2022

Nursing Faculty Experiences with Interactive Games and Gaming and Student Preparedness

Laura S. Dana
Walden University

Walden University

College of Nursing

This is to certify that the doctoral dissertation by

Laura Dana

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Edna Hull, Committee Chairperson, Nursing Faculty
Dr. Mary Rodgers, Committee Member, Nursing Faculty
Dr. Maria Ojeda, University Reviewer, Nursing Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2022

Abstract

Nursing Faculty Experiences with Interactive Games and Gaming and Student Preparedness

by

Laura Dana, MSN, Ed, RN, LCCE, COS-C

MSN, Walden University, 2013

BSN, University of Central Florida, 2009

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Nursing

Walden University

November 2022

Abstract

Although instructional strategies to enhance student learning is a critical component of the faculty role, nursing education has been slow to incorporate games and gaming into the learning environment. The primary purpose for this qualitative phenomenological research study was to explore the lived experiences of nursing faculty of associate degree programs, specifically regarding the use of games and gaming as interactive, experiential teaching and learning strategies. This study was designed to answer the question, "What are the lived experiences of faculty who use games and gaming as instructional approaches in associate degree nursing (ADN) education." Through one-on-one interviews via Zoom technology, the experiences of 18 ADN faculty who were already utilizing games and gaming. Their thoughts and feelings were collected and analyzed through the lens of Kolb's theory of experiential learning, Knowles's adult learning theory, and Piaget's theory of constructivism. Using Creswell's six steps for qualitative data analysis, major themes generated from participant interviews included creating games to reinforce knowledge, acknowledging lightbulb moments, viewing the learner as participant versus passive recipient, and advocating in support of the uniqueness of the adult learner. Positive social change results from growing evidence that games and gaming have contributed to the shift away from classic, teacher-centric didactic classrooms to more student-focused, interactive, and immersive learning experiences. This shift raises awareness of the need for faculty to design engaging learning environments that include energizing and participatory teaching/learning practices.

Nursing Faculty Experiences with Interactive Games and Gaming and Student Preparedness

by

Laura Dana, MSN, Ed, LCCE, COS-C

MSN, Walden University, 2013

BSN, University of Central Florida, 2009

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Nursing

Walden University

November 2022

Dedication

This research is dedicated to those who stood by me throughout the process.

First and foremost, I dedicate my dissertation to my husband, “Pappy,” and my children, Sam, and Eric. You were all a part of the adventure before it really started. It truly was my pregnancy with our twin sons that started an avalanche of change, including going back to school to become a nurse. From there, we all knew it was obvious from the start that nursing education was the direction I was headed toward. Every step, forward and backward, was a group effort, and I thank you all for hanging on and pushing me forward.

There were many others who encouraged me down that track and inspired me to reach for more, but it genuinely started with the original three: Chris G., Vicki M., and Sue L. All three are nurses who, at different points in my life, nurtured and motivated me through their own work. I have been influenced by so many educators and nurses and each has a special and meaningful place in my heart, as I could not have made the journey without them.

Finally, I dedicate my work to my students and fellow educators who have encouraged me to be better, to think more globally, and to hopefully inspire new educators just as I was encouraged by those educators and theorists before me. To this I say, never stop dreaming and believing that every path, including the bumps and missteps, is a pathway that is self-created, hopefully leading to a self-defined level of success. Create your own light and let it shine as brightly as you choose!

Acknowledgments

For the unending support and guidance, I want to thank Dr. Edna Hull, Dissertation Chair extraordinaire. She is an inspiration to nurse educators like me, and she has provided me with the necessary expertise and mentorship needed to complete such a monumental project. I will forever hear her voice ask, “Laura, what’s the problem?” I will never be able to thank her enough for talking me off the proverbial ledge from time to time. Her patience, guidance, and time made me feel as though I was her only student, and for that, I will be forever grateful. Additionally, I would also like to thank Dr. Betsy Rodgers, Dr. Maria Ojeda, and Dr. Leslie Hussey for their direction, skill, and commitment to the PhD process. Lastly, I would also like to acknowledge the Walden University academic advisors, library services, faculty, and Writing Center for their commitment to the process and expertise in their various areas.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Introduction

Whereas games and gaming in education has grown in acceptance in recent years, there have been very few studies focusing on games and gaming in nursing education. Broadly speaking and for the purposes of this research study, games are identified as a vehicle through which education, entertainment, and learned behaviors occur. More specifically, gaming is defined as a form of play utilizing points or tokens collected by the player/team that is used to build confidence and competence within a nonpunitive and competitive environment (Awwol et al., 2015; Kuo & Chuang, 2016). These definitions consider all available forms of gaming, including electronic games, video games, personal computer (PC) games, web-based games, and mobile phone games, as well as those that blend multiple forms of traditional gaming. With the call for nurse educators to adapt to a learner-centered teaching environment, games and gaming have gained popularity as interactive teaching strategies that has been shown to be useful and meaningful for all types of adult learners (Beavis et al., 2015; Bourgonjon et al., 2013; El-Masri et al., 2015; Hämäläinen & Oksanen, 2014; Kang & Chang, 2019).

Historically, K-12 educators have incorporated games and gaming as interactive strategies for teaching and learning. Additionally, many educators in colleges and universities, especially those working within the sciences, have successfully included games and gaming to foster an interactive learning environment (Aburahma & Mohamed, 2015; Barr, 2018; Collazos et al., 2019; Dankbaar, 2017; Gibson & Douglas, 2013; Hamari et al., 2016, Severengiz et al., 2020). Both games and gaming are effective

teaching-learning strategies within the confines of nursing education, and both provide interactive, hands-on learning through an application of learned knowledge and accumulated skills. As theories change, application of theories also adjusts and flexes, further allowing evidence to change practice. An application of experiential and interactive learning creates social change in the educational structure. Social change is not created in isolation; instead, it is made when evidence is used to further understanding. Essentially, social change in nursing education is evident when learning is more interactive, immersive, and experiential (Ahmed & Sutton, 2017; Proctor & Justice, 2016; Ward et al., 2018). Social change through games and gaming includes the advancement and maturation of nursing education through interactive and experiential methods.

This chapter serves as the introduction of a research study addressing the topic of games and gaming in nursing education, beginning with background information and summaries of literature published on the topic of games and gaming in nursing education. Additional topics included in the chapter are the problem statement, purpose statement, the research questions guiding the study, nature of the study, definitions, and assumptions. This chapter ends with the identification of delimitations, limitations, and the significance of the study.

Whereas the use of games and gaming is an explored phenomenon in education, the literature gap being addressed by this study is the lack of knowledge regarding faculty experiences using games and gaming in undergraduate nursing education. The literature indicates that games and gaming in education are useful instructional strategies (Beavis et

al., 2015), however, there has been little research published on the experiences of faculty who incorporate games and gaming in nursing education.

Background

Background information on games and gaming indicate that games and gaming for educational purposes is an old idea that has gained renewed interest. Much of this interest can be contributed to the shift away from the traditional lecture approach for teaching to interactive and learner-centric teaching and learning (Barr & Tagg, 1995). Specifically, recent research on games and gaming reveal that teaching and learning strategies using games can be intense but also absorbing and motivating (Breen & Jones, 2015; Saunders et al., 2017). To date, recent literature on games and gaming can be framed, understood, and summarized under the broad headings of K-12 grade education and higher education.

K-12 Grade Education

There is a long tradition of using games in K-12 grade education; however, gaming in the electronic or simulation sense is a growing phenomenon in education as technology has developed over recent years. Educators in primary and secondary education have been faced with changing learner demographics that require greater interactivity, creativity, and use of innovative teaching modalities (Gallegos et al., 2017; Garcia-Lopez et al., 2019). The literature on K-12 education acknowledges that games and gaming in education are current and effective means of providing students with experiential learning modalities (Aleson-Carbonell & Guillén-Nieto, 2012; Carenys & Moya, 2016; Silva et al., 2019; Stieler-Hunt & Jones, 2015; Sung et al., 2018; Thiede et

al., 2017; Zirawaga et al., 2017). The current research in educational games and gaming states that games and gaming are useful and meaningful tools, requiring active participation from students (Chaney & Doukopoulos, 2018; Nasiri et al., 2019; Sardone & Devlin-Scherer, 2016). Additionally, studies on student engagement show that educators are better able to keep students involved when those students are drawn into fun and interactive learning environments (Bossavit et al., 2018; Foster, 2008; Trajkovik et al., 2018), even while simultaneously presenting challenging theory and concepts. As the ongoing research in K-12 education seeks to improve student outcomes, games and gaming in education are pertinent as they build problem-solving skills, improve motor and cognitive abilities, and address communication proficiencies (Miller, 2015; Williamson et al., 2004). Game genres in K-12 grade education include paper and pen forms such as crossword and word find, games requiring accuracy and hand-eye coordination, up to and including serious games like simulation.

Literature from the gaming world shows an integration of learned skill, and awards players (students) by compelling them to make their own decisions, collaborate with peers, and consider alternatives, all while utilizing behaviors of accuracy and responsibility (Southgate et al., 2017). Research in education also stresses that learning is cumulative (Cicchino, 2015; Vernadakis et al., 2015; Williamson et al., 2004), providing primary and secondary students with an environment in which they are better prepared for the future (Woods et al., 2015), including making difficult decisions, considering consequences, and learning from mistakes (Chaney & Doukopoulos, 2018; Garcia-Lopez et al., 2019). In an enriching and engaging learning environment, educational games and

gaming stimulates thought processes and can lead young learners to take control, actively participate, and develop problem solving skills in a meaningful way.

Games and Gaming in Higher Education

Whereas gaming in K-12 education has been in use for several years, the use of games and gaming in nursing education has had a slower start. Games and gaming in higher education are closely associated with the use of technology in college teaching. The literature on games in higher education has shown these games contribute to a more enjoyable and fun experience for the adult student (Aburahma & Mohamed, 2015; Barr, 2018; Beylefeld & Struwig, 2007). Gaming research conducted in higher education has shown improvements in student skill sets and knowledge when the student is taken out of a traditional, teacher-centric environment, and awarded experiential learning created by the student themselves (Awwol et al., 2015; Grogan & Meijer, 2017; Keiner & Gilman, 2015; Lam et al., 2019).

Thus, results from studies on games and gaming in higher education support an interactive learning environment that advances skills in communication, adaptability, and creativity (Collazos et al., 2019; Dankbaar, 2017; Hamari et al., 2016, Severengiz et al., 2020). As seen in K-12 education, the higher education student learner is cognitively challenged and immersed in an environment where mistakes can be made without fear of physical or emotional consequence (Shute et al., 2015), all while thriving in a student-centered design that is individualized to the student experience (Severengiz et al., 2020; Thiede et al., 2017). To date, literature reflects a positive stance on games and gaming use in higher education as gaming is interactive, promotes problem solving, and supports

independent thinking (Costello, 2018; Kavanagh & Szweda, 2017; Maraffi et al., 2017; Reyes-Chua & Lidawan, 2019; Subhash & Cudney, 2018; Wu et al., 2012; Wu et al., 2014). However, while gaming in higher education has made significant gains, little has been achieved in understanding the use of games and gaming in nursing education. This is particularly true in understanding the experiences of faculty who use games as an instructional strategy for associate degree nursing education where the emphasis is on preparing the non-traditional learner for clinical practice.

Gap in the Literature

While literature on games and gaming has been well reported in K-12 grades and higher education, research on games and gaming in nursing education remains sparse. Recognizing this void in the literature, this research study was designed to explore games and gaming in nursing education. More specifically, this research study was designed to answer the following research question: What are the lived experiences of faculty who use games and gaming as an instructional approach in associate degree nursing education? Although there is a strong movement away from traditional educator-centered teaching within nursing education, there continues to be a slow acceptance of games and gaming in the teaching-learning environment of nursing. Games and gaming are popular and effective teaching strategies that infuse active learning and goal driven outcomes into many classrooms, skills labs, and clinical learning environments, but they have not been studied in nursing education. Experiential learning through games and gaming improves the developing learner's skills and knowledge by facilitating theoretical comprehension and application (Aljezawi & Albashtawy, 2015; Holbrey, 2020). For this purpose, this

research study was designed to fill the knowledge gap with the voices of nurse educators who successfully utilize games or gaming within their educational environments, including classroom, skills lab, simulation, and in the clinical setting.

Problem Statement

As indicated in the literature (Barr & Tagg, 1985), today's learner is different. This factor is particularly true in undergraduate nursing education where learners are technologically oriented and can easily become distracted with the traditional teacher-dominated lecture method. Reduced attention spans, a heavy reliance on instant gratification, a need for immediate feedback, and innovation has increased the demand for instruction that can gain and sustain interest in the learning process. Though teaching strategies to enhance student learning have grown exponentially over the years to address changing these and other student demographics, there remains an open, unanswered question. What about the effectiveness of games and gaming in nursing education? The present study is an early attempt to answer this question by exploring the experiences of faculty on the use of games and gaming as an instructional approach in nursing education. Knowledge of games and gaming, as told from the lived experiences of nursing faculty, will fill a void in understanding how effective teaching strategies can impact student learning.

Purpose of the Study

The purpose of this study is to explore the lived experiences of associate degree nursing faculty who integrate games and gaming within teaching and learning. The phenomenon of interest includes games and gaming. It is important to address this topic

as games and gaming as instructional approaches have the potential to identify student-related areas of strength and weakness regarding collaboration, communication, and problem-solving skills (Kafai & Burke, 2015; Mathew, 2017; Mawhirter & Garafalo, 2016; Meguid & Collins, 2017).

Research Questions

The primary research question guiding this study is: What are the lived experiences of faculty who use games and gaming as an instructional approach in associate degree nursing education?

Conceptual Framework

This study is guided by theories and concepts related to experiential learning and constructivism. Experiential learning, a concept related to constructivism, can be traced back to Aristotle (1999) and Confucius (1990), as both philosophers believed in the value of past experiences as part of human growth and development. Rogers (1956) brought this humanistic type of learning into modern times when he expressed the importance of lived experiences as an integral part of multi-layered, individualistic teaching-learning processes. Kolb's experiential approach (1984) to teaching and learning further addressed constructivism within an adult learning environment. Specifically, experiential learning and constructivism are utilized within games and gaming by defining a learner/player, assigning an acquisition or task to the learner/player, and requiring the use of previously learned knowledge.

The theories on experiential learning and constructivist learning will serve as the lenses for exploring games and gaming as a phenomenon. Kolb's theory of experiential

learning (1984) can be applied to both the learner (player) and the designer (educator) in the use of games and gaming in the learning environment. The learner experience is in the acquisition of new knowledge or skills; in contrast, the educator experience is in developing a game, putting it to use, and then evaluating the effectiveness of the strategy (game). The phenomenon of games and gaming also relates to constructivism and adult learning frameworks. Utilizing constructivism as a framework for adult learning (Ackermann, 2001; Lewis et al., 1989; Piaget, 1968), the learner brings a skill set into the learning environment, acquires new skills and knowledge, and uses a reflective process to learn from the combined experiences. Thus, when adult learners are placed in an interactive learning experience, they respond positively to the learning (Joyce et al., 2009; Knowles, 1973; Spies et al., 2015).

Constructivism is applied within games and gaming by defining a learner/player, assigning an acquisition or task to the learner/player, and requiring the use of previously learned knowledge. With a baseline to start, the player builds an individualized level of understanding through experiences. Ultimately, the player uses reflections upon those experiences to increase knowledge, skill, and correctness (Ackermann, 2001; Bruner, 1960; Creswell, 2014; Kolb, 2015). When skills develop, confidence and competence expand and are further refined (Daniel & Tivener, 2016). Subsequently, encountering new information within a constructivist learning environment invites the adult learner, the nursing student, into adaptable and variable conditions, all of which are necessary in both nursing training and in professional practice (Halm & Crespo, 2018; Lewis et al., 2018).

The nursing student is required to use current knowledge, ask new questions, explore possibilities, and assess what has been learned.

Additionally, in constructivist teaching and learning, students are encouraged to play an interactive part in the process (Bruner, 1960; Creswell, 2014; McEwen & Wills, 2014). Faculty following the philosophy of constructivism act as facilitators who guide activities and address theoretical application in a hands-on experiential learning environment (Kapp, 2012; Kolb, 2015; McEwen & Wills, 2014; Strickland et al., 2016; Zhao, 2014; Zhang, 2013). Consequently, constructivism and experiential learning will guide this research as findings generated from the study will provide insights on the use of games and gaming in undergraduate nursing education. More detail on Kolb's theory of experiential learning will be presented in Chapter 2.

Nature of the Study

This qualitative phenomenological study is designed through a constructivist philosophy of interactive learning to be utilized by nursing educators. This research can be accomplished through the lens of constructivism utilizing games and gaming as an effective teaching and learning strategy within nursing education (Creswell, 2014). When approaching a research question from a phenomenological perspective, Creswell (2014) stated that researchers seek to learn about a phenomenon through the lens of "lived experiences of individuals" (p. 14).

I conducted a qualitative study based on Husserlian phenomenological methodology approaches in human science research by focusing on the description of experiences (Christensen et al., 2017; Moustakas, 1994). Husserl argued that

phenomenology is the study of gathered experiences (Husserl, 2017). A phenomenological approach allowed analysis of lived experiences to better understand the perception and meaning of the phenomenon within context (Moustakas, 1994; Neubauer et al., 2019; Thiede et al., 2017). Hence, a qualitative phenomenological approach was appropriate in that it had the capacity to focus on the experiences of participants and examine common meanings found in those experiences (Creswell, 2014; Kim et al., 2017; Kolb, 2015; Lambert & Lambert, 2012).

I collected data through online interviews using Zoom video conference technology. More precisely, semi-structured, one-to-one interviews were conducted to collect in-depth information from nursing faculty. I collected data using "backyard research" (Creswell, 2014; Hull, 2017) by gathering interviews from associate degree nursing faculty, some of whom were my own colleagues, employed in a two-year, entry level Associate Degree nursing program. I also reached into the Walden Faculty Pool for appropriate candidates from around the country. In these interviews, participants had their voices and answers recorded electronically and eventually transcribed verbatim. Virtual interviews were substituted for face-to-face encounters based on worldwide conditions at the time of study (Centers for Disease Control [CDC], 2020).

Definitions

Adult learning: Knowledge guided by self-direction, motivated by a readiness to learn, and reflecting on previous experiences while utilizing these pieces to acquire problem solving skills (Knowles, 1973; Spies et al., 2015; Taylor & Hamdy, 2013)

Experiential learning: The process of learning through immersion within an experience, including hands-on learning and reflective response (Boothby, 2014; Breen & Jones, 2015; Kolb, 1984; Kolb, 2015)

Games: Structured form of play and entertainment used to teach a lesson, skill, or for an accumulation of points/tokens (Aburahma & Mohamed, 2015; de Freitas, 2018; Hainey et al., 2016)

Gaming: An electronic form of game playing that can include use of computers, tablets, smart phones, gaming stations, online gaming, virtual gaming, and serious gaming, known as simulation (Awan et al., 2019; Costello, 2018; Grogan & Meijer, 2017)

Gamification: A strategy for creating a learning experience using games and gaming to engage learners and create an environment of self-motivation (Ahmed & Sutton, 2017; Becker, 2021; Dicheva et al., 2015; Orte et al., 2019)

Interactive learning: A teaching-learning strategy incorporating active participation on behalf of the student while utilizing technology, communication, and teamwork skills (Daniel & Tivener, 2016; Lewis et al., 2018)

Assumptions

Assumptions, as cited by Creswell (2014), are beliefs, whether understood or not, that the researcher presents as part of their own thinking. An assumption is an idea that is assumed to be true; however, these assumptions can be influenced by personal experiences and can be erroneous as a result (Nassaji, 2020; Ravitch & Carl, 2016). For this study, there were assumptions that qualitative, phenomenological methodology

provided an awareness of faculty perspectives on the use of games and gaming in nursing education. Additionally, I assumed that personal interviews conducted with associate degree nursing faculty would deliver an understanding of the use of games and gaming within the context of nursing education. These assumptions were addressed by specifically reaching out to faculty who already use games and gaming as part of their instructional approaches to teaching and learning. Moreover, it was an assumption that interviewed faculty would accurately and honestly answer presented questions during the interview process (Burkholder et al., 2016; Patton, 2014). This assumption was addressed by offering time for participants to answer questions completely during the interview process, as well as offering opportunities for participants to review transcribed interview notes to check for accuracy.

Further, there were built-in assumptions that each educator's experience was similar regarding the use of games and gaming in nursing education. Additionally, there was an assumption that nursing faculty have a desire to deliver highly effective education by using games and gaming in nursing education. Lastly, it was assumed that each faculty participant's lived experience was useful and applicable to the research. Each of these final assumptions was addressed during the interview process because each participant's experience was independent of any other participant's experience. Time was given for each participant to tell their story, and I used follow-up questions for clarification when necessary.

Based on the literature, there were also assumptions that games and gaming easily translate knowledge into applied skills for nursing students (Aljezawi & Albashtawy,

2015; Pront et al., 2018; Royce & Newton, 2007; Silvia Neves da Nova Fernanda & Angelo, 2018; Sitterding et al., 2019). The literature from within the social sciences and education indicated that games and gaming were an applicable modality within various teaching and learning environments (Alexander & Tuan, 2015; Costello, 2018; Grogan & Meijer, 2017) and could be utilized in ways that improve knowledge, skills, and application of such. However, the literature reviewed indicated that games and gaming in nursing education were underutilized and underexplored.

Scope and Delimitations

The scope of this research study was to focus on associate degree faculty who teach within the classroom, skill and simulation laboratories, and in clinical, bedside environments. Further, more than 50% of the interviewed nursing faculty participants were located in central Florida. The rest of the participants were scattered throughout the country. Faculty participants were required to have completed at least one year of applicable teaching experience working directly with associate degree nursing students utilizing games and gaming to teach problem-solving and communication skills.

Study findings that were addressed were communicated through the lens of the conceptual frameworks of experiential learning and constructivism. Interpretation of study results were limited to how those responses applied to the concepts of interactive and experiential learning. Within the context of qualitative research, inductive and deductive data analyses were used to "build their patterns, categories, and themes" (Creswell, 2014, p. 186) to further illustrate commonalities from within the individual, using one-to-one interviews with participant faculty.

Limitations

According to Burns, Grove, and Gray (2015) research study limitations are defined as potential weaknesses in the research study that are out of the researcher's control. More specifically, limitations pertain to impediments with the potential to affect internal and external validity of a study. Limitations noted during proposal development included sample size, geographic location of the study, and the investigator's connection to the research topic of games and gaming in nursing education.

Limitations do exist in the live and virtual interview process, including time constraints, having to build rapport quickly, and remaining time focused on the subject at hand (Janghorban et al., 2014; Ravitch & Carl, 2016; Rubin & Rubin, 2012). Interviewing failures, such as losing the participant's interest, the participant not providing "usable material," or the participant being led in a particular direction by the interviewer's questioning (Asselin, 2003; Weiss, 1994) can all work as limitations within a qualitative study. Efforts to address limitations included utilizing an interview process that included a pre-interview prior to the face-to-face, one-to-one synchronous interviews. Early in the pre-interview, rapport was established with each participant (Creswell, 2014; Creswell & Creswell, 2018). During face-to-face interviews, the researcher was able to monitor and record the verbal responses. Time was also given for clarification of any ambiguous answers, and participants were able to explain any statements that required further investigation (Creswell, 2014; Creswell & Creswell, 2018). Having participants fully involved in the interview process and allowing for ad lib responses yielded positive statements and large amounts of rich, thick data (Creswell,

2014; Creswell & Creswell, 2018). Any undue interviewer biases were managed through reflexivity, including the use of reflective journaling throughout the interview process, and following each participant interview (Abrahams, 2017; Creswell, 2014; Creswell & Creswell, 2018). The data collection process yielded large amounts of data, which led to a thorough analysis. Finally, oversight by committee members responsible for examining the research study from an unbiased perspective provided balanced evaluation of the research.

Significance

A study on games and gaming in education has broad implications with the potential to impact students, academic administration, practice, policy, and social change. In fact, though nursing practice continues to evolve around new evidence, the significance of games and gaming in other similar science-based educational environments has been well established (Aburahma & Mohamed, 2015; Andika et al., 2019; Bossavit et al., 2018; Zirawaga et al., 2017). The significance of the study impacts each stakeholder at different levels.

The adult student population has come to expect a high level of kinesthetic learning. Games and gaming combine that style of learning with several concepts, including active learning, inclusivity, collaboration, and goal setting (Awan et al., 2019; Boctor, 2013; King et al., 2019; Lindblom, 2018; Sabatino, 2014; Sheehan et al., 2017; Tan et al., 2017). Games and gaming in education are significant within an interactive and experiential learning design. Faculty experiences with games and gaming will contribute to ongoing research related to their use in nursing education.

Nursing Education

Changes to teaching and learning strategies in nursing education attempt to improve performance and confidence as students mature into practitioners entering the field (Meyer & Shatto, 2018). While educational techniques in K-12 and higher education continue to adapt to a student population desiring more interactive forms of teaching and learning, nursing education is similarly moving in that direction, albeit more slowly. Nursing faculty intend to create motivating and engaging learning opportunities through educational opportunities, like games and gaming, that are interactive and utilize experiential learning strategies to help students achieve goals (Berndt, 2019; Billings & Halstead, 2019; Cunningham et al., 2019). Research in K-12 and higher education show that participating in educational games and gaming provide students with greater problem-solving and communication skills through the transformation of knowledge-based materials into application (Hwang & Chen, 2017; Maraffi et al., 2017; Reyes-Chua & Lidawan, 2019). Nursing faculty have those same opportunities for change. As faculty present successful learning in the acquisition and application of those skills, games and gaming can bridge the change into student-centered teaching and learning events. Ultimately, student success is based on an integration of both knowledge and skills.

Academic Administration

Equally, administrators develop strategies to improve student outcomes. Likewise, academic administrators must keep their eyes on the bottom line, including the expenses versus the outcomes of teaching and learning. Administrators are focused on what benefits the student, the institution, and ultimately, the community (Zhang & Cui,

2018). Findings from this study will benefit academic administration by identifying resources for faculty, such as defining financial sources directed at expanding teaching and learning strategies like games and gaming. In collaboration with faculty, innovative teaching strategies such as experiential and interactive learning effect positive change by infusing hands-on learning, which is particularly necessary within nursing education.

Administrators can partner with nursing faculty to foster and model professional behaviors of collaboration, teamwork, and respect. Administrators can also support faculty by focusing on faculty development, including training specific to experiential and interactive learning modalities such as games and gaming. Just as a better prepared nursing student enters the workforce with highly developed skills, confidence, and competence learned through experiential and interactive learning opportunities, faculty need those same opportunities. Academic administrators endorsing profound changes, such as the move from instructor-centered teaching to student-driven learning, reinforce the importance of participatory learning experiences. Ultimately, administrators have the authority to release funding and set a tone for how institutions support and develop faculty, which in turn, positively impacts student outcomes (Bilal et al., 2017; Fischer et al., 2018; Greenwood & Ewell, 2018).

