build a rapport, allowing the participants to share any concerns before signing consent, and maintaining an open line of communication throughout the study. The interview and focus

group protocols ensured that consistency and focus on the research questions was maintained. The participants were made aware of the field note process. The field notes allowed self-reflection on the reaction to the participant and the interview to decrease the risk of biases (Braun & Clarke, 2013).

An ethical issue that may arise during the analysis of data phase of the basic qualitative research study is the desire only to disclose positive results (Creswell, 2013). Any contrary findings need to be reported and alternative explanations explored (Connelly, 2016; Creswell, 2013). Jafarzadeh-Kenarsari et al. (2019) concluded in a qualitative study that faculty resist new technologies or virtual learning due to a lack of knowledge, motivation, and interest. Failure to report the barriers that faculty expressed they experienced would have resulted in major ethical issues for this study.

Ethical thinking before conducting the study aided in maintaining internal checks for credibility, transferability, and dependability within the study. Sharing the detailed steps of the research and the ethical considerations is a way to maintain openness and positively impact credibility (Fleming et al., 2021). The use of audio-recorded interviews and the focus group allowed for data saturation to be met. The transferability of the results can be a challenge with qualitative research. The transferability of the findings were a concern since the focus was on nurse educators in the Northeastern region of the United States. The results can be applied to other settings by providing readers with detailed specifics related to the study's setting, participants, and circumstances (Braun & Clarke, 2022). The readers of the study can then use the results of the data to reflect on how it applies to their lived experiences (Merriam & Tisdell, 2016).

The researcher was aware that the results may not be generalizable to all nurse educators but providing detailed inclusion and exclusion criteria within the study can help readers better understand the situation of the participants. Using one-on-one interviews, a focus group, and field notes aided the study's credibility. A findings credibility relates to the reader's ability to believe the findings (Nassaji, 2020). Using multiple data sources helps triangulate the data, improving the credibility (Merriam & Tisdell, 2016). Member checking was also a way to ensure the internal validity (Merriam & Tisdell, 2016).

The approved plan by Capella University's IRB team and the Belmont Report provided a detailed guide to protect the participants of the study and to strengthen the credibility, transferability, and dependability of the study structure and results (Department of Health and Human Services, National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Creating and following detailed methods and techniques throughout the study can improve the validity and reliability of the study (Hayashi et al., 2019). The records of the raw data, transcripts, analysis, and collection procedures are maintained for a minimum of seven years per Capella University's IRB.

Summary

The information in Chapter 3 included the study design for the basic qualitative study focusing on exploring the faculty perspectives on teaching non-technical skills in a virtual nursing environment. The basic qualitative design was discussed, including the participant selection, sampling method, size, recruitment procedures, and protection of participants' importance. The next section of the chapter included a detailed explanation of the data collection and analysis process and instrument used.

Chapter 3 concluded with the ethical considerations needed to ensure that the participants' confidentiality was maintained, and they were protected throughout the study. Biases and potential conflicts of interest were discussed. Chapter 4 will provide specific information regarding the study's outcome and the in-depth analysis process. The detailed findings from the thematic analysis will be reported and provide answers to the research questions.

CHAPTER 4. PRESENTATION OF THE DATA

This basic qualitative research study focused on the experiences of nursing faculty located in the Northeastern region of the United States who had taught non-technical skills in a virtual environment. The research questions of this study were: What experiences have nursing faculty had when implementing educational activities to assist nursing students in developing non-technical skills in a virtual learning environment and what have faculty learned from their experiences implementing education activities to help nursing students in developing non-technical skills in a virtual learning environment that would impact their future teaching strategies? Data were collected using individual semi-structured interviews via video conferencing software, a focus group using the same software, and field notes. The interviews completed with nine nursing faculty participants were rich in data. The focus group allowed for the collection of data to expand on the themes from the interviews. Chapter 4 is divided into four main sections: an introduction, a description of the sample, an in-depth exploration of the research methodology, and a data analysis presentation.

Introduction: The Study and the Researcher

This qualitative research was conducted to explore the experiences of nursing faculty teaching non-technical skills in a virtual environment. The researcher was initially interested in studying non-technical skill learning using high-fidelity simulation mannequins, but the literature was saturated with these studies. A few semesters into planning, the COVID-19 pandemic struck the Northeastern region of the United States and altered how educators prepare the next generation of students. With the abrupt shift to online learning, the effects on nurse educators became relevant, thus providing opportunities for students to develop non-technical skills.

Preparation for the study included completing the Collaborative Institute (CITI) modules required by Capella University. Before starting the data collection, all the necessary coursework for the doctoral degree was completed. The coursework included a comprehensive predictor term that was successfully passed. Regular reviews of journal articles and books helped the researcher better understand how to complete qualitative research. Meetings with the mentor were routinely scheduled, along with meetings with committee members throughout the research process. A complete IRB approval was obtained by submitting a Dissertation Research Plan (DRP) and supporting documents through Capella University. Data were collected using interviews and focus group conversations, transcribed, coded, and analyzed the data.

Description of the Sample

The sample for this basic qualitative study consisted of nine nursing faculty participants teaching in the Northeastern region of the United States. The faculty had experience teaching non-technical skills in both virtual and in-person settings. Per Capella University's IRB suggestion, no demographic data were collected from the participants. Only two participants expressed that they had experience as a student in a virtual learning environment. Four participants were recruited through email correspondence through their college or university. The remaining five participants were recruited via Facebook.

All nine interviews and the focus group were conducted virtually through audio conferencing software. The nine interviews were audio-recorded and transcribed to ensure accuracy. Table 1 includes the dates of the interviews, the duration of the interviews, and the number of pages for the transcript. A total of 352 minutes were spent collecting data from the interviews and a focus group. The average interview length was just under thirty minutes per interview.

Table 1

Individual Interviews and Focus Group Participants

Participants	Date	Time/ Minutes	Pages
Participant 1	August 12, 2022	23	9
Participant 2	August 17, 2022	38	17
Participant 3	August 26, 2022	22	10
Participant 4	September 21, 2022	30	11
Participant 5	October 18, 2022	31	10
Participant 6	October 18, 2022	28	10
Participant 7	October 20, 2022	22	8
Participant 8	October 22, 2022	56	18
Participant 9	October 28, 2022	40	15
Focus Group	November 14, 2022	62	23

The interview times were selected based on the availability around the participant's schedule. Five of the nine participants took part in the focus group. Additional focus groups were offered, but no more than two participants could attend each subsequent scheduled time. The interviews were semi-structured, one-on-one, using an interview guide. At interview seven, participant responses became repetitive. Two more interviews that were previously scheduled were completed to meet data saturation. Each participant was assigned an alphanumeric code: P1 through P9 from the interviews. The focus group participants were coded using a random assignment of an uppercase alphabetic coding system: Participant A through Participant E. Participants used a mix of laptop computers, desktop computers, and cell phones for the individual interviews.

Participants signed an electronic informed consent before data collection and were reminded that their participation was voluntary. There were no participants who withdrew from the study. There were a few interruptions during the participant interviews noted in the field

notes. One participant had another co-worker in the room where they shared an office during the interview. One participant was traveling in a car as a passenger. One participant frequently received emails on their computer and would pause briefly to ensure it was not an urgent message. The last notable interruption was one participant who had to briefly excuse themselves to care for their family members in the background. There were no noted interruptions during the focus group; however, participants were muted when not speaking and had their cameras off, making it impossible to tell their surroundings.

Copies of the interview transcripts were sent to the individual participants for validation and clarification. One participant responded with feedback that there were minor grammar issues, but that did not negate the data content. Another participant responded with suggestions on how to edit the transcripts better to maintain confidentiality. Four additional participants responded that the transcripts were accurate. The remaining participants did not respond to the email.

Research Methodology Applied to the Data Analysis

A basic qualitative study was conducted to understand better the faculty perspectives on teaching non-technical skills in a virtual environment. The interviews were transcribed from the audio recording using Microsoft Word. A manual analysis of each transcript was completed line-by-line to ensure accuracy. Member checking was completed after the transcriptions were reviewed for accuracy. The field notes were compiled with the transcripts for the data collection process. The transcriptions were reviewed a minimum of two times to ensure familiarity with the dataset, meeting the goals of phase one (Braun & Clarke, 2022). The initial coding started after the first four interviews were completed. Phase two of the thematic analysis process was challenging for the novice educator. The data were reviewed several times to ensure the

transcripts were coded entirely. Each transcript was analyzed manually, and Microsoft Word comments were placed over areas that contained commonly repeated words or ideas. The initial themes were generated during this step, phase three of Braun and Clarke's (2022) thematic analysis process.

Once all interviews had been completed and transcribed, the transcripts were reviewed and coded for common themes again. Braun and Clarke's (2022) thematic analysis process was used to complete a more in-depth data analysis process. The pieces of data were moved to a table to track how many participants discussed the themes, and several themes were eliminated. Many subthemes started to arise from the data analysis process. Phases 4 and 5 of the thematic analysis required the assessment of the data to connect the codes to the developing themes (Braun & Clarke, 2022). The transcripts were reviewed an additional two times to ensure the themes related to the research questions. Revisions were made that point to the themes if refining was needed. The data extract tables were reviewed multiple times and included review by the mentor. Once the themes and subthemes were captured, the themes were used to guide additional focus group questions. The focus group questions were asked to the participants based on the focus group protocol approved by Capella University IRB and expanded on these questions using the common themes that resulted from the individual interviews.

Presentation of Data and Results of the Analysis

The data collection process aimed to explore the nursing faculty perspectives on teaching non-technical skills in a virtual learning environment to students in the Northeastern region of the United States. The data presented in this section were analyzed using Braun and Clarke's (2022) thematic analysis guide. Phase 6 focused on writing so that the data were presented as a coherent story with the identified themes per Braun and Clarke's (2022) thematic analysis. The

hand-coding process allowed the researcher to organize codes and identify patterns in the quotes taken from each participant. The themes examined related to the two research questions that guided the study were:

RQ 1. What experiences have nursing faculty had when implementing educational activities to assist nursing students in developing non-technical skills in a virtual learning environment?

RQ 2. What have faculty learned from their experiences implementing education activities to assist nursing students in developing non-technical skills in a virtual learning environment that would impact their future teaching strategies?

The themes assisted the researcher in understanding how faculty perceived their experiences in teaching non-technical skills in a virtual learning environment. The themes included (a) barriers to faculty effectiveness, (b) clear expectations, and (c) identification of gaps in the classroom. The following sections describe in detail each of the themes and subthemes. Table 2 provides a summary of the themes and subthemes. Table 2 provides an analysis of which participants discussed the theme and subtheme and the frequency in the number of participants out of nine**.**

Table 2

Summary of Themes and Subthemes

Themes and Subthemes	*Participants from the interviews*	*Frequency*
Barriers to faculty effectiveness		
Engagement	1, 3, 4, 6, 7, 9	6
Impact of class size	1, 2, 6, 8, 9	5
Technology challenges	1, 2, 3, 4, 7, 8, 9	7
Non-verbal communication	2, 3, 5, 8, 9	5
Clear expectations		
Faculty expectations	1, 2, 4, 6, 8, 9	6
Student expectations	4, 5, 6, 8, 9	5
Identifying the gaps		
Synchronous vs non-synchronous	1, 2, 4, 5, 9	5
Flexibility	4, 5, 6, 8, 9	5

Theme 1: Barriers to Faculty Effectiveness

The first identified theme focused on the barriers to faculty effectiveness when teaching non-technical skills in a virtual learning environment. All nine faculty reported barriers they had to overcome to successfully implement online learning activities to help students develop their non-technical skills in response to interview question six. Interview question six required the participants to reflect on any challenges they may have faced during the implementation process of the non-technical skill development activities. Many participants discussed barriers they faced in response to interview question seven which focused on any changes the participants would make following the first implementation of the educational activities. Question eight from the semi-structured interviews allowed participants to discuss challenges they faced in a virtual setting compared to in-person learning. The barriers commonly identified as subthemes were engagement challenges, class size, technology issues, and lack of non-verbal communication due to the virtual nature of the classes.

Engagement

Of the four barrier subthemes that presented themselves through the interviews and a focus group, the most discussed issue was engagement challenges. The feeling of being able to engage students long enough to teach non-technical skills in a virtual learning environment was a barrier discussed by 67 % of the participants. The theme of engagement in the classroom was also discussed during the focus group.

