2016

Impact of an Innovative Classroom on BSN Students' Self-Efficacy and Academic Performance

Laurie Jo Singel
Walden University

Walden University

College of Education

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Laurie Singel

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Review Committee
Dr. Heather Pederson, Committee Chairperson, Education Faculty
Dr. Kay Persichitte, Committee Member, Education Faculty
Dr. Paula Dawidowicz, University Reviewer, Education Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
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MSN, The Catholic University of America, 1996

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Dissertation Submitted in Partial Fulfillment

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Abstract

The critical shortage of registered nurses (RNs) in the United States has led to increased enrollment in nursing schools, but the number of graduates is still decreasing, as nursing students struggle and fail in upper division courses. There is a significant gap in knowledge concerning students' self-efficacy (SE) as a factor directly influencing students' academic performance. The problem examined in this correlational study was the impact of collaborative learning in an innovative classroom setting on Bachelor of Science in Nursing (BSN) students' SE and academic performance. Framed by Bandura's theory of SE, the research questions examined the relationship between students' SE scores at the beginning and end of the innovative course, and their end-of-course grade. The sample included 22 students from one nursing class ($N = 22$) in an undergraduate-level nursing program in Texas. Data sources included disaggregated student grades and an anonymous, online survey. Analyses included Chi-square and Pearson's r correlation of the data. Results indicated SE scores at the end of the course were higher than they were at the beginning of the course, which provided an initial understanding of the impact of the innovative learning environment on BSN students' academic performance, but were not statistically significant and could not, therefore, disprove the null hypothesis. This study indicates that student nursing courses could increase student self-efficacy, which would result in a positive impact in hospital and clinic support for United States citizens.

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Dedication

First, I would like to dedicate my dissertation work to God, who through His many blessings has guided, comforted, and inspired me to stay strong and complete this monumental task. Without the blessings and grace I received throughout this long journey, I would have certainly failed, and I commit to using my new knowledge for good, in service to my nursing students, my nursing profession, and the countless patients who will be cared for by these future BSN graduates.

To my dedicated, loving husband Ken: Without your love and support I would have never thought this possible! You believed in me when I doubted. You lifted me up, time and again, dried my tears, cheered me on, took care of the kids and the dog(s), bought me supplies, fixed computer issues, and were always there with a hug and kiss when I needed it most! Throughout this difficult challenge, I knew you were there and felt reassured that everything would be okay. After all these years of study, reading, writing, and deadlines- I am DONE! Now is our time to go and enjoy our life together [*again]. I love you, Ken!

To my precious children Samantha, Jennifer, and Adam: Thank you all for all the love, support, and encouragement you have given me over these long years of study. Each of you helped by checking in on me, giving me a hug, or bringing me "one more cup of coffee." I truly appreciate all the time, effort, and sacrifices you made on my behalf to help me succeed! Thank you for believing in me- even when I did not believe in myself.

I love you, Samantha!   I love you, Jennifer!   I love you, Adam!

To my mother, Shirley C. Pisarek, Ph.D., MSN, RN- who always told me: "*No one can say you don't know something; you just haven't learned it yet.*" I follow a tradition of strong, determined women: my grandmother, Lt. Loretta Rishor, US Army Nurse Corps, WWII, who earned a bachelor's degree at a time when "women did not go to college," and my Mom, who started with a diploma in nursing and finished with a PhD. You're right: "Education IS the great equalizer" *Love you, Mom!

To my father, SMSgt. George Pisarek, USAF, who instilled in me the drive to master all challenges, the passion to strive for excellence, and importance of organizational skills- thank you for teaching me. *Love you, Dad!

To my beloved grandfather, Stanley Martin Pisarek, who believed in me from the start. You always said: "…just keep going; it will all be worth it." Despite humble beginnings, I believe you earned a "PhD in Life". I smile when I see our "Pisarek" family name plaque- Polish for "scribe" or "writer." I guess after 25 years of "writing" I have finally reached the ultimate goal!

To my beloved German shepherd "Nicholas": You were with me, for years and years, night or day, at my side, protecting me, keeping me company, or dragging me outside for fresh air and sunshine. *I love you Nick* and miss you….you were the best!

To my newest German shepherd "Reign": Thank you for being my newest protector/guardian, confidant, and late night companion. In the wee hours of the night, I know I am not alone. Thank you for being there to help me at the end of this journey. Now, let's go *PLAY!*

Acknowledgments

Many people have helped me along this journey, and whether it was a small gesture, a reassuring hug, or a late night talk, I want to sincerely thank you all. As I reflect back over the years of my doctoral study, there are several people whom I want to thank personally.

First, I would like to thank sincerely my Chair and mentor, Dr. Heather Pederson, who provided a great deal of time and support to help me in completing this dissertation. From her personalized phone calls and helpful tips in the class discussions, to the "tough love" deadlines needed to spur me on to have confidence in myself and finish!

I would also like to thank Dr. Kay Persichitte, my quantitative methodologist, who generously agreed to join my committee and share her expertise with me. From the moment I finished talking with you on the first call, I knew we would be a good match- dedicated to high quality and attention to details- I was right!

I would like to extend my thanks, to Dr. Paula Dawidowicz, who was my other committee member and mentor, providing vital feedback, to help me polish my final manuscript for submission. Your literature review book helped me realize my goal!

I want to thank Dr. Cheri Toledo and Dr. MaryFriend Carter for the kindness and support you have given me during this hectic dissertation phase.

I would like to express sincere gratitude to Dr. Darci Harland ("Dr. Darci") for the outstanding teaching job she did in the EDUC courses: innovative, creative, encouraging, and always pushing her students to seek higher levels of performance. You helped me to be ready to face the challenge of my dissertation and succeed.

To Dr. Robin Froman, my former Dean, who was the one who helped me take the initial leap and "just begin!" my doctoral program. I am so proud to let you know that I was successful- thank you for believing in me.

I would like to thank Yvonne Davila MSN, RN, CNE- for her crucial help in developing the final plans for my study. Your support made all the difference- I share this celebration with you. Thank you, dear friend!

I would like to express sincere gratitude to Dr. Ana Wandless-Hagendorf for her assistance with coordinating IRB approval between Walden and the university site. Your timely help was just terrific!

To my dear university colleagues and friends: Thank you for being there for me, in times of distress- with a tissue and cup of tea, and in times of celebration- with genuine hugs and cheers. For those who already have their doctoral degree, you KNOW what I have been through. For those still working on their programs- I will be here for you.

Special thanks to all of my nursing students, over 18 years of teaching [so far], that helped me to grow and learn and shaped this final research study.

Table of Contents

List of Tables

Chapter 1: Introduction to the Study

Estimates of the critical shortage of registered nurses in the United States project a need for more than 525,000 additional nurses to care for the aging population and increased enrollment from the implementation of nationwide healthcare reform (American Association of Colleges of Nursing [AACN], 2014b; National Academy Press, 2011; National Advisory Council on Nursing Education and Practice, 2010). Despite increased enrollments in nursing schools, the number of successful graduates is decreasing, as many nursing students struggle in their upper division nursing courses, often resulting in course failures or withdrawal from the program (AACN, 2013b; Goff, 2011; Taylor & Reyes, 2012). Researchers have conducted numerous studies to identify factors associated with nursing students' academic performance, reporting that increased stress (Beauvais, Stewart, DeNisco, & Beauvais, 2014), anxiety (Chernomas & Shapiro, 2013), frustration (Brady-Amoon & Fuertes, 2011), and lack of confidence (Pulido-Martos, Augusto-Landa, & Lopez-Zafra, 2012) interfere with successful program completion (Harris, Rosenberg, & O'Rourke, 2014; Taylor & Reyes, 2012).

This study was needed because simply identifying factors associated with poor academic performance does not correct the problem of nursing students failing courses; understanding the impact of utilizing an innovative teaching environment that integrated technology on students' self-efficacy and academic performance can help faculty to assist the students to be successful in their programs, with an end result of more nursing graduates (AACN, 2013a, 2013b; Texas Board of Nursing 2010a, 2010b). Exploring the impact of nursing students learning in an innovative teaching environment will help

educators begin to identify factors that were beneficial to student learning and how such factors affected their sense of self-efficacy and academic performance

Instead of a traditional classroom design, with desks and chairs lined up in rows facing the teacher who was at the front of the room, the innovative classroom had desks arranged in small circles or squares, allowing students to work in small, collaborative groups. The desks at each cluster had access to electrical power and computer cable connections, integrating technology which provided current research findings, evidence-based care practices, videos, interactive websites, and virtual clinical simulations.

A review of current literature on innovative classroom design and instruction strategies reveals there are efforts in higher education to reflect the development of technology, student-centered learning, and 21st century skills, but sadly, even in the health sciences and nursing, it is not the norm, with many university faculty still preferring to lecture to students sitting in rows (Chilton, 2014; Day-Black, Merrill, Konzelman, Williams & Hart, 2015; Diefenbeck, Hayes, Wade & Herrman, 2011; Fahlberg, Rice, Meuhrer & Brey, 2014; Freeman & Walsh, 2013; Hagemeier, Hess, Hagen & Sorah, 2014: Pardue & Morgan, 2008; Peterson, 2014).

Implementation of innovative classroom design and teaching strategies has been supported by the increased availability of mobile technology, including cellular phones, IPads and notebooks, laptop computers, and online collaborative networking, especially among millennial generation students (Dahlstrom, Walker & Dziuban, 2013; Pardue & Morgan, 2008). As digital natives, today's college students prefer and expect to use technology in the learning environments, supported and encouraged by their faculty. .

Without understanding how this new, innovative way of teaching affected the students'

learning, educators will continue to use a trial-and-error process of implementing changes

to curriculum and teaching-learning environments without evidence to support those

actions. Preparing nursing students who are learning in the 21st century requires a

rethinking of the process, the interrelationships between teacher and student, and

innovative, effective strategies that will enable students to become critical thinkers, able

to perform in the fast-paced, unpredictable environment of nursing and today's healthcare

settings (AACN, 2013a, 2013b; Bandura, 1997; Beauvais et al., 2014; Benner, Sutphen,

Leonard, & Day, 2010; Institute of Medicine (IOM), 2010; Partnership for 21st Century

Skills, 2014).

      This study contributed to positive social change because understanding the impact

of a student-centered, active learning environment can help to address problems faced by

current nursing students in the classroom, support their efforts to be academically

successful throughout their programs, and increase the number of nursing graduates,

capable of entering practice. By reversing the trend of failures, more nursing graduates

will be produced, which directly impacts patients' access to healthcare, in particular

among the underserved populations (AACN, 2014b; AACN, 2013a, 2013b, Chernomas

& Shapiro, 2013).

      This chapter provided an introduction to the study, including a sampling of the

research literature related to the focus of the study, an identification of the gap in the

research literature, and an explanation of the need for the study. Chapter 1 included a

statement of the problem, the purpose of the study, conceptual framework, and the central

and related research questions. This chapter closes with an overview of the methodology

of the study, as well as the assumptions, limitations, and the significance of the study.

Background

Numerous research studies have been conducted exploring factors, including

anxiety (Burlison, Murphy, & Dwyer, 2009), stress (Chernomas & Shapiro, 2013;

Lazarus, 1966; Lazarus & Folkman, 1984), motivation levels (Goff, 2011; Harris et al.,

2014), critical thinking (Taylor & Reyes, 2012), and coping (Pulido-Martos et al., 20120,

that are associated with self-efficacy and affect academic performance among nursing

students (Brady-Amoon & Fuertes, 2011). Researchers found that a students' level of

self-efficacy can impact academic performance, including persistence and successful

completion of their program (Putwain, Sander, & Larkin, 2013; Robb, 2012; Shelton,

2012; Taylor & Reyes, 2012; van Dither, Dochy, & Segers, 2011). Chernomas and

Shapiro (2013) conducted their study on self-efficacy and academic performance using

baccalaureate of science in nursing (BSN) students, but a review of other studies found

that not all focused on that specific student population (Fernandez, Salamonson, &

Griffiths, 2012; Gibbons, Dempster, & Moutray, 2011; Jaret & Reitzes, 2009; Peterson,

2009; Pitt, Powis, Levett-Jones, & Hunter, 2012; Wood, Saylor, & Cohen, 2009). Pulido-

Martos et al. (2012) highlighted this concern when she argued that some studies only

included associates degree of science in nursing (ADN) students, who enroll in courses at

community colleges, not universities, with a different level of academic rigor; this finding

was echoed by Taylor & Reyes, 2012). Other issues included researchers collecting data

from students enrolled in undergraduate introductory psychology or sociology courses

(Burlison et al., 2009; Jaret & Reitzes, 2009). Self-efficacy in nursing students has also

been explored as a factor predicting success in passing the National Council Licensing

Exam (NCLEX), which is required for registered nurses (RNs) to begin professional

practice (Silvestri, 2010; Wilson, 2013).

       Although researchers conducting studies examining self-efficacy and academic

performance in nursing students have been conducted, the vast majority only focus on the

associations between stress/anxiety and poor academic performance, or helping students

complete their remediation, once they have failed (Cantrell, 2001; Chernomas &

Shapiro, 2013). There was a significant gap in the knowledge addressing factors directly

influencing the students' current academic performance and strategies to intervene before

there is a course failure or program withdrawal. Researchers continue to focus on the

end-product of students, who are learning in a traditional classroom and following an old-

fashioned teaching pedagogy in which students sit in long rows of desks and chairs or are

lined up in rows in a tiered auditorium. In this traditional pedagogy, the teacher controls

the learning while students are expected to sit quietly, take notes, and ask questions

(Shindell, 2011).

Problem Statement

       The problem addressed in this quantitative study was the impact of collaborative

learning in an innovative classroom setting on BSN students' self-efficacy and academic

performance. While there have been studies exploring self-efficacy and academic

performance in nursing students, the classes were all being taught using traditional

pedagogy, with little change or revision to the process (Beauvais et al., 2014; Brady-

Amoon & Fuertes, 2011; Burlison et al., 2009; Chernomas & Shapiro; 2013: Goff, 2011;

Harris et al., 2014; Pulido-Martos et al., 2012; Shindell, 2011; Shelton, 2012; Taylor &

Reyes, 2012; van Dither et al., 2011). Nurse educators do not know how students respond

to these innovative learning environments, and there is a scarcity of research examining

how innovative teaching-learning experiences impact students' self-efficacy and their

academic performance.

Purpose of the Study

The purpose of this quantitative, correlational study was to explore the impact of

collaborative learning in an innovative classroom that integrated technology on the self-

efficacy and academic performance of BSN students. In this study, results from a

modified version of the Generalized Self-Efficacy Scale (GSES) (Appendix B) were used

to explore the relationship between BSN students' perceived levels of self-efficacy and

their academic performance, as measured by the final course grade. I hypothesized that

collaborative learning in an innovative classroom that integrated technology would

influence the final grade, which aligns with the SE tool designed by Schwarzer and

Jerusalem, (1995). The independent variable in this study was the collaborative learning

in an innovative classroom that integrated technology, and the dependent variables were

the BSN students' self-efficacy and their academic performance in the course. Although

researchers have examined self-efficacy and academic performance with various factors

influencing student performance, this study contributed to the existing literature. I

explored the impact of collaborative learning in an innovative classroom that integrated

technology on BSN students' self-efficacy and academic performance, which can provide

a new perspective on the phenomenon, and educators may use to help identify successful teaching-learning strategies for future BSN students.