Practice

The expectation for a newly graduated nurse is that they are ready to enter the workforce upon completion of their studies. Regardless, practice is influenced by both confidence and competence. Understanding the role of interactivity and experiential learning may lead to developing nurse education programming that complements didactic

theory-based learning with hands-on learning experiences. A well-rounded approach to teaching and learning places the student nurse in experiences that improve and direct self-learning, therefore compelling them to be highly involved in their own education. These practices produce a capable and skilled practitioner, and as a result, improve patient care and outcomes.

Policy

Policy makers from within government, healthcare, and academia may be influenced by the research gathered from this study. The experiences of faculty using games and gaming may positively impact student competence, and therefore, shape a graduate nurse who is prepared for and better able to transition from student to professional nurse (Boothby, 2014; Owens 2019). As policy is influenced by evidence, policy changes regarding teaching and learning lead to changes in the learning environment, thus improving student competence and confidence. A more competent and confident graduate nurse entering the workforce is more likely to endure the rigors of a challenging healthcare environment, and is less likely to make errors, experience burnout, or leave the nursing workforce abruptly (Gallegos et al., 2017; Koivisto et al., 2016). Policies that support games and gaming in the learning environment simultaneously provide an interactive and experiential learning experience for students and faculty.

Social Change

Positive social change will occur with a better understanding of the positive influence that games and gaming have on knowledge, skills, and behaviors in nursing students and graduates. The National League for Nursing (NLN) has recommended the

use of experiential learning, such as games and gaming, as effective teaching strategies that can be used in the nursing education environment (NLN, 2015). As such, further understanding of how and when to implement the interactive and experiential strategies through games and gaming is necessary to develop skills and competence. Positive social change will follow novice nurses entering the workforce with highly developed skill sets, including problem-solving and communication skills. Nurses entering the field with these skills will positively influence nursing shortages and be able to provide advanced clinical skills that enhance patient care and outcomes. Safe and effective patient care is shaped by nurses who possess problem-solving and communication skills and can adapt to a changing healthcare environment. Accordingly, a better understanding of techniques that help nursing students to develop these skills is progressive social change that influence nursing, patient care, and healthcare outcomes.

Summary

Identifying the lived experiences of nursing faculty in associate degree programs working with experiential and interactive learning strategies, such as games and gaming, is essential to reforming nursing education. Previously, nursing education was teacher-centric with students as recipients of information. Education research indicates that an interactive and experiential experience fully involves the student in their own learning. As a result, students build competence and confidence with skills and applicability to overall healthcare. To date, little is known about nursing faculty experiences with interactive and experiential learning, such as games and gaming, even though similar disciplines have moved more in this direction. Understanding the faculty experience with

these types of instructional strategies affords other faculty the opportunity to update curricula and move forward with enhanced instructional approaches.

In Chapter 2, a review of the literature will be presented, specifically literature that supports and defends interactivity and experiential learning. Additionally, Chapter 2 will include literature supporting the conceptual framework and research question addressing the lived experiences of nursing faculty utilizing games and gaming as an instructional strategy. Ultimately, Chapter 2 will demonstrate a synthesis of the literature available from nursing, education, and other social sciences.

Chapter 2: Literature Review

Introduction

This qualitative phenomenological study was designed to explore the experiences of nursing faculty working within an associate degree program utilizing interactive games and gaming in all areas of instruction, including classroom, lab and simulation, and clinical experiences. Games and gaming are well-known in K-12 and collegiate pedagogical literature as particularly useful teaching and learning strategies. In nursing education, games and gaming create opportunities for building self-confidence related to professional, clinical, and healthcare skills (Johnston et al., 2013; McEnroe-Petitte & Farris, 2020; Verkuyl & Hughes, 2019). However, despite usefulness in other academic disciplines, exploration of games and gaming in nursing education has been limited (Aljezawi & Albashtawy, 2015; Baid & Lambert, 2010; Pront et al., 2018). Moreover, even less is known on games and gaming as they are used by faculty in undergraduate nursing education. For example, what are faculty perspectives on adopting games and gaming as interactive and experiential approaches to teaching and learning? What are faculty views on games and gaming as they are carried out in the classroom, skill/simulation lab, and during clinical instruction? Viewed through the experiences of associate degree nursing faculty members, this study was a beginning attempt to understand games and gaming as an approach to teaching and the role of interactive and experiential instructional strategies in nursing education.

Chapter 2 is primarily the literature review. The chapter begins with the search strategy used to locate literature to answer the primary question guiding this study.

Chapter 2 also includes the theories guiding and framing the study. The literature review provides a synthesis of work published by authors who have investigated faculty experiences on games and gaming as teaching and learning strategies. Last, the chapter ends with a review of the literature on what is known and unknown on the topic of games and gaming in education, particularly in nursing education.

Literature Search Strategy

The fundamental research question guiding this study was: What are the lived experiences of faculty who use games and gaming as an instructional approach in associate degree nursing education? A comprehensive and exhaustive review of the literature was completed to answer this question. Multiple databases were searched including ERIC, CINAHL, Education Source, ScienceDirect, Sage Journals, Taylor and Francis Online, and ProQuest Nursing and Allied Health. Through an andragogical lens of interactive and experiential learning, the literature was searched for adult student learning regarding problem-solving and communication skill development strategies, specifically use of games and gaming (Duane & Satre, 2014; Kolb, 1984; Kolb, 2015). I performed a literature search for English and Spanish-language with applicable English translations on the topic of games and gaming in education. Recognizing the history of games and gaming began in K-12 grade and higher education, the search also included examination of databases defining elementary and secondary education. Nursing was later added as a search term to address games and gaming in nursing education.

Seventeen key search terms and phrases were used to guide the search including *adult learner, interactive,* and *experiential learning, social science, K-12 and postsecondary education, games, gaming, gamification, constructivism, faculty perceptions, faculty experiences, teaching strategy, goal setting, problem-solving, collaboration,* and *student outcomes*. Date delimitations were 2005 to present as games and gaming in education is a newer concept in education and the teaching and learning environment. The original search included both qualitative and quantitative studies about games and gaming in K-12 and higher education, including disciplines in language, math, nursing, physical, and social sciences.

Inclusion criteria for conducting the review included research studies and systematic reviews in peer-reviewed journals and scholarly works that addressed games and gaming in education from K-12 education and collegiate education in math, physical, and social sciences. To refine the search and locate relevant literature to answer the research question, combination terms were added including *student development, teamwork,* and *communication*. Last, to further refine the search, the Boolean phrases used were *interactive, experiential learning, nursing education,* and *associate degree nursing education*.

Excluded studies not included in the review were those performed before 2005, and those conducted in human resource or work environments as opposed to education. Considering that games and gaming are underexplored topics in nursing education, articles collected included those utilizing constructivism as a theoretical foundation in

education, and other similar professions outside of nursing. What follows is the theory guiding the study followed by a comprehensive review of the literature.

Theoretical Foundation

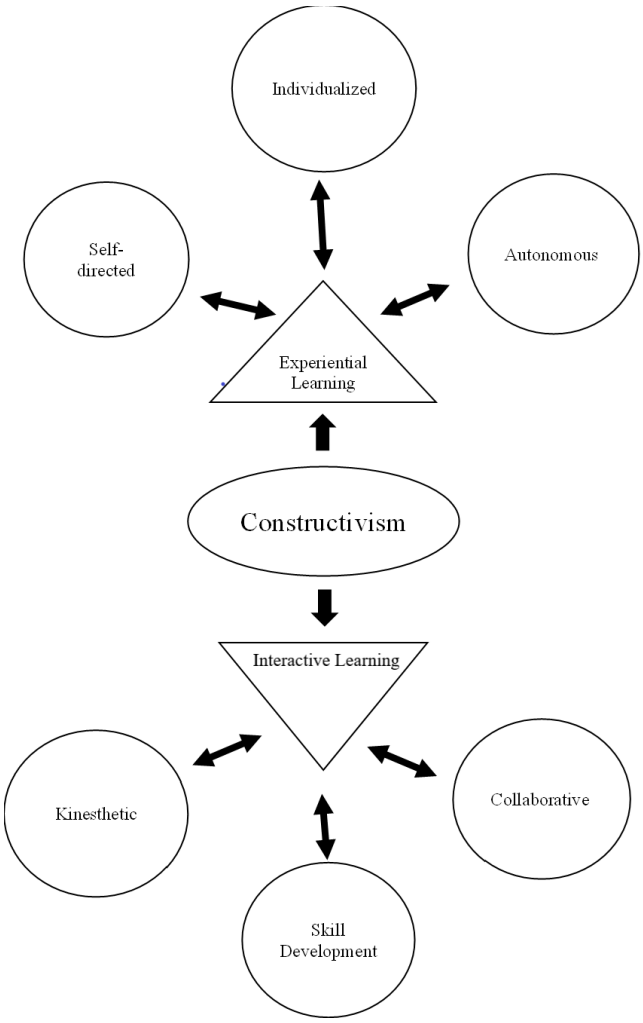
The theoretical foundation for this study was based on constructivism, a theoretical learning concept first developed by John Dewey (1938). Dewey acknowledged the active role of the learner within the creation of knowledge and knowledge application. Over the decades, constructivism has been described along three categories: cognitive, radical, and social constructivism (Ackermann, 2001; Dennick, 2016; Piaget, 1968; Taber, 2016). Constructivism is described as a continuum with experiential learning and interactive learning equally denoted. Within the concept of experiential learning, learning is individualized, with the learner having control over the learning process. As an outcome, learning is largely self-directed.

Equally as important is interactive learning, which provides kinesthetic, hands-on, learning opportunities that are collaborative and amplify skill development. Constructivist theorists, such as Piaget and Dewey, emphasized the linkage between theory and practice application, stressing the need for learning environments to be authentic, meaningful, and relevant. Constructivism builds upon previous knowledge and revolves around learner-centered opportunities (Dennick, 2016; Piaget, 1968; Taber, 2016). With a focus on games and gaming, I explored the experiential and interactive learning components of constructivism as applied to these teaching/learning strategies (Kolb, 1984). To date, the literature about constructivism in education has been integrated smoothly into adult learning environments, applied in the classroom, skills

laboratory, simulation laboratory, clinical experiences, and into the work environment. Furthermore, constructivism may be the impetus for a change from traditional teacher-centered learning into learner-centered environments with faculty serving as facilitators and students being more in control of their own learning. Constructivism is illustrated here in Figure 1.

Figure 1

Theoretical Foundation Through a Constructivism Lens



Within a framework of owned and acquired behaviors, constructivism presents learning as an experience or an event (Ackermann, 2001; Bruner, 1960; Creswell, 2014; Duane & Satre, 2014; Halm & Crespo, 2018; Lewis et al., 2018; Meshram, 2015). The current study was adapted from pedagogical approaches, as constructivism evolves easily into andragogy and adult learning, and uses reflective experiences to build learning upon what is previously known (Knowles, 2010; Loeng & Omwami, 2018; Marlowe & Page, 2005; Usher et al., 2015). When referencing phenomenology, both experiential and interactive learning elevate the value of an experience by addressing a person's previously acquired knowledge, what is new to be learned, and how both concepts of learning build a stronger learner in the end (Houser, 2015; Stacy & Bennett, 2017). The personal experience of the learner is critical in the learner's understanding of newly acquired knowledge. Thus, those personal experiences are based on perceptions, with exposure eventually altered by levels of previous learning. The impact from experiential and interactive learning on nursing education is that a nurse learner's previous level of understanding and skill impacts how that student nurse learner will immerse into the complexities of the problem-solving and communication skills necessary to function in nursing practice. Hence, constructivism in nursing education addresses the growing necessity for development and implementation of interactive and experiential learning opportunities within nursing curricula (Duane & Satre, 2014)

Teaching within the framework of constructivism brings an elevated level of interactivity and experiential learning while addressing individual student learning and emphasizing student development through self-directed learning. Faculty in K-12 and

higher education have used constructivism to radically alter the presentation of learning material (Carenys & Moya, 2016; Silva et al., 2019; Stieler-Hunt & Jones, 2017, Sung et al., 2018; Tafor et al., 2016). Teaching through the lens of constructivism in the classroom offers faculty options of the flipped classroom to infuse interactive and experiential learning opportunities into curricula (Boothby, 2014; Breen & Jones, 2015). Constructivism built into curricula includes student-centered and self-directed learning occasions built on active learning principles that encourage the learner to use previously learned skills to achieve more in-depth knowledge and learn how to utilize it under varied circumstances (Kaymakamoğlu, 2017; Miller & Metz, 2014; Xu & Shi, 2018; Zainuddin, 2018). Regarding games and gaming in the teaching-learning environment, constructivism is a contributing factor within the influence of learning on the actual learner. Interactive and experiential learning addresses adult learning styles and strengthens learning development in all domains, including cognitive, affective, and psychomotor. Games and gaming in education are used to improve motivation, engagement, improve skills, and expand knowledge (Glazer, 2015; Guardia et al., 2019; Mikami, 2020; Sanchez-Martin & Davila-Acedo, 2017; Tsay et al., 2018; Zainuddin et al., 2020). Thus, each of these constructivist goals is enriched through gamification use in the learning environment and assist in constructing knowledge through an individualized learning experience (Polin, 2017; Popil et al., 2015).

The learner within constructivism integrates didactic materials into cognitive abilities and skills. Students are encouraged to reference and engage with previously learned knowledge, acquire new knowledge, and engage in application through problem-

solving and communication skill development. Numerous choices are made by faculty when creating student learning opportunities including choice of media, applicability of learned materials, and expected learning outcomes. Interactive and experiential learning is learner-centered (Kolb, 1984). Seen through the lens of constructivism, experiential learning trends away from teacher-centered approaches and moves toward the incorporation of learner-centered, hands-on, and immersive opportunities. These are learning platforms that engage the learner, create occasions for self-teaching, and immerse the learner directly in the learning process (Hassan et al., 2019; Huang & Hew, 2018; Huang et al., 2018).

Used as an instrument of change, constructivism theory suggests that learning is more inclusive when individual learners synergize principles, rules, and techniques through application of concepts in communication and collaboration (Dennick, 2016; Piaget, 1968; Taber, 2016). Instructive games and gaming used in learning environments offer educational and andragogical learning when the learner is presented with challenges and must use previously acquired knowledge, and application of newly learned skills, all while actively engaging through visual, audio, and psychosocial experiences (Cozar-Gutierrez & Saez-Lopez, 2016). Games and gaming encompass a variety of applications and learning styles. In response to a desire to contribute to an even higher level of learning, serious games, or simulation, connects an even greater level of complexity for the learner (Aleson-Carbonell & Guillén-Nieto, 2012; Connolly et al., 2012; Kapp, 2012; Severengiz et al., 2020). For the player (learner), games and gaming engage an emotional component influencing the value of what is acquired during game play. Hereto, cognitive,

affective, and psychomotor learning domains are addressed by involving multiple senses during game immersion (Jabbar & Felicia, 2015). As such, interactive and experiential learning are powerful and meaningful applications of constructivism within the learning environment. In previous research, the focus has not included nursing education, and although games and gaming in K-12 and higher education have been shown to be effective teaching and learning strategies, nursing has been slow to research games and gaming in the learning environment. Findings from this research study showed the potential for contributing to the ongoing work on constructivism in the interactive and experiential classroom, as these learning opportunities are found in the physical or remote classroom, skills, and simulation laboratory experiences, as well as clinical learning environment.

Through the lens of constructivism, this visual representation of games and gaming was based on adult learning concepts of interactive and experiential learning being at the crux of how adults learn. Andragogy is based on principles of individuality, autonomy, experience, and reflection, which ties it directly to experiential and interactive teaching and learning approaches (Merriam & Bierema, 2014). Within the body of the created visual, experiential learning centers around the learner having autonomy in decision-making, creating a learning opportunity individual to the learner, and opportunities where the learner acquires knowledge/skill that is self-directed. Likewise, interactive learning is represented visually by acknowledging key factors, including kinesthetic, or hands-on learning. Interactive and experiential learning is collaborative in

nature with expectations that learners will acquire skills/knowledge from working with other learners.

In summary, the concepts of interactive and experiential learning through games and gaming were the theoretical framework for this study. Through the organizational process of a literature review, categories and subcategories were identified within the literature, and a literature map was used to synthesize the topics of games and gaming in education. The research was further categorized and reviewed according to research design: qualitative, quantitative, and mixed methods. From there, subcategories further separated research into groupings based on identified key concepts.

Literature Review Related to Key Concepts

The research of games and gaming in education is based upon five major constructs explained in the literature. These terms originate from within literature on K-12 education. Over the years, literature on the use of educational games and gaming have developed within the framework of higher education. The five concepts include adult learning, experiential learning, games, gaming, and interactive learning. As a broad topic, there appears to be no way to discuss one idea without referencing the others.

To date, published research focusing on games and gaming in education has primarily involved K-12 and higher education, specifically within the fields of communication, mathematics, physical, and social sciences. Very few studies were found focusing on games and gaming in nursing education. Ironically, similar science-based disciplines have successfully adopted interactive and experiential learning experiences that develop communication, teamwork, and clinical skills through self-directed learning

(Coker et al., 2016; Schenck & Cruickshank, 2014). These types of experiential and interactive learning experiences provide opportunities to build upon already acquired knowledge, develop new skills, and offer reflective opportunities to learn from past and current performance.

This study's focus was on faculty perceptions of games and gaming, and a continued review of the literature provided no real significant research on faculty, instead focusing more on the student's perception. Therefore, it is important to explore the motivations, attitudes, and experiences of faculty who utilize games and gaming in the educational environment as perceptions and attitudes provide insight from a personal perspective (Beavis et al., 2015; Teall et al., 2019; Tsay et al., 2018; Zainuddin et al., 2020). It is an educator's responsibility to adapt to changes in practice while continuing to make learning relevant and applicable to the learner (Dole et al., 2016; Feldman, 2017; van der Heijden et al., 2015). Hence, the faculty perspective guides the decisions to use games and gaming in the teaching/learning environment.

Adult Learning

In research addressing adult learning, several studies indicate an evolution of common principles, including autonomy, application of knowledge, goal setting, and relevance (Housel, 2019; Knowles, 1973; Knowles, 2010; Sanchez & Cooknell, 2017; Spies et al., 2015; Taylor & Hamdy, 2013). Autonomy is seen in the independence of the learner's decision-making. Several studies reference an application of knowledge and the use of learned materials integrated into clinical practice while also utilizing problem-solving and communication skills (Faust & Paulson, 1998; Hainey et al., 2016; Kang &

Chang, 2019). Other studies suggest that goal setting occurs prior to and while learners efficiently and effectively achieve goal completion and are motivated toward regeneration (Huei-Ju, 2018; Mikami, 2020). In research about adult learning, the concept of relevance is an adult learner concept that has not changed since the inception of adult learning theory (Glance et al., 2018; Merriam & Bierma, 2014). Relevance includes timeliness, meaningfulness, and that knowledge shared is derived from evidence.

Research on the adult learner suggested that learners bring a variety of life experiences and accumulated knowledge into the learning experience (Housel, 2019; Merriam & Bierema, 2014). Therefore, each adult learner's attitude, beliefs, and abilities are individualized to the learner (Kasworm, 2018; Page et al., 2020). Research on the adult learner also acknowledges previously learned skills and the concept that adult learners already bring some familiarity with the subject at hand (Glance et al., 2018). Yet, currently, most of the literature focusing on adult learners was concentrated in non-nursing collegiate education (Keiner & Gilman, 2015; Xu & Shi, 2018).

Research conducted on educators working with adult learner populations often begins with the educator evaluating the learner's level of competence prior to the teaching-learning event. Studies performed by Conner et al (2018), Knowles et al (2015), and McCall et al (2018) focused on a pre-assessment, such as quizzing, to enhance an understanding of baseline student knowledge. Noted in the research, pre-testing of the adult learner's understanding provides the educator and the learner with a baseline of awareness while highlighting strengths and weaknesses within the individual student

(Conner et al., 2018; Knowles et al., 2015; McCall et al., 2018). As adult learners acquire skills, there is a continuing need to demonstrate competence to self and others (Roberts, 2017). The research on adult learners spoke directly to the need for experiential and interactive learning, including those that utilized self-reflection on what has been experienced (Kolb & Kolb, 2017; Sun, 2019). Research on self-reflection in the teaching-learning process (Deed et al., 2019; Gozcu & Caganaga, 2016; Yaccob & Yunus, 2019) suggested that self-reflection offered an opportunity to consider different options, collaborate with peers, and interactively create a complete experiential event that allowed the learner to engage in a multidimensional path of exploration, and decision-making. While nursing education stresses learner independence, problem-solving, and personal skill development, games and gaming have not been studied within the adult population of nursing education.

Experiential Learning

Experiential learning is defined as a teaching methodology immersing the learner in an experience or event that uses role-playing, simulation, and other interactive learning activity (Boyle et al., 2016; Calderon & Ruiz; 2015; Grace et al., 2017; Kolb, 1984; Ward al., 2018). The research on experiential learning was brought into discussion circles by John Dewey (1938) when he introduced the concept of learning as a dynamic encounter driven by a learner's previous experiences, application of new knowledge, followed subsequently by reflective occurrences. Research on experiential learning experience suggested that it is circular in design and each component is integrated as the learner continues to build upon what is already known, what is acquired through demonstration

of new skills and knowledge, and what is learned through reflection (Kolb & Kolb, 2017). Consequently, research on learners in experiential learning experiences are placed into an event guided by the learner themselves. Within the confines of this learning modality, empirical and first-hand accounts from learners placed a high level in categories of satisfaction, participation, and assimilation of new knowledge (Eckhaus et al., 2017). According to Kolb, "Learning is the process whereby knowledge is created through the transformation of experience" (1984, p. 38) As such, the experience is rooted deeply in the literature, specifically that of educators and scientists. The studies involving comparisons between traditional learning environments and experiential learning (Dominguez et al., 2013; Eckhaus et al., 2017; Hamari et al., 2014; Kolb, 1984) suggested that moving away from an educator-driven learning experience and moving toward an experiential learning environment navigated students into participatory and dynamic roles in their own learning (Wurdinger & Allison, 2017).

A predominance of literature reflects changes being experienced in education as the field moves away from the traditional form of teaching and learning toward an active and involved learner who enhances the learning environment with individual thoughts, behaviors, and manners (De Zan et al., 2015; Gerlach & Reinagel, 2016). As more research is performed, studies suggest that effective experiential learning, specifically through games and gaming, tailor the experience for learners and encourage use of psycho-cognitive abilities and activities that motivate the learner/player to do better (Bontchev et al., 2018; Coker et al., 2016; Eckhaus et al., 2017; Kolb & Kolb, 2017). While nursing has used simulation via serious games for many years (Breen & Jones,

2015; Mawhirter & Garafalo, 2016; Morse et al., 2019, National League for Nursing, 2015), there is still room for additional research on the use of multiple forms and complexities of games and gaming in nursing education.

Games

In assessing the literature for a definition of games, there were several considerations in order to make the construct applicable to all games. For the purposes of this study, games were described as a form of competitive play with a set of rules and roles that help the player develop skill or knowledge (Andika et al., 2019; Bayeck, 2020; Bodnar et al., 2015; Laski & Siegler, 2014; Soewardi & Perdana, 2019). The research on games included those games considered "traditional" in many countries, including board games, card games, and games of strategy (Bayeck, 2020; Campbell, 2016; Cardinot & Fairfield, 2019; Gozcu & Caganaga, 2016; Troussas et al., 2020). These types of games, and those less traditional and more interactive, appeared to support significant and effective improvements in engagement, satisfaction, and motivation to learn (Bullard & Anderson, 2014; Hamari et al., 2016; Mackavey & Cron, 2019). Research on the use of games to elevate learning in language, math, and science suggested that learner-centered games were more effective than conventional methods of teaching and learning (Becker, 2021; Mahbub, 2019). Research on games in education (Cheng et al., 2014; Kuo & Chuang, 2016; Wiggins**,** 2016) suggested a development of proficiencies, including communication skills through collaboration, promotion of learner skills and demonstration of said skills, and creating nonpunitive, realistic, immersive experiences that promote a social environment of teamwork and collaboration. As healthcare includes

its own language, including cultural and professional expectations, research on the use of games and gaming in teaching has become an internationally recognized teaching modality imparting strategy, speed, and proficiency through active and collaborative interactions (Petri & von Wangenheim, 2016; Phuong et al., 2017; Sevy-Biloon, 2017).

Gaming

Literature on gaming stretches into two distinctive definitions; the act of using games, and the broad-spectrum of electronic game use including computer, virtual, hand-held, fully immersive role-playing, and serious games of simulation (Gentry et al., 2019; Kinder & Kurz, 2018; Kyaw et al., 2019; Valen et al., 2019; Verkuyl et al., 2016; Verkuyl & Hughes, 2019; Weiss, 2018; Zirawaga et al., 2017). Research specifically on educational gaming continues to improve as quickly as technology makes advancements in efficacy of mannequins, useability, cost, and accessibility. Evidence suggested that serious gaming and gamification of learned materials improve knowledge, skills, and satisfaction (Boyle et al., 2016; Kyaw et al., 2019; Lam et al., 2019; Qualters et al., 2008; Saxena et al., 2016). Several studies focused on the assessment of communication competence, and developed tools to assess skills developed through role-playing, observation of others in role-playing/simulation, and debriefing from those experiences (Kapralos et al., 2011; Kim, 2018). Analysis of educational gaming literature identified that games and gaming are a useful framework for organizing learning topics from basic repetition to complex and multi-leveled problem-solving exercises (Hojjat et al., 2019; Howard et al., 2015; McDonald, 2017). Literature on gaming addressed evolving changes in learning modalities and domains, and meshed the learner's behaviors, perceptions, and

reflections in the learning experience (Deed et al., 2019; Gozcu & Caganaga, 2016). In nursing education simulation, role-playing, or serious gaming experiences allowed the learner to explore interactions and dialogue with patients, family members, colleagues, and members across an interdisciplinary spectrum of healthcare professionals (Atwood-Blaine & Huffman, 2017; Gartmeier et al., 2015). Simulation, otherwise known as serious games, has become more a part of the tools utilized to educate nursing students, but there continues to be a deficit in the research compared to other like-minded sciences.

Interactive Learning

Interactive learning emphasizes engagement of a hands-on approach to learning, advancing, and deepening an understanding of content and skills. Research within pedagogical and andragogical literature attaches an interactive component and has revolutionized the traditional educational experience as hands-on learning opportunities develop a more thorough level of learning through engagement and development of applied skills (Ackermann, 2001; Hassan et al., 2019; Lam et al., 2019; Page et al., 2020; Piaget, 1968; Ward et al., 2018). Interactive learning produces independent thinking and action intermingling together in the learning process. Several studies suggest that interactive learning is an evolving teaching-learning strategy for learners of all ages, used to cultivate skills, knowledge, and abilities from basic, memorized materials, up to and including complex information requiring engagement of psychomotor and cognitive areas of the brain (Huang et al., 2018; Meguid & Collins, 2017; Pettit et al., 2015). Interactive learning stimulates problem-solving skills and influences how a student communicates and behaves in the professional environment. The literature on interactive learning

continues to accumulate from educational organizations as interactive learning is collaborative, engaging, and creatively enriching (Dicheva & Dicheva, 2017; Dicheva et al., 2015; Hew et al., 2016; Lieberoth, 2015). Ongoing literature analysis underlines the importance of interactive learning and the connection to learner satisfaction, engagement, and nurturing cognitive and psychomotor skills (Dicheva et al., 2015; Hamari et al., 2016; Hanus & Fox, 2015; Holbrey, 2020; Huang et al., 2018; Lindblom, 2018; Lukita et al., 2017). Where traditional teaching/learning environments are single-mindedly slanted toward the educator, interactive and experiential learning techniques, such as games and gaming, effectively immerse the learner in an engaging and fun learning environment, personally connecting the learner to what is being learned.