Interview Data. Six out of nine participants stated in their interviews that keeping nursing students engaged in learning non-technical skills in a virtual environment was a barrier to learning and teaching. Participant 3 said, "I just put in more effort to keep them engaged." Participant 4 said, "engagement. I found it in the beginning, quite challenging to engage students virtually compared to face the face." Participant 9's statements agree with the other participants in expressing that the students were often distracted by life outside the classroom. Participant 9 expanded more on the topic by stating,

> I think the biggest challenge was if there were students that weren't willing to be in the moment. So either they didn't have their cameras on, that was always a big clue, right? If you don't have your camera on, if you're not properly unmuting, and sometimes they were definitely distracted by life behind them. There were certainly times when some students would be, you know, doing this virtual work from their workplace, or from you know, a home with distractions in the background. So that was probably our biggest barrier on student learning was the environment that person was in.

Participant 6 stated that engagement may have been a barrier to learning because there was not enough structure in the online environment following the COVID-19 pandemic. Participant 6

discussed struggles keeping students in their twenties and thirties engaged due to outside factors, such as jobs, families, and the non-traditional style of learning.

Focus Group Data. During the focus group, engagement was a barrier discussed by the participants. The focus group evolved from discussing engagement as a barrier to being more focused on how the faculty addressed the engagement issue. To expand on the data collected in the interview, participant E discussed integrating small breaks into the activities to allow the distracted students to reset and come back more focused. Participant E stated, "it was really challenging at first to just keep everyone engaged and on target." Participant A and D agreed with participant E when they stated that keeping students engaged when teaching non-technical skills in a virtual setting was a challenge. Participant D stated that they struggled with setting ground rules; examples included locations where the students were allowed to use their video conferencing software. For example, participant D discussed a struggle to engage students in the virtual classroom if they were walking down a grocery aisle.

Class Size

Class size was a common barrier discussed by the participants related to challenges they experienced teaching non-technical skills in a virtual learning environment. Nursing programs were burdened during the COVID-19 pandemic restrictions to provide day-to-day learning instruction that impacted the students and faculty of large and small nursing programs (Lewandowski et al., 2021). Six out of nine (67%) participants discussed class size in their interviews. Class size as a barrier was discussed by many participants in response to research question six, which asked about the challenges the participants faced. Some participants mentioned class size as a barrier when answering research question eight, which compared

implementing educational activities in a virtual setting compared to an in-person learning environment.

Interview Data. From the one-on-one interviews, 56% of the participants stated that class size impacted their teaching of non-technical skills in a virtual environment. Participant 1 stated, "yeah what would I do differently. I think, because we have such a large volume of students breaking them up into groups helps." Participant 2 felt that the class size was impacted by the virtual environment stating,

> That definitely mattered; it really did; you need a much smaller class online versus in person… But I did have to have a smaller number of students because I needed to keep up with that chat. They were more interactive online.

Participant 9 expanded more on the subtheme by stating,

> So, you'd have a small group, maybe five people. I was actually able to do more work with those five people than I would have done. Probably in a group of twenty, I was able to really devote undivided attention to them. Which sounds insane. I know this sounds like crazy, but I could actually devote my attention to them, and it would turn into a great big group discussion.

Participant 8 also stated that a group of five students was more manageable to accomplish the learning activities created to teach non-technical skills in a virtual environment.

While 56% of the participants mentioned larger class sizes being a barrier to their teaching, Participant 3 discussed the opposite of the majority, stating that they found larger class sizes more beneficial. Participant 3 stated,

> I actually think it's easier with more students than with less, because it's that engagement issue, and with less, you could have just a group of outliers who aren't super verbal, to

> begin with, and then you put them on the other end of a screen even more difficult. Whereas a big group, someone who's just more outgoing in general may participate, which triggers other people to participate that wouldn't necessarily be the first to stand up and raise their hand.

Participant 6 agreed that class size was a barrier for their effective teaching but listed the technology platform as one of the many challenges related to class size. Participant 6 stated,

> I think some of the Zoom meetings, those kind of discussions, the difficulty I found with Zoom and or with any kind of video chat platform is when you have a large group of people sometimes it's hard to, I don't know you're going to start to talk yet, so it's kind of some of that talk over which we were able to kind of work through a process, so to speak. Using the raise your hand function, or typing your question in the chat box.

Focus Group Data. During the focus group, one participant stated that their class size was over 60 students in a single video-conferencing platform. The participant discussed the need to break the students into groups so that they could focus on one group at a time. Participant A stated that they struggled to balance the activities during the class since there were so many students completing the activities. Another participant added that "we did the best we could. It was better than doing nothing" when discussing issues with class sizes being replicated in the virtual environment compared to the in-person classroom.

Technology

Technology issues were common among the subthemes that presented themselves during the thematic analysis. The participants taught at various schools where the student population and access to technology differed. Participants discussed having issues with different computers and new software.

Interview Data. Seven out of nine participants, 78%, discussed challenges with technology as a barrier to teaching non-technical skills in a virtual classroom. Many participants discussed the incorporation of virtual learning platforms during the COVID-19 pandemic that they had not previously used. Participant 1 discussed that switching to new learning programs was a barrier for many faculty members. They stated,

> We have started using programs, such as CoursePoint or Shadow Health for exams we've just adopted ExamSoft so learning those programs and how to effectively communicate how to use those programs to students is definitely a learning curve for faculty. Some faculty might feel much more comfortable with the technology than others, so it requires a lot of onboarding and training, and practice to get used to those programs yes.

Delays in students being able to complete assignments due to technology glitches and faculty struggles were discussed. Participant 3 stated that inconsistency between different online resources and technical glitches were major issues. Participant 3 expanded on this barrier by saying,

> I think the technology is the biggest challenge. It's inconsistent even with good programs, et cetera. It's just an inconsistent tool for large groups of people. There's always going to be someone who's Internet in and out, or who, whether it's a fault of their own or not, you're always going to lose a couple down in a technology rabbit hole.

Participant 2 stated that "the little technology glitches were definitely the most difficult part of it" when discussing the switch to a virtual learning environment. While Participant 9 also discussed technology as a barrier to their effective teaching of non-technical skills, they also stated that they became proficient at working through these technology glitches throughout the COVID-19 pandemic. Participant 9 stated,

> Internet, that was a big problem for us. I should have mentioned that earlier. We found that you know, depending on which system you are using what the better browser was, so that stuff was quickly identified, and something faculty as a faculty member. We became proficient at some of our IT skills that we never would have developed had we not been virtual like that.

Participant 8 included that technology challenges that varied between types of computers and learning software became an issue. Participant 8 stated,

> The other thing that's really bad with all of this is people who have Macs and they're online.. I mean even the IT people say that unless you have a brand new Mac, that I did not realize this, but they have licenses behind the MACs, and what happens is things slow down and you can't do things, and you have to buy a new machine. I had no idea.

Participant 4 discussed students having technology challenges as a barrier to learning. Participant 4 stated that their students needed help with determining whom to reach out to solve technical issues. They stated that their smaller school had less of an information technology help desk team that could meet the demands of the students compared to a larger university. Participant 7 stated that they were "uncomfortable" when there were technology glitches in the middle of their non-technical skill learning activity. They also noted that this was "something that we're going to have to get used to" when learning in our technology world.

Focus Group Data. During the focus group, one participant stated that since returning to primarily in-person learning after being virtual for the COVID-19 pandemic restrictions, they have students who may not have been successful in a virtual environment due to technology issues and the inability to navigate the technology challenges. Participant A stated,

> I have two students actually right now who still can’t figure out, EHR and ATI that's not as a dig, but thank God, they entered the program when they did, because I don't believe that they would have succeeded. I don't think they would have been successful in any capacity, because I see them, and I have them in clinical and I'm like Wow! You're so amazing. But like Jeez, I really wish you could just figure that out or maybe you can reach out to tech support. I think if they had applied, or maybe even started in 2020, or 2021, I would have been an absolute disaster, and they would have not been successful at all.

Participant D stated that technology challenges included “trying to share a screen and manage a chat” using one computer at home was a challenge. Participant B discussed that the need to learn multiple different technology platforms to determine which worked best for teaching the students was a learning curve for many faculty. Participant C stated that “as far as using Zoom, I had never used it before” when discussing with the group the learning curve when teaching non-technical skills in a virtual learning environment. Participant D discussed that their experiences as a student in an online learning environment did not prepare them for “what to expect with the student issues or the Zoom piece.”

Non-verbal Communication

The faculty participants discussed non-verbal communication, or lack thereof, as a barrier when teaching non-technical skills in a virtual learning environment. The interviews and focus group presented data that discussed non-verbal communication on both the faculty and student sides. The participants felt the faculty often missed non-verbal cues from the students in a virtual setting and also were cautious in what non-verbal communication they were demonstrating in the virtual classroom.

Interview Data. During the interviews, 56% of the participants discussed non-verbal communication barriers. Participant 8 discussed the inability to read the student's body language and non-verbal cues as a barrier to effective teaching. They stated,

> So, to me, it's all about body language. Okay, every single bit of it. I don't care, so you see my face, you see my mouth, but that's not my body language. My body language is what my hands are doing. Am I leaning on something? Am I writing? Will you know a lot of what you're saying when you are virtual? You don't see any of that first of all, you got twenty-five little faces. I cannot watch them all. I'm not seeing their whole being versus being in a lab or being in a [simulation] room, you know, I can see that they go and say, I'm going to close the curtain and touch it, you know. It can never be, I don't think it could ever be the same to be perfectly honest. I think we have to accept that.

Participant 2 shared that they are very animated, and it was difficult for those non-verbal animations to translate in a virtual setting. Participant 5 expressed concerns that when they were teaching virtually, their personality may have been misconstrued by students. Participant 5 stated,

> I'm not intimidating being face to face, where I'm sure I can come off intimidating because you know discussion boards don't have that human ability behind it, like they don't know am I smiling when I'm asking them this question, or am I being just cruel and trying to catch them out on the spot. What you know. So, face to face they have to answer, but they know that I'm supportive. Where online I don't think they know that.

Participant 9 expressed their concerns that as a faculty member, you might read the virtual classroom incorrectly and not end up focusing on things that were important. They shared, "you

felt the temperature more. You knew that if you spent your time on lecturing, trying to just talk at people, it never worked, to me virtually that never worked."

Focus Group Data. The theme of non-verbal communication as a barrier to teaching non-technical skills in a virtual environment was discussed by Participants A, B, C, and D. Participant A started the discussion by stating, "there was no way I could tell you any body language on anybody." Participant D explained that they were more aware of the non-verbal communication style they were portraying to students as a barrier to learning. Participant D discussed that they tried to ensure they were not portraying non-verbal communication and that they, as the instructor, may not be focused. Participants B, C, and D expanded on this topic by discussing the lack of being able to read a student's non-verbal cues resulted in them often struggling to figure out when a topic needed more explanation and when a student understood the information. Participant B stated that non-verbal cues from students are something they "rely on innately" in the classroom. They continued by saying, "I rely on that so much that virtually I find myself very lost."

Participant D discussed that "part of the difficulty with recognizing the non-verbal cues was also being able to see them. If you had on monitor, and you were either sharing a screen or even if you didn't have on the monitor." The technology barriers played a role in the non-verbal cues. Participant C stated that they struggled to pick up on students' personalities, which could help tell if the students were engaged. Participant C states in a traditional classroom, "you just pick up on their facial expressions, and you can tell they are getting it."

Theme 2: Clear Expectations

The theme of clear expectations was brought up by 78% of the participants in the one-on-one interviews in response to the interview questions that required the participants to reflect on

things they may change for subsequent implementations. From the theme, subthemes presented themselves. Those subthemes included clear expectations for faculty and expectations for students within the course. When the nursing faculty participants discussed having clear expectations, they discussed that expectations are guidelines and rubrics that allowed all parties, students, and faculty, to perform better when teaching and to learn non-technical skills in a virtual learning environment. The semi-structured interview question number seven asked for examples of how the participants would change the activities from the first time they implemented them virtually for subsequent implementations. This interview question was helpful in requiring the participants to reflect on how they had learned from their previous experiences. Theme two utilized interview question four, focusing on how the participants felt when implementing the educational activities. In response, some faculty discussed the need for or lack of clear expectations as impacting how they felt about the experience.

Faculty Expectations

Nurse educators must be trained to develop and perform online lessons to be effective educators in a virtual setting (Vadsaria & Vadsaria, 2022). Many faculty made the switch to teaching virtually with little time for proper preparation. The subtheme of clear faculty expectations is addressed.