Research Questions

The research questions for this study were developed based on the theoretical framework of self-efficacy (Bandura, 1977, 1995, 1997) and the quantitative research methodology. Bandura defined self-efficacy as the "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments," which "… influences how people think, their behavior, the perception of themselves," and, most important for this study, how they motivate themselves (Bandura, 1997, p. 3).

Research Question 1 (RQ1). Is there a relationship between the BSN students' perceived self-efficacy at the beginning of the course and at the end of the course, when participating in collaborative learning in an innovative classroom that integrated technology?

Null Hypothesis (H$_0$1): There is no relationship between the BSN students' perceived self-efficacy at the beginning of the course and at the end of the course, when participating in collaborative learning in an innovative classroom that integrated technology.

Alternative Hypothesis (H1): There is a positive relationship between the BSN students' perceived self-efficacy at the beginning of the course and at the end of the course when participating in collaborative learning in an innovative classroom that integrated technology.

Research Question 2 (RQ2). Is there a relationship between the BSN students'

end-of-course grades and their end-of-course perceived self-efficacy?

Null Hypothesis (H$_0$2): There is no relationship between the BSN students' end of course grades and their end of course perceived self-efficacy.

Alternative Hypothesis (H2): There is a positive relationship between the BSN students' end-of-course grades and their end-of-course perceived self-efficacy.

Independent and Dependent Variables

The independent variable in this study was the collaborative learning in an innovative classroom that integrated technology, and the dependent variables were the BSN students' perceived self-efficacy at the beginning and end of their course, and their academic performance in the course. Although researchers have examined self-efficacy and academic performance with various factors influencing student performance, this study contributed to the existing literature by exploring the impact of collaborative learning in an innovative classroom that integrated classroom that integrated technology on BSN students' self-efficacy and academic performance, providing a new perspective on the phenomenon, which educators may use to help identify successful teaching-learning strategies for future BSN students.

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Conceptual Framework for the Study

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The components of self-efficacy include "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). According to Bandura (1977, 1995, 1997), self-efficacy influences how people think, their behavior, their perception of themselves, and most important for this study, how they motivate themselves. Individuals who believe they lack abilities will "tend to

avoid challenge activities... and they give up in the face of difficulties" (Bandura, 1995, p. 4). I used the self-efficacy conceptual framework in this study as a basis for exploring the impact of an innovative learning environment that integrated technology on BSN students' self-efficacy. This framework provided a contextual lens through which BSN students' experiences in a collaborative learning environment that integrated technology, and how this type of teaching pedagogy impacted their self-efficacy and academic performance.

This framework has been used in previous research to explore the underlying problems of poor academic performance for BSN students, with researchers discovering that stress, anxiety, and frustration levels increase as students encounter increasingly challenging assignments, complex clinical situations, and multiple cognitive, psychomotor, and emotional demands, with few demonstrating the academic persistence needed to graduate (Beauvais et al., 2014; Brady-Amoon & Fuertes, 2011; Chernomas & Shapiro, 2013; Goff, 2011; Harris et al., 2014; Jaret & Reitzes, 2009; Miller, 2010; Pulido-Martos et al., 2012; Taylor & Reyes, 2012). Addressing factors that affect a student's academic performance can lead to increased ability to be successful, even in the face of a challenging situation, which aligns with self-efficacy, a major concept in Bandura's social cognitive theory (1977).

Extending concepts of self-efficacy to the academic setting, Bandura (1993) found students' beliefs about their ability to handle academic demands influenced their emotional states, resulting in "stress, anxiety, and depression, as well as motivation and academic achievement" (p. 133). For most people, success at tasks builds self-efficacy

and failure weakens it. Failures have a greater impact if they occur before the person has established a foundation of self-efficacy (Bandura, 1997). A review of 39 research studies conducted from 2000 – 2011 concluded that higher education programs could influence a students' self-efficacy, and that interventions based on social cognitive theory concepts were "more effective in influencing students' self-efficacy than interventional treatments with underlying theories other than social cognitive theory" (van Dinther et al., 2011, p. 104). The researchers concluded that knowing factors that affect students' efficacy could help educators "to develop and plan programs to enhance students' self-efficacy" (2011, p. 105). This framework will be further described in Chapter 2.

According to Bandura (1977, 1995, 1997), self-efficacy influences people's thinking, behavior, perception of themselves, and, most importantly for this study, their self-motivation. Individuals who believe they lack abilities will "tend to avoid challenge activities... and they give up in the face of difficulties" (Bandura, 1995, p. 4). Those with a strong sense of self-efficacy visualize strategies and supports to help them attain their goals, while those with a low sense of efficacy view difficult tasks as personal threats and envision "all kinds of adverse outcomes rather than concentrate on how to perform successfully" (1995, p. 11). Those with a strong sense of self-efficacy view difficult tasks as challenges to be mastered and seek out opportunities to learn and grow, to demonstrate a strong commitment to persist, even in the face of difficulties (1995, p. 11).

I chose the self-efficacy conceptual framework to answer the central research questions and aid in the design and analysis of this study. For the research design, the framework outlined the type of information that needed to be collected, such as self-

efficacy survey data and GPAs in the nursing course. A quantitative research design was selected to provide the opportunity for collecting statistical information about the lived experience in an innovative classroom with technology and active learning. Self-efficacy theory was used as a lens to view the information gathered using a quantitative design, with students completing the survey at the beginning and end of the course to evaluate their sense of self-efficacy at the beginning and at the end of the course. The students' final course grade, measuring their academic performance, was also collected. For data analysis, the statistical results quantified how the students' experience impacted their learning and the belief that they could be successful in the BSN program, providing the reader with a common frame of reference.

Nature of the Study

I used a quantitative research design to investigate the impact of learning in an innovative classroom setting that integrated technology on BSN students' self-efficacy and academic performance. Using correlational statistical methods, I collected data from a self-efficacy questionnaire and final course grades for the BSN students enrolled in a single classroom.

The participants in this study were BSN students enrolled in the third of a five-semester program, focusing on Nursing and Health Promotion in the Community. These students were in their second half of their junior year of college, having completed an average of 65 credit hours of prerequisite courses including chemistry, anatomy and physiology, microbiology, nutrition, statistics, and liberal arts courses. They had also had two semesters of foundational nursing courses with clinical experiences.

BSN cohorts averaged between 25 and 30 students. Quantitative data was collected from the modified version of the GSES (Schwarzer & Jerusalem, 1995), which was distributed to students at the end of the semester, asking them to evaluate what their perceived level of self-efficacy was at the beginning of the course and what it was at the end of the course. The GSES provided data to answer the question about the impact of the innovative classroom setting on any changes to perceived self-efficacy at the beginning and end of the course. The students' final course grades were also collected at the end of the semester to correlate with the findings from the GSES and to answer research question two. Demographic data, including the students' age and gender, were collected for comparisons with future studies in this area.

I was the sole person responsible for all data collection and analysis. Quantitative data gathered from the entire nursing class using a modified version of the GSES was analyzed using descriptive and inferential statistics to determine perceived levels of self-efficacy at the beginning and the end of the course. The quantitative data was entered into a Statistical Package for Social Sciences (SPSS) program and statistically analyzed using chi-square and Pearson's r statistics to determine if there was a relationship between the self-efficacy scores at the beginning of the course and the end of the course, and if a correlation existed between the level of self-efficacy at the end of the course and students' end of course grades.

Definitions

*Academic performance***:** students' beliefs about their efficacy to handle academic demands influenced their emotional states, resulting in "stress, anxiety, and depression, as well as motivation and academic achievement" (Bandura, 1993, p. 212).

*Collaborative learning***:** Instead of using the traditional one-way lecture, the teacher will employ active, student-centered learning. This style of teaching-learning includes 21st century skill such as creativity, critical thinking, communication and collaboration. A range of functional and critical thinking skills related to information, media, and technology needed in clinical practice will also be used (Partnership for 21st Century Skills, 2014).

*Innovative classroom***:** Instead of a traditional classroom layout with desks and chairs in rows with faculty teaching from the front of the room, the design is an open, collaborative layout, arranging shared-workstation tables, which allow several students to work together (Brandon & All, 2010; Wright, 2011).

Self-efficacy: "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3).

Assumptions

This study was conducted under several assumptions: (a) students in the study attended the Nursing and Health Promotion in the Community class and participated in collaborative learning with classmates, (b) faculty teaching the course were comfortable using innovative teaching strategies, including student collaboration and technology, (c) students answered the questionnaires honestly, (d) all technology in the classroom was

working properly during the classes, and (e) students were competent using the computers, mobile technology, and online websites to search for information.

Scope and Delimitations

The quantitative study sample was one group of nursing students at a small, private, Catholic university. The student group was selected based on their level of knowledge thus far in the BSN program and alignment with the purpose of the study. Students were from diverse backgrounds, but the university is a majority Hispanic-serving institution. Students in earlier cohorts were not selected due to lack of experience and educational preparation that would allow them to study and analyze complex patient situations presented in class. Graduate nursing students were not included as they have already passed the licensure exam and have professional experience, which students do not have yet. The students taking this course were in the same age range as juniors in college.

The findings from this study may be generalized to other nursing students in a BSN program, as their prerequisite courses are similar. Due to the small sample size and small, private, religious university setting, it would be difficult to generalize to a large, public university. The factors being studied may be of interest to other researchers and used for additional research to validate findings. The innovative classroom and technology available for student and faculty use at this university are not typical of other nursing programs.

Limitations

There were limitations involved with this quantitative study, including concerns about the quantitative approach. A quantitative research methodology did not allow for a more in-depth understanding of the phenomenon or answer questions about how the innovative classroom affected students, their self-efficacy, or their academic performance. Using a larger class of nursing students, multiple classes, or multiple nursing programs would have provided a better representation of the nursing student population and allow greater generalization. The sample population was limited to a particular class of students, at a specific level within the BSN program; no other students were considered.

Significance

Despite generations of calls for educational reform and improvement, nursing faculty cling to outdated practices, but their "anachronistic teaching methods are no longer keeping up with the needs of new graduates entering practice" (Shindell, 2011, iii). Students are expected to adopt a submissive posture in class, to appear passive and powerless, and sit in long rows of wooden desks and chairs. This exemplifies the way in which "traditional lectures continue to form the pedagogical foundation for the majority of nursing faculty" (2011, p.3).

A typical nursing class session consists of extensive one-way communication, from the teacher to the students, with an overwhelming amount of complex content, extensive reading assignments, and exam preparations. Students struggle to keep pace with the instructor's lecture, trying to grasp important concepts and make connections

between the knowledge from their core science courses and the more complex nursing

content; due to [the stress, etc., fill in what this is due to], some fail exams and the course,

others withdraw from the program or change majors (Harris et al., 2014; Shelton, 2012).

The end results are less nursing graduates and, subsequently, fewer nurses to meet the

healthcare needs of communities across the nation (AACN, 2014b; Benner et al., 2010;

IOM, 2010).

      Leaders in nursing, healthcare, and education have called for a "radical

transformation" in nursing education to improve outcomes (Benner et al., 2010), citing

the critical shortage of baccalaureate-prepared nurses (AACN, 2014b), lack of nursing

faculty (AACN, 2014a), and numerous studies correlating a decrease in the quality of

health care delivery with a shortage of qualified nurses (Benner et al., 2010). Nursing

education programs can no longer continue with current pedagogical practices that

produce poor student outcomes and reduced numbers of graduates (Beauvais et al.,

2014).

      Echoing this sentiment, the AACN (2014a) and other leaders in the nursing

profession stressed that " even if there were no nursing shortage or nursing faculty

shortage, nursing education would still need to change dramatically to meet the demands

of current nursing practice" (Benner et al., 2010, p. 4). For faculty to accomplish this

revision of the traditional pedagogy, they will need to adopt innovative teaching

strategies, including effective content delivery methods, flexible classroom design, and a

more student-centered focus for learning (Ahn & Class, 2011; Johnson, 2014). The

purpose of this study was to examine the impact of collaborative learning in an innovative classroom setting on BSN students' self-efficacy and academic performance.

Innovation

This study took place in an undergraduate baccalaureate nursing program at a private, Catholic university in south Texas, with students enrolled in an upper level course called Nursing and Health Promotion in the Community. Instead of a traditional classroom layout with desks and chairs in rows and faculty presenting from the front of the room, an innovative classroom design was used For the purposes of this study; innovative classroom design was defined as an open, collaborative layout with shared workstation tables that allowed several students to work together.

Students integrated concepts from nursing, pathophysiology, pharmacology, medicine, and technology into evidence-based plans of care and class presentations (Chilton, 2012; Huether & McCance, 2011; Kala, Isaramalai, & Pohthong, 2010). As adult learners, they assumed more control in their learning process, using all the information and resources available to them, instead of waiting for the teacher to direct the class (Rye & Støkken, 2012; Shindell, 2011).

Summary

A sampling of current studies identified factors affecting academic performance of nursing students, but did not extend to beginning to understand how those factors impact students or their sense of self-efficacy (Beauvais et al., 2014; Brady-Amoon & Fuertes, 2011; Chernomas & Shapiro, 2013; Goff, 2011; Harris et al.,, 2014; Pulido-Martos et al., 2012; Taylor & Reyes, 2012). Nurse educators need to understand how

factors in the teaching-learning environment impact students' performance and their belief that they can be successful at a task (Bandura, 1997). This study explored the impact of an innovative classroom utilizing technology on BSN students' academic performance and self-efficacy and contributed to the knowledge about this phenomenon.

Chapter 1 provided the background of the need for understanding students' academic performance and how self-efficacy was be related to that performance. Chapter 2 will include a description of Bandura's theory of self-efficacy as the conceptual framework for this study (1977, 1995, 1997). A review of current literature and seminal works in self-efficacy theory (1977) is included and will explore concepts of academic performance, stressors, collaborative learning, and innovative classrooms. Following the review of the literature, Chapter 3 includes a description of the methodology of this study, the research design and data sources. Chapter 4 will discuss the collection of the data collection, statistical analysis methods used. Results will be presented aligned to the research questions, with specifics included in a discussion of demographic and academic performance of the BSN students. Chapter 5 will provide an interpretation of the findings, including a discussion of alignment with Bandura's theory of SE and previous research studies exploring SE and academic performance among nursing students. Limitations of the study will be identified and recommendations for future research studies will be outlined. Finally, a discussion of the study's findings will be presented and possible applications to the body of knowledge and support of positive social change.

Chapter 2: Literature Review

The purpose of this quantitative study was to explore the impact of collaborative learning in an innovative classroom that integrated on the self-efficacy and academic performance of BSN students. Although researchers have conducted numerous studies exploring self-efficacy and academic performance in nursing students, most classes were taught using traditional pedagogy, with little change or revision to the process (Alavi, 2014; Hsieh, Sullivan, & Guerra, 2007; Khan, 2013; McLaughlin, Moutray, & Muldoon, 2008; Robb, 2012; Wilson, 2013). Nurse educators do not understand how students respond to specific teaching strategies or different learning environments, and there is a scarcity of research examining how innovative teaching-learning experiences impact nursing students' self-efficacy and their academic performance.