Summary and Conclusions

While there is literature to support the use of games and gaming in educational environments, including K-12 and higher education, specifically in science-based fields, there was limited practical literature identifying games and gaming within nursing education. Consequently, a significant gap existed in the literature regarding games and gaming in nursing education. Furthermore, a gap existed in understanding the lived experiences of faculty utilizing games and gaming as a phenomenon within nursing education literature. Understanding games and gaming as teaching modalities, as well as the lived experiences of ADN faculty implementing these teaching modalities into the learning environment, is important when developing interactive and experiential learning opportunities for nursing students. As students develop themselves into competent, confidant, and communicative novice nurses, they are better prepared to enter the

challenging and robust healthcare field of the 21st century where they are familiar with modern technologies and how those interactive experiences enhance teaching and learning. Games and gaming afford the learner an opportunity to fully immerse within self-directed learning, problem-solving through changing situations, while developing highly proficient clinical and communication skills.

Games and gaming present the nurse educator an option for providing learner-centered, individualized self-directed learning opportunities (Barr, 2018). According to the literature, nurse educators have the opportunity to establish interactive and experiential events that engage and entertain students while offering instruction, collaboration with peers and professors in a nonpunitive learning environment (Aljezawi & Albashtawy, 2015; Baid & Lambert, 2010; Berndt, 2019; Cunningham et al., 2019). As games and gaming are used within education, each learner establishes his/her own baseline knowledge. Through the acquisition of newly learned clinical, problem-solving, and communication skills, students leave the learning environment with a heightened sense of self and a more investigatory and probing understanding of presented materials. Faculty who engage the learner with applicable and relevant knowledge assist students to focus on newly learned concepts. Cumulatively, students develop a richer knowledge base, and, become better prepared clinicians who can correct and advance patient outcomes in a clinical environment. This study was trying to answer the research question: *What are the lived experiences of associate degree nursing faculty who use games and gaming as an instructional approach in undergraduate nursing education?*

Chapter 3 included the methodology used to explore the lived experiences of nursing faculty utilizing games and gaming in nursing education, including classroom, skills and simulation laboratories, and in the clinical environment. Furthermore, Chapter 3 included the research design, research question, and the role of the researcher within the study. Additionally, the methodology was explained, how study participants were recruited, the method and rationale for data collection and how it was utilized, as well as data analysis and its impact on research findings. Lastly, Chapter 3 provided an overview of the ethical procedures by which the research was conducted, and plans used to address trustworthiness of the study findings, as well as how rights of participants were addressed throughout the process.

Chapter 3: Research Method

The purpose of this study was to explore the lived experiences of nursing faculty in associate degree nursing programs who integrate games and gaming in teaching and learning. Chapter 3 focuses on the methodology that was used to describe how nursing faculty utilize games and gaming in all elements of teaching and learning, including classroom, skill and simulation laboratories, and in the clinical environment. Specifically, the methodology explains and is inclusive of the research design, research questions, and the role of the researcher within the study. Additionally, an overview of plans for recruitment, gaining access to study sites, participant selection procedures, methods of data collection and analysis, and a delineation of issues of trustworthiness and human rights protection procedures are presented in Chapter 3.

Research Design and Rationale

The purpose of this study was to explore the lived experiences of associate degree nursing faculty who integrate games and gaming within the teaching and learning environment**.** The primary question guiding this research study was: What are the lived experiences of faculty who use games and gaming as an instructional approach in associate degree nursing education? Secondary questions included: (a) how do associate degree nursing faculty define games and gaming in the teaching-learning environment; (b) how do associate degree nursing faculty incorporate games and gaming as teaching strategies; (c) what experiences guide associate degree nursing faculty in how and when they utilize games and gaming as part of experiential learning; and (d) what reflective practices guide associate degree nursing faculty to include games and gaming into

learning in all nurse education environments, including classroom, clinical, laboratory, and simulation exercises?

The phenomenon of games and gaming include the key concepts of interactive learning, experiential learning, nurse faculty, and learning environment. Games are a form of competitive play with a set of rules and roles that help the player develop skill or knowledge (Andika et al., 2019; Bayeck, 2020; Bodnar et al., 2015; Laski & Siegler, 2014; Soewardi & Perdana, 2019). Gaming is the act of using games or electronic game use of all types including computers, virtual, hand-held, fully immersive role-playing, and serious games of simulation (Gentry et al., 2019; Kinder & Kurz, 2018; Kyaw et al., 2019; Verkuyl et al., 2016; Verkuyl & Hughes, 2019; Zirawaga et al., 2017). Interactive learning emphasizes engagement of a hands-on approach to learning (Hassan et al., 2019; Lam et al., 2019; Page et al., 2020; Ward et al., 2018). While similar to interactive learning, experiential learning includes a component of individuality in that each learning experience is "in the eye of the beholder" and different for each participant (Boyle et al., 2016; Calderon & Ruiz; 2015; Grace et al., 2017; Kolb, 1984; Ward et al., 2018). In the roles of games and gaming facilitators, nurse faculty structure academic and experiential events to instruct learners throughout the nursing curriculum (ACEN, 2018). In this type of learning environment, nurse educators are not limited to the classroom, and these interactive and experiential learning experiences can be found in skill and simulation labs, as well as clinical learning experiences in and out of the hospital and community-based settings (ACEN, 2018; Breen & Jones, 2015).

Research Tradition

As a qualitative tradition, phenomenology can be described as descriptive or interpretative (Husserl, 2017; Moustakas, 1994; Neubauer et al., 2019). However, regardless of which qualitative research tradition is exercised, the guiding principle behind phenomenology is that within the approach of phenomenology, the individual experience is paramount. With the purpose of exploring the lived experiences associated with key concepts, phenomenology looks to explore the meanings gathered from those lived experiences (Husserl, 2017). Within the confines of phenomenology, the researcher explores the depth and strength of those individual experiences with a focus on the phenomena (Patton, 2014; Ravitch & Carl, 2016). These narrative clues depict the phenomena being studied while simultaneously describing relationships between the individual and the phenomena (Sutton & Austin, 2015). Thus, the researcher can describe the relationship between the individual and key concepts in qualitative research, thereby providing an understanding of the experience from a personal perspective, referred to as a lived experience, rather than a theoretical understanding of the phenomena (Jackson et al., 2018; Oyelana et al., 2018). In this, the human experience is constructed on a continuum throughout a person's life (Creswell, 2014), which in traditional terms, falls under a postpositivism outlook, or one in which knowledge is constantly evolving as people gain more experiences (Patton, 2014).

Role of the Researcher

Within the body of phenomenological research, the role of the researcher is described as one that accesses, questions, gathers, and analyzes the thoughts and feelings

of participants (Husserl, 2017; Neubauer et al., 2019; Ravitch & Carl, 2016). Additionally, while the researcher gains access to personal thoughts, opinions, and experiences, he or she must also realize his/her own role in the research. By its very nature, qualitative research approaches include an element by which the researcher becomes the research instrument (Burns et al., 2015; Cypress, 2019; Merriam & Tisdell, 2015). The phrase "researcher-as-instrument" references the active and interactive nature of the researcher utilizing his/her own senses, specifically hearing and vision, to observe, assess, and interact with a participant. An aspect of qualitative research is the uniqueness of the researcher as the instrument involved directly or indirectly with the participant being studied (Rubin & Rubin, 2012; Merriam & Tisdell, 2015; Ravitch & Carl, 2016). Qualitative interactions are based on an exchange of ideas from researcher to participant and vice versa via the interview process (Merriam & Tisdell, 2015). Thus, I will assume the role of observer as participant and utilize an interview process with study participants.

In an observer-as-participant role, the researcher is charged to perform data collection and analysis without bias (Creswell, 2014; Creswell & Miller, 2018; Probst, 2016; Stewart, 2010). In the present study, the phenomenon explored is games and gaming. My firsthand experiences in nursing and community-based education made me keenly aware of the various areas where learning can happen, including classroom, skills and simulation laboratories, as well as all types of clinical experiences. However, to limit bias as the researcher, I made purposeful choices to select study participants who had experience with the phenomenon of games and gaming in nursing education. To meet those types of selection criteria, I considered personal knowledge of games and gaming

within the nursing education environment. This familiarity helped form trusting relationships with study participants. In my study, I utilized backyard research (Hull, 2017). As a result, I had knowledge of some study participants prior to their interviews. However, my contact with those participants was professional in nature, and none of the participants served in roles subservient or submissive to me. Any known participant relationship was collegial, only. All participants were interviewed utilizing semi-structured interview questions without leading or biased questions. Additionally, bracketing (Hull, 2017) was used to recognize and reflect upon any known or discovered personal biases, perceptions, and experiences related to the study phenomenon. Burkholder et al. (2016) and Creswell (2014) state that bracketing is the ability of the researcher to recognize their own biases, perceptions, and experiences as possible influencers on the researcher's understanding of studied concepts.

As a qualitative researcher, I accepted and acknowledged my own understanding of the study phenomenon using bracketing (Burns et al., 2015; Ravitch & Carl, 2016). To do so, I utilized a journaling process after each interview as a method of reflection. Journaling (Burns et al., 2015; Ravitch & Carl, 2016; Rubin & Rubin, 2012) also continued throughout the study, including through data collection and analysis. On a personal level, my own instructional approach has been to bring the "classroom" to life. To do this, I have utilized many forms of active and interactive learning, including games and gaming in the learning environment. For the integrity of the research, it was important to acknowledge my own teaching style and strategies used with students while

facilitating learning in all forms of teachable environments, including classroom, skills and simulation labs, as well as in the clinical setting.

Methodology

The methodological approach for this study is descriptive phenomenology with an emphasis in the Husserlian phenomenological approach. The methodological steps that were followed included participant selection, instrumentation, procedure for data collection and analysis, and procedures for recruitment. Setting the parameters for the type of population to be studied included sampling strategy, criteria for participant selection, all points of recruitment steps, and elements leading to data saturation.

Participant Selection Logic

Participant selection begins with the identification of the population to be studied. The population for this study is nursing faculty working in associate degree nursing education. From within that greater population, participant selection was based on established parameters, including the utility of games and gaming in the learning environment. Participant selection was based on criteria that support collection of rich data, which is a description of qualitative research examining the depth and complexities of what is being studied (Barrett & Twycross, 2018; Patton, 2014). In this study, participant selection began with recruitment via the researcher's university email and the professional emails of two sets of nursing faculty from two different institutions (Appendix C). I decided to reach into the pool of educators with whom I taught at my own home institution's nursing program. As a result, some of the participants were colleagues, thus backyard research (Hull, 2017) was conducted with these educators. As I

had a limited number of available colleagues who qualified to participate, I contacted another institution I was familiar with. In previous conversations with the dean of nursing of the secondary institution, I was encouraged to interview the faculty in order to gather more interviews from a similar institution's nursing faculty. It was my intent to gather participant stories, analyze them, and look for commonalities (Creswell & Creswell, 2018; Burns et al., 2015; Ravitch & Carl, 2016), thus providing a deeper understanding of the phenomenon, games, and gaming in nursing education.

Sample Size

The sample size in qualitative research is set by the researcher, and as such, remains a subjective number of participants demonstrated as a regularly changing number per study (Boddy, 2016; Merriam & Tisdell, 2015). The number of participants for this study was intended to range from 8-12 subject interviews. Each participant participated in a 1-hour face-to-face, one-to-one interview that liberally followed the study guide questionnaire (Appendix D). The qualitative literature supported a varying number based on my subjectivity and completing as many as are needed until data saturation is achieved in order to answer the research question (Ravitch & Carl, 2016). The goal of achieving data saturation was when I could see through reflection and evaluation that the gathered data had run its course in terms of new or enlightening information coming from additional interviews. Rubin and Rubin (2012) suggest that equality, or balance, as well as completeness, or thoroughness, are found in allowing for different perspectives, and that saturation is achieved when the same story begins to be told.

Criteria for Selection

Participant selection was not limited to the classroom and included all learning environments in which a nurse educator-student working relationship can be experienced, including skills and simulation labs, and all levels of clinical nursing. Participants were purposively sampled from associate degree nursing programs with on-ground programming that included skills and simulation laboratories, as well as off-site learning experiences. Associate degree programs in Florida were utilized, and all participant faculty had at least one year classroom, lab, simulation, or clinical nursing instructional experience within one of the two chosen programs. I decided to only utilize faculty with more than one full year of teaching experience as newer educators are novices (Benner, 1982) and, as such, would have fewer experiences to draw from.

In addition to faculty within Florida, the Walden University Faculty Pool, an outside resource, was utilized to find appropriate participants. Participants were nurse educators within an associate-degree program who already utilized games and gaming within the framework of a teaching-learning experience. Nurse educators who were excluded included those who did not use games or gaming in any capacity, as well as those educators who had not been fully employed for at least one year's time. Within the preparation for interviews and the actual interviews themselves, participants were de-identified and only referred to using assigned pseudonyms. Interviews were intended to be performed both live and in a virtual setting, depending on the availability of both the participants and the researcher.

Prior to contacting any nursing educator, my home institution's dean of nursing, as well as the presidents and the institution's IRB, were contacted regarding the feasibility of utilizing nursing faculty as participants in the research study. In the original application to the IRB, two institutions were mentioned; my home institution and a college in Colorado. However, while although the dean of nursing in Colorado was in favor of participation, the institution's IRB was not in favor of outside research. Therefore, a change was made to eliminate pursuit of the secondary institution in Colorado and move forward with the Walden Faculty Pool for additional participants. If any predetermined institution made an allowance for faculty participation, nursing faculty were provided with an informational flyer (Appendix C) within an email that noted inclusion criterion, purpose of the study, and my contact information. Only my Walden University issued email address was utilized as I performed backyard research (Hull, 2017) and was familiar with some of the participants.

Data Saturation

Data saturation is described as the point at which data collection should stop. For reasons known to myself in the role of researcher, the point of saturation occurred when I was no longer receiving variances in the experiences expressed through interview or observation (Patton, 2014; Saldaña, 2016). At this point, I no longer needed to gather any more interviews or observations and had to begin the tasks of data analysis, including organizing, coding, and observing for similar themes. For the purposes of my research, I aimed to interview 8-12 participants who had been pre-selected to participate in the study.

Instrumentation

This is a descriptive phenomenological qualitative research study with an emphasis in the Husserlian phenomenological approach. As such, there was no paper or electronic instrument used for this research, which led to me in the role of researcher becoming the instrument of data collection (Creswell & Creswell, 2018). In this research, data collection was provided through one-to-one, face-to-face interviews conducted via Zoom, an internet-based video conferencing platform or in person. Zoom interviews were both audio and video recorded as Zoom has a feature to accomplish both simultaneously. If live interviews occurred, they were recorded using the video feature on my phone. Field notes from Zoom were also utilized. As Zoom is a video conferencing platform, the only nonverbal communication to be viewed was upper body language and visible facial expressions; therefore, I decided to conduct Zoom interviews anonymously and with muted cameras. There was an opportunity to observe participant surroundings prior to beginning any interview.

After the interviews concluded, I transcribed each interview verbatim. I have multiple years of experience as a transcriber, and as such, I performed all transcribing manually. Any study participant had the option to request and receive their personal interview in transcribed form. This technique was used to check for inconsistencies, inaccuracies, and accidental omissions (Creswell & Creswell, 2018). Further, any participant who wanted to see my data analysis was afforded an opportunity to see common themes and interpretations of said themes. As the research questions under investigation were based solely on the lived experiences of nursing faculty utilizing

games and gaming in the learning environment, the relationship between saturation and sample size was determined during the interview process in the data collection phase of the study. Additional instrumentation included the demographic survey (Appendix E) and interview guide (Appendix D.).

Procedures for Recruitment, Participation, and Data Collection

The focus of this section is on gaining access to the study site, participant recruitment, data collection, and data analysis. With the assistance of the program administrators, institutional review boards (IRB) of the participant institution, as well as the IRB for the university, the processes of recruitment, participation, data collection, and analysis were reviewed for breaches in ethics and legalities. The strength and rigor of these processes involved in qualitative research are held to the highest of standards in the safety of participants and the efficacy of the research itself.

Data Collection

I collected data via face-to-face, one-on-one interviews accomplished through Zoom, an internet video conferencing platform. As Zoom is a video conferencing tool, there were observations of nonverbal communication techniques prior to the interviews, including facial expressions and upper body language that utilized in interpreting the data, as well. However, after the decision was made to conduct all interviews via Zoom, I also decided to conduct interviews in an anonymous format, and mute cameras. Demographic information was collected during participant selection (Appendix E).

Organizing and Reading the Data

Data organization began by acquiring transcripts of participant interviews and transcribing interview notes and transcripts (Creswell & Creswell, 2018). To validate accuracy of participant statements, each participant was offered the opportunity to receive a transcribed form of our interview. Any participant who desired this opportunity did so for the purpose of review and possible revision, if necessary. Reading transcripts generates a reflection of occurrences with participants. From the examined transcripts, I discovered codes and themes that began to emerge (Creswell & Creswell, 2018). Furthermore, reading transcripts allowed for identification of discrepancies or any irrelevant data. Any discrepancies were included in the data analysis as all data are pertinent, relevant, and necessary to represent each participant experience as a valuable lived experience (Jackson et al., 2018; Oyelana et al., 2018).

Data Analysis

Analysis of the data was guided by Creswell and Creswell's (2018) five-step process that identifies five separate steps to analyze data. These data collection steps include organizing, reading, coding, generating descriptions and themes, and finally, representing the description and themes (Creswell & Creswell, 2018).

Coding the Data

As stated, analysis of the data was guided by Creswell and Creswell's (2018) five-step process that identifies five separate steps. These data collection steps include organizing, reading, coding, generating descriptions and themes, and finally, representing the description and themes (Creswell & Creswell, 2018). Data organization began by

acquiring transcripts of participant interviews and transcribing interview notes and transcripts (Creswell & Creswell, 2018). When words or phrases are generated through data analysis, this is referred to as in vivo (Ravitch & Carl, 2016). The language that is gathered through analysis generates meanings of "…ideas, perspectives, or experiences" (Ravitch & Carl, 2016, p. 249). Coding of interview transcripts was performed manually and accounted for through use of a spreadsheet (Saldaña, 2016). I used a self-created Excel spreadsheet to keep track of what words, phrases, and ideas I was generating from the data. This spreadsheet helped me with tracking and enabled me to reference words and phrases quickly and efficiently.

During coding, it was imperative that I acknowledged personal biases (Clark & Veale', 2018). Through bracketing, researcher's bias was recorded in the form of reflective journaling, allowing me to look back on previous experiences with games and gaming, and beliefs that might have influenced data analysis (Creswell & Creswell, 2018). I continually read and reread participant transcripts, as well as listened to recordings, to uncover all possible themes and commonalities within the transcribed pages (Creswell, 2014; Creswell & Creswell, 2018; Ravitch & Carl, 2016). Additionally, the more the transcripts were read and interpreted, the deeper the understanding of the meanings behind participant experiences (Creswell, 2014; Creswell & Creswell, 2018) with the phenomenon of games and gaming in nursing education.

Generation and Representation of Description and Themes

According to Kim et al (2017), qualitative studies generate opinions and experiences, which researchers can then analyze down into commonalities and themes.

The themes generated through coding are represented and reported in the major findings of the study (Creswell & Creswell, 2018; Williams & Moser, 2019), found in chapter 4. The themes that emerged from data collection and analysis were representative of common feelings, opinions, and experiences of study participants (Ravitch & Carl, 2016; Williams & Moser, 2019). Individual experiences were analyzed for commonalities, both positive and negative. A description of games and gaming was generated from the collected experiences of nurse educators utilizing this phenomenon in a variety of learning environments throughout collegiate nursing education. These generated themes are discussed in chapter 4 via verbatim derived narrative passages. Creswell and Creswell (2018) state that an examination of findings will include detailed themes, and include supportive examples from the collected data. As findings demonstrate themes, analysis also includes scrutinizing interconnections with other themes (Creswell & Creswell, 2018).

Issues of Trustworthiness

In qualitative research, the researcher is tasked to achieve thoroughness through trustworthiness of the work (Creswell & Creswell, 2018; Johnson et al., 2020). Trustworthiness is also referenced as validity. In that, Creswell and Creswell (2018) defined trustworthiness as a basis for making certain presumptions, including that the research is credible, transferable, dependable, and confirmable. Echoing Creswell and Creswell (2018), Johnson et al. (2020) wrote that “quality indicators” are the standards for expectations of trustworthiness within the collection and analysis of data. These quality markers examine whether the research question is clear, and that the conceptual

framework or foundation is appropriate (Ravitch & Carl, 2016). Additionally, and specific to the collection of data through the lived experience, these quality indicators bring a sense of trustworthiness from finding those connections that form from one participant's experience to the next (Creswell, 2014; Creswell & Creswell, 2018; Ravitch & Carl, 2016).

Credibility

Credibility is the knowledge that the research findings are true or as close to true as possible (Creswell & Miller, 2010; Ravitch & Carl, 2016). In this study, I increased credibility in the findings while adhering to my chosen methodology, utilizing triangulation, investigatory questioning, debriefing and peer review, and applying contextually distinct and direct quotes from participant interviews (Creswell & Creswell, 2018; Ravitch & Carl, 2016; Rubin & Rubin, 2012). Chapter 3 lays out the methodology as a detailed plan for conducting the study. A peer review was conducted by the dissertation doctoral-prepared committee members and included in chapter 3 to demonstrate alignment with the Husserlian phenomenological approach (Christensen et al., 2017; Creswell & Creswell, 2018; Ravitch & Carl, 2016).

Qualitative data collection often includes a triangulation process, and in that, an opportunity to gather data from multiple sources (Creswell & Creswell, 2018; Ravitch & Carl, 2016). An applicable method, in this case, is one-to-one interviews as they capture multiple experiences in data collection and advance Husserlian phenomenological research (Creswell, 2014; Creswell & Creswell, 2018; Ravitch & Carl, 2016). Moving forward with this study, triangulation was achieved by interviewing faculty who utilized

games and gaming in various areas of nursing education, including classroom, skills and simulation labs, and in the various clinical settings. Thus, triangulation was achieved by hearing from different educational perspectives of faculty who teach in a variety of educational environments (Creswell & Poth, 2018; Natow, 2019).

Transferability

Transferability, also referenced as generalizability, enables the researcher to utilize the research outside the context of where it was originally studied (Ravitch & Carl, 2016). Regarding transferability and its connection to qualitative research, there is the notion that qualitative research is not used to find answers, but instead, to understand perspectives (Patton, 2015; Ravitch & Carl, 2016). The very basis of qualitative research is built upon the individual, subjective, voice of the participant (Patton, 2015; Ravitch & Carl, 2016). Transferability allows for the studied concept to be applied outside of the context of the original research (Ravitch & Carl, 2016). Use of rich, thick data to tell each participant's story shows transferability (Patton, 2015). In this research, transferability was increased through detailing of purposive sampling techniques, demographic information of participants (Appendix E) and through thorough and descriptive examination of participant experiences with the phenomenon, games and gaming in nursing education.

Dependability

Dependability in qualitative research is a measure of reliability (Lincoln & Guba, 1985; Ravitch & Carl, 2016). It is the ability to replicate findings should the research be studied again (Ravitch & Carl, 2016). The collection and analysis of data is a form of

audit, seeking to examine the accuracy and dependability of the research and how it was accomplished. This dissertation followed a form of audit via a qualitative dissertation checklist (Lincoln & Guba, 1985). The dissertation document provided detailed explanations of the performed steps in collection and analysis. Moreover, the dissertation process was supervised and guided by committee members who offered peer review and debriefing throughout the writing process.

Confirmability

Confirmability references the objective nature of the findings and the connection to researcher bias (Ravitch & Carl, 2016). In quantitative studies, objectivity is used to describe the ability to avoid personal biases or knowledge from clouding a thought or perception (Ravitch & Carl, 2016). However, qualitative research does not aim to look for objectivity as the studied participants are providing their personal lived experiences, and as such, it would be impossible to aim for an objective lens at someone's personal perceptions (Creswell & Creswell, 2018; Lincoln & Guba, 1985; Ravitch & Carl, 2016). Confirmability is an effort to remain transparent, and as such, I utilized reflective journaling throughout the data collection and analysis processes (Burns et al., 2015; Ravitch & Carl, 2016; Rubin & Rubin, 2012). This type of journaling allowed me to record my biases, make notes about my perceptions, reflect on aspects of the dissertation process that were challenging and rewarding, and allow me, as a researcher, to reflect on the entire process. In learning from the participant experiences, I was able to gain knowledge about how this research could impact social change specific to nursing education (Burns et al., 2015; Ravitch & Carl, 2016).

Ethical Procedures

The scholarly pursuit of research triggers questions about ethics in research (Creswell & Creswell, 2018). As an ethical safeguard, the Institutional Review Board (IRB) of the university analyzes the ethical nature of any research study and approves the project's forward progress into data collection and analysis (Creswell & Creswell, 2018). Prior to this research moving forward, IRB approval was obtained.

Gaining Access

As in healthcare, no harm or beneficence is also applied in research. In that, the reference to no harm refers to ensuring that participants are not coerced to participate in any study, and that participant values and ethics are respected and valued (Lincoln & Guba, 1985). Harm can come when participants are drawn into unethical, illegal, or uncomfortable situations (Lincoln & Guba, 1985; Ravitch & Carl, 2016). This study solely utilized the personal interviews of qualified participants who chose, on their own, to participate in the interview process. Gaining access to participants first began with a connection being made between institutional leadership, IRB committees, and the researcher. In my study, some participants were familiar to me as backyard research was utilized (Hull, 2017.) However, all these participants were colleagues with a lateral level of power, and I had no supervisory or managerial roles impacting the professional relationship. All participants were provided with an informational flyer via their professional email accounts containing inclusion criteria, purpose of the study, and researcher contact information. Additionally, each interested participant received a copy of the informed consent form (Appendix A) outlining the risks, benefits, and purpose of

the study, as well as an option to leave the study at any time (Creswell & Creswell, 2018; Weiss, 1994). At the beginning of every interview, each participant was read a blanket statement restating that participation was voluntary, and that the participant had the right to refuse to answer any question or stop the interview at any point. A reiteration of the purpose of the study and thanking the participant for their time was also provided prior to beginning each interview.