Interview Data. Six of the nine participants discussed faculty expectations in their interviews. Participant 3 felt that having clear expectations of their role as faculty member helped provide structure. For example, participant 3 discusses having a clear turnaround time expectation for answering student emails. Participant 3 discussed that their management team had expectations; they stated,

> I think that was very, very helpful, because it offers some sort of structure like, within 72 hours. Well, they prefer, It's 48 hours. They should be giving me that but it's not, 72 hours just the most that you can.

Participant 1 discussed the need for clear guidelines for instructors when it came to their engagement in the class. Participant 1 listed an expectation of all faculty that they are responding to every single student within a set guideline of 24-48 hours. Participant 2 felt that it was sometimes challenging for faculty to communicate with each other online versus in person. Participant 6 shared a similar feeling and expressed that the faculty had expectations of themselves that required them to be available more frequently than they would if they followed in-person hours. Participant 6 stated, "I think the biggest battle was just the time of everything, and I think Faculty felt that they needed to be connected to their emails all the time and kind of at the fingertips of students." Participant 6 and participant 9 both expressed that they did find some best practices after teaching non-technical skills in a virtual environment the first time. For example, participant 6 expressed that the faculty "set more boundaries with the students," and participant 9 stated that the best practice of having "an open office hour" helped their faculty.

Focus Group Data. The focus group participants presented data that added to the subtheme of having clear faculty expectations. Participant A expressed that they needed help with how far they were expected to help students navigate online and technical issues. Participant A stated, "Do we, you know, get a text so we can figure this out? Do we go offline with them, you know, to get them on frozen?" Participant D expressed that consistency across the program may have been more helpful to their program. Participant D stated, "I think, just to a point that came up before, was having consistency across the program, if not at least the

college." Participant B stated that they have run into issues with consistency within the program due to not having clear faculty expectations.

Student Expectations

Interview Data. From the one-on-one interviews, 56% of the participants stated in their interview that clear student expectations could aid them in teaching non-technical skills in a virtual learning environment. Participant 6 felt that having clear expectations of the students can help the students adjust more easily to the assignments. Participant 6 stated,

> I think some things that would be changed would be having more of a kind of very clear, step-by-step what to do, and maybe even having a video piece kind of outlining some of those directions, just because, you know, different learners get the information um different ways.

Participant 8 felt like participant 6, discussing using a clear rubric for the students to guide their learning. Participant 8 stated,

> What happens is there are assignment criteria, it might say, within the first three days of the module, post your initial thinking, or within 48 hours of the module beginning, Post your question to the class. Does that make sense? So that's an assignment criterion, I grade on that when they follow the assignment criteria, and then I follow the rubric all the way down. Okay, if they did a really good job of explaining the topic, if they use literature for references for every single posting, if they answered their classmates, that type of thing.

Participant 9 discussed the need for clear student expectations regarding learning in the virtual setting. They expressed that having clear requirements for participation was helpful. Participant 9 included, "So the expectation from day one was cameras on microphones. We turned on and off

so that you could hear each other, and people had to participate." They went on to further discuss the importance of having consequences for not meeting the expectations to ensure the students were participating and meeting their goals. Participant 9 included,

> During the classroom I would look at you, and we have open discussion kind of that flipped classroom model. We would do the same thing virtually to people, and if the person didn't have a camera on, and didn't respond. Usually, I would wait a little bit, give them time if that same person didn't respond to the second time, there was a consequence. There was an email that was sent to you. You know, people were involved, and you were held accountable to the fact that you weren't participating.

Participant 4 discussed that using announcements and emails to communicate clear expectations to the students was helpful. They provided the students with clear and consistent guidelines, stating, "end of the day Sunday at 11:59 pm, that is when all the due dates are supposed to be finished."

Focus Group Data. During the focus group, having clear expectations for students when implementing activities that would develop and improve their non-technical skills was discussed briefly. Participant D discussed that consistency with expectations of the students across the entire program or school may have helped. Participants A and B agreed with participant D. During the focus group, participant A stated, "yeah, I agree we should have had better ground rules, too," when discussing having clear expectations for students to follow. Participant D stated, "I'm not sure that the whole school was on the page of what the ground rules were." Participant B expanded on this topic, stating that not providing the students with consistency results in "so much pushback from the students." Participant B explained that consistent student expectations allowed the faculty to hold the students accountable.

Theme 3: Identifying the Gaps in the Classroom

The COVID-19 pandemic left many nursing programs with challenges they needed to overcome. Changes in how the content was delivered impacted accreditation standards, and disruptions in the traditional learning modalities impacted student academic progression (Leaver et al., 2022). Many faculty felt they needed to learn how to teach non-technical skills in a virtual learning environment. Interview question two was useful in ensuring the participants had a detailed understanding of how non-technical skills are defined so they can provide accurate experiences on gaps they encountered in a virtual setting. In response to interview question four, Participant 5 stated they were nervous about the unknown when teaching non-technical skills virtually and that the unknown may have held faculty back from making the transition. After learning from their experiences, the faculty participants were able to express the gaps that they felt may need to be addressed moving forward with teaching non-technical skills in a virtual learning environment.

Many individual interviews and focus group participants discussed the subthemes of flexibility and synchronous versus asynchronous classes. Interview questions one and three were important to theme three because they allowed the development of a better understanding of the participant's experiences teaching online and being an online student. A newer participant to the virtual environment may express different gaps compared to a more experienced faculty member who has had time to close gaps or recognize a deeper context to certain gaps.

Synchronous vs. Asynchronous

There are various ways to teach non-technical skills in a virtual environment, from newer virtual simulations to traditional lecture-style education. One subtheme identified in the data was the differences in teaching non-technical skills in a virtual environment, either synchronously or

asynchronously. Theme three emerged from interview question five, which focused on which activities the participants felt provided more learning opportunities. Most participants discussed differences in the effectiveness of the educational activities based on their implementation via synchronously or asynchronously. This subtheme aligned with interview question nine, which required participants to reflect on what non-technical skills activities they would continue to implement in a virtual learning environment. Participant 6 discussed activities they would implement in both a synchronous and asynchronous virtual classroom but expressed restrictions due to state and board of nursing accreditation requirements.

Interview Data. Fifty-six percent of participants stated that they found a difference in teaching non-technical skills in a synchronous versus the asynchronous course. Participant 2 stated,

> It's a different kind of learning, synchronous versus asynchronous, you have to be an independent learner to be asynchronous, and they did not sign up for an online course or an online school, so we did synchronous so that we could maintain that connection with them.

Participant 5 expressed their struggle teaching non-technical skills in a virtual environment in an asynchronous course because they were not able to provide real time feedback. Participant 5 stated,

> You know they're not learning it, because they are not in real time, and it’s sad, no matter how much I give them the information in an announcement, I'll say, please read this announcement, It’s very important. I give them all these tips to be successful, and to complete the assignment correctly, and they just blow through it.

Participant 9 felt similarly to participant 5 that a synchronous teaching style for non-technical skills was more efficient. Participant 9 stated, “As long as I was synchronous, I felt I was giving the same level to people…. When I was totally asynchronous, I found it more challenging. I don't think I delivered it the same.” Participant 9 also included more examples of how synchronous courses allowed for real time feedback. They stated,

> If I compared my synchronous to asynchronous classes, the synchronous ones could be fantastic because they were getting the real time feedback, the as-and-so students had better feedback than the same group of students that I because it is a small college….They gave much more positive feedback to the synchronous classes, the immediate feedback they got when things were asynchronous, and it was more of a written conversation back and forth with you and the students.

Participant 8 submitted an example of a non-technical skill development activity that contained synchronous and asynchronous assignments. Participant 1 discussed that they found certain asynchronous teaching methods beneficial for non-technical skill development. Participant 1 stated that discussion forms were vital because they promoted engagement. They included discussion forms that were important,

> Because they can post their ideas and engage with each other and the faculty, also, maybe they can post their presentations for their peers to see, and they can evaluate each other's presentations or kind of critique them, give them feedback and help with critical thinking.

Focus Group Data. During the focus group, participant D discussed a combination of synchronous and asynchronous learning activities as valuable teaching tools. Participant D stated,

> Yeah, it took a little bit in much like everything else, but eventually I, most of the time, had the whole class staying, and they might not have done a full three hours. We were able to kind of condense them with some stuff around. But I think initially, the half and half were tricky because our clinical went online as well. So, we did a similar thing where they had activities to work on throughout the week, and then they would meet as their clinical group on their scheduled clinical day for a bit of time to kind of debrief and recap. So, they kind of had to manage a little bit of the asynchronous as well as the synchronous piece.

Participant C added during the focus group that they too, shared the belief that both methods were beneficial by stating, "I think it was an effective learning tool, the virtual case scenarios, and then and then discussing how the students would have managed that in the in the real-life setting." Participants A, C, and D agreed that synchronous classes allowed the educators to provide real-time feedback similar to the traditional, face-to-face environment when teaching non-technical skills in a virtual learning environment. Participant D stated, "I also like the asynchronous piece" when discussing the use of student learning activities that promoted back-and-forth feedback from students and faculty, even if it was not in real-time.

Flexibility

Many faculty participants discussed the transition and implementation of new learning modalities when teaching non-technical skills in a virtual learning environment. Implementing these new teaching tools was a learning curve expressed by many faculty. The theme of flexibility was discussed during the interviews and the focus group.

Interview Data. Fifty-six percent of participants stated that they felt the structure was important, but having some flexibility within the programs to adjust it to their teaching style was

also important. Participant 6 explained ways that they used a product from the company in a way that it was not intended to be used, but it they had the flexibility to integrate the product in a way that met the needs of their students and their course objectives. Participant 6 also felt that they required flexibility in their grading policies to meet the needs of the students who may struggle with the switch to virtual learning. Participant 6 felt that students should be held accountable, but there also needed to be adjustments given for a learning curve. They stated,

> I think the first challenge was just some of the resistance the students had, like again, part of it is unfamiliar with the product, unfamiliarity with Covid at the time especially, you know again, managing work schedules and family schedules and children at home for school and our students at home for school. I think we all definitely had kind of a learning curve and some leniency there in terms of like some of the expectations and some of the processes just given the nature of the beast.

Participant 9 expressed that they could take some of their learning activities from the traditional, in-person classroom and had the flexibility to adjust them to fit the virtual learning environment. Participant 5 stated, "I do remember what it was like to be an online student" when discussing the need for faculty to have flexibility with their teaching style, office hours, and response time to students. Participant 4 expressed the need to be more flexible in understanding that the students were not in a traditional classroom setting; many were in their bedrooms or at the kitchen table. Participant 4 stated, "yeah, we have to be a little bit more understanding, a little bit more empathetic and just try to give a little bit more grace to people."

Focus Group Data. Participant D stated that they believed faculty had to be flexible to switch to a virtual learning environment successfully. They explained that they implemented a new learning technology tool when the school switched to virtual learning during the COVID-19

pandemic, which would not be an effective teaching tool if implemented the way it was intended. Participant D discussed that they had the flexibility to use the learning tool differently to better fit their students' needs. Participant A felt that the faculty, overall, were flexible in meeting the needs of the students.

Summary

The basic qualitative study was designed to answer the two research questions focused on understanding faculty perspectives on teaching non-technical skills in a virtual learning environment. Participants were recruited within the Northeastern region of the United States. The data were gathered using semi-structured interviews, focus group, field notes, and supplemental material submitted by the participants. Braun and Clarke's (2022) thematic analysis guide were used to aid the thorough analysis of the rich descriptive data that was gathered. All nine participants completed one-on-one semi-structured interviews. Of those nine, five participated in a focus group. A thorough analysis using Braun and Clarke's (2022) thematic analysis revealed three themes: (a) barriers to faculty effectiveness, (b) clear expectations, and (c) identifying the gaps in the classroom. Each theme and subtheme assisted the researcher in answering the research questions. Chapter 4 included the analysis of the data that highlighted the overall themes and subthemes.

Chapter 5 includes a summary of the results presented in Chapter 4 and the conclusions from those results. A discussion of the results and comparison of the findings to previous literature are included. The implications and limitations of the study are discussed in detail. A recommendation for future studies is to expand on to provide more insight into faculty perspectives on teaching non-technical skills in a virtual setting.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Chapter 5 concludes with a summary and discussion of the findings focusing on understanding faculty perspectives on teaching non-technical skills in a virtual learning environment. The results will be compared to previous and current literature. The results of the study related to the theoretical frameworks of Benner's (1982) novice to expert theory and Kolb's (1984) experiential learning theory are discussed. The research questions that guided this basic qualitative study were:

RQ 1. What experiences have nursing faculty had when implementing educational activities to assist nursing students in developing non-technical skills in a virtual learning environment?