This chapter provides an extensive review of the literature on self-efficacy and academic performance in nursing students, collaborative learning and innovative classroom design, and teaching strategies. Chapter 2 also includes search strategies used in the Walden Library, Google Scholar, and other peer-reviewed, scholarly online sources, the search engines selected, and a list of key terms. The majority of literature review reflects current studies from 2010-2016, with the inclusion of older studies that helped to provide a background for the phenomenon being explored, and primary literature from Bandura on self-efficacy theory (1977, 1995, 1997).

There were a number of studies on self-efficacy and nursing students conducted in the early 1980's, but there was a noticeable gap in the literature until roughly the turn of the century. Studies on self-efficacy and nursing became more frequent beginning in

2005. Considerable interest in nursing education and research is being focused to study clinical simulation as the new, innovative teaching design. Unfortunately, much less attention is on nursing studies implementing innovative classroom design or teaching strategies, noting faculty prefer to maintain traditional a pedagogy and continue to lecture to students lined up in rows of desks and chairs (Assessment Technologies Institute (ATI), 2014; Benner et al., 2010; Gantt, 2010; Maloney, Storr, Morgan, & Ilic, 2013; Rizzolo, Kardong-Edgren, Oermann, & Jeffries, 2015; Shindell, 2011) .

Literature Search Strategy

For this literature review I used a number of database searches in the Walden Library and online peer-reviewed websites including CINAHL Plus with Full Text, CINAHL and Medline Simultaneous Search, Academic Search Complete, Dissertations and Theses at Walden University, Education Research Complete, ProQuest Nursing and Allied Health Source, PsycARTICLES, and Google Scholar. I was able to locate current research on nursing students' academic performance, self-efficacy, stress and other factors affecting academic performance, collaborative learning, active learning in nursing programs, innovative teaching strategies. There is considerable research documenting relationships between stressors and academic performance in nursing programs, but little research on interventions to correct those issues or studies exploring students' perspectives about the teaching-learning environment (Hsu & Hsieh, 2011). Although some studies have shown efforts to implement new teaching strategies, little is documented about how these strategies impact students' learning or self-efficacy.

Key terms included the following: *self-efficacy, nursing students, innovative teaching, collaboration, technology, nursing schools, baccalaureate nursing students, academic performance, teaching strategies, nursing education,* and *active learning*.

Conceptual Framework

I used the self-efficacy conceptual framework as a basis for exploring BSN students' experience in the nursing program and how an innovative learning environment that integrated technology may impact their self-efficacy and academic performance. This framework has been used in previous research to explore the underlying problems of poor academic performance for BSN students (Brady-Amoon & Fuertes, 2011; Jaret & Reitzes, 2009), with researchers discovering that stress, anxiety, and frustration increase as students encounter increasingly challenging assignments (Beauvais et al., 2014), complex clinical situations (Pulido-Martos et al., 2012; Taylor & Reyes, 2012), and multiple cognitive, psychomotor, and emotional demands, with few demonstrating the academic persistence needed to graduate (Chernomas & Shapiro, 2013; Goff, 2011; Harris et al., 2014;; Miller, 2010; Addressing factors that affect a student's self-efficacy can lead to increased confidence in their belief about their ability to be successful even in the face of a challenging situation.

Self-Efficacy Theory

The components of self-efficacy include "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). According to Bandura (1977, 1995, 1997), self-efficacy influences how people think, their behavior, their perception of themselves, and most important for this study,

how they motivate themselves. Individuals who believe they lack abilities will "tend to avoid challenge activities... and they give up in the face of difficulties" (Bandura, 1995, p. 4). Those with a strong sense of self-efficacy visualize strategies and supports to help them attain their goals, while those with a low sense of efficacy view difficult tasks as personal threats and envision "all kinds of adverse outcomes rather than concentrate on how to perform successfully" (1995, p. 11). There are four primary sources of self-efficacy: mastery experiences, vicarious experiences with social models, social persuasion, and altering arousal states (Bandura, 1997).

Mastery experiences provide authentic challenges for the person to take on, and when successful through perseverance, build increasing levels of strong self-efficacy. Even when faced with growing demands or complexity, this type of activity builds a self-efficacy that is grounded in a sustained effort, and people become convinced they "have what it takes to succeed" (Bandura, 1997). When faced with adversity, these people stand fast and quickly recover from setbacks, determined to follow through and attain the goal. Each time they persevere, they develop a stronger sense of self-efficacy and can handle increasing challenges in future situations.

A second way to build self-efficacy is through vicarious experiences, observations of a social model performing a task and succeeding, which helps to convince the person that they too can be successful. The more similarity there is between the model and the people vicariously experiencing the challenge, the stronger the influence. If the model is vastly different from the observer, that person does not make the connection that they possess the same capabilities and do not develop a strong sense of self-efficacy (1997).

By presenting a model who is successful in the task, and demonstrates creativity in their thinking and problem-solving, observers can learn how to mirror those behaviors for themselves. Unfortunately, if the observers witness the model failing despite true efforts, the experience can undermine the observers' confidence and lower their self-efficacy.

A third way to develop self-efficacy is through verbal persuasion, although this method is not as strong as mastery experiences. Convincing a person they possess the capabilities to be successful can help boost them when difficulties arise and prevent them from focusing on their deficiencies. It is, however, easy to undermine the confidence of a person whose self-efficacy was strengthened by verbal persuasion, because their beliefs can be threatened if they have disappointing results from a challenge they accepted. Bandura (1997) argued that to build self-efficacy through verbal persuasion, the situations should be designed to bring beginning successes and situations where the person may fail should be avoided.

A fourth way to strengthen a person's self-efficacy is through altering their physiologic and emotional reactions to situations. If a person views a situation as threatening, their arousal will cause physical reactions that can overwhelm their ability to cope which could result in a negative experience (1997). Those who have a strong sense of self-efficacy will view their physiological arousal as something that energizes them rather than something that weakens them (1997).

For the purposes of this study, self-efficacy was examined as a factor influencing nursing students' academic performance, which may be impacted by an innovative classroom environment that integrated technology. The conceptual framework builds

upon the self-efficacy beliefs of students and their academic performance in a nursing course when the setting has been revised to allow for student-centered active learning in an innovative environment.

Self-Efficacy and Academic Performance

Numerous studies across a broad range of student populations and settings have been done examining the concept of self-efficacy and academic performance. Researchers and educators agree that a student's sense of self-efficacy is associated with academic success, motivation, and persistence, even in the face of challenging situations (Beauvais et al., 2014; Brady-Amoon & Fuertes, 2011; Burlison et al., 2009; Chernomas & Shapiro, 2013; Goff, 2011; Harris et al., 2014).

Cassidy (2015) explored how self-efficacy related to undergraduate students' perceptions of their capabilities and resilience when facing challenging situations. In the quantitative study, 435 British undergraduate students were exposed to an adverse situation case vignette, describing either personal or vicarious academic adversity, and then asked to complete a General Academic Self-Efficacy Scale (GASE) and the Academic Resilience Scale-30. The researchers found significant positive correlations between the GASE and a strong predictor of academic resilience (2015).

In an earlier quantitative research study, Taylor and Reyes (2012) explored how self-efficacy and resilience affected academic persistence and test scores, as a means to identify factors leading to increasing attrition rates in nursing programs. The study included 136 BSN students in multiple courses during one 16-week semester, using a pretest – posttest, quasi-experimental design. Students were given the Resilience Scale

and General Self-Efficacy Scale on two separate occasions: once during the first week of the course and once during the final week of the course, prior to final exams. Testing the students at the beginning and end of the semester, the researchers found no statistical differences between perceived self-efficacy or resilience and students' test scores but noted significant differences between resilience and perseverance (2012).

Fenning and May (2013) conducted a quantitative study with 100 freshman college students to investigate the mediating and moderating effects of self-efficacy and self-concept in relation to the students' academic performance and career path certainty. Students in their study were asked to complete several questionnaires, include the Self-Efficacy Scale, the Self-Efficacy for Learning Form, Harter's Self-Perception Profile for College Students, and the Contingencies of Self-Worth Scale (2013, p. 640). Results indicated significant positive relationships between general self-efficacy, job competence, scholastic competence, and social acceptance. The two constructs were also found to be predictors of academic performance at different stages of schooling, differentiating between performance in high school and then college. Entering the college environment is often fraught with new types of challenges the student has not experienced before, leading to issues with adjustment and affecting academic performance.

In a quantitative study examining the association between self-efficacy and self-rated abilities associated with adjustment and academic performance, Brady-Amoon and Fuertes (2011) invited 271 undergraduate college students with majors in the liberal arts to participate in the study, and complete the College Self-Efficacy Inventory, the Self-Estimates subscale of the Self-Directed Search tool and the Student Adaptation to

College questionnaire (2011, p. 433). The researchers discovered that self-efficacy contributes to adjustment, and can help a person face new tasks. The findings showed that self-efficacy, in contrast to self-rated abilities, was the stronger in relation to adjustment and academic performance.

Putwain et al. (2013) conducted a quantitative study with 206 first-year undergraduate psychology students to examine whether academic self-efficacy, operationalized as confidence in study-related skills and behaviors, was also a predictor of academic achievement and emotions. Students were asked to complete the Academic Behavioural confidence scale at the beginning of semester one, which measures confidence in study skills and behaviors, required of an undergraduate and the Achievement Emotions Questionnaire was completed at the beginning of semester two. Results showed that self-efficacy better predicted first-semester academic performance and more control with learning-related emotions. The researchers posited that self-efficacy in study-related skills played a critical role in how the student viewed challenges and maintaining pleasant emotions, which impacted for better academic performance (2013).

Khan (2013) conducted a quantitative pilot study to examine the relationship in the college academic setting between academic self-efficacy, stress, coping skills, and academic performance, using the Academic Self-Efficacy Scale (Chemers, Hu, & Garcia, 2001). Sixty-six undergraduate psychology students participated in the study, completing online questionnaires, including the Academic Self-Efficacy Scale and the COPE Inventory. The focus of the study was to examine whether a higher academic self-

efficacy and the use of effective coping skills were correlated with higher academic performance (Khan, 2013). Results of the study showed a "clear relationship between academic self-efficacy and GPA," and he recommended future research look further into the concept of coping in an academic setting (2013, p. 8). van Dither et al. (2011) echoed this sentiment in their extensive review of the literature investigating factors affecting students' self-efficacy in higher education. Researchers began with over 500 studies; and identified 39 empirical studies that met the criteria and were aligned with Social Cognitive Theory (Bandura, 1977). Results clearly indicated that student self-efficacy has become an important construct in educational research over the last 30 years (2011, p. 104). The authors argued that "educational programmes [sic] have the possibility to enhance the students' self-efficacy, and educational programmes [sic] based on social cognitive theory proved to be particularly successful on this score (2011, p. 95). Robb (2012) also conducted an in-depth analysis of the concept of self-efficacy within the context of nursing education, locating a final selection of 30 publications from 1982 to 2010, and stressing the connection between Bandura's self-efficacy theory and effectve classroom education. "It has been suggested that creating a student-centered learning environment and implementing active learning strategies raise perceived self-efficacy beliefs and promote knowledge acquisition (Robb, 2012, p. 170).

Ramos-Sanchez and Nichols (2007) conducted a quantitative study with 192 freshmen at a private, liberal arts university on the west coast, to explore whether there was a significant different in the self-efficacy levels of first-generation and non-first-generation college students and its impact on academic performance and college

adjustment. First-generation students consisted of 33% of the sample, and 52.1% of the

participants identified themselves as non-Hispanic White/European American, 13%

identified as Hispanic/Latino, 20.3% were Asian American or Pacific Islander, and 1.6%

were African American. Students completed the College Self-Efficacy Instrument and

Student Adaptation to College Questionnaire online. Study results showed that non-first

generation students had higher levels of self-efficacy and performed better than first-

generation students, reflecting previous findings in other studies associating a

generational status with GPA (2007). The researchers did argue that their study increased

the understanding of the power of self-efficacy with college adjustment (2007, p. 13). In

another quantitative study examined the impact of psychological factors such as self-

esteem, self-efficacy, consciousness, and motivation on academic performance among

African-American students at a major historically Black university in the southwestern

United States (Metofe, Gardiner, Walker & Wedlow, 2014). Two hundred five

undergraduate students enrolled in psychology courses participated in the study,

completing several questionnaires on a web based survey tool, including the Rosenberg

Self-Esteem Inventory, the New General Self-Efficacy Scale, the Big Five Inventory, and

the Work Preference Inventory (2014, pp. 62-63). Results showed self-efficacy was

positively and significantly correlated with academic performance and extrinsic

motivation correlated with academic performance (2014). Maropamabi (2014) examined

the role of self-efficacy and self-esteem beliefs influencing academic performance, in a

quantitative study of 100 students in Botswana, using the GSES. Results indicated no

significant relationships between the academic performance, self-efficacy, and self-

esteem, but the researchers also included the finding that "although 98.1% of respondents reported that they could get good grades if they wanted to, only 12.2% had a high GPA," demonstrating an inflated sense of ability beyond the level of what their test scores revealed (2014, p. 8).