Treatment of Human Participants

Primarily, the ethical implications in research are most importantly focused on the human subjects involved in the actual research (Creswell & Creswell, 2018). Prior to beginning any research, the academic institution's IRB must give approval that the research to be conducted is valid, legal, and ethical. To ensure that this task was completed, the IRB gave approval prior to any data collection or analysis. Beyond collection and analysis, ethical, moral, and legal responsibilities of do no harm, provide an informed consent, protection of privacy and confidentiality, and no deception were followed in this study (Lincoln & Guba, 1985; Ravitch & Carl, 2016).

Institutional Permissions

Having buy-in from institutional leadership is the first step in ethically gaining access to faculty participants. For this study and in order for full disclosure to occur, the researcher's professional institution where some participants were also employed was contacted via their own IRB. That institution went through its own approval process and ultimately granted permission for me to move forward with data collection. The institution took a secondary role and asked that Walden University act as the primary

IRB. As such, my professional institution did not assign a differernt IRB case number and allowed me to utilize the Walden assigned IRB number. An email chain between my home institution was spearheaded by the co-chairs and secretary of the institution's IRB. Additionally, I contacted the interim dean of nursing. The interim dean of nursing agreed to act as the departmental liasion and provided permission for me to access colleagues via their professional contact email addresses, as well as assisting with putting flyers in faculty mailboxes. I was given permission to verbally announce the start of my research and need for participants during a faculty meeting and that information was also put into the department faculty meeting minutes.

After IRB approval was granted from both institutions, participants were contacted regarding interest in participation via a flyer (Appendix C). The flyer was an attachment to an email and flyers were also placed in institutional mailboxes. Prior to selection, each participant learned about study purpose and implications on social change. I made myself available to participants who had questions related to confidentiality, privacy, and participant rights and answered questions or concerns to the satisfaction of each participant. All study participants provided written consent via an email (Appendix A) prior to their interview, and then again, verbally just prior to beginning the interview, an acknowledgement was made regarding the interview being conducted via volunteerism. Participation was voluntary and offered without coercion, incentives, or compensation. Additionally, verbal acknowledgement by the participant was given agreeing to be recorded during the interview process.

Ethical Concerns Related to Recruitment

Informed Consent

The concept that any consent could be signed without fully informing the patient or participant about the risks, benefits, and alternatives to a procedure or a particularly dangerous treatment is unpleasant to think about. However, to protect the public, participants must be fully informed prior to participating in any research (Burkholder et al., 2016; Lincoln & Guba, 1985; Ravitch & Carl, 2016). As a body invested in oversight, the IRB makes final decisions on the validity of research through approval of a full disclosure statement that the participant signs and dates (Burkholder et al., 2016). A document (Appendix A) was provided regarding informed consent and the need for acknowledgement prior to participation in this study. Prior to conducting any data collection, the IRB reviewed and approved a consent form to be utilized by participants. As all interviews were ultimately conducted in a virtual world, consent was given via an email. Copies of those emails were saved directly to the researcher's computer. Upon receipt, the researcher collected these consents and saved them to a protected file.

Protection of Privacy and Confidentiality

Any participant contributing to a study has the right to privacy and confidentiality (Burkholder et al., 2016; Creswell, 2014; Creswell & Creswell, 2018; Lincoln & Guba, 1985; Ravitch & Carl, 2016). Thus, data collected during this study was securely locked in one, of two locations. Inside my private home, I have an office area that I only use. My laptop, which is password protected, has an internal drive, and an external drive attached, as well. The external drive is password protected and the computer and external drive do

not share the same passwords. Additionally, any paperwork, including hard copy consents, were locked in a secured filing cabinet located in my home office. Only two participants provided hard copies of signed consents. All the remaining participants provided only an email with "I consent" in the narrative area. Each participant's screen name was changed to "Participant" and all pictures of participant faces were removed to protect anonymity. In seven years after data collection and analysis, all paper data collected will be shredded, and all electronic data will be permanently deleted from any devices, including travel drives. Any data that was shared with participants or committee members and included deidentified information was only shared within the population of people involved in the study either via the research collection or within the committee members' purview.

No Deception

Trustworthiness is of the utmost importance when working in a body of research. Trust building with participants begins from the very start; introducing the topic to be studied and asking for volunteers to participate in the research. If a trusting relationship does not begin from that very first introduction, the participant may alter or withhold vital information out of fear or anxiety that the research may negatively impact the individual person (Roberts, 2017; Rubin & Rubin, 2012). A broken trust relationship is very difficult to repair. Speaking to building trust, participants in my study were always provided with all contact information to me, including a cell phone with texting ability, and an email that gave me notifications to my phone. Participants always retained the right to refuse or to discontinue their relationship with the research at any time.

Interviews were conducted in a private, non-threatening environment, and all interviews were conducted virtually, utilizing the platform, Zoom, an online video conferencing service. Through face-to-face and one-on-one interviews, trust was established by utilizing clear communication, providing study protocols and purposes, and presenting myself in a professional manner that exemplified my expertise in the content, secure in my direction, and confident that these pre-selected participants would be able to provide an open and honest discussion about their lived experiences using games and gaming in all areas of nursing education.

Ethical Concerns Related to Data Collection

Ethical concerns raised during data collection include an assertation that study participants are only selected from institutions wherein no power issues exist (Rubin & Rubin, 2012). Power in qualitative research relates to a possible imbalance in the relationship between the researcher and the participant, i.e. having superior-inferior affiliations (Raheim et al., 2016). For example, any participant working within the same institution as the researcher will have no assertive, supervisory, or direct or indirect leadership role (Hull, 2017). Finally, informed consent will be obtained in written and verbal form. Within the consent (Appendix A), the benefits, risks, and alternatives to study participation were available, and each participant had the option to end their participation in the study at any time and without recourse.

Study participants have rights to privacy, confidentiality, applicable education, and right of refusal (Ravitch & Carl, 2016; Rubin & Rubin, 2012). Outlined by Ravitch and Carl (2016), privacy is the right to control access to personal, physical, medical, and

financial information. Privacy may be understood as a right to control access and use of physical items, i.e. a person‘s body or a home; to information, i.e. medical and financial, or physical privacy, i.e. the right to protect a person or an environment (Ravitch & Carl, 2016). Confidentiality, according to Weiss (1994), is the ultimate responsibility of the researcher, and inclusive of protection of the participant at all costs, including private, personal, and often times, sensitive information, experiences, or opinions that the participant may discuss during the interview process. Regarding applicable education, this is a reference to the participant having accurate and complete information regarding the purpose, time involvement, and expectations of being a study participant in the interview process (Creswell and Creswell, 2018; Rubin & Rubin, 2012; Weiss, 1994). Lastly, right of refusal is a protection for the participant to be able to stop their participation in the resesarch study and at any time during that research (Rubin & Rubin, 2012).

Treatment of Collected Data

A one-hour, face-to-face, one-to-one, semi-structured interview was planned with selected participants. An interview guide (Appendix D) was provided to the university’s IRB, and all interested parties, with a list of possible questions to be asked and discussed during each individual interview. I asked questions about the use of games and gaming in the classroom and all nursing educational environments, including the clinical environment, skills lab, and simulation laboratories. Under normal circumstances, interviews would have been conducted in a face-to-face format. As we were still currently experiencing a worldwide pandemic restricting movement to essential travel, all

interviews were conducted via Zoom, an internet video conferencing platform that is free of charge. As an educator who already utilizes Zoom for teaching purposes, I had the capacity to offer more than the typical 40 minutes of free Zoom use and had an unlimited account. This enabled all participants in this study to remain on Zoom for longer than 40 minutes and made it possible to conduct interviews in this format regardless of the length of the interview. Participant rights were protected according to IRB guidelines. Interviews were recorded utilizing the record feature within Zoom, offering both visual and audio recording capabilities. However, in the interest of anonymity, all participants were asked to mute their cameras, and I muted my camera, as well. Interviews concluded when individual participants indicated that they had fully answered each question, expressing opinions to the best of their abilities about personal experiences regarding games and gaming in nursing education. Once the interviews were completed and the recordings were stopped, both the participants and I would unmute our cameras. Often, a conversation about my research or the participant's own interest in pursuing their own research would ensue.

After the interviews were completed, I transcribed the audio recordings and made them available to participants who were interested in viewing transcripts. Each participant who desired a copy of their transcript was sent a copy via email in order to have them checked for accuracy of information. If necessary and based on feedback from participants, transcripts would have been altered to include any corrections or need for inclusions. Study participants had follow-up opportunities to make any corrections or include any new information that was previously missed. Via email confirmation,

participants approved the transcripts from their own interviews. No participants chose to make any changes to their transcripts. Once approved by participants, transcripts were secured in a locked, external hard-drive computer storage file. I was the only person with access to the file and the file was only accessed when being utilized for data analysis and reporting. Merriam and Tisdell (2016) write about the ethical considerations of electronic transfer of documents. Transcripts were available via email and no physical paper copies of transcripts were ever available. No one, other than me, has had access to the hard drive. Regardless, the hard drive was always password protected.

Conflicts of Interest and Other Ethical Issues

Ethical concerns in research include the possibility of researcher conflict of interest (Barrett & Twycross, 2018). Conflict of interest can occur when the researcher receives personal or professional gains for conducting the research (Eide & Kahn, 2008). In that sense, the researcher may have clouded judgement regarding any part of the study process, including data collection, analysis, and the reporting of findings (Creswell, 2014; Creswell & Creswell, 2018). As I am the researcher in this study and I am a nurse educator working within the framework of an associate-degree nursing program, there was a possibility of conflict of interest that included the utilization of colleague-based interviews. However, I am on a level, professional standing with all prospective study participants who were employed in my home institution. I was not familiar with any of the faculty who participated via the Walden Faculty Pool.

Summary

Chapter 3 is a methodological plan for this research study. This chapter included the research design, rationale for the methodology, role of the researcher, plan for conducting the study, and intent to ensure quality at all levels, including ethical and legal ramifications in the implementation of this study. The data collection of personal interviews immersed me, as the researcher, in the lived experiences of the pre-selected participants. From collection, chapter 4 introduced and identified the data analysis component of the research. Moving forward into chapter 4, this dissertation will include details about the demographics of the participants, information about the setting in which the interviews were conducted, how the data was collected and analyzed, a description of how trustworthiness was developed and maintained, and finally the study findings as they relate to the research question, *What are the lived experiences of faculty who use games and gaming as an instructional approach in associate degree nursing education?*

Chapter 4: Results

Introduction

The primary purpose for conducting this study was to explore the lived experiences of nursing faculty in associate degree programs who integrate games and gaming in the learning environment, including classroom, skills and simulation laboratories, and clinical events. Based on collected experiences I gathered, information was obtained from associate degree nursing faculty, some of which I was familiar with. Due to utilizing backyard research (Hull, 2017), more than 50% of the interviews were with participants from my own institution. The remaining faculty participants were sought through the Walden Faculty Pool, an external source. Chapter 4 presents the research findings gathered from all of the collected interviews with nursing faculty who already utilized games and gaming in various elements of teaching and learning environments, including classroom, skills, and simulation laboratories, as well as the clinical environment. Major sections of this chapter include a description of the study participants, their reported experiences on games and gaming, a description of the programs in which they taught, and how I collected and analyzed the study data. I also included the results from the interviews, issues with trustworthiness, ethical procedures, and an overall summary of the chapter.

Research Question

The primary research question used in this study was as follows: What are the lived experiences of faculty who use games and gaming as an instructional approach in associate degree nursing education? This primary question was supported by four

thematic questions derived from the IRB approved interview guide (Appendix D). Supporting Questions (SQ) were as follows:

SQ1: How do associate degree nursing faculty define games and gaming in the teaching-learning environment?

SQ2: How do associate degree nursing faculty incorporate games and gaming as teaching-learning strategies?

SQ3: What experiences guide associate degree nursing faculty in how and when they utilize games and gaming as part of experiential learning?

SQ4: What reflective practices influence associate degree nursing faculty when considering adult learners and the use and usefulness of games and gaming in the learning environment?

Setting

All participants in this study were currently employed nursing faculty who responded to an inquiry for study participants meeting the following criteria: (a) full-time or part-time employment in an associate degree entry level nursing program, (b) RN licensure for at least one year, (c) a minimum of a master's degree in nursing, and (d) already utilizing games and gaming in the learning environment. Each interview, regardless of the participant's location, was conducted via Zoom, an online conferencing tool, and scheduled when convenient for both parties. Emails were exchanged in advance of a selected date and time for the interview, and once finalized, a final email reminder was sent with a live, active Zoom link. Instructions were provided on accessing Zoom, including opening an account if any participant did not already have access to a Zoom

account. With the cameras muted and voices recorded via Zoom's built-in recording feature, each interview was conducted in an anonymous format.

Four participants alluded to their knowledge and professional working relationship with me during their individual interviews. Each interview was conducted via the internet from the participant's private home or professional office environment. Once greeted on-screen and prior to beginning the recording, the participants were invited to mute their cameras. Every interview was conducted in privacy and entirely in the Zoom format. At the conclusion of each interview, Zoom automatically uploaded the recording to a newly created file. I chose to save all recorded interviews to a separate computer file in a secured external memory device on my personal computer. Both the computer and the external memory device required a secured code to access them. Each interview had its own separate file, i.e., Interview 1, Interview 2. No other identifying information was provided or used. Outside of any personal conditions, i.e., phone ringing, timer going off on a participant's phone, and a participant's family member interrupting for a few moments, there were no other personal or organizational conditions, to my knowledge, that influenced participants.

Demographics

Immediately upon sending out the information about the research study, I received several inquiries about participation. In total, 39 faculty members from around the United States reached out to participate. Almost immediately, more than 20 potential participant faculty were eliminated from participation due to not meeting stated criteria or not being able to find time in their schedules. In the end, 18 appropriate and eligible

participants were selected to participate in one-on-one interviews via Zoom, an online conferencing platform.

All participants (100%) in the study were full or part-time faculty currently employed by a two-year, entry level associate degree nursing program, as this was a main criterion for participation. While it was the original plan to specifically interview participants from Florida and Colorado, I decided to utilize eligible candidates from Florida along with the Walden University faculty pool, regardless of participant location within the country. As a result, participant faculty hailed from all over the United States. As interviews materialized, participants predominantly lived and worked on the east coast, and more than 10 were located in Florida. From the start, the research was meant to include my own colleagues, and backyard research was utilized (Hull, 2017.) Nine faculty came directly from my own home institution. The remaining nine participants involved in the research were volunteers from within the Walden Faculty Pool; all participants, regardless of whether they were known to me or not, replied to a general email that included a recruitment flyer (Appendix B) looking for participants in the research.

Prior to beginning each participant interview, I asked questions regarding the participant's personal experience in teaching. This collection of demographics included identified gender, years of teaching, the highest level of education acquired, subject matter expertise, and the size of the program in which the participant was currently teaching. All participants identified as female, and while 10% of nursing students identify as male, even fewer than 10% working as nurse educators are male identifying (NLN,

2020). All the participants had a master's degree in nursing (MSN), and some faculty participants were contemplating returning to school to earn a terminal degree. Even though 12 participants indicated that the MSN was their highest degree, six participants reported having earned doctorate degrees, with one having earned a PhD degree, three having earned an EdD degree, and two having earned DNP degrees. Of the 18 participants, two were currently working toward a terminal degree, but had not finished their coursework. Only two participants (11%) had less than 2 years of classroom teaching experience; however, both of those participants had been teaching in adjunct clinical positions for more than five years. Table 1 presents demographic information about the participants in the research study.

Table 1

Participant Demographics

Participant #	Gender	Service Years	Highest Degree	Subject Matter	Location of Program
P1	F	> 10 years	MSN	Fundamentals, Adult Health 1 & 2 *F/T hospital educator	Rural
P2	F	5-10 years	MSN	Fundamentals	Rural
P3	F	1-5 years	MSN	Adult Health I	Rural
P4	F	5-10 years	MSN	Fundamentals	Rural
P5	F	5-10 years	MSN	Fundamentals	Rural
P6	F	5-10 years	MSN	Adult Health 2, Critical Care/Concepts	Suburbs, population > 500,000
P7	F	5-10 years	PhD	Mental Health, Adult Health	Rural
P8	F	5-10 years	MSN	Adult Health, Critical Care	Rural

(table continues)

Participant #	Gender	Service Years	Highest Degree	Subject Matter	Location of Program
P9	F	5-10 years	MSN	Adult Health, Critical Care/Concepts	Suburbs, population > 500,000
P10	F	> 10 years	DNP	Medical-Surgical	Suburbs, population > 500,000
P11	F	1-5 years	MSN	Mental Health, Adult Health I	Rural
P12	F	5-10 years	DNP	Adult Health 1 & 2, Practicum, Bridge (LPN/Medic to RN track)	Rural
P13	F	5-10 years	EdD	Adult Health, Practicum	Rural
P14	F	5-10 years	MSN	Fundamentals, Adult Health, Maternal-Child, Critical Care	Inner city
P15	F	1-5 years	MSN	Adult Health	Rural
P16	F	1-5 years	MSN	Maternal-Child, Adult Health	Rural
P17	F	5-10 years	EdD	Skills/Simulation Coordinator	Inner city
P18	F	> 10 years	EdD	Maternal-Child, Adult Health I & 2	Inner city

Although the original application to Walden University's IRB (approval # 03-07-22-0265656) suggested a total of 8-12 interviews were to be conducted, a total of 18 interviews were achieved. This decision was made once I had completed 12 interviews. At that time, I had not achieved data saturation, and as I had many more inquiries into participation than had been previously expected, I continued to interview until I had completed 18 interviews. It was at that time that I felt I had reached saturation.

All interviews were completed over a four-week period. After each interview, I began the transcription process immediately. Only four of the 18 participants (22%) wanted to review their transcribed interviews, and these transcripts were sent

electronically to their provided email addresses as requested by each of those participants. None of these participants returned the transcribed interviews with any corrections. All four sent personal messages thanking me for my study and wishing me success in my research.Of the 18 participants, five taught two or fewer courses per semester (28%). Twelve participants (67%) taught two or more courses every semester. One participant was the lab and simulation coordinator for their program and did not teach any specific courses but contributed to all courses within the skills/simulation environment. Thirty-three percent (33%) of the participants taught in nursing education programs in large cities with populations greater than 500,000. The remaining 65% described their programs as small, community-based or community colleges, mostly in rural areas.

Data Collection

Eighteen participants were utilized for this data collection. Each participant was interviewed, and data was collected via Zoom. Prior to meeting, emails were exchanged with dates and times appropriate and approved by both me, the researcher, and the participant. During email exchanges, confirmation of consent was acquired. With each participant who agreed to participate in the study, a returned email with the words “I consent” was used to designate their willingness to volunteer. In two cases, an email with an attached copy of the consent form was returned. Once a time and date were confirmed, a live Zoom link was emailed to the participant that would link the participant directly into the Zoom room. Once in the room, I welcomed each participant in from the waiting room. After welcomes were exchanged, I explained the layout of the interview and asked

each participant to mute their individual camera. As this was happening, I simultaneously changed the participant's personal name on the screen to the pseudonym, "participant," to provide anonymity for the participant interview. If a participant had a picture on screen that appeared once we were in the camera muted phase, it was covered or changed by the participant prior to beginning the recording. Once all personalization from the participant was removed, I began the recording and read a short disclaimer about the research, the study intent, and the rights of the participant.

From there, each interview followed a general list of questions from the interview guide (Appendix D). Interviews ranged from 42-65 minutes in length. In the IRB application, I had originally asked for 60-90 minutes. As I am a novice researcher, asking for 60-90 minutes was an overestimation and unnecessary, as the natural end of most of the interviews was approximately 51 minutes. Each participant was interviewed from a personal home or work office. One participant interview had to be rescheduled as the participant attempted to be interviewed while shopping with her son. That interview was postponed to a different time so that the participant could be more focused and less distracted. As the researcher, I always conducted interviews from my personal home office, and all files were secured immediately after each interview was completed.

Prior to conducting each interview, I would open a new file in my computer, give it a name, i.e., Interview 1, and prepare myself to begin the interview. I would pull up the interview guide (Appendix D) and have a blank copy ready so that I could transcribe directly during the interview. I used those transcribed notes to help fill in the blanks for pauses or changes in tone, and I would also transcribe if a question had to be restated for

any reason. Those transcribed field notes were used in collaboration with the audio files from Zoom.

All data were collected via the Zoom interview interface. Once I finished each interview, the record button was stopped. From that point, I would conclude by thanking the participant, once again, for their participation, and finally ending the Zoom session. After each Zoom session and interview ended, Zoom automatically uploaded the file created prior to the interview. While Zoom processed and compressed the file, I created an independent computer file on the secure, external drive of my computer. Once the Zoom file was completely processed, it was uploaded to the secured file on my external hard drive. Each participant's interview file was designated only by "Interview" and a number (Example: Interview 10). In this main file, there were several other files, including an audio file (M4A), a video file (MP4), a file of the transcribed audio file, and the field notes as previously described. Even though the interviews were conducted without cameras engaged, the video feature is something that I was unable to disable, and as such, it was uploaded alongside the audio file available from Zoom; a video file is an automatic file created by Zoom when utilizing their recording feature.

In the original plan submitted to the IRB, there was a reference to attempting to collect some interviews in a face-to-face environment. However, due to time constraints of participants and the continuance of Covid-related health concerns, Zoom interviews were the best option for all interviews, both local and long distance. These interviews included those conducted with local participants from my home office. As Zoom, or another similar online conferencing platform, was always an option for any interviews

that were outside of the local area, this option was a better method for everyone who participated, regardless of locale. No other unusual circumstances were encountered in data collection.

Data Analysis

I collected and analyzed the data simultaneously using first and second cycle coding. Saldaña (2016) wrote that coding is heuristic in nature and performed as part of "discovery" to find meaning from within the data collection. From the start and throughout the personalized interview process, it was apparent that each participant brought an individualized approach to the inclusion of games and gaming to the learning environment. Additionally, each participant had a different interpretation of what games and gaming brought to the learning experience. Utilizing Creswell's six steps for qualitative data analysis (2014), I organized, read, and coded the data. This process led to generating themes, representing those themes, and interpreting study results. From the first interview and until data saturation, ending with interview 18, data analysis was conducted throughout the process.

Organizing and Reading the Data

Initially in the data analysis process, I used in-vivo coding as my approach to first cycle coding. Those personal interviews were helpful in easily identifying patterns within the interviews. During each interview, I used field notes, including adding in pauses for when the participant needed to take a moment to think or restate a thought. These notes were transcribed as if they were a secondary set of answers to the same questions. The questions were generated from the interview guide (Appendix D). All these notes and the

transcribed interviews were catalogued, and aligned with the research questions (Creswell, 2014). I used a code and re-code strategy (Saldaña, 2016) to increase the trustworthiness of the results. Based on the research questions posed, I was able to identify numerous commonalities within the transcribed manuscripts. Additionally, I listened to the verbal recordings while following along with the written transcripts. Once an identified word or phrase was recognized, I highlighted that word or phrase with an associated color. When I reviewed the transcribed interviews, I referenced those colors as commonalities.

Coding the Data

During coding, I utilized the colors red, blue, purple, and green in the transcripts to represent similar expressions of thought. I chose these colors as specific words evoke certain feelings and I believed that these colors represented those feelings appropriately. From this point, I determined that red would be used for emotions, positive and negative. For example, if the word “fun” appeared in an interview, it was coded in red as fun is an experience of enjoyment, an emotion. Likewise, the phrase “competitive” can be used to represent both a negative and a positive emotion. Either way, this word was coded in red. Similar words that invoked emotion were coded in red, as well, and words like “enjoyable”, “entertaining”, “meaningful” were expressed in red. I used blue to represent ideas related to “connection”. Therefore, words or phrases, such as “interactivity”, “interconnectedness”, and “engagement” were coded in blue. Purple was used for words or phrases related to support. Examples of supportive type phrases were “together”, “colleague”, and “collaboration”. The word “teamwork” was one that could be coded in

blue for connection, but also in purple for support. Words that could have been construed with multiple meanings were bolded or underlined to draw attention. As the word "teamwork" had a duality in meaning, I bolded or underlined it every time it appeared in a transcript. Finally, green was used for words or phrases referencing a reflective process, including "thinking back", "thoughtful", "debriefing", and "self-examination". Utilizing a color-coding system made it relatively easy to find appropriate quotations from within the collected data. As I performed verbatim transcription of each interview, I also included ellipses to represent pauses, gaps, and redirections while a participant was speaking. There were many verbal cues to listen for, and as mentioned earlier, I included the use of bolding and underlining commonalities within the various interviews, wherever that was appropriate and necessary.

To eliminate a repetition of ideas or themes, a secondary coding was performed. After this was completed, the pattern coding process was completed, and codes were grouped together by similar meanings and developed into categories. Categories became themes. As the themes emerged from the collected data, each research question was answered. A visual of the colors assigned to themes developed from the transcribed interviews can be seen in Table 2.

Discrepant Cases

Apart from one participant being slightly more hesitant than the other participants in the use of games and gaming in the learning environment, there were no real discrepant cases. Part of my reasoning for continuing to interview past the proposed 8-12 interviews was that I considered that by expanding my interview sources, I might find

some negative responses in the use of games and gaming in the learning environment. However, even though I expanded the interview pool to 18, I did not experience any real negative comments or outliers within the participant interviews.

Table 2

Color-coding of Themes

Red (Emotions)	Blue (Connection)	Purple (Support)	Green (Reflection)
Enjoyable	Interactivity	Together	Thinking back
Fun	Interconnectedness	Colleague	Thoughtful
Entertaining	Engagement	Teamwork	Self-examination
Meaningful	Link	Collaboration	Scrutinize

As data analysis progressed into the flesh of the interviews, it revealed a common reference from many participants regarding a change in didactic presentation from teacher-centered to a learner-centered focus, and a move away from the "sage on the stage." While I continued to utilize Creswell's six steps for qualitative data analysis (2014), I noted that this specific phrase, "sage on the stage," was used by many participants and was referenced as an "old-fashioned" and "outdated" manner of presenting material. Many participants referenced earlier generations of teaching, including their own firsthand experiences in nursing school, when the instructor was expected to be the all-knowing contributor of the message, and the students were expected to be the passive recipients of information. Most participants also referred to this evolution in education and the development from a teacher-centered environment to a learner-centered atmosphere. Five participants referenced being the "guide on the side," more of a facilitator than an all-knowing one-way directional speaker. However, while

only five participants used that specific phrase, most participants alluded to being a facilitator in the learning environment versus the all-knowing provider of information. This was what drove most participants to create an interactive and participatory learning environment that was student-focused and student-controlled. Many participants in the study referenced these two phrases, “sage on the stage” and “guide on the side,” as impetus for their style of teaching and the inclusion of games and gaming in the learning environment. All participants spoke about bringing interactivity and experiential learning into the classroom, wherever that learning was to occur.