RQ 2. What have faculty learned from their experiences implementing education activities to assist nursing students in developing non-technical skills in a virtual learning environment that would impact their future teaching strategies?

The research questions have been adequately answered using the three themes and subsequent subthemes. The implications for practice within nursing education will be addressed. The recommendations for future research are also included in the final chapter.

Summary of the Results

Nursing educators have been forced to be innovative in how they educate their students due to restraints on in-person learning opportunities. The limited clinical locations and the COVID-19 pandemic distance precaution restrictions have impacted the in-person learning opportunities available to many nursing programs (Fowler et al., 2018). The COVID-19 pandemic forced many health science programs to determine if a course could be taught virtually or overcome challenges to implementing a virtual format (Calhoun et al., 2020). The transition

from traditional learning environments to virtual learning can be challenging for many nurse educators. This basic qualitative study was needed to better understand the nursing faculty's experiences teaching non-technical skills in a virtual environment. The findings were needed to provide insight into the phenomena of nurse educators' experiences teaching non-technical skills in a virtual environment. The results of the data analysis have an impact on the future experiences of nurse educators (Peddle et al., 2020).

Previous research exploring non-technical skill development in nursing education and student perspectives of online learning provided a foundation, but few studies focused on the nursing faculty's perceptions and experiences. Nursing studies focusing on non-technical skill development are a recent addition to the nursing literature due to traditional nursing education focusing on technical skill development (Johnson & Aggarwal, 2019). Non-technical skill development has been linked to safer patient outcomes and has been proven relevant to nursing education (Jirativanont et al., 2017; Murray et al., 2016). Studies similar to Widad and Abdellah (2022) focused on non-technical skill development within nursing education but were not focused on virtual learning. Virtual learning is an effective way to educate nursing students, but it is not without its challenges (Posey & Pintz, 2017). Barriers to online learning which were outside of the student or faculty's control, like internet restrictions, impact the virtual classroom (Amir et al., 2022). Lack of engagement in the virtual classroom is linked to student dissatisfaction with virtual learning and should be considered by nursing educators, including the use of flipped classroom activities to improve engagement (Halasa et al., 2020; Katlen et al., 2022; Natarajan & Joseph, 2022). One previous study was found in nursing research that studied the faculty perspectives on teaching non-technical skills using virtual patients (Peddle et al., 2020). This study guided the researcher to study further the topic of faculty perspectives on

teaching non-technical skills in a virtual environment that is not specific to using one type of technology. The need and purpose of the study were guided by the noted gap in the nursing literature related to this topic. The basic qualitative study was designed to answer two research questions that were previously discussed.

Nine nurse educator participants from the Northeastern region of the United States were interviewed using a semi-structured format. A focus group was conducted after the nine interviews were completed. The study effectively collected data from participants that were analyzed for themes using Braun and Clarke's (2022) thematic analysis. The results of this study indicated that nurse educators who taught non-technical skills in a virtual environment were influenced by many things outside of their control and had to overcome challenges to be successful. Data analysis showed that faculty agreed on four barriers they had to overcome to be successful. The analysis also indicated that clear expectations were useful in guiding the online learning experience and that there were apparent gaps in the way non-technical skill development activities were implemented in a virtual learning environment.

Faculty appreciated clear guidelines for themselves and their students to provide better learning experiences and expectations in the virtual classroom. Benner's (1982) novice to expert theory and Kolb's (1984) experiential learning theory guided the study. The findings from the interviews and focus group showed the evolution of the nurse educators' learning process through multiple implementations of non-technical skill development activities in the virtual environment. The interviews revealed that most nurse educator participants felt they reverted to a novice educator when teaching non-technical skill development activities. As novice educators teaching non-technical skills in a virtual environment, participants were able to identify where they could improve or better support their peers and students in transitioning to virtual teaching.

The data analysis of the nine interviews uncovered needs for future implementation. Participants recommended that institutions offer clear expectations of their faculty and consistent expectations of their students to eliminate challenges with virtual learning. Using the interviews and focus group allowed the collection of rich and descriptive data to investigate the faculty perspectives on teaching non-technical skills in a virtual environment.

Discussion of the Results

The focus was on the experience of nursing faculty who implemented education activities in a virtual environment to teach non-technical skills. The research questions were as follows: What experiences have nursing faculty had when implementing educational activities to assist nursing students in developing non-technical skills in a virtual learning environment? And What have faculty learned from their experiences implementing education activities to assist nursing students in developing non-technical skills in a virtual learning environment that would impact their future teaching strategies? The one-on-one semi-structured interviews allowed the nine participants to discuss their experiences teaching non-technical skills in a virtual learning environment. The focus group allowed the participants to share more experiences related to the teaching of non-technical skills in a virtual learning environment. The data analysis process used Braun and Clarke's (2022) 6-step thematic analysis. The process led to three themes which included (a) barriers to faculty effectiveness, (b) clear expectations, (c) identifying the gaps in the classroom. The themes assisted the researcher in answering the two research questions. Figure 1 demonstrates the first research question, themes, and subthemes. When read from left to right, the first part of the figure consists of the first research question, followed by the two themes of barriers to faculty effectiveness and identifying the gaps in the classroom that help

answer research question one. The last part of the figure depicts the subthemes that arouse from the data analysis.

Figure 1

Identified Themes and Subthemes Research Question 1

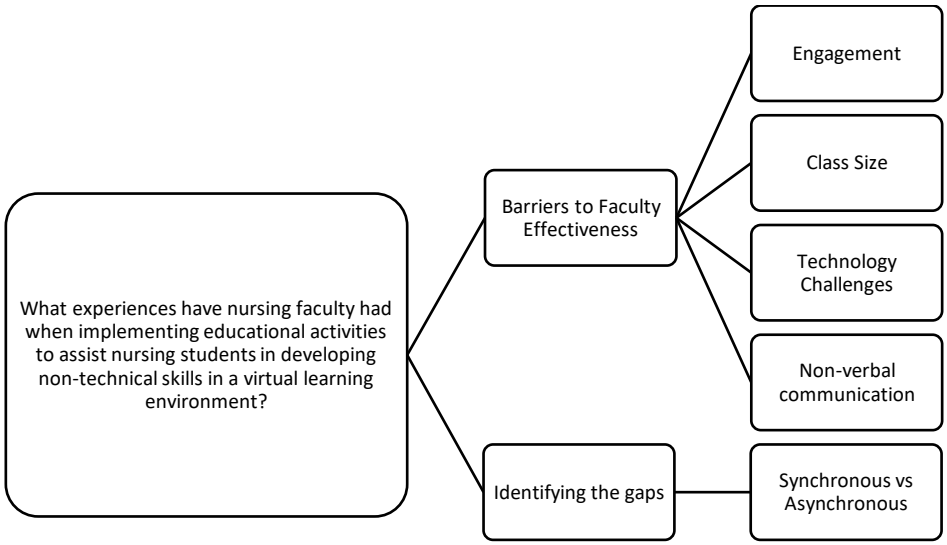
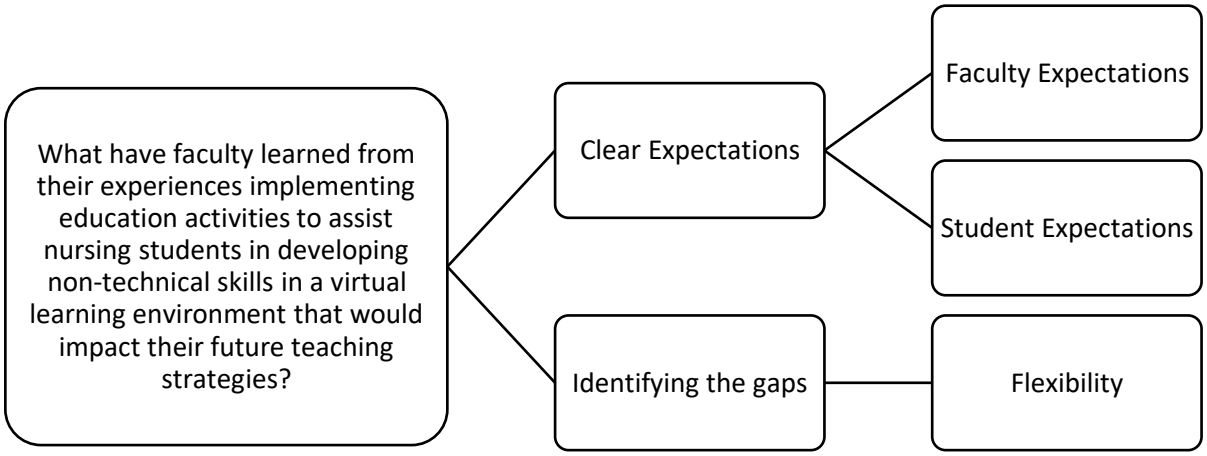


Figure 2 presents the second research question and corresponding themes and subthemes. The left-hand side of the figure includes the research question two. The second column includes the main themes that help answer research question two. The final column includes the subthemes from the data analysis.

Figure 2

Identified Themes and Subthemes Research Question 2



The following section includes a discussion of the themes and subthemes. Findings from this study showed that faculty could effectively teach non-technical skills in a virtual environment. However, faculty discussed struggles they faced during their experiences teaching non-technical skills in a virtual setting.

Theme 1: Barriers to Faculty Effectiveness

The nine interviews and focus group discussion revealed challenges the participants faced as educators in a virtual classroom teaching non-technical skills. All participants recognized that outside factors impacted their effectiveness in teaching non-technical skills in a virtual environment. Six participants recognized that they struggled to maintain a level of engagement within the virtual classroom that promoted a positive learning experience. Participants 1 and 7 felt that they had to engage students in the virtual classroom more when teaching non-technical skills since it was easier to become disconnected compared to a traditional learning environment.

Participant 4 expressed that they found it challenging to engage students when they were a novice to teaching online but became more comfortable as they learned from semester to semester. The discussion provided an understanding of what experiences the faculty had when implementing non-technical skills development activities in a virtual learning environment. The theme supports and aligns with research question one, focusing on what faculty experiences the faculty had. The overall results revealed that lack of engagement as a barrier that the participants found interfered with their ability to teach non-technical skills in a virtual environment. The results showed that participants would implement changes in their activities or their teaching methods for subsequent semesters if they remained virtual.

Five of the nine participants expressed that larger class size impacted their ability to effectively implement non-technical skill development activities in a virtual learning environment. Participants 1, 6, 8, and 9 implemented smaller groups within a larger class or breakout rooms in Zoom to manage the larger class size. The participants from the study varied in colleges and universities where they taught, impacting the number of students each faculty had in a specific class. The participants also expressed teaching different courses where a nursing lecturer may have 30 to 100 students, but a clinical instructor may only have six to eight students. Three participants did not discuss class size as impacting their teaching. One participant mentioned that larger class sizes allowed them to teach non-technical skills more effectively since more students were engaged in the activities. While the consensus was not unanimous that smaller class sizes were more beneficial to teaching non-technical skills in a virtual environment, it aided in better understanding different faculty experiences. Seven out of nine participants discussed challenges with technology as a barrier to their effectiveness in teaching non-technical skills in a virtual environment. Participant 3 believed technology issues were the most significant

challenge they had to overcome. Some participants felt they were limited in their ability to effectively teach non-technical skills in a virtual environment due to technical issues that arose with the virtual programs they were implementing. The data from the interviews and focus group allowed the first research question to be answered related to what experiences nursing faculty have had when implementing these educational activities in the virtual classroom.

Many participants discussed the barrier to implementation related to the subtheme of non-verbal communication. Faculty noted that teaching non-technical skills required being able to read the students' non-verbal communication styles. The challenges with technology and class size went hand and hand with this barrier. A participant expressed that the limited ability to see all of the students on their one computer screen impacted their ability to read non-verbal cues from the class. Multiple participants expressed that not being able to see and hear side conversations in a virtual setting caused them to change their teaching methods. The data from the interviews and a focus group aided the researcher in having a better understanding of the faculty's experiences teaching non-technical skills in a virtual setting by identifying barriers that the faculty may be able to overcome in subsequent semesters.