Although some studies on self-efficacy and academic performance included BSN students, (Alavi, 2014; Andrew, 1998; Andrew & Vialle, 1998; Beauvais et al., 2014; Chernomas & Shapiro, 2013; Chesser-Smyth & Long, 2012; Fernandez et al., 2012; Gibbons et al., 2011; Goff, 2011; Jaret & Reitzes, 2009; Oetker-Black, Kreye, Underwood, Price & DeMetro, 2014; Peterson, 2009; Pitt et al., 2012; Stump, Husman & Brem, 2012; Wood et al., 2009), many only included associates degree of science in nursing (ADN) students, who enroll in courses at community colleges, not universities, with a different level of academic rigor (Pulido-Martos et al., 2012; Taylor & Reyes, 2012). A more recent quantitative study used self-efficacy as a theoretical framework for developing clinical evaluation tool based on psychometric properties and used in the clinical simulation lab (Oetker-Black et al., 2014), and a nursing student self-efficacy scale to help students make accurate assessments of their abilities, promoting academic achievement (Stump et al., 2012). Researchers conducted a quantitative study aimed at determining the level of self-efficacy in undergraduate nursing students and to examining the relationship between skills development and self-efficacy (Karabacak, Serbest, Kan Öntürk, Eti Aslan & Olgun, 2013). The descriptive study consisted of 100 students enrolled at a university in Istanbul, who were asked to complete a student introduction form, the Self-Efficacy Scale questionnaire, and an intramuscular injection procedure

checklist. The results showed the mean general self-efficacy score of the students in the

study as high, so the education given to the students about the intramuscular injection had

the same influence on all students' self-efficacy (Karabacak et al., 2013). No difference

was seen in the self-efficacy of the students before or after the psychomotor skills

training. Chesser-Smyth and Long (2012) conducted a sequential, mixed-methods, three-

phase design study to understand the influences on self-confidence among first-year

undergraduate nursing students in Ireland. Results showed self-confidence fluctuated

during the first clinical rotation, but as the students' confidence increased, their

motivation towards academic achievement also increased (2012). The researchers

reported their findings supported Bandura's self-efficacy theory and stressed that

assisting with the development of self-confidence in nursing students should be "a central

tenet of the design and delivery of undergraduate programs" (2012, p. 145). Cantrell

(2009) conducted a descriptive correlational study for her doctoral dissertation to explore

the relationships between self-efficacy, causal attribution, self-esteem, and academic

achievement in 264 junior and senior BSN students from three different schools in a

southeastern state. Multiple data gathering tools were used including a demographic

instrument, Harvey and McMurray's Nursing Academic Self-Efficacy Scale (1994),

Russell's Causal Dimension Scale II, and Rosenberg's Self-Esteem Scale. Academic

performance was measured by the grade earned by the students in the courses they were

enrolled. Results showed students indicated high levels of self-efficacy, which the author

noted mostly likely due to persistence in the program and success with courses, causal

attribution scores revealed students felt that their success or failure was under their

control, again, aligned with high levels of self-efficacy and personal control (2014). In

another dissertation research study, Wilson (2013) explored the relationship between

perceived self-efficacy beliefs, remediation, and academic performance in 94 pre-

licensure baccalaureate nursing students, from five public baccalaureate nursing

programs in California. Using a prospective, correlational research design, the

participants completed a Perceived Academic Self-efficacy Scale (PASES) and ATI

exam preparation survey, prior to completing the standardized ATI Medical Surgical

exam. Those students who score with less than Level-two proficiency on the exam were

required to complete structured ATI remediation plan before retesting. After the students

had completed the remediation, the PASES, the re-test ATI Individual Performance

Profile and a remediation questionnaire were used. Results showed a small, positive

relationship between the PASES given in the first phase and exam preparation, no

significant association between remediation and academic performance on initial and

subsequent ATI testing, but there was a substantial positive relationship between the

PASES and ATI academic performance after remediation, and an improvement in self-

efficacy beliefs (2013, p. 62). Self-efficacy in nursing students has also been explored as

a factor predicting success in passing the National Council Licensing Exam (NCLEX), an

exam which is required for registered nurses (RNs) to begin professional practice

(Silvestri, 2010). Zengin, Pinar, Akinci, and Yildiz (2013) also used self-efficacy as a

framework for examining psychometric properties of the Self-Efficacy for Clinical

Evaluation Scale SECS) in a sample of 400 Turkish nursing students. The researchers

used a cross-sectional methodology to evaluate the clinical tool with the nursing students

from three universities, recruiting those students who had, at least, one year training in nursing (2013). Three linguistic experts were asked to translate the scale into Turkish, to ensure language and cultural adaptation of scale, before administering to the participants. Statistical analysis revealed the SECS is a reliable and valid tool to be used in the clinical nursing education settings.

Earlier studies were noting the relationship between self-efficacy and academic performance for nursing students, with some studies looking for evidence that self-efficacy could be a predictor of academic performance in science courses (Andrew, 1998; Andrew & Vialle, 1998). Additionally, a sampling of older studies on self-efficacy and academic performance outside of nursing student populations were reviewed (Chemers, Hu & Garcia, 2001; Gore, 2006; Luszczynska, Gutierrez-Dona, & Schwarzer, 2005; Solberg, O'Brien, Villareal, Kennel & Davis, 1993).

Chemers et al. (2001) have been cited as a seminal work in this area of research, using a longitudinal study design of first-year university students, examining the effects of academic self-efficacy and adjustment to the college environment. Results were positive, with the authors highlighting the findings that supported the role of self-efficacy and optimism in positively influencing first-year college students' success and adjustment. More important, statistical analysis revealed self-efficacy "directly and indirectly had powerful relationships to academic performance and college adjustment" (2001, p. 61). Gore (2006) also found that academic self-efficacy beliefs predicted college outcomes. Recruiting 629 first-year freshmen between the fall of 2000 and 2003, the researcher asked participants to complete a College Self-Efficacy Inventory (CSEI)

and the Academic Self-Confidence Scale during the first two weeks of the fall semester. The participants were again asked to complete the CSEI during the last two weeks of the semester, and American College Testing (ACT) scores and GPA's were obtained as a measurement of academic performance (2006). Although the results did show that self-efficacy was a predictor of college success, the author cautioned that the levels of relationship may be affected by when the measurements are taken, which aspects of self-efficacy and college outcomes are being evaluated (2006, p. 112).

Luszczynska et al. (2005) conducted an extensive review of the literature across five countries, exploring the relationship between General Self-Efficacy and a number of other psychological constructs. A staggering 8,796 participants were examined through research studies, from Costa Rica, German, Poland, Turkey, and the United States. Results showed the "highest positive associations were optimism, self-regulation, and self-esteem… and academic performance was found to be associated with self-efficacy as hypothesized" (2005, p. 80). These studies provide further evidence of the strength of the relationship between self-efficacy and a person's academic performance.

Stressors and Academic Performance

Entering college brings a number of new challenges for the student, from academics to social interactions and increased stressors not experienced before (Brady-Amoon & Fuertes, 2011; Burlison, Murphy & Dwyer, 2009). Numerous research studies have been conducted exploring factors associated with self-efficacy and academic performance among nursing students, including anxiety, stress, burn out, motivation levels, critical thinking, and coping (Beauvais et al., 2014; Chernomas & Shapiro, 2013;

Goff, 2011; Harris et al., 2014; Murff, 2005; Pulido-Martos et al., 2012; Taylor & Reyes,

2012). Other researchers found students' level of self-efficacy can impact academic

performance, including persistence and successful completion of their program (Putwain

et al., 2013; Robb, 2012; Shelton, 2012; Taylor & Reyes, 2012; van Dither et al., 2011).

Exploring other factors that affect academic performance, Jaret and Reitzes

(2009) conducted a quantitative study to investigate how college student identities and

ethnic identities vary among a diverse group of students and among immigrant, second-

and third-generation students. Adjustment to college, increasing academic demands, and

personal stressors of separation from family and friends can all impact a student's

academic performance (2009). Using a sample of 652 students from a large, diverse

public urban university, the researchers examined the effect of stressors on self-efficacy,

self-esteem, and GPA. Contrary to their first hypothesis, results showed Asian students

did not have the most positive experience, Black students were more involved with

campus activities than White students, and both Black and Asian students had higher

academic scores than their White classmates (2009). Immigrant students and second- and

third-generation students were higher in cultural identities and the importance they placed

on academics, gaining knowledge, and studying (2009, p.355).

Expanding the focus of factors affecting nursing students, Gibbons (2010)

explored stress, coping, and burn-out in a quantitative study. Several online

questionnaires were administered to 171 final year nursing students in this quantitative

study, the Generalized Self-Efficacy Scale, the Index of Sources of Stress in Nursing

students, the Marlowe-Crowne Social Desirability scale, and the Brief COPE scale, to

examine the relationships between sources of stress and psychological burn-out (2010, p. 1301). Although previous studies had explored stress and burn-out, the researchers emphasized theirs was the first study to examine the role of coping and self-efficacy, not as a predictor of burn-out, but as a moderating role with stress, and to help the student develop a sense of eustress (2010, p.1305). Findings confirmed that as the level of demands in nursing school increased, the student experienced emotional exhaustion and personal achievement decreased. Gibbons argued that educators should take action to provide support and a sense of control in student learning, using innovative teaching strategies and peer support (2010. p. 1308).

Gibbons completed a follow up study in 2011, expanding his research to exploring stress, coping, and satisfaction in nursing students (Gibbons, Dempster & Moutray 2011). In contrast to previous studies, the researches framed the study of sources of stress that were likely to enhance, well-being and student learning. A questionnaire measuring sources of support, control, self-efficacy, and coping was administered to 171 final year students in the United Kingdom. Results of the sources of stress were aligned with their effects on the student's well-being, with self-efficacy, dispositional control and support noted to be significant predictors of eustress, and avoidance-coping the strongest predictor of adverse well-being (2011, p. 621).

Employing a cross-sectional, descriptive, exploratory design, Chernomas and Shapiro (2013) measured the extent of stress, depression and anxiety (SDA) in 251 BSN students in a Canadian nursing program. The literature identified three primary sources of stress among nursing students: clinical practice issues, academic concerns, and personal

matters, which aligns with the findings from this study. Students were asked to complete an online survey using the DASS (Depression Anxiety Stress Scales), demographic information, and a quality of life questionnaire. The higher levels of SDA were correlated with students' poor coping abilities.

Pulido-Martos et al., (2011) conducted a systematic review of the literature to identify the main sources of stress for nursing students and how these stressors evolved over the program. A final sample selection of 23 studies meeting the criteria was examined, with the majority of studies from Europe and over one-fourth were in England (2011, p.22). Unfortunately, there was a considerable variability in instruments used, leading to a broad range of findings, but a grouping of the sources of stress validated previous findings of academic, clinical and personal sources of stress. Fernandez et al. (2012) conducted a quantitative study using 81 students in an accelerated nursing course at a large university to explore emotional intelligence as a predictor of academic performance. Students were given the Trait Emotional Intelligence questionnaire and four subscales of the Motivated Strategies for Learning Questionnaire (MSLQ); GPA's were obtained at the end of six months to measure academic achievement. Results showed a statistically significant correlation between emotional intelligence scores and critical thinking, with the researchers validating that emotional intelligence as an important predictor of academic achievement. Beauvais et al. (2013) also examined factors related to academic success among nursing students, conducting a descriptive correlational study with 124 participants. The study sought to describe the relationship between emotional intelligence, psychological empowerment, resilience, spiritual well-bring, and academic

success. Participants were asked to complete four questionnaires, Spreitzer Psychological Empowerment Scale, the Wagnild and Young Resilience Scale, the Spiritual Well-Being Scale, and the Mayer-Salovey-Caruso Emotional Intelligence test (2011, p. 919). Results found a significant relationship between psychological empowerment, resilience, spiritual well-being, and academic success, noting these factors are valuable when facing the challenges of nursing school. Miller (2010) explored the relationship between self-regulated learning, academic motivation and test anxiety in a quantitative study with 208 freshmen at a public university in the southwest. The participants were given a self-regulated learning subscale from Bandura's Multi-dimensional Scales of Perceived Self-Efficacy, the Worry-Emotional Scale, and Hartman's Perceived Competence Scale. Results showed students who reported higher levels of competence and autonomy also viewed themselves as more capable of self-regulated learning (2010, p. 433). Students with perceived competence in learning also reported less test anxiety; viewing the challenge as a task, they could be successful.

Examining self-efficacy with clinical skills, Aber and Arathuzik (1996) conducted a qualitative study to explore factors associated with student performance in a BSN program, at an urban public university with a diverse student population. Using a descriptive correlational design, researchers recruited 123 senior nursing students who were completing their final semester. Participants were asked to complete a demographic data sheet, the clinical Self-Efficacy Scale, and the Study Skills Self-Efficacy Instrument. Results found a number of factors associated with success in the BSN program, including grades in the synthesis course, students' plans to attend graduate school, a sense of

confidence, motivation and perseverance (1996, p. 286). The authors posited the results supports previous findings that self-efficacy "seems key to achieving success" (1996, p. 287).

In an explanatory, correlational study Goff (2011) investigated learned resourcefulness, stressors, and academic performance in 53 BSN students. Using the conceptual frameworks of Selye's theory of stress and Bandura's self-efficacy theory, the researchers identified the dependent variable, academic performance, and the intervening variable, learned resourcefulness, measuring students' perceptions with the Student-life Stress Inventory and the Self-Control Schedule (2011, p.7). Findings validated that high levels of stressors were perceived by nursing students, but the result that stressors were not predictive of academic performance is in contrast to numerous previous studies; the authors did cite a limitation of a small sample size with this finding. Peterson explored predictors of academic success in first semester BSN students to identify reasons for continued attrition from programs (2009). Using a descriptive, correlational study design, researchers recruited 66 first semester BSN students during the first 2 weeks of class and asked to complete the Rosenberg Self-Esteem Scale and General Self-Efficacy Scale. Students' academic performance was measured by GPAs at the end of the first semester of the program. Despite having met admission criteria of GPA 2.5 or better to be admitted to the nursing program, after completing one semester, only 15% of participants maintained that GPA level and 29 of the 66 (44% of participants) were unable to continue in the program due to failing grades. Researchers stated the results showed no statistically significant relationship between self-efficacy or self-esteem and academic performance;

the authors posited that students may have had inflated perceptions of abilities at the beginning of the semester due to lack of previous experiences with college level work.

Expanding the breadth of research, Zajacova, Lynch, and Espenshade (2005) conducted a quantitative study among a diverse student population. The researchers investigated the combined effects of academic self-efficacy and stress on the academic performance of 107 nontraditional, immigrant, and minority college freshmen at a large, urban, commuter institution in New York (2005). Using a survey, the researchers measured 27 college-related tasks to predict three academic performance outcomes: first-year college GPA, the number of college credits accumulated, and retention after the first year (2005, p. 677). Findings showed a negative correlation between stress and academic self-efficacy, but a positive relation for students' first-year cumulative GPA, the number of earned credits, and enrollment at the start of the second year (2005, p. 696). The authors were pleased to note that, in support of previous studies on the same variables (Lent, 1986) "in fact, self-efficacy is the single strongest predictor of GPA in all models, even taking into account high school academic performance and demographic background variables" (2005, p. 696). This finding was echoed in a later quantitative study, examining self-efficacy and goal orientation among 112 college students at a Hispanic-serving institution in the southwest United States (Hsieh, Sullivan & Guerra, 2007). Researchers used a sample of 51% freshmen, 3% sophomores, 17% juniors, and 28% seniors to measure motivation towards learning, using two questionnaires, the Patterns of Adaptive Learning Survey and the Achievement Goal Orientation Inventory.

The authors noted that "self-efficacy has consistently been found to be a strong predictor of achievement, and this relationship was again found in this study" (2007, p. 268).

Similarly, a study was conducted to investigate the relationship between academic success, ethnicity, and locus of control, which has been found correlated with the development of nursing professionalism (Colucciello, 2000). Following a descriptive design, the researchers used qualitative and quantitative methods to understand better the perception of locus of control and academic success in BSN students from ethnically diverse backgrounds (2000). One hundred six BSN students who had completed their second semester of medical-surgical nursing courses were recruited and their divided into five categories for comparison during the study: Filipino, Hispanic, White, Other Asian (Cambodian, Chinese, Pakistani, Indian, Pacific Islander, etc.), and Other (Black, American Indian, Alaskan Native, or mixed ethnicity). Participants were asked to complete the Review of Personal Effectiveness with Locus of Control questionnaire and GPA averages, medical-surgical theory grades and test scores were obtained from measurements of academic performance. Interesting, a statistically significant negative relationship was found between external locus of control (ELOC) and the medical-surgical theory grade; no statistically significant association was found between the internal locus of control and academics. Filipinos and Other Asians reported higher ELOC than Whites, but the Asian groups, including Filipinos, viewed academic outcomes to "forces beyond their personal control" (2009, p. 292). When asked for additional details about the locus of control and academic success, students identified the top three factors as study strategies, persistence, and supportive social connections.