There were differences in how often games and gaming were utilized, but the influence that games and gaming had in the learning environment, or should have in the learning environment, was based on meaningfulness and appropriateness, and data analysis exposed individual interpretations of those terms. Those individual interpretations were captured by asking each participant the same basic questions from the interview guide (Appendix D). To assist with validity, triangulation was utilized, including the use of investigatory questioning, debriefing and analysis, as well as applying contextually distinct and direct quotes from participant interviews (Creswell & Creswell, 2018; Ravitch & Carl, 2016; Rubin & Rubin, 2012).

After gathering demographic information about the program in which the participant taught and the students for whom the faculty were serving, participants were asked to provide a definition of games and gaming in the learning environment. In her interview, Participant 2 shared this valuable response:

> To me, games in the learning environment are supposed to be fun, but they are also supposed to provide the student with a set of rules to follow, skills that they can either learn or review, and the game should have a purpose that the student can reflect upon and learn from.

Echoing similar thoughts, Participant 10 remarked:

> I see them as… games… as any activities, even worksheets can be turned into some sort of game. It can be anything. It can be where the students have to get up and scan a QR code on the wall, link to an article with questions or it could be something like "Cup Pong" with questions. I've done a thing like Amazing Race where they have to answer worksheets, where they have to put together a puzzle, a plate of food that would be OK for a renal patient and get pictures of foods. If they get all the foods right, they get a stamp, then they get another clue. They might have to go and figure out ABG values, they get them right, and get another stamp. It gets them up and they have to move. When the student is doing the work, it could be turned into a game...

Throughout data analysis, often standard answers included words and phrases like "involved", "fun", "entertaining", and "meaningful". Nevertheless, each participant agreed that any game or gaming included in the learning environment needed to meet certain criteria for the participant instructor to feel comfort in its inclusion. Moreover, participants were adamant that regardless of location or level of learner, games and gaming needed to meet learner objectives, be meaningful to the individual learner, and reflect an atmosphere of enjoyment and inclusion. While it may have seemed that several

participants had similar thoughts and even used similar phrasing, student engagement in the learning was the highest priority, as was appropriateness of content and its presentation. This was the start to coding for commonalities.

Coding was performed to look for commonalities within each interview and the interconnectedness of thoughts. Throughout transcribing, I utilized a technique of color coding specific common words and phrases. Seventeen of 18 participants (94%) referred to utilizing games and gaming on a regular basis (at least one interactive experience every time they met their students.) One educator, Participant 7, stated that while she was a games and gaming advocate, she also had concerns about participation and competition in the games and gaming environment:

> I think with anything, you're going to have some folks who are very participatory and other folks who are watchers. I think you're going to have folks who are competitive in a gaming environment and, in nursing school, it's pretty competitive anyway. Even to get into the program it's competitive. I think in gaming, we have folks who are looking for that "quick win" rather than thinking through a situation. And of course, you're always going to have students who are slower to respond…I think with gaming, especially if it's in a competitive environment and it's going quick, it can advantage some students and disadvantage others.

Evidence of Trustworthiness

Qualitative researchers undertake the issue of trustworthiness by defining and executing research in a credible, transferable, dependable, and confirmable manner

(Creswell & Creswell, 2018). In doing so, researchers utilize standards and "quality indicators" (Johnson et al., 2020) to scrutinize the collected data and perform analysis. In this research, I specifically utilized the lived experiences of nursing faculty teaching in entry level, associate degree programs who were already utilizing games and gaming in their learning environments. I sought connections from one participant's experience to the next participant's experience (Creswell, 2014; Creswell & Creswell & Creswell, 2018; Ravitch & Carl, 2016). These quality markers examined whether the research question was transparent, and that the conceptual framework was appropriate (Ravitch & Carl, 2016). Additionally, and specific to the collection of data through the lived experience, these quality indicators brought a sense of trustworthiness from finding those connections that form from one participant's experience to the next (Creswell, 2014; Creswell & Creswell, 2018; Ravitch & Carl, 2016).

Credibility

Credibility is the knowledge that the research findings are true or as close to true as possible (Creswell & Miller, 2010; Ravitch & Carl, 2016). In this study, I utilized triangulation, investigatory questioning, debriefing, and peer review, and applied contextually distinct and direct quotes from participant interviews (Creswell & Creswell, 2018; Ravitch & Carl, 2016; Rubin & Rubin, 2012). In Chapter 3, I described, in detail, the methodology as a plan for conducting the study. A peer review was conducted by the dissertation doctoral-prepared committee members and included in chapter 3 to demonstrate alignment with the Husserlian phenomenological approach (Christensen et al., 2017; Creswell & Creswell, 2018; Ravitch & Carl, 2016). I applied these methods

and began with one-on-one interviews as they captured multiple experiences in data collection (Creswell, 2014; Creswell & Creswell, 2018; Ravitch & Carl, 2016). As I moved forward with this study, triangulation was supported by interviewing faculty who already utilized games and gaming in all areas of nursing education, including classroom, skills and simulation labs, and the clinical setting. Thus, triangulation was achieved by examining the different perspectives of participant faculty who teach in a variety of educational environments (Creswell & Poth, 2018; Natow, 2019).

Transferability

Transferability, also referenced as generalizability, enables the researcher to utilize available research outside the context of where it was originally studied (Ravitch & Carl, 2016). Regarding transferability and its connection to qualitative research, there is the notion that qualitative research is not used to find answers, but instead, to understand perspectives (Patton, 2015; Ravitch & Carl, 2016). In this research, the use of rich, thick data to tell each participant's story showed transferability (Patton, 2015). Transferability increased through gathering of demographic information of participants (Appendix E). Through the collection of participant interviews and through thorough and descriptive examination of those participant experiences, transferability was demonstrated with the phenomenon of games and gaming in nursing education.

Dependability

Dependability in qualitative research is a measure of reliability (Lincoln & Guba, 1985; Ravitch & Carl, 2016). It is the ability to replicate findings should the research be studied again (Ravitch & Carl, 2016). The collection and analysis of data is a form of

audit, seeking to examine the accuracy and dependability of the research and how it was accomplished. This dissertation followed a form of audit via a qualitative dissertation checklist (Lincoln & Guba, 1985). The dissertation document provided detailed explanations of the performed steps in collection and analysis. Moreover, the dissertation process was supervised and guided by committee members who offered peer review and debriefing throughout the writing process.

Confirmability

Confirmability references the objective nature of the findings and the connection to researcher bias (Ravitch & Carl, 2016). In my research and after each participant interview was completed, I journaled my own experience related to the data collection. Based on my interactions with each participant, and the answers I received to the questions posed from the interview guide (Appendix D), I wrote about my perceptions of the interview and my thoughts about each experience. This type of journaling allowed me to record my biases, make notes about my perceptions, reflect on aspects of the dissertation process that were challenging and rewarding, and allowed me, as a researcher, to reflect on the entire process. In learning from the participant experiences, I was able to gain knowledge about how this research could impact social change specific to nursing education (Burns et al., 2015; Ravitch & Carl, 2016).

In the end, establishing trustworthiness is part in parcel to meeting the standards of credibility, transferability, dependability, and confirmability. In performing these serious and essential undertakings, the researcher authenticates validity and confidence that the researcher has performed their due diligence in describing the essence of the

research in all aspects from data collection to data analysis, and final reporting. I believe that after completing 18 one-on-one interviews, and engaging with the participants on an individual basis, this crucial step was achieved.

Results

Why do people become teachers? When the answer is whittled down to its most basic reasoning, a very common response will often be "to make a positive impact." As previously stated, the purpose of this research was to explore the experiences of ADN nurse educators who utilize games and gaming in the learning environment.

In this study, all interviews began with questions asking participants to describe the environment in which they worked, and the demographics of the students they taught. More than 75% of the participants imparted that their institutions supported the interactive learning environment. Those same 75% also stated that they had support from administration for the use of interactive and experiential learning, via games and gaming, and had freedom to make choices. Twelve of the participants (67%) had support from other faculty regarding the use of games and gaming in the classroom and other areas in which they taught, but those who did not receive support were not deterred from their use and continued without regard to any negativity from others, including any negativity from students. Three participants (17%) felt that they were "rebellious" or "different" because they felt alone in their use of games and gaming in their personal work environments. These participants shared that this difference in teaching style was the impetus for feeling lonely. Specifically, Participant 16 acknowledged:

> Sometimes, I think that I'm in this gaming thing by myself. I have colleagues who are still kinda on the "old fashioned" pathway and think I'm a bit kooky for doing something new. It's not new, but it's new to them.

Regardless, even those who felt they were alone, also shared that they had some support within their own colleges, including colleagues who taught different courses, taught in different disciplines, or taught on different levels, but who also used games and gaming in the learning environment. Many faculty, whether supported or not within their home institutions, involved themselves in online support groups specifically for faculty who were like-minded regarding interactive and experiential learning environments.

Regarding student populations, only 11% (2 participants) stated that their programs were predominantly attended by Caucasian students. Eighty-nine percent (16 participants) stated that their programs were culturally diverse, including many students newly emigrated from other countries, including Nigeria, Haiti, Cuba, Somalia, Jamaica, and Dominican Republic. Three participants (17%) identified that their campuses served communities located on or very nearby to United States military bases. In those cases, many of the students were military spouses, and having deployment as part of student home life was a significant psychosocial impact on success for those students. Mostly, faculty participants specified that their students were overwhelmingly female-identifying with a generalized 10% of the student population male-identifying. Ages of the students ranged from 18-60+ years of age, but most participants had student populations with an average age of 22-35 years of age by the time a nursing student graduated. All faculty participants claimed to have age outliers, including younger students in their teens, and

having some students who had participated in dual enrollment programs between high schools and community college programs. Most participants stated that they also had students in their 60's, who had possibly been out of the workforce, raised families, or even retired from other careers in some cases. Many participants (78%) confirmed that being involved in the personal lives of their students was, often, part of building rapport with individual students. In fact, many participants mentioned that knowing more personal pieces of information about students often enabled faculty to help students with finding appropriate resources. All faculty participants (100%) stated that their colleges supported students with special accommodations and offered services appropriate to the student individual needs, including offering private spaces for testing, longer testing times, readers, and various other forms of accommodations. All participants (100%) stated that their colleges handled those needs outside of the nursing departments in a special service type of department, i.e., Student Services, Student Learning Services, Student Accommodation Services, etc., designed solely for that purpose and that nursing faculty simply complied with whatever accommodations were needed by the student and assigned by the department.

Almost all participants perceived that funding and time involved in creating and carrying out games and gaming were two limitations regarding interactive and experiential learning use. Many participants believed that these were deterrents in their use by "hesitant" colleagues. All participants (100%) perceived that use of games and gaming in the classroom was subjective and could be used effectively and efficiently to provide valuable learning within a nursing educational experience.

Throughout the interviews, there was a definite spectrum in game and gaming use, including how much these types of learning activities were utilized, what types were used, how involved each experience was, different levels of involved costs, and their application and use. Fascinatingly, 100% of all participants claimed to use traditional forms of games and gaming in their personal learning environment to some extent, including games like Jeopardy, Wheel of Fortune, Who Wants to be a Millionaire, crosswords and word finds, and classic party and carnival games of chance, i.e., "Pin the Tail on the Donkey", ring toss, and Charades. All participants referenced the use of electronic formatted games like Kahoot! and Nearpod, and many eluded to the possibility of "over-Kahoot-ing" and how games and gaming can lose their meaningfulness through overuse. During the interview process, Participant 15 revealed:

> There's a point, at which, you can just give them too much. Too many activities, too many games, and… <insert laughter> you can just over-Kahoot them into oblivion. It loses its meaning when they come to expect a game with everything. Especially the same game, and the same gaming format.

As a result, many participants reported that they designed their own interactive activities, including case studies, both live and virtual, and other types of interactive learning experiences that went beyond the formal "game" or "gaming" type of environment. Participant 18 detailed her experience with the gaming format in the classroom:

> My students like to get up and move. I love to bring activities into the classroom or lab that will allow them to interact and build rapport with each other….and me.

All, but a single participant (94%) had utilized some form of escape room, live and virtual, with multiple layers of learning, including work in complicated content, such as arterial blood gases (ABGs), mean arterial pressures (MAP), and prioritization of care. Five participants (28%) had the experience of creating their own escape room, including all components from start to finish of clues, steps and directions, and all processes to finding answers and how to "escape." All participants (100%) reported that escape rooms were highly useful in reviewing content, applying knowledge, and approaching learning in an interactive and experiential manner. In fact, many participants referenced escape rooms as being the ultimate in gaming as it involved rules, acquired knowledge/skills, and teamwork. When it came to speaking about escape rooms as an example of games in the learning environment, Participant 6 communicated:

> Whether it's a case study in class, a simulation, or an escape room that's done, having them acting in real time to think through a situation, helps them in feeling more secure around the content when they have an actual patient. That's the point behind their use.

Even as each participant imparted their personal experiences, commonalities were found in and among participants, including the impact made to the learning environment, and ultimately, to each individual student in their distinct learning experience. The goal by the educator, consequently, is the creation of a learning environment in which the learner creates and encounters their own meaningful learning capabilities. Via data collection and analysis, thoughts and feelings were expressed and identified through coding. Eventually, themes emerged.

Theme 1: Creative Games Reinforce Knowledge

Participants providing their lived experiences of utilizing games and gaming in the learning environment showed themselves to be as independent in their answers as they were as humans, and each had a different spin on their personal definitions of what games and gaming could be in the teaching-learning environment. However, collectively, each participant agreed that for games and gaming to be successful, the game or gaming experience had to be purposeful, meaningful to the learner, and engaging in its presentation. For example, to achieve purpose and meaning, gaming as a teaching strategy works best when reinforcing knowledge as opposed to introducing new content or concepts. To be engaging, faculty back away, allowing the learning activity to be student-to-student. In discussion with Participant 2, she maintained:

> My reason for using games is… most students respond to them positively. If you give them a choice between flat lecture or playing a game, they will usually pick the game. Games can be anything where there are rules and competition…and the competition can be with themselves or with others. Gaming can be electronic or even…. like when we use simulation. Simulation is a form of gaming because students are put into roles, there are rules to follow, and students will use skills they already have, maybe they'll acquire new skills along the way. In the end, the student will have a chance to look back at their performance and see what they have done, how they have behaved under those circumstances, what they have learned.

In a separate interview, Participant 6 recognized the desire for students to enjoy the learning environment and what is being taught:

> Games are, to me, something that should be fun for the students, but provide them with review or reminders of content that we've covered during the didactic part of the day. I use games and gaming in the classroom, or the lab, to physically engage the students with the material… versus the boring one-way lecture where I'm the only one talking and they are sitting there like lumps on logs. It's boring for them... and for me. No one wants to see students falling asleep, and I feel…. I feel that games bring a liveliness into the classroom that I can't match by talking alone. You need a creative spark.

For Participant 16, the definition of games and gaming in the learning environment was referenced as:

> Fun. They're just fun. Even if it's a crossword, or a Kahoot! It's fun to see my students competing for prizes… or even if it's just for bragging rights. Games may seem pretty basic to some of my colleagues, like party games, but when you see their eyes light up (the students) and their excitement about getting a chance to laugh and engage with each other in a less restrictive way… it's fun. When they leave the classroom laughing and chatting, why wouldn't a teacher want to put that kind of learning modality into the classroom environment? Games make people smile.

Participant 14, a relatively new nurse educator, shared that she had been an elementary school teacher prior to becoming a nurse. She stated:

> So, I came out of the public-school world prior to nursing. When I became a nurse educator, I went back to my old ways of teaching and that included using games and gaming in the learning space. I do a little bit of everything. I use word games, like crosswords and word finds. Those are good for working on vocabulary and memorized materials, like lab values and definitions. I use games of chance, like "Pong" and "Toss Across" and for those, I associate questions and answers. So, the students can review content that we've just covered. I also use escape rooms and more involved interactive activities. Those are very time consuming and… sometimes costly. But the students respond very positively to their use, especially the escape rooms. In those kinds of activities, they have to work together, follow rules, use their skills, and talk. The learning comes in working together to find the answers.

Theme 2: Acknowledging "Lightbulb Moments"

Educators aspire to create an attractive, engaging, and meaningful learning experience for all their students, regardless of the academic level of the student. Educators who create these experiences look for nonverbal communication, those "a-ha" moments when the learner makes connections with the learning. Most participants agreed that just about any activity could be turned into a game and placed into a gaming environment as long as it met the criteria of meaningfulness, purposefulness, and high level of interactivity. Participant 7 described the incorporation of games and gaming as:

> … the ultimate active teaching-learning strategy. I can actually watch the material taking hold in the student. We all talk about those "light-bulb" moments, and with

> games, I can actually see those moments happening in the classroom. I can see the correlation between content and application because I provide the didactic material, then I offer it up in a gaming format, and then I get to see it applied in the lab, or even in the clinical environment with patients. I see those "light bulbs" going off during the games we play.

For Participant 9, her reasoning for including games and gaming as a teaching strategy was to promote certain behaviors:

> Games are interactive. I have a lot of trouble getting my students to talk. It's a cultural issue as many of my students are international and culturally, they were not encouraged to speak up in class before me. In a gaming environment, the classroom disappears, and we create a sense of fun and competition. That level of engagement is not something that I get from my students when I'm up at the front just talking about the material they need to know. I watch for them to make connections with the material.

Participant 12 also discussed a lack of engagement during the didactic portion of learning, reasons why, and provided ideas to combat it:

> My students are usually afraid to speak, afraid to make mistakes. But when it's presented in the format of a game, they lose that fear because they don't see the games as "learning" and they're more apt to speak up and participate. Games provide a strategy for collaborative learning, so whether it's a word game or an escape room, they have to work together. I try to keep groups small, no more than 2-4 people in a group, and that forces them to work together and collaborate. If

> they learn nothing else, they learn how to work with others, which is extremely valuable as new nurses. There's a switch that's turned on by working together.

When referencing the incorporation of games and gaming into the learning environment, Participant 17 confirmed:

> I see what fits for each cohort. I have a list of games that are always ready to be used, but every group of students is different, so where and how I use them changes. But…I am willing to do whatever I have to lay whatever groundwork is necessary to achieve high levels of student engagement. I'll sing a song, dance a dance. I have no shame. I have costumes, hats, or whatever I need. It's worth the extra effort so that students can and will remember. But it's not about remembering facts and figures, it's always about being able to apply the information.

Theme 3: Viewing the Learner as Active Participant Versus Passive Learner

The experiential learning environment is one in which the learner is fully immersed and participatory. Rather than sit back and receive, the learner as participant is involved, plunged into the experience. When the learning environment is an experience where the learner is involved, the role of the educator is less director and more facilitator, and the student becomes more the manager of their own learning. Participant 18 spoke openly about her role as an educator in the experiential learning environment:

> I see my role as the guide, the facilitator, the one that leads, but does not carry. What I mean is… if I stand in front of the room and "blah, blah, blah"… they're gone… they're asleep. I've lost them. But if I create a fun, engaging activity that

> makes them think, talk, and even laugh… then we've moved past the boring content and made something inviting and interesting out of something that was none of the above.

For Participant 4, it was important to impart:

> To me, creating a learning experience is everything. It's pictures on the walls. It's students working in groups on a case study. It's introducing new technology, like QR codes. I mean… my students see QR codes out in the community at restaurants and places like that, but they don't expect it in the classroom. But I use them, like a game, for my students to find information about their patients or the situation. They have to stop, look up the code, and then get information so that they can move forward with the activity. … An example would be how I use QR codes on the feet of the mannequins in the skills lab. If the student doesn't pull the sheets back and check for a pedal pulse, they will never see the QR code attached to the patient's foot, but that also means that they aren't looking at the complete patient. Did they check a pedal pulse? Hard to do if you never pulled the sheet back. Using something like a simple QR code attached to the patient's foot is a good way to see if the student is actually performing a complete head to toe assessment. That's part of the experience…. the learning, the doing, and then being able to use that information to help the patient achieve their goals.

In this research and as I interviewed ADN nurse educators who provide games and gaming as part of an experiential framework for learning, I found that many participants spoke about creating an "experience" for their students and this experiential

learning leading to a positive impact on students and the learning environment. Most participants acknowledged the desire of adult students to be involved in their own learning, and the creation of an experiential learning environment was fostered by appropriate use of games and gaming.

Nurse educators, like teachers in most similar disciplines, scrutinize the environments in which they teach, and the way in which their students learn. Creating an experiential learning environment allows for open and scholarly discussion. As an instructional approach, the experiential learning environment provides students with a fully participatory learning space and offers multiple methods for students to learn. In this approach, the student is the creator of their own educational learning experience. My aim as a researcher was to understand the lived experiences of nursing faculty in associate degree programs regarding the interactive and experiential nature of teaching and learning utilizing games and gaming in the learning environment.

Unfortunately, nursing education has been a bit slow on the uptake to make changes from a teacher-centric educational environment into a more interactive and experiential learning environment that engages adult learners at all levels and styles of learning. However, the introduction and use of games and gaming in the learning environment is an innovative and participatory form of learning that can enhance theoretical knowledge with activities displaying application of skill, knowledge, and cooperation (Kinder & Kurz, 2018). From a faculty perspective, games and gaming allocate time for collaborative, and sometimes competitive experiences. Recognizing that

adult learners yearn to be participatory in their own education, Participant 11 maintained that:

> Students are, right now, challenged to think on their feet. I think it's important for me, as an educator, to recognize that and roll with the changes. I think it's important for me to support this. I'm down.

However, there is a downside to being a "renegade" and being unconventional in one's approach. Participant 5 offered that she often felt challenged by colleagues:

> I am utterly alone in my department. I am the weirdo who plays games. But I don't have the same problems in my classrooms that others have. What I mean is, my students are laughing and having fun while others have students who are glazed over, staring into space. Games, to me, create an experience… a whole experience where everyone has buy-in, not just the person at the front of the room. I'm trying to motivate my students and increase their ability to problem-solve, critically think, and use those skills when challenged to do so. Answering test questions on a test is not how I see that happening. What patient is going to ask them a bunch of questions like what they'd see on a test?

Theme 4: Advocating in Support of the Uniqueness of the Adult Learner

All participants agreed that adult learners want to be involved in their own learning, if the activity is meaningful and appropriate. This is when the learner finds something to connect to in the learning. All participants in this research found that games and gaming in the learning environment was a useful and successful method of providing

adult learners with what they want and need. While speaking with Participant 3, she shared:

> These are adults. So, when you say "games", you have to be specific about how they are going to be used, why they're being used, and what the purpose is. From a student perspective, if they don't understand the intent or the meaning behind what you're doing, they won't necessarily want to participate and they won't "buy in" to what you're selling. But my excitement about something feeds over to them… and it might sound silly, but even a song or a jingle that they learn, can be helpful in making complex content less overwhelming. I find videos on YouTube, sometimes they're videos made by students from other schools. When my adult students see other adult students having fun with the material, they can take themselves less seriously and have fun with it, too.

Recognizing that word usage is significant with adults, Participant 9 suggested:

> Sometimes when you say "games" in the classroom, you might get some raised eyebrows, but the research that I've read talks about increasing response time and improving problem-solving skills. There's proof that it works in other areas of education, and that's why I use it.

Additionally, Participant 9 shared this about her students and their use of games in the learning environment:

> From what I have experienced, there are, all around, positive outcomes for the adult learner. I use escape rooms and other activities like that because it offers my students a chance to perform, but in a group, bounce ideas off each other, like in a

> real-world scenario. I like the idea of bringing the world into my classroom. Games offer my students a chance to act and reflect on how they performed as individuals, and as teams. Nursing is all about teamwork. Being able to have those reflective moments is where a lot of the learning is held. Like in simulation, we have debriefing when we can reflect upon the experience. … and I kinda feel like if it's good enough for the military to have "games in the field", then it's good enough for my nursing students. I am sorta preparing them for battle, right?

Participant 18 emphatically answered that adult learners need to be included in the learning experience by stating:

> Gaming, like in a simulation, is an interactive learning opportunity where theory is put to the test, and done so by forcing the student to apply those theories in real time. But in the gaming environment, as it's a learning environment, the learner is protected from harm by being able to make mistakes in a nonpunitive place, learn from those mistakes, and not be fearful that they have harmed themselves or the patient. It's a win-win for everyone, especially the student and, eventually, the community. The student grows in their confidence and their abilities, and the community gains a more confident and competent graduate nurse entering the field.

According to Participant 3, game-based learning is a more personal way of bringing the theory to life:

> I create an environment for my students where reality is suspended, but only in the sense that my students can't hurt anyone, including themselves. I add

> discussion boards, or maybe I'll give them a map to follow, or rules to collaborate on. The student, or the team, have to learn to work together, and in doing so they become self-aware. I use reflection, or debriefing, to discuss how things went. What they liked, what they didn't, what they learned, how they would be able to use this information in the future. As an adult learner, myself, I like to use games and gaming to enhance the learning environment and provide a safe space for learning… that is inclusive of all my students. Maybe you have someone who is shy or doesn't like to speak up. Maybe you have someone who has real leadership skills, but needs to learn how to follow or to take direction. The gaming environment offers those opportunities in a style that is engaging, interactive…. And you might, maybe, even get some smiles and laughs from your audience that they can take home with them. If I've done that, then I believe, I've done my job.

Summary

In summary, chapter 4 provided answers to the primary research question: What are the lived experiences of faculty who use games and gaming as an instructional approach in associate degree nursing education? Even as each participant provided independent answers, collectively, they expressed a deep passion for bringing the learning environment to a place where students could learn while enjoying themselves, while at the same time fortifying their knowledge, building clinical skills, and developing soft skills like communication and collaboration. Additionally, four secondary questions were answered:

SQ1: How do associate degree nursing faculty define games and gaming in the teaching-learning environment?

SQ2: How do associate degree nursing faculty incorporate games and gaming as teaching-learning strategies?

SQ3: What experiences guide associate degree nursing faculty in how and when they utilize games and gaming as part of experiential learning?

SQ4: What reflective practices influence associate degree nursing faculty when considering adult learners and the use and usefulness of games and gaming in the learning environment?

SQ1 was as independent in the answers as the participants were as humans. Each had a different spin on their personal definitions of what games and gaming could be in the teaching-learning environment. However, collectively, each participant agreed that in order for games and gaming to be successful they had to be purposeful, meaningful to the learner, and engaging in their presentation. SQ2 was answered by most participants, similarly, agreeing that just about any activity could be turned into a game and placed in a gaming environment as long as it met the criteria of SQ1, including meaningfulness, purposefulness, and the level of interactivity. Answers to SQ3 were also based on meaningfulness and appropriateness to the learner. Most participants agreed that if learning by doing was appropriate for the student, then it was also an appropriate method of measurement for the instructor, as well. All participants stated that, at one time or another, they had experiences where a game or a gaming situation did not go according to plan. However, rather than throw it out completely, everyone stated that “learning from

our mistakes" was better than starting all over again. Finally, SQ4 asked each participant about their own reflective practices regarding games and gaming with adult students and their usefulness. All participants agreed that adult learners want to be involved in their own learning, if it is meaningful and appropriate. This is when the learner finds something to connect to in the learning. In reflecting back on the experiences, the educator is better able to make corrections, improve communication, and provide learning experiences that meet student needs, manage student learning outcomes, and ultimately, produce a confident and competent newly graduated nurse who can work under pressure from the first day on the job.