Theme 2: Clear Expectations

The second theme, clear expectations, captured the participants' thoughts on having explicit guidelines to help faculty and students navigate online learning. The theme of clear expectations aided in answering research question two, which focused on what faculty had learned from their experiences teaching non-technical skills in a virtual environment. Participants discussed that having clear expectations of their faculty role helped them navigate the challenges that developed when implementing non-technical skill development activities in a virtual environment. Many of the participants discussed clear expectations as an evolving concept. The

participants discussed that many of them lacked clear expectations when initialing teaching non-technical skills in a virtual environment leading to challenges. The data from these interviews guides the researcher in answering research question two, which focuses on what have faculty learned from these experiences. All the participants had virtually taught for at least two semesters, providing them with enough experience to discuss what they learned and how they addressed these challenges. Five participants expressed that having clear expectations for the students also limited their challenges in the classroom. The students were aware of what they were expected to do and when taking a lot of the guessing out of the assignments. However, many faculty expressed that they only knew what to expect from the students after the first time they ran the activity through themselves. The second research question focused on what faculty learned from their experiences. No participant expressed that their implementation of educational activities to improve non-technical skills in a virtual environment was flawless. The participants expressed that they learned what expectations were important by living through the experience of implementing these activities and then repeating the cycle.

Theme 3: Identifying the Gaps in the Classroom

The third theme that was recognized was the gaps that faculty found within the experience of teaching non-technical skills in a virtual environment. The theme emerged from reflection by the participants on areas they felt they would change in the future or what helped them succeed the first time. The participants identified challenges with synchronous and asynchronous courses to teach non-technical skills in a virtual environment. The faculty shared the importance of interacting with students in real-time to help them develop their non-technical skills. The subtheme aided in answering research question one, which focused on the faculty's experiences when teaching non-technical skills in a virtual environment. Many participants

expressed that synchronous courses offered their students a better real-time experience where they could provide feedback instantaneously and promote learning. However, some participants expressed that they could replicate this back-and-forth exchange with students in an asynchronous course that enabled positive non-technical skill learning environments. The participants' experiences helped the researcher better understand the differences in the faculty experiences based on the type of virtual delivery method. All participants had experience with teaching synchronous and asynchronous, which allowed for better discussion during the interviews. The need for flexibility within the virtual environment was a subtheme identified and discussed by many participants. Many participants felt that they needed to be supported by their institution to be flexible within the virtual classroom. The participants included that some virtual activities needed to be adapted to fit their students and program. Most participants discussed that their flexibility increased when they implemented an educational activity within the virtual environment. The subtheme of flexibility aided in answering research question two regarding what faculty had learned from their experiences that would impact their future teaching strategies.

Conclusions Based on the Results

All nine participants had experience teaching non-technical skills in both an in-person and virtual environment within the state. Many participants reported feeling apprehensive the first time they were required to teach non-technical skills in a virtual environment. The results of this study indicated that although faculty used different technology platforms for different schools and taught different things, they shared common experiences when teaching non-technical skills in a virtual environment. The three identified themes of (a) barriers to faculty effectiveness, (b) clear expectations, and (c) identifying gaps in the classroom assisted in

answering the research questions exploring faculty experiences in teaching non-technical skills in a virtual learning environment.

The findings can be used to bridge the nursing education research gap by exploring the faculty experiences teaching non-technical skills in a virtual environment. The data provide insights into the faculty's experiences in teaching non-technical skills virtually, which seems to be the new way many faculty will educate their students for the near future. The results add to the American Nurses Association (2021) call to support nurse educators as innovators in the classroom to promote positive learning experiences. The data analysis supported the need for programs to have technology support systems in place to help students and faculty transition to online learning and offer clear expectations to support learning and teaching. The results also support the need for continued education for nursing faculty on ways to incorporate active learning strategies in the classroom to promote engagement. The need for administrators to explore the virtual resources, including the costs, benefits, and support for each, is imperative to meet the needs of the learners and faculty alike (Nadelson et al., 2021). The information from the study may also encourage nurse educators who are resistant to teaching non-technical skills virtually to consider alternative approaches to learning that shift from the in-person classroom.

Comparison of Findings with Theoretical Framework and Previous Literature

Benner's (1982) novice to expert theory within nursing education supported the findings of the study. The three themes from this study included barriers to faculty effectiveness, clear expectations, and identifying gaps in the classroom. Benner explained that nurse educators become experts in their field through experiences and years of teaching. When nursing faculty were required to switch their learning modalities to a virtual classroom, they reverted to a novice stage even though they were experts in traditional classrooms (Thomas & Kellgren, 2017). The

novice stage included faculty who have no experience with teaching non-technical skills in a virtual environment, and this included all the participants at some point in their careers (Benner, 1982).

The results from the study indicated that the participants went from proficient and expert educators to novice educators when implementing non-technical skill development activities. Although many participants had completed classes virtually as students, teaching non-technical skills virtually was a relatively new concept for them as educators. It was apparent in the data that many programs struggled with developing and implementing activities in a virtual environment during the first semester of teaching online (Posey & Pintz, 2017; Thomas & Kellgren, 2017). The data from the interviews and the focus group supported the conclusion that faculty learned from repetitive experiences and were able to advance through the different stages of Benner's (1982) novice to expert theory through subsequent implementations of non-technical skill development activities in the virtual setting.

The second guiding theory behind the study was Kolb's (1984) ELT. Kolb's four-part learning cycle included concrete experiences, reflection, conceptualization, and experimentation (Fewster-Thuente & Batteson, 2018). According to ELT, the learning process happens through experiences and reflection to implement what is learned in subsequent experiences. The participants from this study were able to implement learning activities in the virtual environment, critically evaluate the experience, implement changes, or reflect on things they would change to strengthen their ability to teach non-technical skills in a virtual learning environment.

The participants of this study possess direct knowledge and experience of how to teach non-technical skills in a traditional classroom. The participants had to adjust their style of teaching to be successful virtual educators over the past two years. Having experience as an

educator in traditional classrooms did not translate to successful online educators without reflection and adaption (Sowko et al., 2019). Having clear expectations of what faculty were expected to do promoted better experiences per the findings of the study. This aligns with the nursing literature that reflects many nurse educators having limited experience teaching non-technical skills virtually and needing to adapt their teaching pedagogies (Roney et al., 2017). Participants felt that they did not know what to expect from the transition and were concerned about being prepared to implement their teaching strategies which are congruent with Baroudi and Shaya's (2022) findings.

The findings align with current literature supporting the need for infrastructure within the program before implementing online learning (Moradi et al., 2022; Posey & Pintz, 2017). The participants expressed the need for clear expectations of themselves and their students to be successful. The findings align with Kolb's (1984) ELT concepts that faculty were unable to completely understand what was needed to be successful without the concrete experience of implementing the non-technical skill activities in the virtual setting. By reflecting on the challenges that arose during implementation, the participants were able to express the need to use engaging activities, plan with appropriate infrastructure, and support the students and faculty with their technology challenges (Moradi et al., 2022; Natarajan & Joseph, 2022; Posey & Pintz, 2017).

The research found that many participants expressed feeling supported and having the ability to be flexible in the classroom to promote non-technical skill development. The findings align with Benner's (1982) novice to expert theory advancing levels that require faculty to reflect on their experiences to adapt their teaching styles. Participants reported flexibility aiding them in promoting student engagement and learning, which is supported in the nursing literature (Clarke

et al., 2021; Head et al., 2022). Technology barriers to effective learning in a virtual environment were a subtheme that was present in the data. Participants expressed that although many of them had been student learners, they were not prepared to make the shift to online educators. Although many students and faculty report using technology daily, the technologies and software used in the classroom present challenges (Lokmic-Tomkins et al., 2022). The findings aligned with Kolb's (1984) ELT that presented the learning cycle through having the experience of using new technology, reflecting on that experience, learning from it, and implementing changes based on your experiences. Research question two focused on what faculty had learned from their experiences that would impact their teaching strategies for subsequent courses where they had to teach non-technical skills in a virtual environment. The participants expressed the need for clear student and faculty expectations. Many participants expressed that their first experiences teaching non-technical skills in a virtual environment did not include clear expectations. Using Kolb's (1984) ELT, the faculty learned from those first experiences, reflected on the need for clear expectations, and can now express that they would implement these changes in future learning activities.

The findings of the study aid in closing the gap in nursing literature on the faculty experiences teaching non-technical skills in a virtual environment. Participants noted that many virtual platforms adopted during the COVID-19 pandemic were added based on convenience and availability. Using Kolb's (1984) ELT, faculty needed to evaluate the effectiveness of these platforms to continue using them (Katlen et al., 2022). The analysis of the data collected showed the need for prepared educators who were trained to teach virtually, as the technology platforms did not replace the interactions between faculty and student (Katlen et al., 2022; Zhou et al., 2022).

Overall, nursing faculty participants were required to implement non-technical skill educational activities in a virtual classroom to effectively prepare the next generation of nursing students for the healthcare system. Contrary to the findings of Kotcherlakota et al. (2017), the participants from this study seemed to express positive attitudes moving forward with the continued implementation of non-technical skill development activities independently of their age and experience teaching. The participants shared positive experiences and described the benefits of being able to teach non-technical skills virtually. The participants also expressed concerns with technology challenges, class size, and lack of non-verbal communication as barriers to their effectiveness as educators.

Interpretation of the Findings

The ANA (2021) has called for nurse educators to transform their approaches to the traditional classroom by becoming innovative with their use of instructional activities. Findings from this qualitative study indicated that faculty are adapting their teaching pedagogies to embrace the value of online learning and the use of new technology platforms. Although the findings of this study indicated that nurse faculty participants had positive experiences implementing educational activities in a virtual environment, the study also noted that there were barriers to their effectiveness as educators. The findings from this study supported the development and implementation of regular training programs that help both novice and experienced educators learn to implement new technology platforms in their courses. The findings support the need for continuous evaluation and reflection on the activities used to continue to evolve with the changing technology and lack of in-person learning experiences. As new technology advances transform nursing education, educators must reflect on their past practices to transition to a newer way of educating (Murray et al., 2016). Previous literature

showed that virtual learning allows educators to integrate technology platforms and become innovative educators (Halasa et al., 2020; Mekler et al., 2017).

An important finding from the current study related to class size and its impact on learning in a virtual setting. The belief that class size should be limited to allow for more effective teaching of non-technical skills in a virtual environment was shared among five of the participants. One participant did express that larger class sizes promoted engagement and more interaction during the class. Some faculty noted that they were able to improvise small class settings using group work. Research studies focusing on student perception of online learning show similar findings that students prefer a smaller online classroom (He et al., 2021). Participants expressed the ability to help students develop their skills more effectively with a smaller group size by collaborating more (Hao et al., 2022). With the choice of class size being primarily out of the hands of the classroom educators, it is important for the administration to take these challenges into account when increasing enrollment to meet the demands of the healthcare system to produce more nurses. The lack of clinical placements, increase in enrollment demands, implications of social distancing restrictions, and advancement of technology platforms have allowed programs to graduate more nursing students into the profession (Abuatiq, 2019; Katlen et al., 2022). Participants reported using technology platforms in innovative ways to attempt to compensate for things they could not change, like the class size or technology choices made by the college or university.

The perceptions of faculty to the continued implementation of non-technical skill development activities in a virtual environment were optimistic. Participants discussed overcoming barriers and hurdles but still being successful in their implementation. Some faculty reported an increase in the preparation time prior to implementing a new learning activity

virtually but similar to their preparation for a traditional classroom activity. The increase in preparation time revolves around many participants stating they implemented new technology platforms during the switch to virtual learning. With many technology platforms and activities available within nursing education to help students develop their non-technical skills, it is important for administrators to explore what is available and the benefits and limitations of its usage within their program (Nadelson et al., 2021). The administrators need to consider the findings of this study related to the lack of technical support from the school and the platforms and the inability to see non-verbal cues from the students.

A surprising discovery from this study was the need for clear expectation guidelines to be set in the program for both faculty and students. The participants enjoyed flexibility in the classroom but benefited from consistent expectations to guide their practice. Feeling burnt out was mentioned a few times during the interviews and focus group related to constantly being available to students without clear-cut work hours in the virtual setting. While the current study failed to investigate this theme further, it was important to mention it for future nurse educators to consider. While participants expressed that they enjoyed the usage of asynchronous learning activities to support the students learning, the ability to share real life experiences with students in a synchronous classroom was valuable if the students came prepared. For this reason, having clear expectations of the student's learning requirements helped facilitate a positive learning experience in the virtual classroom.