Examining factors of persistence and successful academic performance and student retention, Shelton (2012) conducted a quantitative study with 458 associate degree nursing students across Pennsylvania and New York, one group (n=300) were currently enrolled students who had persisted through the nursing program without leaving, a second group (n=83) had withdrawn from the nursing program voluntarily, and the third group (n=75) were formerly enrolled students who had been required to withdraw because of academic failure. A questionnaire was mailed to all participants, which consisted of four sections, including academic efficacy expectations, academic outcome expectations, perceived faculty support, and background data of the participant. Results showed students had no significant difference between the groups in their academic efficacy expectations, but students who persisted had higher academic outcome expectations than students who withdrew voluntarily, and there was a significant different in perceived faculty support among students persisted, with high levels, and those who failed academically, indicating low levels of perceived faculty support. Pitt et al. (2012) identified factors influencing pre-nursing students' academic and clinical performance from a different perspective than Shelton (2012), exploring their effect on student attrition. Researchers used a mixed review of the qualitative and quantitative literature, examining 44 studies from 1999 to 2011, with findings supporting previous research identifying critical thinking skills, personality, age, self-efficacy and academic engagement as affecting student attrition (Pitt et al., 2012). Several areas were found to have a significant relationship to academic performance, including self-efficacy, English as second-language, personality and employment, but were not explored in relation to

attrition, indicating another gap in the literature (2012). Two earlier studies also

examined the relationship of various factors predicting academic performance (Burlison,

2009; Kitsantas, Winsler & Hue, 2008). Burlison administered the MSLQ to 352

undergraduate students taking an introductory course in psychology and evaluated the

scores to predict course grades, but results showed only self-efficacy, and time and study

environment were found to contribute to the validity (2009, p.1321). Kitsantas et al.

(2008) recruited 243 undergraduate students enrolled in introductory courses in their first

semester at a large, public university in the mid-Atlantic region; the MSLQ was

distributed in class and students were asked to return the questionnaire immediately after

completing it. Researchers obtained cumulative GPAs for all participants at the end of the

first and second year as a measurement of the predictive effect of the variable on

academic performance. Self-efficacy and time management were found to be predictive

of academic performance, measured by students' GPA at the end of the first and second

year of college (2008). Lynch (2008) undertook a similar study investigating motivational

beliefs and learning strategies in difficult college courses, recruiting a normative cross-

section of college classes, with a participant pool of 320 students, including 200

freshmen, 44 juniors, and 73 seniors, both male and female students. Students were asked

to complete the MSLQ, and results showed students rated more difficult courses as less

meaningful, expended less effort, and had lower self-efficacy scores. Females in all

groups reported higher test anxiety, but both freshmen and senior females had lower

critical thinking scores. The authors noted that while self-efficacy may build in

introductory courses, students entering the most difficult courses in their major lose

confidence with resulting effects on academic performance (Lynch, 2008).   McLaughlin,

Moutray, and Muldoon (2008) conducted a quantitative study using a longitudinal design

to examine the role of personality and self-efficacy in predicting academic performance

and attrition in nursing students. Using several tools, 384 students from the United

Kingdom were asked to complete the Occupational and academic self-efficacy for

nursing measurement, an academic self-efficacy scale, and Eysenck Personality

questionnaire. Following statistical analysis, findings indicated that students who scored

higher psychoticism scores were more likely to withdraw from a course, contributing to

attrition (2008, p. 217). On a more positive note, researchers did find occupational self-

efficacy to be a significant predictor of students' academic performance, as measure by

course grades, indicating that students who have positive role models can raise their own

self-efficacy through vicarious experiences (2008). Ofori and Charlton (2002) conducted

a correlational study to build a test model describing psychological processes underlying

nursing students' academic performance. Employing an opportunistic sampling of 315

nursing students from two semesters at a university in Northwest England, researchers

asked participants to complete the Multidimensional Academic Locus of Control Scale,

and Wood and Locke's academic self-efficacy questionnaire, and Concern About Coping

subscale, and then they were to anticipate their grade in percentages for a module

assignment (2002, p. 510). Additionally, demographic data, including age and number of

appointments students made seeking one-to-one support were also gathered. Statistical

analysis revealed seeking academic support as having the strongest direct effect on

academic performance; increasing age was positively correlated with academic

performance, which the authors attributed to a student's maturity over the younger's students reluctance to ask for help (2002, p. 512).

Collaborative Learning

Despite decades of research providing evidence of a multitude of stressors affecting college students and their academic performance, and especially those enrolled in professional nursing programs, many educators continue to hold fast to teaching content-laden courses using traditional lectures, with overuse of slide presentations and note taking, maintaining the power and authority in the classroom, leaving students feeling anxious, exhausted, and resorting to surface learning (Beauvais et al., 2014; Benner et al., 2010; Brady-Amoon & Fuertes, 2011; Burlison, Murphy, & Dwyer, 2009; Chernomas & Shapiro, 2013; Goff, 2011; Harris et al., 2014; Pulido-Martos et al., 2012; Shindell, 2011; Taylor & Reyes, 2012). Benner et al. (2010) argued that nurse educators have followed strategies from general research of educational practices, instead of domain-specific research on teaching in nursing; yet nurse educators expect nursing graduates to synthesize, integrate, and application complex scientific facts, knowledge, and skills into professional clinical practice (AACN, 2014b; Texas BON 2010a, 2010b). Changes in higher education classroom is beginning to appear, with faculty using evidence-based practice to implement more student-centered, constructivist, active-learning environments, helping students to gain 21st century knowledge, skills, and behaviors to be prepared for their chosen careers (Ahn & Class, 2011; Brandon & All, 2010; Denton, 2012; Haraldseid, Friberg, & Aase, 2016; Harris, Rosenberg, & O'Rourke, 2014; Kala, Isaramalai, & Pohthong, 2010; McLaughlin et al., 2014).

Recognizing that the healthcare environment is rapidly changing due to discoveries in science, technology and medicine, researches integrated a constructivist framework using electronic learning as a model for nursing education (Kala et al., 2009). Using computer technology in the classroom, the students become active in their own learning, with the faculty assuming the role of facilitator, with strategies such as case studies, gaming, problem-based learning in small groups, and concept-mapping. By creating their own understanding of what they are learning, students can collaborate in small groups and build a knowledge base that has relevance and value, as a student and more importantly, when they graduate. Brandon and All (2010) argued that nursing instructors cannot continue to "teach as they were taught, simply rearranging content-laden material," but to change to a concept-based curriculum, where students can see the application of valuable concepts across the lifespan (p.89). With constructivism, the learner actively creates new ideas with meaning, not just rote memorization of facts. Benner et al. (2010) are in agreement with Brandon and All (2010) noting that some of the more experienced nursing faculty already uses some of these concepts in the clinical post-conference, where students can work in small groups, collaborating on a patient care issues, sharing ideas, and actively synthesizing real-world experiences with didactic content.

Integrating technology with computers and online resources, researchers are finding new ways to encourage active learning with college students (Denton, 2012; Hsu & Hsieh, 2011; McLaughlin et al., 2014). With the use of cloud computing, which allows people to access computing services and data sharing over the internet, Denton found a

number of strategies to keep students engaged, including group projects, peer assessment,

student-constructed presentations, simultaneous class discussions, collaborative

reflection, and website publishing. After recruiting graduate level education students, the

faculty arranged students to work in groups of three to create their own website showing

assessment techniques, collaborating with Google Docs and Google drawing. At the end

of the course, students were asked to complete a survey of their learning of the content

material and attitudes related to cloud technologies to enhance learning (2012, p. 39). The

results were overwhelmingly positive; stating their understanding of assessment concepts

was strengthened. While this example included graduate students, there is significant

evidence that undergraduate students prefer to use mobile technology, especially with

blended learning and look to instructors for "opportunities and encouragement to do so"

(Dahlstrom, Walker & Dziuban, 2013, p.5). McLaughlin et al. (2014) implemented a

study of a course redesign to a flipped classroom model, with students preparing for class

so they can fully participate in discussions, improving critical cognitive development and

working collaboratively with classmates (p. 237). The authors noted that changing from

the traditional 75-minute lecture format to a more student-centered was facilitated by

technology, such as audience response clickers, laptop computers, and self-paced online

content, available to the student prior to class. The instructor did include micro lectures,

usually one to three minutes, to help students refocus and reinforce that the additional

clarity or assistance was available. Students were asked to complete a pre-course and

post-course survey about their experiences in the flipped classroom, with over 70%

preferring traditional classroom teaching in the beginning and dropping to less than 20%

at the post course survey. Flipped classroom preferences were less than 30% at recourse time and skyrocketed to almost 90% favorability at the post course survey. These findings demonstrate that students' exposure to these innovative strategies can help them to buy in to assuming a more active role in their own learning. Hsu and Hsieh (2011) conducted a quantitative study exploring the effects of a blended learning module on self-reported learning among BSN students as compared to a control group who were designated to be in a classroom using lectures only. Researchers recruited 233 second-year students in Taiwan, who were divided into experimental and control groups. The experimental groups received web-based teaching and learning modules, in addition to classroom lectures present throughout the study period. Participants were asked to complete several questionnaires: Case Analysis Attitude Scale (CAAS), Case Analysis Self-Evaluation Scale (CASES), the Blended Learning Satisfaction Scale (BLSS), and the Metacognition Scale (MS) to compare the scores between those who received blended learning over traditional classroom teaching. Results did not show statistically significant differences in the scores between the two groups of students, demonstrating that blended learning and classroom teaching can be effective methods.

In another study examining innovative teaching-learning practices, Peck, Werner, and Raleigh (2013) used a mixed-method educational evaluation to determine if there was an increase in learning through the use of group testing in 39 undergraduate nursing students. Integrating the use of Immediate Feedback Assessment Technique (IF-AT) testing, students worked in groups and then chose their test answers through consensus. The IF-AT forms are similar to the scratch off tickets used with lotteries, with answers

randomly located in the box underneath the material that is removed. If a student scratched off an answer and the star, indicating a correct answer, was not present, the group discussed the test question again, and then made subsequent attempts. The star, indicating a correct answer, is not located in the middle of the answer box, but in different positions to prevent students from trying to guess without careful thought (2013). Evaluation of this strategy was accomplished by comparing students' final examination grades before and after implementing this collaborative strategy, with a marked increase in grades from an average of 76% to above 90% in all subsequent semesters. Additionally, students were given a survey with a Likert-scale ranging from one to five, with five the most favorable response toward the AT-IT, with an overwhelmingly positive response from the 39 students, and a mean of 4.77 on the 5-point scale. In a similar study, Ahn and Class (2011) implemented a student-centered pedagogy with pre-service teacher course, allowing the students to generate questions for their own midterm exams. The narrative follows the reactions of the students, who are reluctant to assume this active role in learning, become frustrated when they learn the difficulty in developing higher-order questions, and to reflect on their own learning. Interesting, the authors presented this implementation at a forum with higher education faculty and received less-than-supportive feedback, when teachers were asked if they would implement this strategy, reinforcing the long-held belief that many teachers wish to continue to maintain the power and authority in the classroom (2011). Wright (2011) echoed this sentiment in her essay on implementing classroom innovations. She highlighted a number of themes that influence the decision to change to student-centered

learning in higher education: balance of power, the function of content, the role of the teacher, the responsibility for learning, and the purpose and processes of evaluation (2011). From the beginning of class, students are reminded that the teacher has the power and authority, from attendance policies, schedules and other "heavy-handed directives" (p. 92). The frantic "need to cover the content" in a course tends to override the importance of student learning, with course outcomes and goals forcing students to memorization and "binge and purge" approach to examinations (p. 93). To make the classroom student-centered, the teacher needs to change from the "sage on the stage…to the guide on the side," allowing students to guide their own learning (p. 93). Students will need to accept the responsibility for learning in a student-centered classroom, instead of passively waiting for the teacher to provide it. Utilizing computer technology and online resources will allow the student to actively participate in the learning process, and willingly accept that responsibility. Changing from the focus on generating grades to truly evaluating learning, alters the process of evaluation in a student-centered classroom, where the instructor helps students to ask critical questions, assess their work and that of their peers and seeks a richer learning experience (p. 95).

Actively involving students in their own learning through collaborative processes helps them to understand learning expectations, increase interaction with classmates and stimulate dialogue, and to "see the bigger picture" (Haraldseid, Friberg & Aase, 2016, p. 1). Researchers implemented an exploratory qualitative study to explore and describe the process of student involvement in developing technological learning materials for clinical skills training, recruiting 165 Norwegian nursing students enrolled in a clinical skills

course (Haraldseid et al., 2016). The investigators used focus group interviews and field

notes to gather rich, thick descriptions of the students' experiences. Results showed that

during the process, the students' understanding of their learning needs evolved, and they

became advocates for their learning needs (2016, p. 5). Beyond recognizing the value of

the bigger picture in the learning process, students sought out opportunities for

interaction with one another, finding supportive with classmates and refining their

learning. The authors cautioned that this type of innovation is an iterative process, and

will evolve as the process continues. Smith-Stoner and Molle (2009) used an action

research design to implement cooperative learning in two undergraduate nursing courses,

a medical-surgical course, and a senior-level community health class. The two faculty

members met four times during the quarter to share reflections and discuss strategies used

in the classroom. During the initial cycle, efforts focused on forming groups and seating

arrangements, ensuring each group had students of different abilities, which would

facilitate cooperative learning. The second cycle focused on managing time and

transitioning between group work and whole-class discussions. Negative student

feedback was also discussed, identifying that some students did not prepare and could not

contribute and students focusing on the knowledge they needed to pass exams, instead of

a more in-depth learning experience. In the third cycle, the faculty continued to

concentrate on the structure of the learning activities and made necessary adjustments.

The last and final cycle, they shared successes related to the cooperative learning. Results

of the study found more direct involvement with the students, identifying those with

additional learning needs, addressing student errors during class time- ahead of

examinations and fostering better academic performance, and faculty serving as role models for collaboration by listening to student discussions, asking questions, and clarifying errors (2009, p. 316).

Innovative Classroom

In a famous 14th century manuscript illumination, the *Lecture of Henricus de Alemania,* the professor is featured lecturing to his students, high above in his elevated seat, or *cathedra (*Kortum, n.d.*).* The students in the front rows are paying close attention to the teacher, with their heads tilted up, books open, and sitting obediently in the rows of seats. There are a few students in the second row who are also paying attention while others are engaged in conversation, and some do not have books. By the third and fourth row of the classroom, the students are disengaged, one is sleeping, and only a few even have their books. What is shocking is that now, in the 21st century, with the explosion of science, technology, medicine, space travel, and expensive computers, classes are still designed and conducted in the same manner. A review of current literature on innovative classroom design and instruction strategies reveals there are efforts in higher education to reflect the development of technology, student-centered learning, and 21st century skills, but sadly, even in the health sciences and nursing, it is not the norm, with many university faculty still preferring to lecture to students sitting in rows (Chilton, 2014; Day-Black, Merrill, Konzelman, Williams & Hart, 2015; Diefenbeck, Hayes, Wade & Herrman, 2011; Fahlberg, Rice, Meuhrer & Brey, 2014; Freeman & Walsh, 2013; Hagemeier, Hess, Hagen & Sorah, 2014: Pardue & Morgan, 2008; Peterson, 2014).