In chapter 4, I discussed the results of the research study regarding the use of games and gaming in the nursing educational environment and faculty perceptions of said games and gaming use. This chapter established the setting, demographics of the participants, the students they serve, and the programs in which they teach. Additionally, chapter 4 contained a detailed discussion of data collection methods, data analysis, issues of trustworthiness, and the results. Moving forward into Chapter 5, this final chapter contains a detailed discussion of the conclusions taken from the data collection and analysis, and how the literature interweaves between the conceptual framework, and social changes that could be made should research on the utilization of games and gaming in the nursing educational environment continue to flourish.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this qualitative research was to capture the lived experiences of nursing faculty in associate degree programs utilizing games and gaming as a teaching-learning strategy in the learning environment. I explored the variety of uses, places where they could be utilized, and how games and gaming could be applied. Simultaneously, I focused on faculty perceptions of why and how those games and gaming experiences are developed and managed. I also explored the differences from educator to educator, and both positive and negative influences that impact decision-making regarding the use of games and gaming in the classroom, skills and simulation labs, and all types of clinical environments.

For future research, understanding decision-making and reasoning provided by experienced educators could help to foster a more interactive and experiential learning environment for adult learners (nursing students), and promote positive social change in nursing education. By encouraging more educators to create and utilize better developed interactive tools, like games and gaming, students will learn theory, but also more fully immerse themselves in application of those theories at the bedside and in other clinical environments. Through this, the positive influences on students are higher levels of confidence and competence. For the community, the positive influence is a more well-rounded graduate nurse who is better able to provide competent and efficient clinical care under pressure. Regarding the use of games and gaming in the learning environment,

both educator and student will have a more positive influence on the student's learning experience, and ultimately, will obtain better outcomes.

Chapter 5 includes discussion and interpretation of the findings and limitations of the study. Moreover, I have also included recommendations for future studies, implications for positive social change, and my conclusions.

Interpretation of the Findings

In this section, I have considered how the findings from data collection and analysis link to the research literature presented in Chapter 2. I then considered how closely aligned Piaget's theory of constructivism (1968) is to the application of games and gaming in education, specifically nursing education. I used constructivism as the framework for this study.

Connections to the Literature

Within the existing literature, there is straightforward evidence of positive effects from games and gaming use in the learning environment. From educator perspectives gathered during interviews, participants reported a heightened level of student engagement, collaboration, problem-solving, and application of theory in the clinical environment. These perspectives from educators align with other studies that support the use of games and gaming in the learning environment, both in nursing education and other similar social sciences. My findings were also aligned with what was attained through the literature of K-12 and higher education research.

All participants in this study believed that games and gaming in the nursing educational environment helped students to better understand the theories behind their

actions. As nursing is a science-based field, our actions must have theoretical purposefulness. Thus, simply knowing the theory is not enough, but understanding why we use the theory and how it justifies our actions provides a more positive influence, and thus, a more positive outcome for the patient, family, and community (Becker, 2021; Breen & Jones, 2015; Gentry et al., 2019).

Within the existing literature, there were reportable positive responses from learning environments where games and gaming have been introduced and utilized. Educators throughout K-12 education and higher education in sciences, such as sociology and psychology, have successfully used games and gaming to introduce new concepts, review learned materials, and help students to achieve learning outcomes (Carenys & Moya, 2016; Silva et al., 2019; Stieler-Hunt & Jones, 2015; Sung et al., 2018; Thiede et al., 2017; Zirawaga et al., 2017). Studies in the literature support the positive influences that games and gaming have on those student learning outcomes, including improvements in problem-solving, communication, and collaborative skills (Coker et al., 2016). Students who develop these higher-level skills enter the workforce better prepared from the start of their careers and are better able to handle the rigors and stressors that present to clinical nurses who must manage complicated patient care, inordinate numbers of interruptions, and barrages of required documentation throughout their workday (Gallegos et al., 2017; Koivisto et al., 2016). What is learned through the fast-paced environment of a game or gaming environment, including competing with self or others and having to work alone or on teams, can be easily translated into the professional world.

When examining the research about teacher perceptions of games and gaming use in the learning environment, most participants echoed what was found in the literature, including a) a need to bring interactivity into the learning environment by any means necessary; b) knowing and understanding the value of what is to be learned; c) limited budgets may impact building, preparing, and carrying out games and gaming effectively; d) limited support emanate from other faculty/students; and the need to e) find appropriate ways to connect the didactic material with interactive and experiential learning experiences that remain meaningful to the adult learner. Interviews revealed themes of interactivity, engagement, creativity, and purposefulness. These perceptions were also seen in the supportive research (Hassan et al., 2019; Huang et al., 2018). Participants discussed both positive and negative aspects of games and gaming use. However, for most, the negative aspect in their use was mostly in their overuse. Participant 7 emphatically stated,

> Some of my colleagues just want to throw a game in the classroom when they can't think of anything else to do. I think that you can overdo it with them (the students)… and I think that you can just as easily lose their interest in playing too many games or running too many simulations. Too much of anything is never any good.

Most participants suggested that they utilized formal types of games, including word puzzles like crosswords and word finds, as well as standard board games like Jeopardy!, Wheel of Fortune, and Who Wants to be a Millionaire. In addition, many participants alluded to using classic party and carnival games of chance, i.e., "pin the tail

on the donkey," ring toss, and charades. All participants were either familiar with or consistent users of electronic games like Kahoot! and Nearpod, and most specified using or participating in escape rooms, interactive case studies, and simulation, which by industry standards are referred to as serious gaming.

Connections to the Conceptual Framework

According to Piaget (1968), the basics of learning should not stop at remembering facts and figures. When the experience of learning is as an important component of the learning as the context of the learning, the learning becomes more meaningful, and the student develops a deeper passion for it because they are more present and immersed in the learning.

When applying Piaget's theory (1968) and aligning his theory with the findings from this study, I found that it supports the data collected during the personal interviews. According to Piaget (Ackermann, 2001), experiential learning puts an emphasis on the actual experience and is personal, self-directed, and reflective. For the purposes of this research, I am referencing the nursing educational experience. In this study, participant educators reported that games and gaming in the learning environment were better than traditional teacher-centered classroom environments or traditional teaching methods, as games and gaming provide situations where students remain involved, engaged, and can actually enjoy themselves during the learning process. Thus, learners create a learning experience of their own design.

In this research, participant educators viewed games and gaming in the learning environment as a way of providing a more in-depth level of learning because the learner

becomes fully immersed in a game and gaming setting. The learner must follow a set of rules, acquire new skills or knowledge, and compete with themselves or others to prove their worth. In the end, the learner becomes a higher-level learner as they utilize previously acquired knowledge and skills, further develop that with newly acquired knowledge and skills, all the while having fun and, hopefully, enjoying themselves. Piaget (1968) suggested teachers take an active role in the presentation of materials to students, and that rather than students sit and receive information passively, they should interact with the learning experience, encouraging a higher level of engagement with the theory. This higher level of engagement promotes a link between theoretical knowledge and its actual application. For nurses, it is this linkage between theory and application that promotes a safer and more effective clinical practitioner, therefore, creating safer and healthier outcomes for the patient, family, and community. The "critical thinker" is one who can use knowledge, experience, and problem-solving skills to individualize care (Cicchino, 2015; Howard et al., 2015; Hwang & Chen, 2017). In Piaget's words,

> The main goal of education in schools should be the creation of men and women who are capable of doing new things, not simply repeating what other generations have done….People who can be critical, validating, and not necessarily accepting, everything that is offered to them (1936).

Students who are involved in the learning are generally more invested in the outcomes as well (Bontchev et al., 2018; Boothby, 2014; Coker et al., 2016). Experiential learning prepares students for success beyond the classroom (Kolb & Kolb, 2017, Sung et al., 2018; Tafor et al., 2016).

Limitations of the Study

Limitations of this study included the small sample size. Research study sample sizes can impact the validity of any research, and although this study surpassed the expected 8-12 participant interviews, 18 interviews is still considered a small sample size for a research study. As limitations are potential weaknesses in the research (Burns et al., 2015), this could have led to potential issues with the gathering of enough data.

Another limitation of the research was the simple nature of the virtual interview process. For this study, interviews were conducted utilizing Zoom, an online communication platform. Internet connectivity continues to be an ongoing struggle when using internet-based communication platforms. In those cases, the researcher and the participant remain causalities of connection issues. I did experience a couple of instances when the connection stopped. For those times, we waited until both parties, the researcher and the participant, were able to start speaking and hearing again. I also experienced one instance when the screen froze, and the participant was dropped from Zoom unexpectedly. Again, this was quickly remedied and only lasted for a few minutes until the participant could reenter the Zoom room and restart the conversation. It did interrupt the flow of the interview momentarily, but that was quickly regained once we both were back online and able to restart the conversation.

Lastly, there was and will always be researcher bias built into the nature of qualitative research when the researcher has an interest or personal experience in the field of study (Patton, 2015). In this study, I utilized two techniques to reduce bias in the research process, including following an interview guide (Appendix D) and the use of

reflective journaling. During the interviews, I used the same interview and questions from participant to participant. I purposefully did not use leading questions and utilized active listening skills, which reduced bias by allowing each participant to fully answer questions without interruption before moving onto another question or asking any follow-up questions. I used a normal tone of voice and did not give any emphasis to any particular words or phrases. If a participant needed any clarification, I provided clarification to the best of my ability. Furthermore, I also used reflective journaling so that I could better understand my own responses to participant statements and comments. Journaling allowed me to review each interview for content, completeness, and examine the answers. As I was transcribing while I was listening to the answers, I was also able to review when a participant would take breaks between words, stumble over words or thoughts, or change the direction of what they were saying. Journaling also gave me an opportunity to look back at my own interviewing technique, which appeared to improve over the course of the 18 interviews.

With the experiences of each interview behind me, I was able to engage with the next participant in a more effective manner. This gave me a better sense of confidence and comfort with the interview process in general. I found the reflective journaling process to be immensely helpful in editing myself and in reviewing my ability and skills with active listening. Both techniques, using an interview guide and reflective journaling, facilitated a reduction in bias throughout the data collection and analysis processes.

Recommendations for Future Research

During data collection and analysis, it was evident that there was a need for further research about games and gaming in nursing education. Additional research could certainly include expanding the participant pool, including other entry level nursing programs. This research focused on the perspectives of faculty who work in associate degree nursing programs but opening the research up to faculty working within bachelor's degree programs, or even to faculty working within practical nurse programs would provide different perspectives on the use of games and gaming in the learning environment. Additionally, while participant faculty did represent different parts of the United States via the university faculty pool, it was understood that a large percentage of participants, 10 of the 18 participants (56%), hailed from one state, Florida, and nine of those participants hailed from one school via backyard research (Hull, 2017.) I would recommend expanding the participant pool to include faculty from a better variety of areas of the country. In this research, I felt that the west coast was underrepresented. Also, most of the faculty participants worked in programs that were in rural areas. Future research should include more faculty working in inner cities and suburbs. This might have provided perspectives that I did not hear during data collection. Another possible area that could be researched in the future would be the inclusion of classroom observation. I felt that being able to watch educators in their own teaching environments, utilizing the games and gaming that they spoke so passionately about, would have provided more insight and understanding of their perspectives.

Implications

Games and gaming in education have been a functional part of teaching-learning strategies within K-12 learning environments for many years. Likewise, games and gaming have successfully been used in higher education in similar science-based subject areas to nursing, such as psychology and sociology. The data collected during this research and the results after analysis have added to the knowledge base regarding faculty perspectives in the use of games and gaming in the learning environment of nursing education. Implications for policy, practice, and social change based on the results of this research are applicable for educators, administrators, hospital and other professional stakeholders, as well as policy makers. The significance of this study impacts each stakeholder at distinct levels.

Implications for Policy

One implication for policy change, based on results of this research, is that policies could be written, and budgeting could be dedicated to providing teachers with the resources they need to design, build, and run games and gaming experiences for students at all levels of learning. Based on collected data, results showed that faculty perspectives included a lack of funding to appropriately foster a significant increase in games and gaming in the learning environment. In fact, many participant faculty claimed to have to fund these interactive activities out of their own pockets, and claimed that many of their colleagues were discouraged from game use because of the lack of funding. Policy changes that support the use of games and gaming in the nursing learning environment could also include providing time for faculty to work on game development. If faculty

had more time to flesh out ideas, work on developing them more fully, and time to collaborate with like-minded colleagues, students would have access to a higher level of interactive and experiential learning experiences. Thus, the adult learner would improve skills, knowledge, confidence, and problem-solving skills in a shorter amount of time.

Implications for Practice

An implication for practice is that by offering and focusing more time on interactive and experiential learning, and moving away from teacher-centric learning, the learning environment becomes more learner-centered. In that, adult learners can take more charge of their own learning. This would help with engagement and professional development. As reported in the research, when learners are more engaged in their own learning, they feel that the learning is applicable to them as learners, and they experience higher levels of confidence and competence. Clinical practice improves when the learner is fully invested, including understanding the theory and feeling self-confident about its application in the clinical environment. Changing practice to include a more engaging and enjoyable learning environment promotes an atmosphere where missteps are looked upon as a positive part of the learning process and used to make enhancements in future practice.

Implications for Social Change

One implication for social change could be for the game and gaming industries to become more involved in nursing education. This could include the hiring of nurse educators in the gaming industry to foster a cooperative relationship between educators, game designers, developers, and those who fund the development of these resources. An

example would be to have game and gaming designers to work collaboratively with nurse educators so that games and gaming opportunities are built with healthcare learning environments in mind. As the nurse educator is fully aware of the inner workings of the learning environment and how games and gaming can be helpful in bringing interactive and experiential learning experiences to adult learners, the inclusion of the nurse educator in the development and design phase would enhance the games and gaming being utilized. While working alongside game designers who have the expertise in building appropriate and useable games and gaming experiences, this collaborative relationship could positively influence the learning environment by utilizing the expertise of both the educator and the game designer simultaneously. Having nurse educators providing the content for the games would benefit the game designer. Having the game designer providing the buildout of the games would benefit the educator, and thus, benefit students.

Another implication for social change is that by creating interactive and experiential learning spaces, adult learners are fostered into higher levels of confidence, knowledge and skill base, as well as a provision of fun and engaging activities that help students to develop skills in communication, collaboration, and problem-solving. As adult learners typically want to be involved in their own learning, games and gaming deliver the learner with the opportunity to engage with colleagues utilizing a self-competitive and team-competitive approach. The learning, in gamification format, becomes less obtrusive and more enjoyable, thereby creating an atmosphere of enjoyment. When students enjoy what they are doing, they are usually more involved in

the learning process, and the material being learned is better absorbed and easier for them to apply in a clinical setting.

Conclusion

Games and gaming in education is a thoroughly researched topic in K-12 and higher education. However, nursing education has been slow to change and accept these forms of teaching and learning strategies. Yet in this research, I found that there are many nurse educators who are already utilizing games and gaming in the learning environment. These interactive and experiential learning experiences have been documented in showing increases in student knowledge and skills, collaboration, and problem-solving skills. These skills are increasingly necessary for success as students graduate and move into the professional work environment (Gallegos et al., 2017; Koivisto et al., 2016). Moreover, as students are anticipated to graduate and hit the ground running straight out of their nursing programs, the expectation is that newly graduated nurses are properly prepared to withstand the rigors of professional practice.

In my qualitative research, I interviewed 18 nurse faculty from around the United States working with associate degree students as they prepare for licensure. Participant faculty reported high levels of personal and professional satisfaction with the inclusion of games and gaming in the learning environment. Likewise, they reported high levels of student satisfaction when games and gaming were included. The takeaway from this research was that further research should be conducted to investigate the use of games and gaming in all areas of nurse education, including classroom, skills and simulation labs, as well as in the clinical environment. Games and gaming in learning are an

exceptional way to engage the learner in an enjoyable atmosphere, that at times, can even allow the student to forget that they are actually learning or reviewing content. What better way to close than by referencing a movie about gaming, Wargames, produced in 1983. …and just as the computer asks the main character, I pose this last question, “Shall we play a game?”

References

Abrahams, H. (2017). Listen to me: A reflection on practice in qualitative interviewing. *Journal of Gender-Based Violence. 1*(2), 253-259. https://doi.org/10.1332/239868017X15090095938377

Aburahma, M.H. & Mohamed, H.M. (2015). Educational games as a teaching tool in pharmacy curriculum. *American Journal of Pharmaceutical Education. 79*(4), 1-9. https://www.ajpe.org/

Accreditation Commission for Education in Nursing [ACEN]. (2018). ACEN accreditation manual. Retrieved from http://www.acenursing.net/manuals/sc2017_A.pdf

Ackermann, E. (2001). Piaget's Constructivism, Papert's Constructionism: What's the difference? 1-11. https://learning.media.mit.edu

Ahmed, A. & Sutton, M.J.D. (2017). Gamification, serious games, simulations, and immersive learning environments in knowledge management initiatives. World *Journal of Science, Technology and Sustainable Development. 14*(2/3), 78-83. https://doi.org.org/10.1108/WJSTSD-02-2017-0005

Aleson-Carbonell, M., & Guillén-Nieto, V. (2012). Serious games and learning effectiveness: The case of it's a deal! *Computers & Education*, *58*(1), 435-448. http://dx.doi.org/10.1016/j.compedu.2011.07.015

Alexander, A. & Tuan, H. (2015). Gaming worlds: Secondary students creating and interactive video game. *Art Education. 68*(1), 28-36. http://doi.org/10.1080/00043125.2015.11519303

Aljezawi, M. & Albashtawy, M. (2015). Quiz game teaching format versus didactic lecture. *British Journal of Nursing. 24*, 86-92. https://doi.org/10.12968/bjon.2015.24.2.86

Andika, W. D., Akbar, M., Yufiarti, & Sumarni, S. (2019). Playing board games with mathematical self-concept to support early numeracy skill of 5-6 years old children. *Journal of Physics*. 1-7. https://doi.org/10.1088/1742-6596/1166/1/012019

Aristotle. (1999). In T. Irwin (Ed.), *Nicomachean ethics* (2nd ed.). Hackett.

Asselin, M.E. (2003). Inside research: Issues to consider when doing qualitative research in your own setting. *Journal for Nurses in Staff Development: JNSD. 19*(2), 99-103. https://doi.org/10.1097/00124645-200303000-00008

Atwood-Blaine, D., & Huffman, D. (2017). Mobile gaming and student interactions in a science center: The future of gaming in science education. *International Journal of Science and Mathematics Education. 15*, 45–65. https://doi.org/10.1007/s10763-017-9801-y

Awan, O., Dey, C., Salts, H., Brian, J., Fotos, J., Royston, E., Braileanu, M., Ghodbadi, E., Powell, J., Chung, C., & Auffermann, W. (2019). Making learning fun: Gaming in radiology education. *Academic Radiology. 26*(8), 1127-1136. https://doi.org.org/10.1016/j.acra.2019.02.020

Awwol, N., Alom, M., & Care, E. (2015). Game design for learning to solve problems in a collaborative environment. Proceedings of the European Conference on Games Based Learning. 1, 25-33. http://academic-conferences.org

Baid, H. & Lambert, N. (2010). Enjoyable learning: The role of humour, games, and fun activities in nursing and midwifery education. *Nurse Education Today. 30*(6), 548-552. http://doi.org/10.1016/j.nedt.2009.11.007

Barr, M. (2018). Student attitudes to games-based skills development: Learning from video games in higher education. *Computers in Human Behavior. 80*, 283-294. https://doi.org.org/10.1016/j.chb.2017.11.030

Barr, R.B. & Tagg, J. (1995). From teaching to learning – A new paradigm for undergraduate education. *Change. 27*(6), 12-25. https://www.colorado.edu/ftep/sites/default/files/attached-files/barrandtaggfromteachingtolearning.pdf

Barrett, D. & Twycross, A. (2018). Data collection in qualitative research. *Evidence-Based Nursing. 21*, 63-64. http://orcid.org/0000-0003-1130-5603

Bayeck, R.Y. (2020). Examining board gameplay and learning: A multidisciplinary review of recent research. *Simulation & Gaming. 51*(4), 411-431. https://doi.org/10.1177/1046878119901286

Beavis, C., Muspratt, S., & Thompson, R. (2015). 'Computer games can get your brain working: Student experience and perceptions of digitals games in the classroom'. *Learning, Media & Technology. 40*(1), 21-42. http://doi:10.1080/17439884.2014.904339

Becker, K. (2021). What's the difference between gamification, serious games, educational games, and game-based learning? *Academia Letters, 209*. https://doi.org/10.20935/AL209

Benner, P. (1982). From novice to expert. *The American Journal of Nursing. 82*(3), 402-407. http://www.jstor.com/stable/3462928

Berndt, J.L. (2019). Using “Breakout Boxes” for pharmacology review. Nursing *Education Perspectives. 40*(2), 116-117. http://doi:10.1097/01.NEP.0000000000000349

Beylefeld A.A. & Struwig M.C. (2007). A gaming approach to learning medical microbiology: Students' experiences of flow. *Medical Teacher. 29*(9), 933-940. http://doi.org/10.1080/01421590701601550

Bilal, Guraya, S.Y., & Chen, S. (2017). The impact and effectiveness of faculty development program in fostering the faculty’s knowledge, skills, and professional competence: A systematic review and meta-analysis. *Saudi Journal of Biological Sciences. 26*, 688-697. https://doi.org/10.1016/j.sjbs.2017.10.024

Billings, D. & Halstead, J. (2019). *Teaching in Nursing – A Guide for Faculty.* (6th ed.). Elsevier, Inc.

Boctor, L. (2013). Active-learning strategies: The use of a game to reinforce learning in nursing education. A case study. *Nurse Education in Practice. 13*(2), 96-100. http://doi.org/10.1016/j.nepr.2012.07.010

Boddy, C.R. (2016). Sample size for qualitative research. *Qualitative Market Research. 19*(4), 426-432. https://doi.org/10.1108/QMR-06-2016-0053

Bodnar, C.A., Anastasio, D., Enszer, J.A., & Burkey, D.D. (2015). Engineers at play: Games as teaching tools for undergraduate engineering students. *Journal of Engineering Education. 105*(1), 147-200. https://doi.org/10.1002/jee.20106

Bontchev, B., Vassileva, D., Aleksieva-Petrova, A., & Petrov, M. (2018). Playing styles based on experiential learning theory. *Computers in Human Behavior. 85*, 319-328. https://doi.org/10.1016/j.chb.2018.04.009

Boothby, J. (2014). Nursing students' and educators' perspectives on using educational games as an experiential learning strategy. (Publication No. 3646811). [Doctoral Dissertation, Indiana University of Pennsylvania]. Proquest.

Bossavit, B., Pina, A., Sanchez-Gil, I., & Urtasun, A. (2018). Educational games to enhance museum visits for schools. *Journal of Educational Technology & Society. 21*(4), 171-186. https://www.j-ets.net/ETS/index.html

Bourgonjon, J., De Grove, F., De Smet, C., Van Looy, J., Soetaert, R., & Valcke, M. (2013). Acceptance of game-based learning by secondary school teachers. *Computers & Education, 67*, 21-35. http://doi:10.1016/j.compedu.2013.02.010

Boyle, E.A., Hainey, T., Connolly, T.M., Gray, G., Earp, J., Ott, M., Lim, T., Ninaus, M., Ribeiro, C., & Pereira, J. (2016). An update to the systematic literature review of empirical evidence of the impacts and outcomes of computer games and serious games. *Computers & Education, 94*, 178-192. https://doi.org/10.1016/j.compedu.2015.11.003

Breen, H. & Jones, M. (2015). Experiential learning: Using virtual simulation in an online RN-BSN program. *The Journal of Continuing Education in Nursing, 46*(1), 27-33. http://doi:10.3928/00220124-20141120

Bruner, J. S. (1960). *The process of education.* Harvard University Press

Bullard, S.B. & Anderson, N. (2014). “I’ll Take Commas for $200”: An instructional intervention using games to help students master grammar skills. *Journalism, 69*(1), 5–16. https://doi.org/10.1177/1077695813518778

Burkholder, G.J., Cox, K.A., & Crawford, L.M. (2016). *The scholar-practitioner’s guide to research design.* Laureate Publishing.

Burns, N., Grove, S.K., & Gray, J.R. (2015). *Understanding nursing research: Building an evidence-based practice.* (6th ed.). Elsevier Saunders

Calderon, A. & Ruiz, M. (2015). A systematic literature review on serious games evaluation: An application to software project management. *Computers & Education. 87*, 396-422. https://doi.org/10.1016/j.compedu.2015.07.011

Campbell, T. C. (2016). Putting the “real” in real options: A board game approach. Journal of Financial Education, 42(1–2), 102–115. http://www.jstor.org.ezaccess.libraries.psu.edu/stable/90000838

Cardinot, A. & Fairfield, J. A. (2019). Game-based learning to engage students with physics and astronomy using a board game. International Journal of Game-Based Learning (IJGBL), 9(1), 42–57. https://doi.org/10.4018/IJGBL.2019010104

Carenys, J. & Moya, S. (2016). Digital game-based learning in accounting and business education. *Accounting Education. 25*(6), 598-651. https://doi.org.org/10.1080/09639284.2016.1241951

Centers for Disease Control. (2020). Coronavirus (COVID-19). United States Department of Health & Human Services. https://www.cdc.gov/coronavirus/2019-ncov/index.html

Chaney, P.L, & Doukopoulos, L. (2018). An active learning exercise on sustainability and the water footprint of food: The dinner party menu challenge. *Geography Teacher. 15*(4), 173-184. http://dx.doi.org.ezp.waldenulibrary.org/10.1080/19338341.2018.1491877

Cheng, C-Y., Liou, S-R., Tsai, H-M., & Chang, C-H. (2014). The effects of team-based learning on learning behaviors in the maternal-child nursing course. *Nurse Education Today. 34*(1), 25-30. http://Doi:10.1016/j.nedt.2013.03.013

Christensen, M., Welch, A., & Barr, J. (2017). Husserlian descriptive phenomenology: A review of intentionality, reduction and the natural attitude. *Journal of Nursing Education and Practice. 7*(8), 113-118. https://doi.org.10.5430/jnep.v7n8p113

Cicchino, M.I. (2015). Using game-based learning to foster critical thinking in student discourse. *Interdisciplinary Journal of Problem-Based Learning. 9*(2), 1-17. https://doi.org.org/10.7771/1541-5015.1481

Clark, K.R. & Veale', B.L. (2018). Strategies to enhance data collection and analysis in qualitative research. *Radiologic Technology. 89*(5), 482-485. https://doi.org/radiologictechnology.org/content/89/5/482CT.full.pdf

Coker, J.S., Heiser, E., Taylor, L., & Book, C. (2016). Impacts of experiential learning depth and breadth on student outcomes. *Journal of Experiential Education. 40*(1), 5-23. https://doi.org/10.1177/1053825916678265

Collazos, A., Gutierrez, F.L., & Moreira, V.F. (2019). CREANDO: Tool for creating pervasive games to increase the learning motivation in higher education students. *Telematics and Informatics. 38*, 62-73.

https://doi.org.org/10.1016/j.tele.2018.08.005

Confucius. (1990). What is experiential learning? In J.W. Gentry (Ed.), *Guide to Business Gaming and Experiential Learning.* (2nd ed.). Nichols Publishing Company.