The novice-to-expert model discussed the experienced participants from this study reverted to novice educators when they first implemented non-technical skill development activities in the virtual setting (Benner, 1982). From the experiences shared, the participants had all taught non-technical skills throughout multiple semesters, with self-reporting of their

proficiency level improving with experience. The ELT also discussed the progression of faculty experience through the implementation of activities across multiple semesters. It is important to note that the one-on-one interviews provided the data on barriers to faculty effectiveness, but the focus group provided data on how the faculty had learned and grown from those experiences. The current state of healthcare and the limitations that nursing programs face have resulted in changes in the classroom space, limited number of available faculty, and a need for in-person learning opportunities (Murray et al., 2016). Many nurse educators expressed that the shift to virtual learning is here to stay within nursing education, and the findings from this study could help close the gap in nursing literature regarding faculty experiences implementing non-technical skill development activities in a virtual environment. Exploring faculty experiences teaching non-technical skills virtually can help improve education activities, aid in the incorporation of virtual education, and help educators embrace the virtual learning experience (Moradi et al., 2022; Peddle et al., 2020; Zhou et al., 2022).

Limitations

The basic qualitative design was appropriate for answering the research questions. Despite picking the most appropriate research methodology, all studies have limitations. The small sample size of nine nursing educators in the state limits the ability of the findings to be generalizable to other nursing faculty located in different states. The faculty shared the qualifications of teaching online in the past two years, teaching in-person in the past five years, and teaching in the state. The participant criteria may have excluded other nurse educators who had valuable experiences teaching non-technical skills in a virtual setting but did not meet the criteria. It may be of interest to learn if nurse educators from other states had similar challenges and experiences transitioning their teaching from in-person to virtual learning with respect to

non-technical skill development. Another limitation in the study was the use of technology to conduct the one-on-one interviews and the focus group. Conducting the interviews virtually allowed a broader geographical range of participants but limited the observation of the participant's non-verbal cues and body language. Internet connectivity issues were noted to limit one interview. Distractions from other individuals in the room with the participants were noted as limitations during some interviews.

The results of the study may be time sensitive as the rate of nursing programs implementing virtual learning continues to grow and expand with technology changes. Another limitation of the study was that the novice researcher had limited experience conducting interviews and focus groups. A few interviews were conducted quickly, where the novice researcher may have been able to better engage the participants with more probing questions. The final limitation is the researcher's prior experience teaching non-technical skills virtually, which could present bias. Using an expert review panel prior to the implementation of the interview questions and member checking to clarify responses was a way to remove bias.

Implications for Practice

The results of the study added to the body of knowledge on the faculty perspectives on teaching non-technical skills in a virtual learning environment. The results could have implications for other nurse educators attempting to implement non-technical learning activities in a virtual environment. The findings addressed the identified gap in understanding the faculty perspectives within nursing education, focusing on non-technical skill development in a virtual environment. What has been identified in this study is that most participants felt they had to overcome barriers in the virtual environment that were more challenging to overcome than in a traditional learning environment. The participants identified maintaining engagement as a more

significant challenge in virtual learning than in-person classrooms. The findings are consistent with the literature that supported the need to engage in learning activities when virtually teaching non-technical skills (Natarajan & Joseph, 2022; Posey & Pintz, 2017). Administrators and nurse education leaders may find the results beneficial when planning educational learning opportunities for their faculty members. Providing experienced and novice nurse educators with continuing education courses focused on engaging the students in a virtual classroom would benefit many programs. The experiences and perceptions of faculty on which activities offered better learning opportunities for non-technical skill development may provide insight for modifying current practices and software purchases.

The findings from this study highlighted the challenges with technology and class size for many nurse educators. This study lays the groundwork for further research into determining the ideal virtual class size for optimizing non-technical skill development. Educators play a crucial role in creating a positive learning environment for students but for many, impacting class size is out of the educator's control. The findings could aid college and university administrators in supporting the initiative to investigate ideal class sizes to benefit students' learning experiences. Technology challenges were a common subtheme throughout the interviews and focus group. The study may offer insight for educators and administrators on the common types of technical challenges to help them preemptively combat these issues with possible training programs (Amir et al., 2022). One participant expressed that technology issues were challenging since they were a smaller school with limited assistance in this department. The findings could aid future educators in investigating outside technology aid through the programs they use.

The participants expressed the need for flexibility within the course to adapt their learning activities to meet the students' needs better. Faculty may consider having lead educators

trained in the virtual activities they are learning to assist other educators in implementing these learning tools. Regular training on the educational tools offered within the school can aid educators in using the most advanced technology to meet their classroom needs. Nursing educators are being asked to teach more students with less access to traditional learning opportunities. Exposure to actual patients in a traditional clinical experience is a crucial part of nursing education that is becoming challenging for many programs to maintain (Hao et al., 2022). With fewer in-person learning opportunities but more nursing students, educators juggle the shift between synchronous and asynchronous classes (Suliman et al., 2022). Participants expressed the need for real-time feedback to help students develop their non-technical skills. The findings from the study contradicted the findings of Suliman et al. (2022), who determined that no significant differences were found between the two types of classes offered. However, variations in teaching methods need to be implemented between synchronous and asynchronous courses. Nurse educators may need to adjust their teaching methods to meet the needs of the online classroom based on the results of this study.

Recommendations for Further Research

The present study explored faculty perspectives on teaching non-technical skills in a virtual learning environment. The study was conducted with nurse educators from programs within the Northeastern region of the United States who had previously taught both in-person and virtually. A recommendation for further research would be to extend the geographical boundaries nationwide. Teaching at an in-person program within a practitioner's home state and teaching virtually in other states is common for nurse educators. The educators and stakeholders would benefit from exploring the perspectives of faculty nationwide. The scholarly community would also benefit from more literature investigating the effectiveness of non-technical skill

development in a virtual environment. Additional research focusing on faculty perspectives teaching non-technical skills in a virtual environment with quantitative data showing the effectiveness of those teaching tools would benefit the nursing community. Additionally, non-technical skill development continues once a student is a licensed nurse. Studying the impact of non-technical skill development in a virtual environment post-licensure may add to the nursing research that can be translated across all nursing disciplines.

Another recommendation is to conduct a study where researchers focus on the experiences of faculty who have experience as online learners compared to faculty teaching online who are novices to the virtual classroom. Participants 1, 2, 6, 8, and 9 stated that larger class sizes impacted their ability to effectively teach non-technical skills in a virtual environment. Another potential study could compare different nursing class sizes to gauge the impact that class size has on the ability of the educator to be effective. Participants 1, 2, 4, 5, and 9 discussed providing real-time feedback in a synchronous class as an effective way to teach non-technical skills in a virtual environment. A researcher may choose to address the development of non-technical skills in nursing students comparing the synchronous and asynchronous courses in a future study.

Conclusion

This basic qualitative study aimed to understand better faculty experiences teaching non-technical skills in a virtual learning environment. The study was developed due to the gap in nursing literature surrounding the experiences of faculty implementing non-technical skill development activities in the virtual classroom. Nine Northeastern United States nurse educators were interviewed using semi-structured one-on-one interviews, and participants were invited back for a focus group. Field notes were also kept. All participants volunteered to enroll in the

study, signed informed consent, and were allowed to withdraw at any time without question during the study. Braun and Clarke's (2022) six-phase thematic analysis produced the main themes of (a) barriers to faculty effectiveness, (b) clear expectations, and (c) identifying the gaps in the classroom.

The basic qualitative research design has been effective in collecting and analyzing the data that focuses on faculty experiences teaching non-technical skills in a virtual environment. Research question one was "What experiences have nursing faculty had when implementing educational activities to assist nursing students in developing non-technical skills in a virtual learning environment?" The themes that aided in answering these questions were barriers to faculty effectiveness and identifying gaps. Research question two was "What have faculty learned from their experiences implementing education activities to assist nursing students in developing non-technical skills in a virtual learning environment that would impact their future teaching strategies?" The themes of clear expectations and identifying the gaps were developed using thematic analysis.

Based on the data collected, it is recommended that experienced and novice nurse educators reflect on their teaching strategies based on the key themes found in this study to improve their educational methods. Nurse educators can learn from the results of this study by having a better understanding of the challenges that previous educators had to overcome to teach non-technical skills in a virtual learning environment. Nursed educators can support their need for clear expectations and flexibility within the virtual classroom using the results from this study. Administrators can learn from the results of this study to offer more ongoing educational opportunities to their educators to promote innovative teaching strategies. Administrators can also learn from the key findings to investigate their class size to faculty ratio in online courses.

Further research conducted focusing on the correlation between faculty experiences teaching non-technical skills in a virtual environment and the effectiveness of those activities on the developing of the students' skills is recommended.

REFERENCES

Abahuje, E., Bartuska, A., Koch, R., Youngson, G., Ntakiyiruta, G., Williams, W., Dias, R. D., Rosu, C., Yule, S., & Riviello, R. (2021). Understanding barriers and facilitators to behavior change after implementation of an interdisciplinary surgical non-technical skills training program in Rwanda. *Journal of Surgical Education, 78*(5), 1618-1628. https://doi.org/10.1016/j.jsurg.2021.01.011

Abuatiq, A. (2019). E-Learning in nursing: Tool development for evaluating virtual patient learning systems. *Teaching and Learning in Nursing*, *14*(4), 291-297. https://doi.org/10.1016/j.teln.2019.06.010

Adler, R. H. (2022). Trustworthiness in qualitative research. *Journal of Human Lactation, 38*(4), 598-602. https://doi.org/10.1177/08903344221116620

American Nurses Association (ANA). (2021). *What are the skills needed to be a nurse innovator*. https://www.nursingworld.org/practice-policy/innovation/blog/what-are-the-skills-needed-to-be-a-nurse-innovator/

Amir, H., Windasari, D. P., Sriyanah, N., Ilyas, H., Alam, R. I., Ernasari, E., & Agus, A. I. (2022). Students' perceptions of online learning in nursing education in the COVID-19 pandemic. *International Journal of Health Sciences, 6*(S4), 396-403. https://doi.org/10.53730/ijhs.v6ns4.5524

Amudha, P., Hamidah, H., Annamma, K., & Ananth, N. (2018). Effective communication between nurses and doctors: barriers perceived by nurses. *Journal of Nursing Care, 7*(3). https://doi.org/10.4172/2167-1168.1000455

Arkan, B., Ordin, Y., & Yılmaz, D. (2018). Undergraduate nursing students' experience related to their clinical learning environment and factors affecting to their clinical learning process. *Nurse Education in Practice, 29*, 127-132. https://doi.org/10.1016/j.nepr.2017.12.005

Arseven, I. (2018). The use of quality case studies as an experiential teaching method in training of pre-service teachers. *International Journal of Higher Education, 7*(1), 111-125. https://doi.org/10.5430/ijhe.v7n1p111

Azungah, T. (2018). Qualitative research: deductive and inductive approaches to data analysis. *Qualitative Research Journal, 18*(4), 383-400. https://doi.org/10.1108/qrj-d-18-00035

Baroudi, S., & Shaya, N. (2022). Exploring predictors of teachers' self-efficacy for teaching in the Arab world amid COVID-19. *Education and Information Technologies, 27.* https://doi.org/10.1007/s10639-022-10946-4

Benner, P. (1982). From Novice-to-expert. *American Journal of Nursing, 82*(3), 402-407. http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=ovfta&NEWS=N&AN=00000446-198282030-00004.

Beno, S. M., Wingo, N. P., Berry, J. L., Noles, K., & Tucker, D. C. (2020). Assessment of 21st century skills during an innovation challenge. *Journal of Higher Education Theory and Practice, 20*(13), 79-108. https://doi.org/10.33423/jhetp.v20i13.3836

Braun, V., & Clarke, V. (2013). *Successful Qualitative Research: A practical guide for beginners*. Sage.

Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. Sage.