Implementation of innovative classroom design and teaching strategies has been supported by the increased availability of mobile technology, including cellular phones, IPads and notebooks, laptop computers, and online collaborative networking, especially among millennial generation students (Dahlstrom, Walker & Dziuban, 2013; Pardue & Morgan, 2008). As digital natives, today's college students prefer and expect to use technology in the learning environments, supported and encouraged by their faculty. Some teachers are enabling classroom technology to allow students to interact with students in other schools, states, or countries through video links, such as Skype (Chilton, 2012). The advantage of this type of innovative classroom is the increased motivation in students to participate in their own learning, assuming an active role and engaging with other points of view. Nursing faculty at one school implementing gaming as an innovative teaching strategy for their community health course, using serious games such as the qualitative case study on epidemiology *Outbreak on Water's Edge,* to engage students in real-life scenarios that have relevance and help to prepare them for challenges in clinical practice (Day-Black et al., 2015). In a quantitative study, Montenery et al. (2013) implemented a number of innovative technologies into their nursing program, recognizing that millennial generation students feel comfortable using new technology, and it increased interest in the course. Audience response clickers, online resources- such as podcasts, and use of human patient simulators were included in the study with 60 nursing students. Results showed a positive response for audience clickers and human patient simulators, but only a moderate to neutral impact from the podcasts. Bell (2010) offered strategies for problem-based learning as an innovative approach to learning,

providing the opportunity to learn a number of 21st century skills. Blending a constructivist approach to technology, Bell noted students can take an active role in their learning, incorporate collaborative skills with classmates, and become more independent in organizing their learning (2010).

Moving from the traditional classroom to an active learning classroom (ALC) can often uncover challenges not seen with the established pedagogy. Petersen and Gorman (2014) offered a number of strategies to address common problems, such as the difference in the classroom setup, moving from students in rows all facing forward to small group clusters, with no focal point and multiple distractions going on. The authors suggested having multiple projection screens around the room, whiteboards, or portable screens to allow all students directly visibility of materials in class-wide discussions. The physical constraints of a tiered classroom or one with desks in rows do not encourage collaboration. Moving desks into groupings can allow students to face one another during discussions. To address the loss of a focal point, the teacher can move around the room and become a coordinator where he/she is standing. If there is a lot of noise or distractions, the teacher can refocus everyone with a set signal or sign, helping students to bring attention to them. Students working in groups can use technology, but if a group is making a presentation, to ask others to close their laptops to help students focus. Using similar strategies, faculty at the University of Wisconsin-Madison used faculty development funding to convert a classroom into a student-centered active learning environment with upside down pedagogies (SCALE-UP) (Fahlberg et al., 2014). The faculty described the multiple-year plan for designing and implementing the new pilot

classroom and the two pilot studies conducted using the SCALE-UP classroom, using both qualitative and quantitative methods to evaluate student learning (2014). Findings from the evaluation were mostly positive responses from the students, although there was some negative feedback regarding watching lectures outside of class time and perceived a lack of time to complete projects in the classroom. Faculty also noted that technology in the SCALE-UP classroom cannot, and should not be the focal point for learning, but another tool to use to facilitate student-centered learning (2014, p. 91). Undergraduate students also stated there was great concern over group learning and peer accountability, with its effect on their individual course grades. The authors also cautioned that faculty cannot continue teaching as they did in the traditional classroom, and must learn and utilize interactive, student-centered strategies (2014). Fiedler, Giddens, and North (2014) also noted that an important aspect of implementing an innovative classroom design is the faculty's level of experience and comfort with using innovative technology.

Freeman and Walsh (20130) offered a commentary about implementing new strategies and classroom designs aligned with brain-based teaching and learning strategies, to improve active student involvement. Alluding to concepts such as neuroplasticity, or the brain's ability to change or reorganize over time as a result of experiences, and student-centered cooperative learning, the authors offered ten brain-based strategies: (a) create a safe environment in the classroom where students can learn without fear, or undue stress, (b) recognize students have multiple intelligences and learn differently, (c) encourage cooperative learning, (d) movement and chunking of information, , (e) use humor in the classroom, to create a relaxed atmosphere Additional

brain-based strategies included () integrate the arts, use music, pictures, to get students

thinking about other ways of learning, (7) use active and experiential learning to help

students reflect on their lived experiences e, (8) ensure course assignments are relevant to

what needs to be learned, (9) promote critical thinking and reflection, , (10) integrate

technology, recognizing the students entering the class are already digital natives and feel

comfortable using it as a tool to learn (2013). O'Connor, McDonald, and Ruggiero

(2015) concur with a number of the strategies outlined by Freeman et al. (2013), citing

the need to scaffold complex learning, integrate 21st century thinking with emerging

technologies, and to use dynamic design and assessment to expand learning and

communication opportunities for students. Ruckert et al. (2014) also presented a model

for integrating technology into health professions educational settings to address time and

space constraints, large class sizes, competition for clinical internships and geographical

barriers for students traveling between the classroom and clinical sites. Redesigning the

classroom into active learning environments was accomplished through training and

support to faculty for increased use of technology such as Blackboard, videos, Voice

Thread, and Twitter, and students using collaborative learning in small groups (2014, p.

1). Clayton, Blumberg, and Auld (2010) conducted a quantitative study examining the

relationship between motivation, learning strategies, and the choice of environment,

traditional or an online component. Recruiting 13 post-secondary, graduate students from

New York City, enrolled in a psychology course, researchers asked them to complete the

Patterns of Adaptive Learning Survey, the MSLQ, and a self-efficacy scale. It should be

noted that over 80% of the students reported never having taken an online class or hybrid

class (p. 352). Questionnaires were completed during one class. Results showed 73% preferred to enroll in a traditional coure, 25% preferred hybrid, and only 2% preferred online. Further analysis revealed low motivational and self-efficacy beliefs among those who preferred traditional classroom design, but students stressed the level of engagement in class was important to them (p. 357).

Several articles were focused specifically on innovative classroom and teaching strategies in nursing education, including an interprofessional study on interpersonal, interprofessional communication, self-efficacy beliefs of medical, nursing, and pharmacy students before and after course participation (Hagemeier, Hess, Hagen & Sorah, 2014). At the completion of the course with 192 first-year medical, nursing and clinical psychology and second-year pharmacy students, the results were so positive, the faculty now require it for all medical and nursing students, with the addition of pharmacy students with the opening of that school (2014). Students were divided into small groups with representation from each of the disciplines and met for three hours each week. Data collected from a self-efficacy survey showed improved self-efficacy beliefs in interprofessional communication at the end of the course (p. 5). This type of innovative classroom experience reflects the critical 21st century skills and relevance to clinical practice for all the students, providing a template for other health science programs to follow.

In a mixed-methods, 18-month, multisite study, Hagemeier et al. (2014) investigated faculty experiences associated with implementing a virtual community into their courses; this report is the qualitative component of that study. A total of 14 BSN

nursing programs were included in the comprehensive study, and through focus groups, qualitative data was collected on the faculty's experiences and perceptions. Three key themes were identified: teaching-learning benefit, commitment to the innovation, and final cost. Faculty felt there was a genuine teaching-learning benefit to the students and were accepting and supportive, as the program allowed the students to have a broader view of patient care than traditional classroom teaching (2014, p. 389). Those faculty interested in implementing the program permanently felt there should be a firm commitment to learning and using the tool properly, and it should be applied early in the school year (p. 390). As students had to absorb the cost of the program, at $35 per year for access, and no textbooks were removed from the program, faculty felt guilty adding additional costs. Additional discussion about reducing the cost by obtaining a state license instead of an individual license was included (2014, p. 390). Additional studies examined factors impacting students' implementation of clinical skills in the clinical setting and a clinical immersion program (Diefenbeck, Hayes, Wade, & Herrman, 2011; Houghton, Casey, Shaw, & Murphy, 2012). Nursing faculty recognized the gap between didactic and clinical practice, incorporating new innovative teaching strategies to improve student preparation for licensure and beginning practice after graduation (Benner et al., 2010).

Summary

College students experience a number of stressors which impact their sense of self-efficacy and subsequently, their academic performance. In addition to the demands of higher education, nursing students must also face challenges related to complex

clinical situations, psychomotor skills, and higher level critical thinking and problem-solving to be prepared to enter professional practice after graduation. Traditional classroom setting and teaching strategies following established pedagogies limit active student learning and can result in nursing students experiencing academic failures, stress, and worse, withdrawal from programs. Numerous studies have identified factors leading to poor academic performance, but there is a scarcity of studies examining strategies to address those issues or understanding the personal experiences of the students. Studies describing the implementation of new, innovative strategies or classroom design fail to explore the reasons why those strategies work. A gap in the research also exists exploring the personal experience of students in these innovative classrooms, and how that setting impacts their sense of self-efficacy and academic performance. This study addressed that gap in the knowledge by exploring the impact of an innovative classroom utilizing technology on the self-efficacy and academic performance of BSN students. In Chapter 3 I will outline the quantitative research methodology that was used to measure students' perception of their self-efficacy at the beginning and at the end of a course using an innovative classroom setting that integrated technology.

Chapter 3: Research Method

The purpose of this quantitative, correlational study was to explore the impact of collaborative learning in an innovative classroom that integrated on the self-efficacy and academic performance of BSN students. An overarching goal of this study was to determine if an innovative classroom design that integrated technology impacted the academic performance and perceived self-efficacy of BSN students.

This chapter provides a description of the design and methodology for this quantitative study. Research Question 1 will be addressed by the quantitative data from the GSES (Appendix B), and Research Question 2 will be addressed through the collection of data from the GSES and the students' final course grade in Nursing and Health Promotion in the Community (Appendix B). A final section of the chapter describes threats to validity.

Research Design and Rationale

Following a quantitative, correlational research design, my study explored the impact of collaborative learning in an innovative classroom setting that integrated technology—the independent variable—on BSN students' perceived self-efficacy and academic performance—the dependent variables. This study explored the possible relationship between the variables to determine if a relationship between BSN students' academic performance and their perceptions of self-efficacy were affected by the innovative teaching-learning environment. The research questions posed in this study were directly related to a correlational research design, positing a possible impact and

relationship between the innovative classroom design and BSN students' perceived self-efficacy and academic performance.

My study focused on the BSN nursing students' enrolled in the third semester course, Nursing and Health Promotion in the Community, which is taught using this innovative classroom design, using collaborative grouping of desks and active learning strategies. This course is only taught in the spring and fall semesters, limiting access to the potential research subjects for the study. This teaching-learning phenomenon occurs only in this one nursing course within the BSN nursing program at the University of XXX (XXX). Other nursing courses in the BSN program continue to be taught by nursing faculty using traditional pedagogy.

To address the gap in the literature, BSN students and collaborative learning in an innovative classroom setting that integrated technology needed to be examined. Researchers have conducted numerous studies to identify factors associated with nursing students' academic performance, reporting that increased stress (Beauvais, Stewart, DeNisco, & Beauvais, 2014), anxiety (Chernomas & Shapiro, 2013), frustration (Brady-Amoon & Fuertes, 2011), and lack of confidence (Pulido-Martos, Augusto-Landa, & Lopez-Zafra, 2012) interfere with successful program completion (Harris, Rosenberg, & O'Rourke, 2014; Taylor & Reyes, 2012). Other researchers found students' levels of self-efficacy can impact their academic performance, including persistence and successful completion of their program (Putwain, Sander & Larkin, 2013; Robb, 2012; Shelton, 2012; Taylor & Reyes, 2012; van Dither, Dochy & Segers, 2011). Although some studies on self-efficacy and academic performance included BSN students

(Beauvais et al., 2014; Chernomas & Shapiro, 2013; Fernandez, Salamonson & Griffiths, 2012; Gibbons, Dempster & Moutray, 2011; Goff, 2011; Jaret & Reitzes, 2009; Peterson, 2009; Pitt, Powis, Levett-Jones, & Hunter, 2012; Wood, Saylor & Cohen, 2009), many only included associates degree of science in nursing (ADN) students, who enroll in courses at community colleges, not universities, with a different level of academic rigor (Pulido-Martos et al., 2012; Taylor & Reyes, 2012).

The selection of a correlational research design was consistent with other previous studies, expanding the research base and addressing gaps in the literature. This study went beyond identifying factors associated with influence on nursing students' academic performance and self-efficacy, by exploring the impact of collaborative learning in an innovative classroom setting that integrated technology, thus providing the first steps for nurse educators and administrators to understand better students' perceptions and how we can help improve their learning experience.

Methodology

Population

The purpose of my study was to investigate the impact of collaborative learning in an innovative classroom on BSN students and if this type of active, student-centered learning affected their individual sense of self-efficacy and academic performance in the course. The study took place in an undergraduate baccalaureate nursing program at a small, private, Catholic university in the Southwest, with an on-campus student population of approximately 4,000 undergraduates. There are approximately 250 undergraduate nursing students enrolled in the BSN program each semester. Students are

admitted to the BSN program in the spring and fall semesters, with an average of 40 students enrolled in the beginning courses. Nursing and Health Promotion in the Community is a third-semester nursing course, in a five semester BSN program, presenting the integration of advanced nursing concepts into patient care in various community settings, from community clinics and elementary schools, to homeless shelters, nurseries, and long-term care facilities.

Students in the Nursing and Health Promotion in the Community course were in the second half of their junior year of college, having completed an average of 65 credit hours of prerequisite courses, including chemistry, anatomy and physiology, microbiology, nutrition, statistics, and liberal arts courses, and two semesters of foundational nursing courses with clinical experiences. This 5-credit hour course included 3 hours of didactic instruction and one, 9 hour clinical day per week. Students seeking admission to the BSN program have met academic criteria, including grade point average (GPA) of 2.5 in all science courses, overall GPA of 2.5, and achieved passing scores on admissions tests.

The vast majority of these students were considered traditional students, having graduated from high school recently and enrolled in an institution of higher learning. Most of the students were single with approximately half of the class living in university dormitories, and the other half lived at home and commuted to campus. All students met the academic requirements for acceptance into the BSN, but there are two major differences between the students' method of completing core requirements: some advanced students have received credit for Advanced Placement (AP) course in high

school and an increasing number—almost half of the class—have completed core courses at a local community college.

Sampling and Sampling Procedures

In order to examine the impact of collaborative learning in an innovative classroom that integrated technology on BSN students' self-efficacy and academic performance, I utilized a convenience sampling of the population. The sample selected were volunteers from the only course in the BSN program that used the innovative teaching-learning strategy. The population consisted of the entire class, averaging between 25 and 30 students. Other reasons for using convenience sampling included the limitations of the researcher for travel to other sites, budget, and matching the characteristics of the study focus. The target population for my study was the entire class of students enrolled in Nursing and Health Promotion in the Community course offered spring semester 2016.