Conner, N.W., Dey, D., & Krause, K. (2018). Needs assessment for informing extension professional development trainings on teaching adult learners. *Journal of Extension. 56*(3), 1-8. https://digitalcommons.unl.edu/famconfacpub/246

Connolly, T.M., Boyle, E.A., MacArthur, E., Hainey, T., & Boyle, J.M. (2012). A systematic literature review of empirical evidence on computer games and serious games. *Computers & Education. 59*, 661- 686. https://doi.org:10.1016/j.compedu.2012.03.004

Costello, R. (2018). *Gaming innovations in higher education: Emerging research and opportunities.* IGI Global.

Cozar-Gutierrez, R. & Saez-Lopez, J.M. (2016). 'Game-based learning and gamification in initial teacher training in social sciences: An experiment with MinecraftEdu'. *International Journal of Educational Technology in Higher Education. 13*(2), 1-11. https://doi.org/10.1186/s41239-016-0003-4

Creswell, J.W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches.* (4th ed.). SAGE Publications, Inc.

Creswell, J.W., & Creswell, J.D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE.

Creswell, J.W. & Miller, D.L. (2010). Determining validity in qualitative inquiry. *Theory into Practice. 39*(3), 124-130. https://doi.org/10.1207/s15430421tip3903_2

Creswell, J.W. & Poth, C.N. (2018). *Qualitative inquiry and research design: Choosing among five approaches.* (4th ed.). Sage Publications.

Cunningham, S., Knight, A., & Hall, C. (2019). Perspectives: Nursing education: From vision to action in a changing world. *Journal of Research in Nursing. 24*(3/4), 265-270. https://doi.org:10.1177/1744987119844077

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

Daniel, T. & Tivener, K. (2016). Effects of sharing clickers in an active learning environment. *Journal of Educational Technology & Society. 19*(3), 260-268. https://www.jstor.org/stable/10.2307/jeductechsoci.19.3.260

Dankbaar, M. (2017). Serious games and blended learning - Effects on performance and motivation in medical education. *Perspectives on Medical Education, 6*(1), 58-60. https://doi.org.org/10.1007/s40037-016-0320-2

Deed, C., Blake, D., Henriksen, J., Mooney, A., Prain, V., Tytler, R., Zitzlaff, T., Edwards, M., Emery, S., Muir, T., Swabey, K., Thomas, D., Farrelly, C., Lovejoy, V., Meyers, N., & Fingland, D. (2019). Teacher adaptation to flexible learning environments. *Learning Environments Research, 23*, 153–165. https://doi.org/10.1007/s10984-019-09302-0

de Freitas, S. (2018). Are games effective learning tools? A review of educational games. *Journal of Educational Technology & Society. 21*(2), 74-84. www.jstor.org

Dennick, R. (2016). Constructivism: Reflections on twenty-five years teaching the

constructivist approach in medical education. *International Journal of Medical Education, 7*. 200-205. https://doi.org/10.5116/ijme.5763.de11

Dewey, J. (1938). *Experience and education*. Macmillan.

De Zan, G., De Toni, A.F., Fornasier, A., & Battistella, C. (2015). A methodology for the assessment of experiential learning lean. *European Journal of Training and Development. 39*(4), 332-354. https://doi.org/10.1108/EJTD-05-2014-0040

Dicheva, C. & Dicheva, D. (2017). Gamifying education: What is known, what is believed and what remains uncertain: A critical review. *International Journal of Educational Technology in Higher Education. 14*(9), 1-36. https://doi.org/10.1186/s41239-017-0042-5

Dicheva, D., Irwin, K., Dicheva, C., & Talasila, S. (2015). A course gamification platform supporting student motivation and engagement. IEEE International Conference on Web and Open Access to Learning (ICWOAL), 1-4. https://doi.org/10.1109/ICWOAL.2014.7009214

Dole, S., Bloom, L., & Kowalske, K. (2016). Transforming pedagogy: Changing perspectives from teacher-centered to learner-centered. The Interdisciplinary *Journal of Problem-Based Learning. 10*(1), 1-14. https://doi.org/10.7771/1541-5015.1538

Dominguez, A., Saenz-de-Navarrete, J., de Marcos, L., Fernandez-Saenz, C., Pages, J., & Martinez-Herraiz, J. (2013). Gamifying learning experiences; Practical implications and outcomes. *Computers & Education. 63*, 380-392. https://doi.org:10.1016/j.compedu.2012.12.020

Duane, B.T. & Satre, M.E. (2014). Utilizing constructivism learning theory in collaborative testing as a creative strategy to promote essential nursing skills. *Nurse Education Today. 34*(1), 31-34. https://doi.org:10.1016/j.nedt.2013.03.005

Eckhaus, E., Klein, G., & Kantor, J. (2017). Experiential learning in management education. *Experiential Learning in Management Education. 15*(1), 42-56. https://doi.org/10.3846/bme.2017.345

Eide, P. & Kahn, D. (2008). Ethical issues in the qualitative researcher – Participant relationship. *Nursing Ethics. 15*(2), 199-207. https://doi.org/10.1177/0969733007086018

El-Masri, M., Tarhini, A., Hassouna, M., & Elyas, T. (2015, May). A design science approach to gamify education: From games to platforms. Paper presented at the Twenty-Third European Conference on Information Systems (ECIS), Münster, Germany. https://researchgate.net/publication/277291418

Faust, J.L. & Paulson, D.R. (1998). Active learning in the college classroom. *Journal on Excellence in College Teaching, 9*(2), 3-24. https://ctl.dixie.edu

Feldman, J. (2017). The role of professional learning communities in facilitating teachers' pedagogical adaption and change. *Journal of Education. 67*, 1-18. https://doi.org/10.17159/2520-9868/i67a03

Fischer, C., Fishman, B., Dede, C., Eisenkraft, A., Frumin, K., Foster, B., Lawrenz, F., Levy, A.J., & McCoy, A. (2018). Investigating relationships between school context, teacher professional development, teaching practices, and student achievement in response to a nationwide science reform. *Teaching and Teacher*

Education. 72, 107-121. https://doi.org/10.1016/j.tate.2018.02.011

Foster, A. (2008). Games and motivation to learn science: Personal identity, applicability, relevance and meaningfulness. *Journal of Interactive Learning Research. 19*(4), 597-614. https://www.learntechlib.org/primary/p/24259/

Gallegos, C., Tesar, A.J., Connor, K., & Martz, K. (2017). The use of a game-based learning platform to engage nursing students: A descriptive, qualitative study. *Nurse Education in Practice. 27*(2017), 101-106. https://doi.org/10.1016/j.nepr.2017.08.019 1471-5953

Garcia-Lopez, L.M., Gutierrez, D., Sanchez-Mora, D., & Harvey, S. (2019). Teachers' use of teaching games for understanding in Central Spain. *Physical Education and Sport Pedagogy. 24*(5), 463-477. http://doi/10.1080/17408989.2019.1628931

Gartmeier, M., Bauer, J., Fischer, M.R., Hoppe-Seyler, T., Karsten, G., Kiessling, C. Moller, G.E., Wiesbeck, A., & Prenzel, M. (2015). Fostering professional communication skills of future physicians and teachers: Effects of e-learning with video cases and role-play. *Instructional Science. 43*(4), 443-462. https://doi.org/10.1007/s11251-014-9341-6

Gentry, S.V., Gauthier, A., Ehrstrom, B.L., Wortley, D., Lilienthal, A., Car, L.T., Dauwels-Okutsu, S., Nikolaou, C.K., Zary, N., Campbell, J., & Car, J. (2019). Serious gaming and gamification education in health professions: Systematic review. *Journal of Medical Internet Research. 21*(3), 1-19. https://doi.org/10.2196/12994

Gerlach, J.D. & Reinagel, T.P. (2016). Experiential learning in MPA programs: A case

for complementary between internship and service learning requirements. *PS: Political Science & Politics. 49*(1), 132-138. https://doi.org/10.1017/S1049096515001158

Gibson, V. & Douglas, M. (2013). Criticality: The experience of developing an interactive educational tool based on board games. *Nurse Education Today. 33*(12), 1612-1616. https://doi.org/10.1016/j.nedt.2013.01.022

Glance, D., Rhinehart, A., & Brown, A. (2018). Learn, expand, engage: A model for teaching clinical skills in the helping professions. *Adult Learning. 29*(3), 104-114. https://doi.org/10.1177/1045159518761845

Glazer, K. (2015). Imagining a constructionist game-based pedagogical model: Using tabletop role-playing game creation to enhance literature education in high school English classes (Order No. 3731117). *Theses and Dissertations. 641*. https://digitalcommons.pepperdine.edu/etd/641

Gozcu, E. & Caganaga, C.K. (2016). The importance of using games in EFL classrooms. *Cypriot Journal of Educational Sciences. 11*(3), 126-135. https://files.eric.ed.gov/fulltext/EJ1140747.pdf

Grace, S., Innes, E., Patton, N., & Stockhausen, L. (2017). Ethical experiential learning in medical, nursing and allied health education: A narrative review. *Nurse Education Today. 51,* 23-33. https://doi.org/10.1016/j.nedt.2016.12.024

Greenwood, K.C. & Ewell, S.B. (2018). Faculty development through simulation-based education in physical therapist education. *Advances in Simulation, 3*(1), 1-12. https://doi.org/10.1186/s41077-017-0060-3

Grogan, P.T. & Meijer, S.A. (2017). Gaming methods in engineering systems research. *Systems Engineering. 20*(6), 542-552. https://doi.org/10.1002/sys.21409

Guardia, J.J., Del Olmo, J.L., Roa, I., & Berlanga, V. (2019). Innovation in the teaching-learning process: The case of Kahoot! *On the Horizon, 27*(1), 35–45. https://doi.org/10.1108/OTH-11-2018-0035

Hainey, T., Connolly, T.M., Boyle, E.A., Wilson, A., & Razak, A. (2016). A systematic literature review of games-based learning empirical evidence in primary education. *Computers & Education, 102*(2016): 202-223. https://doi.org/10.1016/j.compedu.2016.09.001

Halm, M. & Crespo, C. (2018). Acquisition and retention of resuscitation knowledge and skills: What's practice have to do with it? *American Journal of Critical Care. 27*(6), 513-517. https://doi.org/10.4037/ajcc2018259

Hämäläinen, R., & Oksanen, K. (2014). Collaborative 3D learning games for future learning: Teachers' instructional practices to enhance shared knowledge construction among students. *Technology, Pedagogy and Education. 23*, 81–101. https://doi.org/10.1080/1475939X.2013.838451

Hamari, J., Shernoff, D. J., Rowe, E., Coller, B., Asbell-Clarke, J., & Edwards, T. (2016). Challenging games help students learn: An empirical study on engagement, flow and immersion in game-based learning. *Computers in Human Behavior, 54*, 170-179. https://doi.org.org/10.1016/j.chb.2015.07.045

Hanus, M.D. & Fox, J. (2015). Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort,

and academic performance. *Computer Education. 80*, 152–161. https://doi.org/10.1016/j.compedu.2014.08.019

Hassan, M. A., Habiba, U., Majeed, F., & Shoaib, M. (2019). Adaptive gamification in e-learning based on students' learning styles. *Interactive Learning Environments*, 1–21. https://doi.org/10.1080/10494820.2019.1588745

Hew, K.F., Huang, B., Chu, K.W.S., & Chiu, D.K.W. (2016). Engaging Asian students through game mechanics: Findings from two experiment studies. *Computers & Education. 92-93*, 221-236. https://doi.org/10.1016/j.compedu.2015.10.010

Hojjat, D., Hossein, D., & Behrouz, M. (2019). A framework for identifying the proper mechanics of computer games for teaching cognitive topics. *Iranian Journal of Cultural Research. 12*(1), 27-58. https://doi.org/10.22035/jicr.2019.378

Holbrey, C.E. (2020). Kahoot! Using a game-based approach to blended learning to support effective learning environments and student engagement in traditional lecture theatres. *Technology, Pedagogy and Education. 29*(2), 191-202. https://doi.org.org/10.1080/1475939X.2020.1737568

Housel, D.A. (2019). When co-occurring factors impact adult learners: Suggestions for instruction, preservice training, and professional development. *Adult Learning. 31*(1), 6-16. https://doi.org/10.1177/1045159519849910

Houser, J. (2015). *Nursing research: Reading, using, and creating evidence.* (3rd ed.) Jones and Bartlett Learning.

Howard, L.W., Tang, T.L.P., & Austin, M.J. (2015). Teaching critical thinking skills: Ability, motivation, intervention, and the Pygmalion effect. *Journal of Business*

Ethics, 128(1), 133-147. https://doi.org/10.1007/s10551-014-2084-0

Huang, B., & Hew, K. F. (2018). Implementing a theory-driven gamification model in higher education flipped courses: Effects on out-of-class activity completion and quality of artifacts. *Computers & Education, 125*, 254–272. https://doi.org/10.1016/j.compedu.2018.06.018

Huang, B., Hew, K. F., & Lo, C. K. (2018). Investigating the effects of gamification-enhanced flipped learning on undergraduate students' behavioral and cognitive engagement. *Interactive Learning Environments*, 1–21. https://doi.org/10.1080/10494820.2018.1495653

Hull, E. (2017). Conducting research in your own backyard. *Teaching and Learning in Nursing. 12*(4), 232-233. https://doi.org/10.1016/j.teln.2017.06.011

Husserl, E. (2017). *Ideas: General introduction to pure phenomenology.* Martino Fine Books. (Original work published 1931)

Hwang, G.J. & Chen, C.H. (2017). Influences of an inquiry-based ubiquitous gaming design on students' learning achievements, motivation, behavioral patterns, and tendency towards critical thinking and problem solving. *British Journal of Educational Technology. 48*(4), 920-910. https://doi.org/10.1111/bjet.12464

Jabbar, A.I.A. & Felicia, P. (2015). Gameplay engagement and learning in game-based learning: A systematic review. *Review of Educational Research. 85*(4), 740-779. http://dx.doi.org/10.3102/0034654315577210

Jackson, C., Vaughan, D. R., & Brown, L. (2018). Discovering lived experiences through descriptive phenomenology. *International Journal of Contemporary Hospitality*

Management, 30(11), 3309-3325. https://doi.org/10.1108/IJCHM-10-2017-0707

Janghorban, R., Roudsari, R.L., & Taghipour, A. (2014). Skype interviewing: The new generation of online synchronous interview in qualitative research. International *Journal of Qualitative Studies in Health and Well-Being. 9,* 1-3. http://dx.doi.org/10.3402/qhw.v9.24152

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

Johnston, B., Boyle, L., MacArthur, E., Manion, B. F. (2013). The role of technology and digital gaming in nurse education. *Nursing Standard. 27*(28), 35-38. https://rcni.com/nursingstandard

Joyce, R. Verduin, M., LaRowe, S., Bowers, C., & Cannon-Bowers, J. (2009). Lessons learned: Adult learners and serious game design. *Journal of Instruction Delivery Systems. 23*(3), 6-16. http://www.salt.org/

Kafai, Y.B. & Burke, Q. (2015). Constructionist gaming: Understanding the benefits of making games for learning. *Educational Psychologist. 50*(4), 313-334. https://doi.org:10.1080/00461520.2015.1124022

Kang, Y-S. & Chang, Y-J. (2019) Using a motion-controlled game to teach four elementary school children with intellectual disabilities to improve hand hygiene. *Journal of Applied Research in Intellectual Disabilities, 32*(4), 942-951. https://doi.org:10.1111/jar.12587

Kasworm, C.E. (2018). Adult students: A confusing world in undergraduate higher

education. *The Journal of Continuing Higher Education. 66*(2), 77-87. https://doi.org/10.1080/07377363.2018.1469077

Kapp, K. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education.* Pfeiffe.

Kapralos, B., Hogan, M., Pribetic, A.I., & Dubrowski, A. (2011). Virtual simulations and serious games in a laptop-based university: Gauging faculty and student perceptions. *Interactive Technology and Smart Education. 8*(2), 106-119. https://doi.org/10.1108/17415651111141821

Kavanagh, J.M. & Szweda, C. (2017). A crisis in competency: The strategic and ethical imperative to assessing new graduate nurses' clinical reasoning. *Nursing Education Perspectives. 38*(2), 57-62. https://doi.org/10.1097/01.NEP.0000000000000112

Kaymakamoğlu, S.E. (2017). Teachers' beliefs, perceived practice and actual classroom practice in relation to traditional (teacher-centered) and Constructivist (learner-centered) teaching (Note 1). *Journal of Education and Learning*, *7*(1), 29-37. http://doi.org/10.5539/jel.v7n1p29

Keiner, L.E. & Gilman, C.S. (2015). Implementation of interactive engagement teaching methods in a physical oceanography course. *Journal of College Science Teaching. 45*(2), 70-77. https://doi.org:10.2505/4/jcst15_045_02_70

Kim, E. (2018). Effect of simulation-based emergency cardiac arrest education on nursing students' self-efficacy and critical thinking skills: Roleplay versus lecture. *Nurse Education Today. 61*, 258-263. https://doi.org/10.1016/j.nedt.2017.12.003

Kim, H., Sefcik, J.S., & Bradway, C. (2017). Characteristics of qualitative descriptive studies: A systematic review. *Research in Nursing & Health. 40*(1), 23-42. https://doi.org:10.1002/nur.21768

Kinder, F.D. & Kurz, J.M. (2018). Gaming strategies in nursing education. *Teaching and Learning in Nursing. 13*(4), 212-214. https://doi.org/10.1016/j.teln.2018.05.001

King, E., Turpin, M., Green, W., & Schull, D. (2019). Learning to interact and interacting to learn: A substantive theory of clinical workplace learning for diverse cohorts. *Advances in Health Sciences Education. 24*, 691-706. https://doi.org.org/10.1007/s10459-019-09891-8

Knowles, M. (1973). The adult learner: A neglected species. *American Society for Training and Development*, Madison, Wisconsin. https://files.eric.ed.gov/fulltext/ED084368.pdf

Knowles, M. (2010). Adult learning processes: Pedagogy and andragogy. *Religious Education. 72*(2), 202-211. https://doi.org/10.1080/0034408770720210

Knowles, M.S., Holton III, E.F., & Swanson, R.A. (2015). *The adult learner: The definitive classic in adult education and human resource development.* Routledge.

Koivisto, J.M., Multisilta, J., Niemi, H., Katajisto, J., & Eriksson, E. (2016). Learning by playing: A cross-sectional descriptive study of nursing students' experiences of learning clinical reasoning. *Nurse Education Today. 45*, 22-28. https://doi.org:10.1016/j.nedt.2016.06.009

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

Kolb, D.A. (2015). *Experiential learning: Experience as a source of learning and development.* (2nd ed.). Pearson Education.

Kolb, A.Y. & Kolb, D.A. (2017). Experiential learning theory as a guide for experiential educators in higher education. *Experiential Learning & Teaching in Higher Education. 1*(1), 7-44. https://nsuworks.nova.edu/elthe/vol1/iss1/7

Kuo, M-S. & Chuang, T-Y. (2016). How gamification motivates visits and engagement for online academic dissemination - An empirical study. *Computers in Human Behavior. 55,* 16-27. https://doi.org/10.1016/j.chb.2015.08.025 0747-5632

Kyaw, B.M., Posadzki, P., Paddock, S., Car, J., Campbell, J., & Car, L.T. (2019). Effectiveness of digital education on communication skills among medical students: Systematic review and meta-analysis by the digital health education collaboration. *Journal of Medical Internet Research. 21*(8), 1-14. https://doi.org/10.2196/12967

Kyaw, B.M., Saxena, N., Posadzki, P., Vseteckova, J., Nikolaou, C.K., George, P.P., Divakar, U., Masiello, I., Kononowicz, A.A., Zary, N., & Car, L.T. (2019). Virtual reality for health professions education: Systematic review and meta-analysis by the digital health education collaboration. *Journal of Medical Internet Research. 21*(1), 1-13. https://doi.org/10.2196/12959

Lam, J.T., Gutierrez, M.A., Goad, J.A., Odessky, L., & Bock, J. (2019). Use of virtual games for interactive learning in a pharmacy curriculum. *Currents in Pharmacy & Learning. 11*(1), 51-57. https://doi.org/10.1016/j.cptl.2018.09.012

Lambert, V.A. & Lambert, C.E. (2012). Qualitative descriptive research: An acceptable

design. *Pacific Rim International Journal of Nursing Research. 16*(4), 255-256. https://www.tci-thaijo.org/

Laski, E.V. & Siegler, R.S. (2014). Learning from number board games: You learn what you encode. *Developmental Psychology. 50*(3), 853-864. https://doi.org/10.1037/a0034321

Lewis, C.E., Chen, D.C., & Relan, A. (2018). Implementation of a flipped classroom approach to promote active learning in the third-year surgery clerkship. *The American Journal of Surgery. 215*(2), 298-303. https://doi.org/10.1016/j.amjsurg.2017.08.050

Lewis, D.J., Saydak, S.J., Mierzwa, I.P., & Robinson, J.A. (1989). Gaming: A teaching strategy for adult learners. *Journal of Continuing Education in Nursing. 20*(2), 80-84. http://www.slackinc.com/

Lieberoth, A. (2015). Shallow gamification – Testing psychological effects of framing an activity as a game. *Games and Culture. 10*(3), 249-268. https://doi.org/10.1177/1555412014559978

Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic inquiry.* SAGE

Lindblom, K. (2018). Gamify literacy: Boost comprehension, collaboration and learning. *English Journal. 107*(6), 110-112. https://www-proquest-com.ezp.waldenulibrary.org/docview/2076932331/abstract/24AACB03117F428CPQ/1?accountid=14872

Loeng, S. & Omwami, E. (2018). Various ways of understanding the concept of andragogy. *Cogent Education. 5*(1),

https://doi.org/10.1080/2331186X.2018.1496643

Lukita, H.B., Sujana, Y., & Budiyanto, C.W. (2017). Can interactive learning improve learning experience? A systematic review of the literature. *Advances in Social Science, Education and Humanities Research. 158*, 343-348. https://doi.org/10.2991/ictte-17.2017.56

Mackavey, C. & Cron, S. (2019). Innovative strategies: Increased engagement and synthesis in online advanced practice nursing education. *Nurse Education Today. 76*, 85-88. https://doi.org/10.1016/j.nedt.2019.01.010

Mahbub, M.A. (2019). Promoting English grammar instruction in a vocational high school (VHS) classroom through snakes and ladders game. *Aksara. 31*(1), 165-179. https://doi.org.10.29255/aksara.v31i1.212.165-179

Marlowe, B.A. & Page, M.L. (2005). *Creating and sustaining the constructivist classroom* (2nd ed.). Corwin Press.

Merriam, S.B. & Bierema, L.L. (2014). *Adult learning: Linking theory and practice.* Jossey-Bass.

Maraffi, S., Sacerdoti, F.M., & Paris, E. (2017). Learning on gaming: A new digital game based learning approach to improve education outcomes. *US-China Education Review. 7*(9), 421-432. https://doi.org/10.17265/2161-623X/2017.09.003

Mathew, L. (2017). Using Wikis to build nursing concept maps. *Computers, Informatics, Nursing: CIN. 35*(2), 63-66. https://doi.org/10.1097/CIN.0000000000000338

Mawhirter, D.A., & Garafalo, P.F. (2016). Expect the unexpected: Simulation games as a teaching strategy. *Clinical Simulation in Nursing. 12*, 132-136.

http://dx.doi.org/10.1016/j.ecns.2015.12.009

McCall, R.C., Padron, K., & Andrews, C. (2018). Evidence-based instructional strategies for adult learners: A review of the literature. *Codex: The Journal of the Louisiana Chapter of the ACRL. 4*(4), 29-47. https://academicworks.cuny.edu/bx_pubs/43

McDonald, S.D. (2017). Enhanced critical thinking skills through problem-solving games in secondary schools. *Interdisciplinary Journal of E-Skills and Lifelong Learning. 13*, 79-96. http://www.ijello.org/Volume13/IJELLv13p079-096McDonald3482.pdf

McEnroe-Petitte, D. & Farris, C. (2020). Using gaming as an active teaching strategy in nursing education. *Teaching and Learning in Nursing. 15*, 61-65. https://doi.org/10.1016/j.teln.2019.09.002

McEwen, M. & Wills, E.M. (2014). *Theoretical basis for nursing.* (4th ed.). Wolters Kluwer Health.

Meguid, E.A. & Collins, M. (2017). Students' perceptions of lecturing approaches: Traditional versus interactive teaching. *Advances in Medical Education and Practice. 8*, 229-241. https://doi.org/10.2147/AMEP.S131851

Meshram, S. (2015). Constructive learning theory: Exploring the possibilities for this interactive teaching learning methods in physiotherapy education. *Journal of Novel Physiotherapies. 5*(2), 1-5. http://dx.doi.org/10.4172/2165-7025.1000258

Meyer, G. & Shatto, B. (2018). Resilience and transition to practice in direct entry nursing graduates. *Nurse Education in Practice. 28*, 276-279. https://doi.org/10.1016/j.nepr.2017.10.008

Mikami, Y. (2020). Goal setting and learners' motivation extensive reading: Forming a virtuous cycle. *Reading in a Foreign Language, 32*(1), 28-48. https://doi.org/10125/66575

Miller, A. (2015). Games centered approaches in teaching children & adolescents: Systematic review of associated student outcomes. *Journal of Teaching in Physical Education. 34*(1); 36–58. https://doi.org/10.1123/jtpe.2013-0155

Miller, C.J. & Metz, M.J. (2014). A comparison of professional-level faculty and student perceptions of active learning: Its current use, effectiveness, and barriers. *Advances in Physiology Education. 38*(3), 246-252. https://doi.org/10.1152/advan.00014.2014

Morse, C.J., Fey, M., Kardong-Edgren, S., Mullen, A., Barlow, M., & Barwick, S. (2019). The changing landscape of simulation-based education. *AJN: American Journal of Nursing. 119*(8), 42-48. https://doi.org/0.1097/01.NAJ.0000577436.23986.81

Moustakas, C. (1994). Phenomenological research methods. Sage Publications.