Bureau of Labor Statistics. (2022). Occupational employment and wage statistics. https://www.bls.gov/oes/current/oes251072.htm

Cabral, A., & Baptista, A. (2019). Faculty as active learners about their practice: Toward innovation and change in nursing education. *The Journal of Continuing Education in Nursing, 50*(3), 134-140. https://doi.org/10.3928/002201-20190218-09

Calhoun, K. E., Yale, L. A., Whipple, M. E., Allen, S. M., Wood, D. E., & Tatum, R. P. (2020). The impact of COVID-19 on medical student surgical education: Implementing extreme pandemic response measures in a widely distributed surgical clerkship experience. *American Journal of Surgery, 220*(1), 44-47. https://doi.org/10.1016/j.amjsurg.2020.04.024

Cascio, M. A., & Racine, E. (2018). Person-oriented research ethics: integrating relational and everyday ethics in research. *Accountability in Research, 25*(3), 170-197. https://doi.org/10.1080/08989621.2018.1442218

Clarke, S., Skinner, J., Drummond, I., & Wood, M. (2021). Twelve tips for using tactical decision games to teach non-technical skills. *Medical Teacher*. https://doi.org/10.1080/0142159X.2021.2010693

Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg Nursing, 25*(6), 435-436. https://pubmed.ncbi.nlm.nih.gov/30304614/

Crawford, R., McGrath, B., Christiansen, A., Roach, D., Salamonson, Y., Wall, P., & Ramjan, L. M. (2020). First year nursing students' perceptions of learning interpersonal communication skills in their paid work: A multi-site Australasian study. *Nursing Education in Practice, 48.* https://doi.org/10.1016/j.nepr.2020.102887

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches*. SAGE

Cunha, M. L. R., Delle, H., Bergamasco, E., & Rocha e Silva, T. A. A. (2022). Nursing students' opinion on the use of escape ZOOM as a learning strategy: observational study. *Teaching and Learning in Nursing.* https://doi.org/10.1016/j.teln.2022.09.005

Cypress, B. S. (2019). Qualitative research challenges and dilemmas. *Dimensions of Critical Care Nursing, 38*(5), 264-270. https://doi.org/10.1097/DCC.0000000000000374

Dames, S. (2019). Impact of interplaying and compounding factors in the novice nurse journey: A basic qualitative research study. *Canadian Journal of Nursing, 51*(2), 84-93. https://doi.org/10.1177/0844562118817079

DeJonckheere, M., & Vaughn, L. M. (2018). Semistructured interviewing in primary care research: a balance of relationship and rigour. *British Medical Journal, 7*(2). http://dx.doi.org/10.1136/fmch-2018-000057

Denford, S., Lakshman, R., Callaghan, M., & Abraham, C. (2018). Improving public health evaluation: a qualitative investigation of practitioners' needs. *BMC Public Health, 18*(1), 1-7. https://doi.org/10.1186/s12889-018-5075-8

Department of Health and Human Services, National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (1979). *The Belmont Report: ethical principles and guidelines for the protection of human subjects of research.* https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/read-the-belmont-report/index.html

Doringer, S. (2021). "The problem-centered expert interview." Combining qualitative interviewing approaches for investigating implicit expert knowledge. *International Journal of Social Research Methodology, 24*(3), 265-278. https://doi.org/10.1080/13645579.2020.1766777

Esposito, C. P., & Sullivan, K. (2020). Maintaining clinical continuity through virtual simulation during the COVID-19 Pandemic. *Journal of Nursing Education, 59*(9), 522-525. https://doi.org/10.3928/01484834-20200817-09

Fewster-Thuente, L., & Batteson, T. J. (2018). Kolb's experiential learning theory as a theoretical underpinning for interprofessional education. *Journal of Allied Health, 47*(1), 3-8. https://pubmed.ncbi.nlm.nih.gov/29504014/

Fleming, J. I., Wilson, S. E., Hart, S. A., Therrien, W. J., & Cook, B. G. (2021). Open accessibility in education research: Enhancing the credibility, equity, impact, and efficiency of research. *Educational Psychologist, 56*(2), 110-121. https://doi.org/10.1080/00461520.2021.1897593

Flynn, F. M., Bing-Jonsson, P. C., Falk, R. S., Tonnessen, S., & Valeberg, B. T. (2022). Educating for excellence: a cohort study on assessing student nurse anesthetist non-technical skills in clinical placement. *American Association of Nurse Anesthesiology, 90*(1), 7-15. https://pubmed.ncbi.nlm.nih.gov/35076378/

Fogg, N., Wilson, C., Trinka, M., Campbell, R., Thomson, A., Merritt, L., Tietze, M., & Prior, M. (2020). Transitioning from direct care to virtual clinical experiences during the COVID-19 pandemic. *Journal of Professional Nursing, 36*(6), 685-691. https://doi.org/10.1016/j.profnurs.2020.09.012

Foote, J. M., Grimsley, A. T., & Forsyth, D. M. (2022). Impact of a Pandemic as a forced disruption in nursing education. *Journal for Nurses in Professional Development.* https://doi.org/10.1097/NND.0000000000000930

Fortin, A., Viger, C., Deslandes, M., Callimaci, A., & Desforges, P. (2019). Accounting students' choice of blended learning format and its impact on performance and

satisfaction. *Accounting Education, 28*(4), 353-383. https://doi.org/10.1080/09639284.2019.1586553

Fowler, T., Phillips, S., Patel, S., Ruggiero, K., Ragucci, K., Kern, D., & Stuart, G. (2018). Virtual interprofessional learning. *Journal of Nursing Education, 57*(11), 668-674. http://doi.org/10.3928/01484834-20181022-07

Frazer, C., Sullivan, D. H., Weatherspoon, D., & Hussey, L. (2017). Faculty perceptions of online teaching effectiveness and indicators of quality. *Nursing Research and Practice, 2017*, 1-6. https://doi.org/10.1155/2017/9374189

Fukuta, D., & Iitsuka, M. (2018). Nontechnical skills training and patient safety in undergraduate nursing education: A systematic review. *Teaching and Learning in Nursing, 13*(4), 233-239. https://doi.org/10.1016/j.teln.2018.06.004

Garvey, P. K., Sampson, M., & Winfield, S. R. (2022). Rising to the COVID-19 challenge. *Journal for Nurses in Professional Development.* https://doi.org/10.1097/NND.0000000000000823

Gazza, E. A. (2017). The experience of teaching online in nursing education. *Journal of Nursing Education, 56*(6), 343-349. https://doi.org/10.3928/01484834-20170519-05

Gdanetz, L. M., Hamer, M. K., Thomas, E., Tarasenko, L. M., Horton-Deutsch, S., & Jones, J. (2018). Technology, educator intention, and relationships in virtual learning spaces: A qualitative metasynthesis. *Journal of Nursing Education, 57*(4), 197-202. https://doi.org/10.3928/01484834-20180322-02

Geddis-Regan, A. R., Exley, C., & Taylor, G. D. (2021). Navigating the dual role of clinician-researcher in qualitative dental research. *JDR Clinical & Translational Research, 7*(2), 215-217. https://doi.org/10.1177/2380084421998613

Gu, Y., Zou, Z., & Chen, X. (2017). The effects of vSIM for Nursing as a teaching strategy on fundamentals of nursing education in undergraduates. *Clinical Simulation in Nursing, 13*(4), 194-197. http://doi.org/10.1016/j.ecns.2017.01.005

Halasa, S., Abusalim, N., Rayyan, M., Constantino, R. E., Nassar, O., Amre, H., Sharab, M., & Qadri, I. (2020). Comparing student achievement in traditional learning with a combination of blended and flipped learning. *Nursing Open, 7*(4), 1129-1138. https://doi.org/10.1002/nop2.492

Hao, X., Peng, X., Ding, X., Qin, Y., Lv, M., Li, J., & Li, K. (2022). Application of digital education in undergraduate nursing and medical interns during the COVID-19 pandemic: a systematic review. *Nurse Education Today, 108.* https://doi.org/10.1016/j.nedt.2021.105183

Hardie, P., Darley, A., Langan, L., Lafferty, A., Jarvis, S., & Redmond, C. (2022). Interpersonal and communication skills development in general nursing preceptorship education and training programmes: a scoping review. *Nurse Education in Practice, 65*. https://doi.org/10.1016/j.nepr.2022.103482

Hayashi, P., Abib, G., & Hoppen, N. (2019). Validity in qualitative research: a processual approach. *The Qualitative Report, 24*(1), 98-112. https://doi.org/10.46743/2160-3715/2019.3443

He, M., Tang, X., Zhang, H., Luo, Y., Tang, Z., & Gao, S. (2021). Remote clinical training practice in the neurology internship during the COVID-19 pandemic. *Medical Education Online, 26*(1). https://doi.org/10.1080/10872981.2021.1899642

Head, M. L., Acosta, S., Bickford, E. G., & Leatherland, M. A. (2022). Impact of COVID-19 on undergraduate nursing education: student perspectives. *Academic Medicine, 97*(3s), S49-S54. https://doi.org/10.1097/ACM.0000000000004530

Hesse, A., Glenna, L., Hinrichs, C., Chiles, R., & Sachs, C. (2019). Qualitative research ethics in the Big Data era. *American Behavioral Scientist, 63*(5), 560-583. https://doi.org/10.1177/0002764218805806

Higham, H., Greig, P. R., Rutherford, J., Vincent, L., Young, D., & Vincent, C. (2019). Observer-based tools for non-technical skills assessment in simulated and real clinical environments in healthcare: A systematic review. *BMJ Quality & Safety, 28*(8), 672-686. https://doi.org/10.1136/bmjqs-2018-008565

Holder, A. G. (2018). Clinical reasoning: A state of the science report. *International Journal of Nursing Education Scholarship, 15*(1). https://doi.org/10.1515/ijnes-2016-0024

Howard, V., Hartman, A. M., Allen, D. H., & Reynolds, S. S. (2021). Student nurse perceptions of an innovative role to support clinical practices during a pandemic: a qualitative study. *Nurse Education Today, 103.* https://doi.org/10.1016/j.nedt.2021.104959

Howe, D. L., Chen, H. C., Heitner, K. L., & Morgan, S. A. (2018). Differences in nursing faculty satisfaction teaching online: A comparative descriptive study. *Journal of Nursing Education, 57*(9), 536-543. https://doi.org/10.3928/01484834-20180815-05

Isidori, V., Diamanti, F., Gios, L., Malfatti, G., Perini, F., Nicolini, A., Longhini, J., Forti, S., Fraschini, F., Bizzarri, G., Brancorsini, S., & Gaudino, A. (2022). Digital technologies and the role of health care professionals: scoping review exploring nurses' skills in the digital era and in the light of the COVID-19 pandemic. *Journal of Medical Internet Research, 5*(1). https://doi.org/10.2196/37631

Jafarzadeh-Kenarsari, F., Abouzari-Gazafroodi, K., & Zaersabet, F. (2019). Exploration of the experiences and viewpoints of faculty members on continuing education webinars: A qualitative study. *The Qualitative Report, 24*(9), 2215-2232. https://doi.org/10.46743/2160-3715/2019.3985

Jirativanont, T., Raksamani, K., Aroonpruksakul, N., Apidechakul, P., & Suraseranivongse, S. (2017). Validity evidence of non-technical skills assessment instruments in simulated anaesthesia crisis management. *Anaesthesia Intensive Care, 45*(4), 469-475. https://doi.org/10.1177/0310057X1704500410

Johnson, A. P., & Aggarwal, R. (2019). Assessment of non-technical skills: why aren't we there yet. *BMJ Quality & Safety, 28*(8), 606-608. http://dx.doi/10.1136/bmjqs-2018-008565

Johnson, J. L., Adkins, D., & Chauvin, S. (2020). A review of the quality indicators of rigor in qualitative research. *American Journal of Pharmaceutical Education, 84*(1), 138-146. https://doi.org/10.5688/ajpe7120

Kahlke, R. M. (2014). Generic qualitative approaches: Pitfalls and benefits of methodological mixology. *International Journal of Qualitative Methods, 13*(1), 37-52. https://doi.org/10.1177/160940691401300119

Kaiafas, K. N. (2021). Emotional intelligence and role-modeling nursing's soft skills. *Journal of Christian Nursing, 38*(4), 240-243. https://doi.org/10.1097/CNJ.0000000000000881

Katlen, J. N., Manlapaz, M. R., & Hoffman, A. (2022). Considerations for appropriateness of virtual learning in the postpandemic environment. *Journal of Nursing Education, 61*(9), 503-509. https://doi.org/10.3928/01484834-20220705-04

Kaylor, S. K., Strickland, H. P., & Sartain, A. F. (2018). Laughter is the best medicine: teaching to teach using standardized patients. *Nursing Education Perspectives, 39*(4), 255-256. https://doi.org/10.1097/01.NEP.0000000000000254

Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development.* Prentice Hall.