A priori power analysis calculation identified an appropriate sample size of 20 students for the study (Table 1). There were 26 students enrolled in the course spring 2016. Twenty-one participants agreed to complete my study, resulting in a power calculation of 80%, using a level of significance, or alpha, of 0.05, and a large effect size of .51 (Grover, Burns & Gray, 2013; Heine, 2014).

Table 1
Power Analysis Calculation

t tests - Correlation	Point biserial model
Analysis: A priori	Compute required sample size
Input: Tail(s) =	One
Effect size $|\rho|$ =	0.50
α err prob =	0.05
Power (1-β err prob) =	0.80
Output: Noncentrality parameter δ	2.6457513
Critical t =	1.7291328
Df =	19
Total sample size =	21
Actual power =	0.8172279
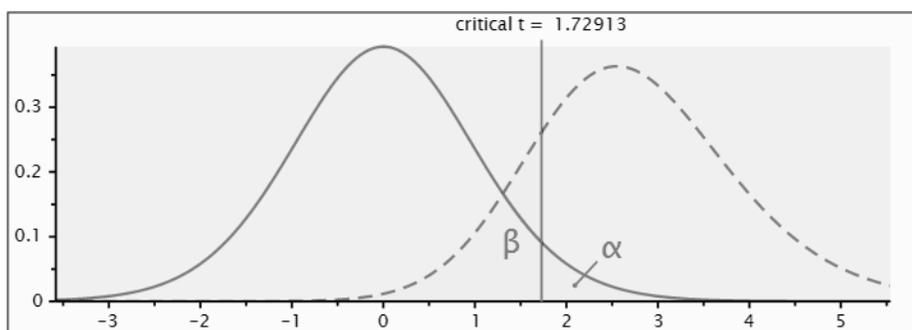
Quantitative data was collected from a modified version of the GSES (Appendix B), along with the students' final grades in Nursing and Health Promotion in the Community course, and demographic data.

Eligibility Criteria

Inclusion criteria. Sampling was done using only those BSN students enrolled in the Nursing and Health in the Community course in spring 2016. Participants had to actively participate in class activities, and be willing to complete the self-efficacy

instrument, and provide their final course grade, and demographic information upon request. All volunteers from the class were accepted.

Exclusion criteria. Students from other courses or levels within the BSN program, graduate nursing students, associate degree students, or other non-BSN students in the program were excluded because their courses were not being offered in the collaborative, innovative classroom setting. Academic status, age, gender, course load, and previous course failures were not considered.

Determination of Sample Size

The *probability* or *statistical power value* determines if a real effect has occurred or if a relationship exists. In scientific literature, the accepted value of 80% (.80) is used, reflecting an 80% probability that a real relationship exists between dependent and independent variables. The next important variable in the calculation is referred to as *alpha* (α). The accepted value for α is .05. When α is greater than .05, the researcher can state there is an increased probability the null hypothesis can be rejected correctly. Thus, when α > .05 one can conclude there is a 95% probability the statistical analysis revealed the right conclusion. The third variable, effect size, determines how strong the relationship between the independent and dependent variables is with values ranging from small, medium, to large effects. For the purposes of my study, I have set a large effect size range.

Using the G*Power 3.1.9.2 online version (Heine, 2014a, 2014b) a statistical power analysis calculations sample size, *N* was computed as a function of power level 1 − *b*, significance level *a*, and the to-be detected population effect size. For the proposed

study, a significance level, or alpha, of .05, the power of 80%, and a large effect size of

.50 were set. This calculation resulted in a sample size of 21 students.

Procedures for Recruitment, Participation, and Data Collection

The research project involved exploring experiences of junior-level, BSN students

learning in an innovative environment at a small, private, Catholic university. A number

of factors influenced sampling decisions, such as representativeness- selecting those

students who were enrolled in the third-semester nursing course taught using this type of

innovative teaching-learning design. Also important was addressing heterogeneity-

ensuring the students selected reflected characteristics of the entire group, not just those

who were academically strong or conversely, academic weak, and included various

ethnic and sociodemographic backgrounds of the student population, which were

predominantly Hispanic, and included Caucasian, Black, Asian, and students from the

Middle East countries of Saudi Arabia and Israel. Demographic information collected

included the participant's gender and age group range, from 18 to 21 years, 22 to 25

years, and over 25 years, as part of the modified GSES (Appendix B).

Preplanning some of the aspects of a proposed study guided me to establish and

strengthen relationships with the essential personnel at the setting, assess the ability to

collect data, and address any concerns with validity or ethical considerations. I had an

established strong rapport with the faculty colleague teaching in the innovative design

course, and support from colleagues, administration, and support staff. I did not teach in

the Nursing and Health Promotion in the Community course, nor did I have authority

over the students' grades for that course. I am faculty at XXX and in the BSN program,

but those roles were addressed by conducting this study at the end of the course and providing anonymity to the students who complete the self-efficacy questionnaire. The nursing administration was supportive of research into innovative teaching and learning as one of the pillars of the university's mission. Further description of the procedures for informed consent and data collection are outlined in the following sections.

Informed Consent

Prior to collection of any data or contact with prospective participants, I obtained Institutional Review Board IRB approval from Walden University (# 06-14-16-0017550) and a letter of cooperation from the IRB at XXX, the authority for the research study setting. I had completed both National Institute of Health (NIH) and Collaborative Institutional Training Initiative (CITI) certificate training for Protection of Human Subjects in Research and submitted certificates with my application for the IRB approval. At the end of the semester I sent a recruitment email to all students who were enrolled in Nursing and Health Promotion in the Community course for spring 2016, with the informed consent and directions on how to proceed if they wished to participate in the study. A link to the Survey Monkey questionnaire was included in the email to the students and a statement was included explaining that those who responded to the study were considered to have given consent to participate.

After one week, a reminder email was sent to all students encouraging those who had not yet completed the questionnaire to do so (Appendix A). The informed consent asked the potential participant to do three things: (1) provide demographic information about gender and age group, (2) complete the self-efficacy questionnaire, estimating their

level of self-efficacy at the beginning of the course and at the end of the course, and (3) to share their final Nursing and Health Promotion in the Community course grade, for statistical analysis and comparisons. All study participants were instructed to download or to print a copy of the informed consent from the email for their records. All data was securely stored in surveymonkey.com for researcher access only

Data Collection

Surveymonkey.com collected the demographics, course grades, and questionnaire items, which were collected anonymously. The link was active for 10 days. After one week, a reminder email with the surveymonkey.com link was emailed to all students. At the completion of the study, all students enrolled in the innovative course were sent an email link to redeem for a five dollar gift card to a local coffee shop. All research study materials, thumb drives, and other paperwork are stored in a locked file cabinet, off campus, for a period of five years, and will then be destroyed.

This study only required one short time period to complete the questionnaire, without any planned follow-up or debriefing sessions. The participants completed the anonymous online survey in the privacy of a setting of their choosing. There were no additional requirements for the participants beyond completing the questionnaire and providing demographic information. There will be no discussion of the study or the participants' activities with the study, maintaining the anonymity of the students.

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Instrumentation and Operationalization of Constructs

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The development of a research study is a complex process, which requires careful thought and preparation. When designing the plan for conducting this study and data

collection, a number of considerations were made, including reliability and validity of the quantitative tool, the setting, privacy and confidentiality for the participants, and strategies for analyzing the data obtained,

Instrument

Selection of a quantitative tool aligned directly with the research questions, providing an accurate assessment of the phenomena being studied and having established reliability and validity for use. The Generalized Self-Efficacy Scale (GSES) (Schwarzer & Jerusalem, 1995) has been tested across numerous populations and settings, and found to have a high reliability, with "samples from 23 nations, Cronbach's alphas ranged from .76 to .90, with the majority in the upper .80s" (Schwarzer et al., 2010; Schwarzer & Hallum, 2008; Schwarzer & Jerusalem, 1995; Schwarzer & Luszczynska, 2007). This study collected the quantitative data from the GSES at the end of the Nursing and Health Promotion in the Community course. Using the Likert scale to answer questions, participants evaluated what their perceived self-efficacy was at the beginning and the end of the semester. The GSES is a 10-item scale used to "assess the strength an individual's belief in his or her own ability to respond to novel or difficult situations and to deal with any associated obstacles or setbacks" (Schwarzer & Jerusalem, 1995). To accurately score the scale, each item has four choice responses, ranging from "Not at all," scored as a one, to "Exactly true," which is scored as a four (Schwarzer & Jerusalem, 1995). The GSES has been widely used across a number of populations and settings, and permission for use and adaptation of items is expressly provided in a formal letter (Appendix C). The questionnaires will be accessed by participants via an online Survey monkey link and

completed in a setting of their choosing scale. Anonymous responses were analyzed

individually and as an aggregate for the study.

Operationalization

The independent variable in this study was the collaborative learning in an

innovative classroom that integrated, and the dependent variables were the BSN students'

self-efficacy and their academic performance, as measured by the final course grade in

Nursing and Health Promotion in the Community course. The following operational

definitions were used in this research study:

Collaborative learning. The process of BSN students working together in small

groups actively participating in the learning process. Students provided peer-to-peer

teaching assistance and support to one another.

Innovative classroom. Instead of a traditional classroom with chairs and desks

lined up in rows or tiered auditorium seating, with the faculty at the front of the room,

using one-way communication to lecture, this classroom had students seated in small

groups of four to five, arranged around tables, to promote collaborative interactions. The

faculty presented an unfolding case scenario and then allowed students to search actively

for current research, evidence-based nursing, and medical practice, to provide clinical

relevance to the topic for the class. Faculty walked around the room, interacting with

student groups throughout the class period, with lively student presentations and

discussions considered the priority for communications.

Technology. For the purposes of this research study, technology was defined as

all electronic media, technology, and communication devices that BSN students had and

used to obtain information from resources. Students were encouraged to use technology

throughout the course, including laptops, tablets, notebooks, IPhones, and computers.

Self-efficacy. The concept that a student believes they can be successful at the

tasks put before them in the Nursing and Health Promotion in the Community course.

This included academic, clinical, didactic, and critical thinking skills for a junior-level

BSN student. It was measured with the GSES, using a Likert scale from the 10-item

questionnaire, which had been modified to reflect the nursing course. Each item on the

GSES had a range of responses, using numerical values from one to four. An example of

an item from the scale: "I can always manage to solve difficult problems if I try hard

enough." Scored at one point for "not at all" to four points for "exactly true", there is a

total possible score of 40 points for the entire scale.

Academic performance. For the purposes of this study, academic performance

was measured by the BSN students' final academic grade, calculated as a percentage

from a possible 100, for didactic and clinical work done in the Nursing and Health

Promotion in the Community Course, and given a numerical value for the GPA on a one

to four scale. As outlined in the XXX SNHP Student Handbook, grades are assigned

according to the SNHP grading scale

Table 1.

Academic Evaluation Grading in the School of Nursing

Letter Grade	Description of Academic Performance	Numerical Grade	Grade Point Average
A	Excellent Scholarship	93% & above	4.00
A-	Excellent Scholarship	90% – 92%	3.70
B+	Good Scholarship	87% – 89%	3.30
B	Good Scholarship	83% – 86%	3.00
B-	Good Scholarship	80% – 82%	2.70
C+	Satisfactory Scholarship	77% – 79%	2.30
C	Satisfactory Scholarship	75% – 76%	2.00
F	Failure	$< 75\%$	0

Note: Academic grades less than 75% are considered a failing grade in the SNHP (XXX, 2015).

Data Analysis Plan

The process of data analysis in quantitative research was first determined by the research questions to be answered, and secondly by the research design selected for collecting the quantitative data.

Research Questions

RQ1. Is there a relationship between the BSN students' perceived self-efficacy at the beginning of the course and at the end of the course, when participating in collaborative learning in an innovative classroom that integrated technology?

H_01: There is no relationship between the BSN students' perceived self-efficacy at the beginning of the course and at the end of the course when participating in collaborative learning in an innovative classroom that integrated technology.

H1: There is a positive relationship between the BSN students' perceived self-efficacy at the beginning of the course and at the end of the course when participating in collaborative learning in an innovative classroom that integrated technology.

RQ2. Is there a relationship between the BSN students' end-of-course grades and their end-of-course perceived self-efficacy?

$H_0 2$: There is no relationship between the BSN students' end-of-course grades and their end of course perceived self-efficacy.

H2: There is a positive relationship between the BSN students' end-of-course grades and their end-of-course perceived self-efficacy.

Collection of the quantitative data from the questionnaire, administered through an online Survey monkey link, was followed by analysis through descriptive and inferential statistical analysis using an Statistical Package for Social Sciences (SPSS) Version 22 program (IBM, 2013). The forms were reviewed for data cleaning, assessing for completeness, use of correct answer responses, and identifying missing responses. The first analysis used descriptive statistics, to add up the answers for a sum score, ranging from 7 to 40, because there may have been up to three missing scores, and then determined a mean score for each student (Schwarzer & Jerusalem, 1995). The GSES scores can be calculated as long as there are no more than three items on a 10-item scale missing (Schwarzer & Jerusalem, 1995). Any changes that were made to individual GSES forms were documented in the data tables presented in Chapter 4.

In order to answer research questions one and two, a chi-square analysis was conducted. The chi-square is an appropriate statistical measure when the purpose of the

research is to test the relationship between two nominal level variables (Statistics

Solutions, 2013). The calculated chi-square coefficient (χ^2) and the critical value

coefficient were compared, to evaluate the significance of the study results (2013). When

the calculated value is larger than the critical value, with an alpha of .05, the null

hypothesis will be rejected (suggesting a significant relationship). In order to determine

the degrees of freedom for a chi-square, it is necessary to use the following equation:

$df = (r - 1)(c - 1)$ (2016). The r value equals the number of rows, and the c value equals

the number of columns from the raw data table (Statistics Solutions, 2013).

Next, to analyze the strength of the relationship between collaborative learning in

an innovative classroom that integrated technologyinnovative classroom that integrated

technology and BSN students' self-efficacy and academic performance, a Pearson

product-moment r correlation was conducted. Pearson r correlation is a bivariate measure

of association (strength) of the relationship between two variables (Author, 2016). Given

that all variables are continuous (interval/ratio data) and the hypotheses seek to assess the

relationships, Pearson r correlations are the appropriate bivariate statistic (Author, 2013).

Correlation coefficients, r, vary from 0 (no relationship) to 1 (perfect linear relationship)

or -1 (perfect negative linear relationship) (Author, 2013). Positive coefficients indicate a

direct relationship, indicating that as one variable increases, the other variable also

increases. Negative correlation coefficients indicate an inverse relationship, indicating

that as one variable increases, the other variable decreases. Cohen's standard was used to

evaluate the correlation coefficient, where 0.10 represents a weak association between the

two variables, 0.30 represents a moderate association, and 0.50 represents a strong association (Author, 2013).

Threats to Validity

The researcher needs to identify clear strategies to address potential threats to validity during data collection, data analysis, and interpretation or conclusions. Validity provides a way to assess the accuracy of claims and as a basis for determining which findings are "sufficiently valid" to be added to the knowledge base (Grove et al., 2013).