Nasiri, M., Amirmohseni, L., Mofidi, A., Paim, C.P.P., Shamloo, M.B.B., & Asadi, M. (2019). Educational games developed for students in perioperative nursing: A systematic review and appraisal of the evidence. *Nurse Education in Practice. 37*, 88-96. https://doi.org/10.1016/j.nepr.2019.05.002

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

National League for Nursing. (2015). A vision for teaching with simulation: A living

document from the National League for Nursing NLN Board of Governors. www.nln.org

National League for Nursing. (2020). NLN Faculty Census Survey of Schools of Nursing Academic Year 2018-2019: Executive Summary. www.nln.org

Natow, R.S. (2019). The use of triangulation in qualitative studies employing elite interviews. *Qualitative Research. 20*(2). https://doi.org/10.1177/1468794119830077

Neubauer, B.E., Witkop, C.T., & Varpio, L. (2019). How phenomenology can help us learn from the experiences of others. *Perspectives on Medical Education. 8*(2), 90-97. https://doi.org:10.1007/s40037-019-0509-2

Orte, A., Ruedas, M.J., Cruz, O., Conejo, A., & Paredes, J.M. (2019). Gamification in the classroom: Mobile phones and on-line quizzes. *Farma Journal. 4*(1), 103. http://revistas.usal.es

Owens R.A. (2019). Exploring an innovative course delivery method for accelerated BSN students. *International Journal of Nursing Education Scholarship. 16*(1). https://doi.org:10.1515/ijnes-2019-0011

Oyelana, O., Martin, D., Scanlan, J., & Temple, B. (2018). Learner-centred teaching in a non-learner-centred world: An interpretive phenomenological study of the lived experience of clinical nursing faculty. *Nurse Education Today. 67*, 118-123. https://doi.org/10.1016/j.nedt.2018.05.012

Page, L., Hullett, E.M. & Boysen, S. (2020). Are you a robot? Revitalizing online learning and discussion boards for today's modern learner. *The Journal of*

Continuing Higher Education. 68(2), 128-136. https://doi.org/10.1080/07377363.2020.1745048

Patton, M.Q. (2014). *Qualitative research & evaluation methods.* (4th ed.). SAGE Publications, Inc.

Petri, G. & von Wangenheim, C.G. (2016). How to evaluate educational games: A systematic literature review. *Journal of Universal Computer Science. 22*(7), 992-1021. https://www.researchgate.net/publication/307175665

Pettit, R.K., McCoy, L., Kinney, M., & Schwartz, F.N., (2015). Student perceptions of gamified audience response system interactions in large group lectures and via lecture capture technology approaches to teaching and learning. *BMC Medical Education*, *15*(92). 1-9. https://doi.org/10.1186/s12909-015-0373-7

Phuong, H.Y., Nguyen, T., & Nguyen, P. (2017). The impact of board games on EFL learners' grammar retention. *IOSR Journal of Research & Method in Education, 7*(3), 61–66. https://doi.org/10.9790/7388-0703026166

Piaget, J. (1968). *Six psychological studies.* New York City, NY: Vintage Books.

Polin, L. (2017). A constructivist perspective on games in education. In *Constructivist Education in an Age of Accountability*. https://doi.org/10.1007/978-3-319-66050-9_9

Popil, I., Thompson, D.D., Billings, D.M., & Kowalski, K. (2015). A game-based strategy for the staff development of home health care nurses. *Journal of Continuing Education in Nursing. 46*(5), 205-207. https://doi.org.10.3928/00220124-20150420-14

Probst, B. (2016). Researcher as participant in qualitative inquiry. *Qualitative Research Journal. 16*(2), 205-207. https://doi.org/10.3928/00220124-20150420-14

Proctor, D. & Justice, L.J. (2016). A future focus of gaming: Soft skills. Handbook of *Research on Gaming Trends in P-12 Education.* 1-20. https://doi.org:10.4018/978-1-4666-9629-7.ch027

Pront, L., Müller, A., Koschade, A., & Hutton, A. (2018). Gaming in nursing education: A literature review. *Nursing Education Perspectives. 39*(1), 28-38. https://doi.org:10.1097/01.NEP.0000000000000251

Qualters, D.M., Isaacs, J.A. Culinane, T.P., Laird, J., & McDonald, A. (2008). A game approach to teach environmentally benign manufacturing in the supply chain. *International Journal for the Scholarship of Teaching and Learning. 2*(2), 1-23. https://doi.org:10.20429/ijsotl.2008.020214

Raheim, M., Magnussen, L.H., Sekse, R.J.T., Lunde, A., Jacobsen, T., & Blystad, A. (2016). Researcher-researched relationship in qualitative research: Shifts in positions and researcher vulnerability. *International Journal of Qualitative Studies in Health and Well-Being. 11*, 1-11. https://doi.org/10.3402/qhw.v11.30996

Ravitch, S.M. & Carl, N.M. (2016). *Qualitative research – Bridging the conceptual, theoretical, and methodological.* Sage Publications, Inc.

Reyes-Chua, E. & Lidawan, M.W. (2019). Games as effective language classroom strategies: A perspective from English major students. *European Journal of Foreign Language Teaching. 4*(1), 1-14. http://dx.doi.org/10.46827/ejfl.v0i0.2366

Roberts, L. (2017). Research in the real world: Improving adult learners web search and evaluation skills through motivational design and problem-based learning. *College & Research Libraries. 78*(4), 527-551. https://doi.org/10.5860/crl.78.4.527

Rogers, C. (1956). *On becoming a person: A therapist's view of psychotherapy.* Houghton Mifflin Harcourt.

Royce, M.A. & Newton, S.E. (2007). How gaming is used as an innovative strategy for nursing education. *Nursing Education Perspectives. 28*(5), 263-267. http://nln.org

Rubin, H.J. & Rubin, I.S. (2012). *Qualitative interviewing: The art of hearing data.* (3rd ed.). SAGE Publications, Inc.

Sabatino, L. (2014). Improving writing literacies through digital gaming literacies: Facebook gaming in the composition classroom. *Computers and Composition. 32*, 163-173. https://10.1080/00098655.2019.1645636

Saldaña, J. (2016). *The coding manual for qualitative researchers.* (3rd ed.). Sage Publications, Inc.

Sanchez, L.M. & Cooknell, L.E. (2017). The power of 3: Using adult learning principles to facilitate patient education. *Nursing 2020. 47*(2), 17-19. https://doi.org/10.1097/01.NURSE.0000511819.18774.85

Sanchez-Martin, J. & Davila-Acedo, M.A. (2017). Just a game? Gamifying a general science class at university: Collaborative and competitive work implications. *Thinking Skills and Creativity, 26,* 51–59. https://doi:org/10.1016/j.tsc.2017.05.003

Sardone, N.B. & Devlin-Scherer, R. (2016). Let the (board) games begin: Creative ways

to enhance teaching and learning. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas. 89*(6), 215-222. https://doi.org/10.1080/00098655.2016.1214473

Saunders, A., Green, R., & Cross, M. (2017). Making the most of person-centered education by integrating flipped and simulated teaching: An exploratory study. *Nurse Education in Practice. 27*, 71-77. https://doi.org:10.1016/j.nepr.2017.08.014

Saxena, N., Kyaw, B., Vseteckova, J., Dev, P., Paul, P., Lim, K.T., Kononowicz, A, Masiello, I., Tudor Car, L., Nikolaou, C.K., Zary, N., Car, J.T. (2016). Virtual reality environments for health professional education. *Cochrane Database Systematic Review. 2*, 1-12. https://doi.org/10.1002/14651858.CD012090

Schenck, J. & Cruickshank, J. (2014). Evolving Kolb: Experiential education in the age of neuroscience. *Journal of Experiential Education. 38*(1), 73-95. https://doi.org/10.1177/1053825914547153

Severengiz, M., Seliger, G., & Kruger, J. (2020). Serious game on factory planning for higher education. *Procedia Manufacturing. 43*, 239-246. https://doi.org.org/10.1016/j.promfg.2020.02.148

Sevy-Biloon, J. (2017). Different reasons to play games in an English language class. *Journal of Education and Training Studies, 31*(1), 84–93. https://doi.org/10.11114/jets.v5il.1967

Sheehan, D. Jowsey, T., Parwaiz, M., Birch, M., Seaton, P., Shaw, S., Duggan, A., & Wilkinson, T. (2017). Clinical learning environments: Place, artefacts and rhythm.

ASME: Medical Education. 51(10), 1049-1060. https://doi.org.org/10.1111/medu.13390

Shute, V. J., Ventura, M., & Ke, F. (2015). The power of play: The effects of Portal 2 and Lumosity on cognitive and noncognitive skills. *Computers & Education, 80*, 58-67. https://doi.org.org/10.1016/j.compedu.2014.08.013

Silva, R., Rodrigues, R., & Leal, C. (2019). Play it again: How game-based learning improves flow in accounting and marketing education. *Accounting Education. 28*(5), 484-507. https://doi.org.org/10.1080/09639284.2019.1647859

Silvia Neves da Nova Fernandes, C. & Angelo, M. (2018). Games-playing strategies used in nursing – An integrative review. *Avances en Enfermeria. 36*(1), 1-25. https://doi.org:10.15446/av.enferm.v36n1.63553

Sitterding, M.C., Raab, D.L., Saupe, J.L., & Iswrael, K.J. (2019). Using artificial intelligence and gaming to improve new nurse transition. *Nurse Leader. 17*(2), 125-130. https://doi.org:10.1016/j.mnl.2018.12.013

Southgate, E., Budd, J., & Smith, S. (2017). Press play for learning: A framework to guide serious computer game use in the classroom. *Australian Journal of Teacher Education. 42*(7), 1-13. https://eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=EJ1151153

Soewardi, H. & Perdana, M.F. (2019). The usability of the educational board game for learning English. *Broad Exposure to Science and Technology. 673*. 1-8. https://doi.org/10.1088/1757-899X/673/1/012076

Spies, C., Seale I., & Botma, Y. (2015). Adult learning: What nurse educators need to

know about mature students. *Curationis. 38*(2), 1-7. https://doi.org:10.4102/curationis.v38i2.1494

Stacy, I. & Bennett, C.B. (2017). From reproduction to construction: Bhutanese higher education students' attitudes towards learning. *Cogent Education. 4*(1), 1-23. https://doi.org/10.1080/2331186X.2015.1094847

Stewart, D. L. (2010). Researcher as instrument: Understanding "shifting" findings in constructivist research. *Journal of Student Affairs Research and Practice, 47*(3), 291–306. https://doi.org/10.2202/1949-6605.6130

Stieler-Hunt, C. & Jones, C.M. (2015). Educators who believe: Understanding the enthusiasm of teachers who use digital games in the classroom. *Research in Learning Technology. 23*, 1-14. https://doi.org:10.3402/rlt.v23.26155

Strickland, H.P., Kaylor, S.K., & Sara, K. (2016). Bringing your A-game: Educational gaming for student success. *Nurse Education Today. 40*, 101-103. https://doi.org:10.1016/j.nedt.2016.02.014

Subhash, S. & Cudney, E.A. (2018). Gamified learning in higher education: A systematic review of the literature. *Computers in Human Behavior. 87*, 192-206. https://doi.org.org/10.1016/j.chb.2018.05.028

Sun, Q. (2019). Conspiring to change the learning environment for adult learners in higher education. *Adult Learning. 30*(2), 89-90. https://doi.org/10.1177/1045159519834959

Sung, H-Y., Hwang, G-J., Wu, P-H., & Lin, D-Q. (2018). Facilitating deep-strategy behaviors and positive learning performances in science inquiry activities with a

3D experiential gaming approach. *Interactive Learning Environments. 26*(8), 1053-1073. https://doi.org:10.1080/10494820.2018.1437049

Sutton, J. & Austin, Z. (2015). Qualitative research: Data collection, analysis, and management. *Canadian Journal of Hospital Pharmacy*. *68*(3), 226-231. https://doi.org/10.4212/cjhp.v68i3.1456

Taber, K.S. (2016). Constructivism in education: Interpretations and criticisms from science education. In *Handbook of Research on Applied Learning Theory and Design in Modern Education*. https://doi.org/10.4018/978-1-4666-9634-1.ch006

Tafor, P., Geier, S., Ogunmuyiwa, E.N., & Addo-Tenkorang, R. (2016). Higher education involving students: A literature research in constructivism, connectivism and Experiential learning perspective. Proceedings of ICERI2016 Conference 14th-16th. 852-859. https://scholar.google.com/scholar?as_ylo=2016&q=+constructivism+higher+education&hl=en&as_sdt=0,10&as_vis=1

Tan, C., Yue, W-G., & Fu, Y. (2017). Effectiveness of flipped classrooms in nursing education: Systematic review and meta-analysis. *Chinese Nursing Research. 4*(4), 192-200. https://doi.org./10.1016/j.cnre.2017.10.006

Taylor, D.C.M. & Hamdy, H. (2013) Adult learning theories: Implications for learning and teaching in medical education. *Medical Teacher, 35*(11), 1561-1572. https://doi.org:10.3109/0142159X.2013.828153

Teall, A.M., Graham, M., Jenkins, N., Ali, A., Pryba, J., & Overcash, J. (2019). Faculty perceptions of engaging students in active learning to address implicit bias using

videos exemplifying the prenatal visit of a lesbian couple. *Journal of Transcultural Nursing. 30*(6), 616-626. https://doi.org:10.1177/1043659619828109

Thiede, B., Posselt, G., Kauffeldb, S., & Herrmann, C. (2017). Enhancing learning experience in physical action-orientated learning factories using a virtually extended environment and serious gaming approaches. *Procedia Manufacturing, 9*, 238–244. https://doi.org/10.1016/j.promfg.2017.04.042

Trajkovik, V., Malinovski, T., Vasileva-Stojanovska, T., & Vasileva, M. (2018). Traditional games in elementary school: Relationships of student's personality traits, motivation and experience with learning outcomes. *PLOS One. 13*(8), 1-16. https://doi.org/10.1371/journal.pone.0202172

Troussas, C., Krouska, A., & Sgouropoulou, C. (2020). Collaboration and fuzzy-modeled personalization for mobile game-based learning in high education. *Computers & Education. 144*, 1-13. https://doi.org/10.1016/j.compedu.2019.103698

Tsay, C.H., Kofinas, A., & Luo, J. (2018). Enhancing student learning experience with technology-mediated gamification: An empirical study. *Computers & Education, 121*, 1–17. https://doi.org/10.1016/j.compedu.2018.01.009

Usher, W., Edwards, A., de Meyrick, B., & Gritter, K. (2015). Utilizing educational theoretical models to support effective physical education pedagogy. *Cogent Education, 2*(1), 1-10. https://doi.org/10.1080/2331186X.2015.1094847

Valen, K., Holm, A.L., Jensen, K.T., & Grov, E.K. (2019). Nursing students; perception on transferring experiences in palliative care simulation to practice. *Nurse*

Education Today. 77, 53-58. https://doi.org:10.1016/j.nedt.2019.03.007

van der Heijden, H.R.M.A., Geldens, J.J.M., Beijaard, D., &Popeijus, H.L. (2015). Characteristics of teachers as change agents. *Teachers and Teaching: Theory and Practice. 21*(6), 681-699. https://doi.org/10.1080/13540602.2015.1044328

Verkuyl, M., Atack, L., Mastrilli, P., & Romaniuk, D. (2016). Virtual gaming to develop students' pediatric nursing skills: A usability test. *Nurse Education Today. 46,* 81-85. https://doi.org:10.1016/j.nedt.2016.08.024

Verkuyl, M. & Hughes, M. (2019). Virtual gaming simulation in nursing education: A mixed methods study. *Clinical Simulation in Nursing. 29*(C), 9-14. https://doi.org:10.1016/j.ecns.2019.02.001

Vernadakis, N., Papastergious, M., Zetou, E., & Antoniou, P. (2015). The impact of an exergame-based intervention on children's fundamental motor skills. *Computers & Education, 83,* 90-102. https://doi.org.org/10.1016/j.compedu.2015.01.001

Ward, M., Knowlton, M.C. & Laney, C.W. (2018). The flip side of traditional nursing education: A literature review. *Nurse Education in Practice. 29,* 163-171. https://doi.org.org/10.1016/j.nepr.2018.01.003

Weiss, J.A. (2018). Creative gaming: A new approach to engage students in pathophysiology. *The Journal for Nurse Practitioners. 14*(9), 177-183. https://doi.org:10.1016/j.nurpra.2018.08.002

Weiss, R.S. (1994). *Learning from strangers: The art and method of qualitative interview studies.* The Free Press.

Wiggins, B.E. (2016). An overview and study on the use of games, simulations, and

gamification in higher education. *International Journal of Game-Based Learning. 6*(1). https://doi.org/10.4018/IJGBL.2016010102

Williams, M. & Moser, T. (2019). The art of coding and thematic exploration in qualitative research. *International Management Review. 15*, 45. https://doi.org/www.semanticscholar.org/

Williamson, K.M., Land, L., Butler, B., & Ndahi, H.B. (2004). A structured framework for using games to teach mathematics and science in K-12 classrooms. *The Technology Teacher, 64*, 15-18. www.eric.ed.gov/?id=EJ708271

Woods, C., West, C., Mills, J., & Usher, K. (2015). Undergraduate student nurses' self-reported preparedness for practice. *Collegian*. *22*(4), 359-368. https://doi.org:10.1016/j.colegn.2014.05.003

Wu, W-H., Hsiao, H-C., Wu, P-L., Lin, C-H., & Huang, S-H. (2012). Investigating the learning-theory foundations of game-based learning: A meta-analysis. *Journal of Computer Assisted Learning. 28*(3), 265-279. https://doi.org:10.1111/j.1365-2729.2011.00437.x

Wu, M.L., Richards, K., & Saw, G.K. (2014). Examining a massive multiplayer online role-playing game as a digital game-based learning platform. *Computers in the Schools. 31*(1-2), 65-83. https://doi.org:10.1080/07380569.2013.878975

Wurdinger, S. & Allison, P. (2017). Faculty perceptions and use of experiential learning in higher education. *Journal of e-Learning and Knowledge Society, 13*(1), https://www.learntechlib.org/p/188130/

Xu, Z. & Shi, Y. (2018). Application of constructivist theory in flipped classroom – Take

college English teaching as a case study. *Theory and Practice in Language Studies. 8*(7). http://dx.doi.org/10.17507/tpls.0807.21

Yaccob, N.S. & Yunus, M.M. (2019). Language games in teaching and learning English grammar: A literature review. *Arab World English Journal. 10*(1), 209-217. https://eric.ed.gov/?id=EJ1287782

Zainuddin, Z. (2018). Students' learning performance and perceived motivation in gamified flipped-class instruction. *Computers & Education. 126*(2018), 75-88. https://doi.org/10.1016/j.compedu.2018.07.003

Zainuddin, Z., Shujahat, M., Haruna, H., & Chu, S.K.W. (2020). The role of gamified e-quizzes on student learning and engagement: An interactive gamification solution for a formative assessment system. *Computers & Education. 145*, 1-15. https://doi.org/10.1016/j.compedu.2019.103729

Zhao, X. (2014). The process of knowledge internationalization and the design of teaching mode in flipped classroom. *Modern Distance Education Research. 2*, 55-61. https://www.oriprobe.com/journal

Zhang, J. (2013). The application of gamification learning concept in flipped classroom teaching. *Journal of Distance Education, 1*, 73-78. https://www.tandfonline.com/

Zhang, J. & Cui, Q. (2018). Collaborative learning in higher nursing education: A systematic review. *Journal of Professional Nursing. 34*(5), 378-388. https://doi.org/10.1016/j.profnurs.2018.07.007

Zirawaga, V.S., Olusanya, A.I., & Makudu, T. (2017). Gaming in education: Games as a support tool to teach history. *Journal of Education and Practice. 8*(15), 55-64.

http://eric.ed.gov

Appendix A: Informed Consent

Consent Form

You are invited to take part in a research study about the use of games and gaming in nursing education. Specifically, your expertise is sought to better define and understand nursing faculty experiences with games and gaming in all forms of nursing education, including classroom, skills lab and simulation, as well as in the clinical environment. The researcher is inviting nursing faculty in Florida or from within the Walden Faculty Pool. Candidates will have at least 1 full year of nursing education experience to participate in the study. I was able to obtain your name and contact information via professional connection (we are colleagues) or via your leadership. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is be conducted by a researcher named Laura Dana, who is a PhD in Nursing Education candidate at Walden University.

Background Information:

The primary purpose of this study is to explore the lived experiences of associate degree nursing faculty who utilize games and gaming as a teaching strategy. More specifically, this study will describe games and gaming usage from the faculty perspective, including how a game is chosen, how a game is assessed as being effective, and what motivation inspires game use within the instructional environment of associate degree nursing education.

Procedures:

If you agree to be in this study, you will be asked to:

- participate in a face-to-face, one-on-one, audio-recorded interview lasting approximately one hour; and
- verify content of transcribed interview transcript, if desired.

Here are some sample questions:

- Tell me about the importance of games in nursing education.
- Please explain a learning experience when you utilized games or gaming.
- Describe skills being assessed while students are involved in a game or gaming.

Voluntary Nature of the Study:

This study is voluntary. You are free to accept or turn down the invitation. No one from Walden University nor (name of institution) will treat you differently if you decide not to be in the study. If you decide to be in the study now, you can still change your mind later. You may stop at any time.

Risks and Benefits of Being in the Study:
Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as fatigue during the interview. Being in this study would not pose risk to your safety or wellbeing.

Benefits of the study include adding to the body of nursing education research. As an individual with first-hand experience with this phenomenon, you will be involved with exploring the lived experiences of nursing faculty who utilize games and gaming in nursing education. With increased knowledge of the faculty experience with this phenomenon, positive social change can occur. Specifically, you will be assisting in informing changes in nursing education, academic administration, nursing practice, and policy reformation. These informed changes have the potential to increase problem-solving skills, and knowledge-base, which ultimately improves care at the bedside.

Payment:
There is no financial compensation for participation in this study.

Privacy:
Reports coming out of this study will not share the identities of individual participants. Details that might identify participants, such as the location of the study, also will not be shared. The researcher will not use your personal information for any purpose outside of this research project. Only the researcher and members of the dissertation committee will have access to deidentified study data. Electronic data will be kept on a password protected hard drive in a locked office. Paper data will be stored in a locked file cabinet in a locked office. Demographic data of participants will be stored in separate files from the remainder of the study data. Data, both paper and electronic, will be saved for seven years then shredded or deleted permanently, respectively.

Contacts and Questions:
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via (407) 758-0878 or laura.dana@waldenu.edu. If you want to talk privately about your rights as a participant, you can call the Research Participant Advocate at my university at (612) 312-1210. Walden University's approval number for this study is (insert approval number here) and it expires on (enter expiration date here).

The researcher will give you a copy of this form to keep.

Obtaining Your Consent:
If you feel you understand the study well enough to make a decision, please indicate your consent by signing below.

Printed Name of Participant _____

Date of Consent _____

Participant's Signature _____
Researcher's Signature _____

Appendix B: Recruitment Email

Date:

Dear (Program Director/Faculty Member/Organization Leader):

I am Laura Dana, a PhD candidate in Nursing Education at Walden University. I write to you as I am conducting an original research study exploring faculty use of games and gaming in undergraduate nursing education. The purpose of this study is to explore a knowledge gap surrounding the associate degree nurse faculty lived experience with the use of games and gaming throughout nursing education. The implications for positive social change through this research are increasing student knowledge and skill level, as well as improving confidence and accuracy.

I humbly request your permission and assistance to solicit participants through your (program/organization). If you are willing to assist in access to participants for my dissertation study, please provide required information for whom to contact to gain approval to conduct my research at your institution. If I gain approval, your additional assistance in distributing the attached flyer to faculty members matching inclusion criteria would also be welcome.

Participants in the study should have more than 1 year of nursing instruction experience at the associate degree level of education. Candidates should be either from the state of Florida or from within the Walden Faculty Pool. I will travel to meet selected participants for a face-to-face, one-on-one interview lasting approximately one hour, if possible. However, based on participant choice and the state of our world, i.e. pandemic and travel restrictions, interviews may also be completed via Zoom or a similar virtual platform. The interviews will be audio/video-taped then transcribed. All information will be kept confidential and secured. Deidentified information will only be shared with Walden University dissertation committee members as appropriate for the completion of the dissertation process.

Thank you in advance for your assistance in generating research to fill this important knowledge gap. Thank you as well for the opportunity to speak with your faculty. I look forward to continued communication with you.

Regards,

Laura Dana, PhD(c), MSN, Ed., RN, LCCE, COS-C

Appendix C: Informational Recruitment Flyer

Doctoral Research Study

Nursing Faculty Experiences with Games and Gaming & Student Learning Outcomes

Laura Dana PhD(c) MSN RN

DO YOU QUALIFY TO PARTICIPATE?

- I am seeking nursing faculty participants for my dissertation research study.
- The purpose of this research is to explore the lived experiences of nursing faculty who utilize games and gaming, including serious games (simulation) in the teaching-learning environment.
- Participants will be requested to participate in one, face-to-face, one-on-one interview lasting approximately one hour.
- If you match the inclusion criteria and would like to assist in this research, please contact me for further information.
- Participation is voluntary and participants may withdraw from the research at any time.
- Inclusion criteria:
  - Nursing faculty with > one year of experience in an ADN/ASN program
  - Located in Florida or from within the Walden Faculty Pool
  - Must utilize games or gaming as some

Contact Information:
Laura Dana PhD(c) MSN, Ed., RN, LCCE, COS-C
407-758-0878 (Florida/EST)
Email: laura.dana@waldenu.edu
Walden IRB approval #: 03-07-22-0265656

Appendix D: Interview Guide

1. Describe the educational program in which you teach.
    a. Tell me about the teaching culture of your program regarding interactive and experiential learning.
    b. How much interaction do students have with faculty in an interactive environment?
        i. What is your perception of student interactions with games or gaming in learning environments?
2. Describe your nursing students.
    a. Socioeconomic demographic
    b. Ages
    c. Cultural diversity
    d. Special accommodations
3. What are your feelings about teaching students in an interactive and experiential learning environment?

4. From your perspective, what is the definition of games and gaming in education?

5. Do you level the difficulty of games based on the level of learner, i.e. simple games crosswords/word finds and lower level learners, serious games (simulation) and higher level learning?

6. When using games and gaming in the teaching-learning environment, how do you connect the didactic content with the hands-on learning?

7. Tell me about the process of choosing what kind of game or gaming will be utilized.

8. Tell me about a time you introduced a game or gaming into the learning environment and you encountered learner hesitance?

    a. Have you encountered faculty/administration hesitance?

9. What is most important to you about your experience with games and gaming in the learning environment?

10. How influential are other faculty/staff on your decision-making regarding the utilization of games or gaming?

11. What role, do you believe, games and gaming have in student success?

12. How do you assess student performance? Learning? Subsequent to the introduction of games.

13. How do you self-reflect as an instructor and how do those self-reflections influence your instruction strategies?

14. Tell me about a situation when you suspected that student engagement was a contributing factor to the success or failure of an activity involving games or gaming.

15. Regarding student preparedness prior to a game or gaming exercise, what expectations do you have?

16. Tell me about your perceptions of your role in student learning outcomes.

17. Is there anything else you would like to tell me?

18. Would you like a copy of the completed transcript? Yes
    a. Which method of delivery would you prefer for the transcript?

Appendix E: Demographic Survey

1. Let's begin with a little about yourself.
    a. What is your identified gender?
    b. How long have you been a nurse faculty member?
    c. Tell me about your formal nursing education
        i. Highest level?
            1. Teaching (subject matter) concentration?
    d. What types of nursing programs have you instructed in?
    e. What type of program do you currently instruct in?
    f. Is your program in a city, suburb, or rural community?
        i. Anything about your program that you would like to include?