Kotcherlakota, S., Kupzyk, K. A., & Rejda, P. (2017). Years of experience as a predictor of nurse faculty technology use. *Journal of Nursing Education, 56*(2), 115-119. https://doi.org/10.3928/01484834-20170123-09

Lancaster, R. J., Schmitt, C., & Debish, M. (2021). A qualitative examination of graduating nurses' response to the COVID-19 pandemic. *Nursing Ethics, 28*(7-8), 1337-1347. https://doi.org/10.1177/0969733021999772

Leaver, C. A., Stanley, J. M., & Goodwin Veenema, T. (2022). Impact of the COVID-19 pandemic on the future of nursing education. *Academic Medicine: Journal of the Association of American Medical Colleges, 97*(3), 82-89. https://doi.org/10.1097/ACM.0000000000004528

Leigh, J., Vasillica, C., Dron, R., Gawthorpe, D., Burns, E., Kennedy, S., Kennedy, R., Warburton, T., & Croughan, C. (2020). Redefining undergraduate nurse teaching during the coronavirus pandemic: Use of digital technologies. *British Journal of Nursing, 29*(10). https://doi.org/10.12968/bjon.2020.29.10.566

Lewandowski, S., Landry, K., & Prieto, V. (2021). Rising to the COVID-19 nursing education challenges and transitioning to online clinical practice: reflecting a year later. *Nurse Educator, 46*(6), 141-142. https://doi.org/10.1097/NNE.0000000000001113

Lin, W. T., Lee, B., & Mayer, C. (2019). Validity and reliability of teamwork evaluation of non-technical skills tool. *Australian Journal of Advanced Nursing, 36*(3), 29-38. https://www.ajan.com.au/archive/Vol36/Issue3/4Lee.pdf

Loh, H. P., De Korne, D. F., Yin, S. Q., Ang, E., & Lau, Y. (2019). Assessment of scrub practitioners' list of intraoperative non-technical skills (SPLINTS) in an Asian ambulatory surgical setting. *AORN Journal, 109*(4), 465-476. https://doi.org/10.1002/aorn.12640

Lokmic-Tomkins, Z., Choo, D., Foley, P., Dix, S., Wong, P., & Brand, G. (2022). Pre-registration nursing students' perceptions of their baseline digital literacy and what it means for education: a prospective COHORT survey study. *Nurse Education Today, 111*. https://doi.org/10.1016/j.nedt.2022.105308

Lopes, R. P., Mesquita, C., Del Rio-Rama, M. d. l. C., & Alevarez-Garcia, J. (2018). Collaborative learning experiences for the development of higher-order thinking. *Revista Espacios*, *39*(17), 1-11. https://www.revistaespacios.com/a18v39n17/a18v39n17p16.pdf

Major, S., Krage, R., & Lazarovici, M. (2022). SimUniversity at a distance: a descriptive account of a team-based remote simulation competition for health professions students. *Advances in Simulation, 7*(1). https://doi.org/10.1186/s41077-021-001990-5

Marquez-Hernandez, V. V., Gutierrez-Puertas, L., Granados-Gamez, G., Rodriguez-Garcia, M., Gutierrez-Puertas, V., & Aguilera-Manrique, G. (2019). Development of a web-based tool to evaluate competences of nursing students through the assessment of their clinical skills. *Nurse Education Today,73*,1-6. https://doi.org/10.1016/j.nedt.2018.11.010

Mekler, E. D., Bruhlmann, F., Tuch, A. N., & Opwis, K. (2017). Towards understanding the effects of individual gamification elements on intrinsic motivation and performance. *Computers in Human Behavior, 71,* 525-534. https://doi.org/10.1016/j.chb.2015.08.048

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). San Francisco, CA: John Wiley & Sons.

Mihas, P. (2019). Qualitative data analysis. *Oxford Research Encyclopedia of Education.* https://doi.org/10.1093/acrefore/9780190264093.013.1195

Moradi, Y., Baghaei, R., Feizi, A., & HajiAliBeigloo, R. (2022). Challenges of the sudden shift to asynchronous virtual education in nursing education during the COVID-19 pandemic: a qualitative study. *Nursing and Midwifery Studies, 11,* 44-50. https://www.nmsjournal.com/text.asp?2022/11/1/44/340540

Morrell, B. L. M., Eukel, H. N., & Santurri, L. E. (2020). Soft skills and implications for future professional practice: qualitative findings of a nursing education escape room. *Nurse Education Today, 93.* https://doi.org/10.1016/J.nedt.2020.104462

Morrison, J., & Shemberger, M. (2022). Fighting the resistance: helping faculty to embrace online teaching during a pandemic. *The Journal of Faculty Development, 36*(3), 49-55. https://www.proquest.com/openview/6abcb57b79863a04fa287e6f3bc2a7a1/1.pdf?pq-origsite=gscholar&cbl=39886

Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research. part 3: Sampling, data collection and analysis. *European Journal of General Practice, 24*(1), 9-18. https://doi.org/10.1080/13814788.2017.1375091

Murray, K., McKenzie, K., & Kelleher, M. (2016). The evaluation of a framework for measuring the non-technical ward round skills of final year nursing students: An observational study. *Nurse Education Today, 45*, 87-90. https://doi.org/10.1016/j.nedt.2016.06.024

Nabolsi, M., Abu-Moghli, F., Khalaf, I., Zumot, A., & Suliman, W. (2021). Nursing faculty experience with online distance education during COVID-19 crisis: A qualitative study. *Journal of Professional Nursing, 37*(5), 828-833. https://doi.org/10.1016/j.profnurs.2021.06.002

Nadelson, S., Nadelson, L., & Connor, K. (2021). Asynchronous online simulation in nursing education: creating learning opportunities to meet current challenges. *Journal of Comprehensive Nursing Research and Care, 6*(2), 177. https://doi.org/10.33790/jcnrc1100177

Nagel, D. A., Stacey, D., Momtahan, K., Gifford, W., Doucet, S., & Etowa, J. B. (2017). Getting a picture: A grounded theory of nurses knowing the person in a virtual environment. *Journal of Holistic Nursing, 35*(1), 67-85. https://doi.org/10.1177/0898010116645422

Nassaji, H. (2020). Good qualitative research. *Language Teaching Research, 24*(4), 427-431. https://doi.org/10.1177/1362168820941288

Natarajan, J., & Joseph, M. A. (2022). Impact of emergency remote teaching on nursing students' engagement, social presence, and satisfaction during the COVID-19 pandemic. *Nursing Forum, 57*(1), 42-48. https://doi.org/10.1111/nuf.12649

National Council of State Boards of Nursing. (2008). *Nursing Faculty Qualifications and Roles.* https://www.ncsbn.org/Final_08_Faculty_Qual_Report.pdf

Peddle, M., Bearman, M., Mckenna, L., & Nestel, D. (2019). Exploring undergraduate nursing student interactions with virtual patients to develop non-technical skills: A case study. *Advanced Simulation, 13*(4). https://doi.org/10.1186/s41077-019-0088-7

Peddle, M., Bearman, M., McKenna, L., & Nestel, D. (2020). "Getting it wrong to get it right": Faculty perspectives of learning non-technical skills via virtual patient interactions. *Nurse Education Today, 88*. https://doi.org/10.1016/j.nedt.2020.104381

Pence, P. L. (2022). Student satisfaction and self-confidence in learning with virtual simulations. *Teaching and Learning in Nursing, 17(1),* 31-35. https://doi.org/10.1016/j.teln.2021.07.008

Pires, S. M. P., Monteiro, S. O. M., Pereira, A. M. S., Stocker, J. N. M., Chalo, D. M., & Melo, E. M. (2018). Non-technical skills assessment scale in nursing: Construction, development and validation. *Revista Latino-Americana de Enfermagem, 26*. https://doi.org/10.1590/1518-8345.2383.3042

Porter, J. E., Cant, R. P., & Cooper, S. J. (2018). Rating teams' non-technical skills in the emergency department: A qualitative study of nurses' experience. *International Emergency Nursing, 38,*15-20. https://doi.org/10.1016/j.inej.2017.12.006

Posey, L., & Pintz, C. (2017). Transitioning a bachelor of science in nursing program to blended learning: Successes, challenges & outcomes. *Nurse Education in Practice, 26,* 126-133. https://doi.org/10.1016/j.nepr.2016.10.006

Powers, K., Pate, K., Montegrico, J., & Pagel, J. (2022). Faculty perceptions of the impact of the COVID-19 Pandemic on new graduate nurses' transition to practice: a qualitative study. *Journal of Professional Nursing, 43,* 33-41. https://doi.org/10.1016/j.profnurs.2022.09.003

Princeton University. (2010). *WordNet.* http://wordnetweb.princeton.edu/perl/webwn?s=educational+activity&sub=Search+WordNet&o2=&o0=1&o8=1&o1=1&o7=&o5=&o9=&o6=&o3=&o4=&h=

Radhakrishnan, B., Katikar, M. D., Myatra, S. N., Gautam, P. L., Vinayagam, S., & Saroa, R. (2022). Importance of non-technical skills in anesthesia education. *Indian Journal of Anaesthesia.* https://doi.org/10.4103/ija.ija_1097_21

Roberts, R. (2020). Qualitative interview questions: Guidance for novice researchers. *The Qualitative Report, 25*(9). https://doi.org/10.46743/2160-3715/2020.4640

Roney, L., Westrick, S. J., Acri, M. C., Aronson, B. S., & Rebeschi, L. M. (2017). Technology use and technology self-efficacy among undergraduate nursing faculty. *Nursing Education Perspectives, 38*(3), 113-118. https://doi.org/10.1097/01.NEP.0000000000000141

Sezer, B., & Sezer, T. A. (2019). Teaching communication skills with technology: Creating a virtual patient for medical students. *Australasian Journal of Educational Technology, 35*(5), 183-198. http://www.researchgate.net/publication/332107710

Sowko, L. A., Fennimore, L. A., & Drahnak, D. M. (2019). Teaching workplace interprofessional communication to undergraduate nursing students. *Journal of Nursing Education, 58*(9), 538-542. https://doi.org/10.3928/01484834-20190819-08

Squires, A., & Dorsen, C. (2018). Qualitative research in nursing and health professions regulation. *Journal of Nursing Regulation, 9*(3), 15-26. https://doi.org/10.1016/S2155-8256(18)30150-9

Stahl, N. A., & King, J. R. (2020). Expanding approaches for research: understanding and using trustworthiness in qualitative research. *Journal of Developmental Education, 44*(1), 26-28. https://eric.ed.gov/?id=EJ1320570

Suliman, M., Ta'an, W. a., Abdalrhim, A., Tawalbeh, L., & Aljezawi, M. (2022). The impact of online synchronous versus asynchronous classes on nursing students' knowledge and ability to make legal and ethical decisions. *Nurse Education Today, 109.* https://doi.org/10.1016/j.nedt.2021.105245

Tacy, J. W., Northam, S., & Wieck, K. L. (2016). Understanding the effects of technology acceptance in nursing faculty: A hierarchical regression. *Online Journal of Nursing Informatics, 20*(2). https://hdl.handle.net/10755/624001

Taylor, C., Angel, L., Nyanga, L., & Dickson, C. (2017). The process and challenges of obtaining and sustaining clinical placements for nursing and allied health students. *Journal of Clinical Nursing, 26*(19-20), 3099-3110. https://doi.org/10.1111/jocn.13658

Theofanidis, D., & Fountouki, A. (2018). Limitations and delimitations in the research process. *Perioperative Nursing, 7*(3), 155-163. https://doi.org/10.5281/zenodo.2552022

Thomas, C. M., & Kellgren, M. (2017). Benner's novice to expert model: An application for simulation facilitators. *Nursing Science Quarterly, 30*(3), 227-234. https://doi.org/10.1177/0894318417708410

Vadsaria, F., & Vadsaria, K. (2022). COVID-19 and nursing education: challenges and prospects. *Asia Pacific Journal of Public Health, 34*(5), 603-604. https://doi.org/10.1177/10105395221100363

Ward, J. K., Comer, U., & Stone, S. (2018). On qualifying qualitative research: emerging perspectives and the “deer” (descriptive, exploratory, evolutionary, repeat) paradigm. *Interchange, 49*(1), 133-146. https://doi.org/10.1007/s10780-018-9313-x

Widad, A., & Abdellah, G. (2022). Strategies used to teach soft skills in undergraduate nursing education: a scoping review. *Journal of Professional Nursing, 42,* 209-218. https://doi.org/10.1016/j.profnurs.2022.07.010

Xu, A., Baysari, M. T., Stocker, S. L., Leow, L. J., Day, R. O., & Carland, J. E. (2020). Researchers’ views on, and experiences with, the requirement to obtain informed consent in research involving human participants: a qualitative study. *BMC Medical Ethics, 21*. https://doi.org/10.1186/s12910-020-00538-7

Yeong, M. L., Ismail, R., Ismail, N. H., & Hamzah, M. I. (2018). Interview protocol refinement: fine-tuning qualitative research interview questions for multi-racial populations in Malaysia. *The Qualitative Report, 23*(11), 2700-2713. https://doi.org/10.46743/2160-3715/2018.3412

Zhou, M., Dzingirai, C., Hove, K., Chitata, T., & Mugandani, R. (2022). Adoption, use and enhancement of virtual learning during COVID-19. *Education and Information Technologies, 27*(7), 8939-8959. https://doi.org/10.1007/s10639-022-10985-x