External Validity Threats

Due to the particular focus of the study, there were limited threats to external validity. The sample population was restricted to only those students enrolled in the Nursing and Health Promotion in the Community course, in which the faculty conducted the class using collaborative learning in an innovative classroom that integrated technology. The sample size was small, but adequate according to power analysis calculations (Heine, 2014). Use of the GSES was easy to replicate, with permission for use available at no cost to the researcher (Schwarzer & Jerusalem, 1995). Issues with trustworthiness in transferability were addressed by fully describing the study, participant selection, and methodology, to allow other researchers to be able to replicate this study.

Internal Validity Threats

Threats to internal validity can lead to errors in conclusions, presenting conflicting rival hypotheses to explain why the phenomenon happened (Grove et al., 2013). One internal threat identified was the selection process for study participants, from an entire class of BSN students, excluding all others as possibilities. However, the focus

of the study was quite specific, and this group of students was the only one matching the

research focus; therefore random selection could not be used. Concerns about controlling

the environment were addressed by planning for data collection and participant contact at

the end of the course to limit any undue influence between the researcher and participants

and to limit any possible impact of the researcher's other role as faculty in the university.

Using only one class of students and online data collection also helped to address

concerns about the environment influencing responses. Threats due to maturation and any

testing effect were controlled by conducting data collection during on online session,

without further testing or questionnaires. The strength of validity and reliability of the

GSES across diverse populations and settings controlled for any threat to internal validity

by instrumentation. Attrition of subjects was not expected to be a concern as the data

collection period was planned for a time that did not interfere with other class schedules

and did not delay students in their daily schedules. This was not an intervention study, so

there were no threats from diffusion, imitation, or other negative impacts on treatment

groups as compared to control groups.

Construct or Statistical Validity

The measuring instrument was related to the theoretical framework of the study to

ensure construct validity. The research questions were developed based on the conceptual

framework of self-efficacy (Bandura, 1977, 1995, 1997) and selection of the GSES

aligned those constructs with that theory. Understanding the concepts used to interpret

the results also strengthened the construct validity of this study. Ensuring the credibility

of the data began with the researcher maintaining the ethical and professional standards

of scientific research. I was the sole researcher and established safeguards for the

protection of the participants, collection of the data, and safeguarding of the analyses. To

ensure credibility, I measured, recorded, and collected only the data that I have described

in this chapter, based on my research questions, and aligned with my problem statement.

Maintaining a researcher's diary where I recorded information about my experiences,

methods, and lessons learned through reflection also added dependability to my study.

Ethical Procedures

IRB Approval

Approval from the Walden University IRB (# 06-14-16-0017550) and a letter of

cooperation from the XXX IRB was obtained prior to any data collection or participant

recruiting. Permission was also obtained from the Dean of the SNHP at XXX to ensure

compliance with university regulations and school policies. As part of the IRB process

for both Walden University and XXX, I completed both NIH and CITI training certificate

courses for the protection of human subjects in research.

Recruitment

Students were not contacted for recruitment to the study until the end of the

semester, to avoid conflicts regarding power and authority with my position as a faculty

member. The initial invitation to participate was sent via the students' university email

with a copy of the informed consent included, and directions on how to access the survey

if they wished to participate in the study. Concerns about privacy, anonymity, and use of

the research data were addressed in the email and informed consent explanation.

Data Collection

A link to the Survey Monkey questionnaire was included in the email to the

students. A statement was placed in the email explaining that those who responded to the

study were considered to have given consent to participate. Surveymonkey.com

collected demographics, course grade, and questionnaire items, which were sent back

anonymously. The link was active for 10 days. After one week, a reminder email with the

surveymonkey.com link was emailed to all students, encouraging those who had not yet

completed the questionnaire to do so. There will be no discussion of the study, students'

participation, or identifiable results, either orally or in written form, in order to protect the

students' privacy. Age was collected as part of the demographic data, using age ranges

instead of distinct numbers, to protect student identities. All research data is maintained

in a locked cabinet, off campus, for a period of five years and then will be destroyed. As

the sole researcher, I was the only person with access to these data. Dissemination of the

research findings will be reported as aggregate data in published studies in peer-reviewed

scholarly journals.

Other Ethical Issues

As a non-experimental research study, the risk to any participant was minimal.

Although this study was conducted with students from my work environment, special

precautions were taken to protect the participants, as detailed in this chapter and shared in

the informed consent (Appendix A). The participants were all adults and able to make

decisions about their involvement in my study. No advance notice was given to the

students regarding this research study during the academic session, so no undue pressure

was placed on students to participate. All participants were former students of mine, and I have no authority over them at this time or influence on their course grade or progression in the program. My university has active research studies being conducted across campus and especially within the SNHP, so faculty, staff, and administrators were comfortable with these processes and protection of research subjects. As a professional nurse and former military officer, I am very experienced in maintaining privacy, such as the Health Insurance Portability and Accountability Act (HIPAA) protections for patients or military information; that same level of discretion was applied to the privacy of the students in this study. The thank you gift offered to all students, whether they participated or not, was minimal; an online link to redeem a five-dollar gift card to a local coffee shop, and it allowed the student to feel appreciated for their time and effort on my behalf.

Summary

This chapter provided a lengthy description of the quantitative methodology used in this research study, including a description of the sample population, how sampling procedures were done and considerations for inclusion and exclusion from the study. Recruitment procedures including providing informed consent and other protections for the participants were discussed, including ethical concerns for conducting the study with students from my university. The measurement instrument was described in detail, including the specific statistical tests that were used, and discussion of the issues of reliability and validity of the instrument and the study. Finally, threats to validity were discussed, including additional ethical concerns and how they were addressed. Chapter 4 will present the results of the study and examine the outcomes of the statistical analyses.

Chapter 4: Results

The purpose of this quantitative, correlational study was to explore the impact of collaborative learning in an innovative classroom that integrated on the self-efficacy and academic performance of BSN students enrolled at XXX. In this study, results from a modified version of the GSES (Appendix B) were used to explore the relationship between BSN students' perceived levels of self-efficacy and their academic performance, as measured by the final course grade. I hypothesized that the final grade would be impacted by collaborative learning in an innovative classroom that integrated technology (Schwarzer & Jerusalem, 1995). This study addressed the following research questions.

Research Questions

RQ1. Is there a relationship between the BSN students'perceived self-efficacy at the beginning of the course and at the end of course, when participating in collaborative learning in an innovative classroom that integrated technology?

H_01: There is no relationship between the BSN students' perceived self-efficacy at the beginning of the course and at the end of course when participating in collaborative learning in an innovative classroom that integrated technology.

H1: There is a positive relationship between the BSN students' perceived self-efficacy at the beginning of the course and at the end of the course when participating in collaborative learning in an innovative classroom that integrated technology.

RQ2. Is there a relationship between the BSN students' end-of-course grades and their end-of-course perceived self-efficacy?

H₀2: There is no relationship between the BSN students' end-of-course grades and their end of course perceived self-efficacy.

H2: There is a positive relationship between the BSN students' end-of-course grades and their end-of-course perceived self-efficacy.

To provide an adequate frame of reference, a review of the study setting and sample population demographics is included. Next, a description of data collection and analysis is presented. The quantitative data included the BSN students' evaluation of their self-efficacy at the beginning and end of their course, their academic grade in the course, and demographic information. The next section of the chapter will present the results of the study, aligned with the proposed research questions. The last section will discuss the evidence of trustworthiness of this study.

Setting

This study took place in an undergraduate baccalaureate nursing program at a private, Catholic university in south Texas, with students enrolled in an upper level course titled Nursing and Health Promotion in the Community. Instead of a traditional classroom layout with desks and chairs in rows, and faculty presenting from the front of the room, an innovative classroom design was used. For the purposes of this study, the innovative design was defined as open, collaborative layout, arranging shared-workstation tables, which allowed several students to work together. In place of using the traditional one-way lecture, the instructor used active, student-centered learning that focused on 21st century skills. These aspects focused on in the class included areas of creativity, critical thinking, communication and collaboration, and a range of functional

and critical thinking skills related to information, media, and technology needed in clinical practice. Students integrated concepts from nursing, pathophysiology, pharmacology, medicine, and technology into evidence-based plans of care and class presentations (Chilton, 2012; Huether & McCance, 2011; Kala, Isaramalai, & Pohthong, 2010). As adult learners, they assumed more control in their learning process, using all the information and resources available to them, instead of waiting for the teacher to direct the class (Rye & Støkken, 2012; Shindell, 2011).

This course is the only undergraduate course taught using innovative classroom design in the BSN nursing program at the XXX. Other nursing courses in the BSN program continue to be taught by nursing faculty using traditional pedagogy.

My study explored the possible relationship between BSN students' academic performance and their perceptions of self-efficacy in an innovative teaching-learning environment. I focused on the BSN nursing students' enrolled in this specific course that was taught using this innovative classroom design.

Demographics

The students invited to participate in this study were undergraduate BSN students enrolled in a third-semester nursing course, in a five-semester program. Age ranges were from 18 to 25 years and above. Of the 26 students enrolled for spring 2016, all but one were female (Table 2).

Table 2
Demographics of Study Participants

Age Groups		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-21	13	61.9	61.9	61.9
	21-25	4	19.0	19.0	81.0
	25+	4	19.0	19.0	100.0
	Total	21	100.0	100.0	

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	20	95.2	95.2	95.2
	Male	1	4.8	4.8	100.0
	Total	21	100.0	100.0	

The vast majority of these students were considered traditional students, having graduated recently from high school and immediately enrolled in an institution of higher learning. Most of the students were single, with approximately half of the class living in university dormitories. The other half lived at home and commuted to campus. All students met the academic requirements for acceptance into the BSN, but there are two types of students in regard to their method of completing core requirements: some advanced students have received credit for an AP course in high school; the other half of the class completed core courses at a local community college. The students who participated in the study reflected characteristics of the entire group, not just those who were academically strong or conversely, academic weak. The sample included various ethnic and sociodemographic backgrounds of the student population, which were predominantly Hispanic, and included Caucasian, Black, Asian, and students from the Middle East countries of Saudi Arabia and Israel.

Data Collection

I began the data collection process after I received approval from the Walden's

IRB from the XXX IRB. The target population for my study was the entire class

of students enrolled in Nursing and Health Promotion in the Community course offered

during the spring semester in 2016. At the completion of the course, an email was sent to

all students enrolled in the course via university email. After one week, a reminder email

was sent out to all students, inviting those who had not yet completed the survey to do so.

There were 26 students enrolled in the course for spring 2016. Twenty-one participants

agreed to complete my study, which, according to the G*power analysis (Heine, 2014),

resulted in a power calculation of 80%, using a level of significance, or alpha, of

0.05, and a large effect size of .50.

The email that was sent to participants contained the informed consent form and a

web link to the online survey. A statement was included explaining that students were

considered to have given informed consent by clicking on the link to participate. The

survey included questions about gender and age, two copies of the GSES, and an open

space to enter their final letter grade in the course.

Data was collected over a period of 10 days via Survey Monkey, after which the

online link was closed. Collected data was then transferred from Survey Monkey to an

Excel spreadsheet and labeled in alignment with the variables being examined in the

study. The final letter grades were transformed into their numerical value according to the

XXX SNHP grading scale, to assists in the statistical analysis (XXX, 2015). The Excel

spreadsheet data was exported into the SPSS file for the study and then analyzed by

descriptive and inferential statistics. All data collected by the online survey was anonymous.

Results

This quantitative, correlational study was conducted to explore the impact of collaborative learning in an innovative classroom that integrated technology on the self-efficacy and academic performance of BSN students. Results from a modified version of the GSES Scale (Appendix B) were used to explore the relationship between BSN students' perceived levels of self-efficacy and their academic performance. The final course grade was used to measure students' academic performance, which I hypothesized to be impacted by collaborative learning in an innovative classroom that integrated technology (Schwarzer & Jerusalem, 1995). A total of 22 responses were received, but during data cleaning it was noted that one survey was incomplete. Twenty-one completed surveys were entered into the SPSS file for statistical analysis. Data from the online surveys were analyzed via descriptive and inferential statistics to provide an understanding of how an innovative classroom that integrated technology may impact the self-efficacy and academic performance of BSN students. Results of the inferential data analysis are presented for each research question in the next section.

Descriptive Statistics

The first analysis used descriptive statistics to add up the answers for a sum score ranging from seven to 40 for each of the GSES surveys and then determined a mean score for each student (Schwarzer & Jerusalem, 1995). Although a 10-item scale, students may score as low as seven because there may have been up to three missing scores, The GSES

was used to "assess the strength an individual's belief in his or her own ability to respond to novel or difficult situations and to deal with any associated obstacles or setbacks" (Schwarzer & Jerusalem, 1995). To accurately score the scale, each item has four choice responses, ranging from "Not at all," scored as a one, to "Exactly true," which is scored as a four (Schwarzer & Jerusalem, 1995). The GSES has been widely used across a number of populations and settings. Permission for use of the scale and adaptation of items is expressly provided in a formal letter in Appendix C. The GSES scores can be calculated as long as there are no more than three items on a 10-item scale missing (Schwarzer & Jerusalem, 1995). Total score for the GSES at the beginning of the course averaged 30 out of the possible total of 40 points (Table 3), noting that most students scored their self-efficacy at or above the mean scores cited in previous research using the GSES (Schwarzer & Jerusalem, 1995). The mean for the individual GSES at the beginning of the course (GSE1) averaged 3.3 on a 4-point scale (Table 4). It was noted that the GSE1 item referring to a classmate disagreeing with the student scored the lowest of all 10 items, averaging 2.5 on the 4-point scale. Total score for the GSES at the end of the course averaged higher with scores average 35 out of the possible total of 40 points (Table 3), noting that most students scored their self-efficacy at or above the mean scores cited in previous research using the GSES (Schwarzer & Jerusalem, 1995). The mean for the individual score at the end of the course (GSE2) items averaged 3.51 on a 4-point scale (Table 5). Again, the GSES item which referred to a disagreement between the student and a classmate scored the lowest of all 10 items, averaging 3.5 on a 4-point

scale, but noticeably higher than the scores at the beginning of the course (Table 5)

averaging 3.5 on a 4-point scale .

Table 3

Descriptive Statistics for GSE1and GSE2: Total Scores

Student	GSE1	GSE2
1.	30.00	29.00
2.	31.00	30.00
3.	28.00	35.00
4.	33.00	39.00
5.	37.00	40.00
6.	36.00	38.00
7.	30.00	39.00
8.	39.00	39.00
9.	31.00	31.00
10.	30.00	30.00
11.	31.00	36.00
12.	39.00	40.00
13.	34.00	38.00
14.	32.00	31.00
15.	33.00	35.00
16.	38.00	38.00
17.	34.00	37.00
18.	30.00	30.00
19.	37.00	38.00
20.	30.00	30.00
21.	36.00	40.00

Note: GSE1 represents GSES at the beginning of course; GSE2 represents GSES at the

end of course (Schwarzer & Jerusalem, 1995).

Table 4

Descriptive Statistics for GSE1and GSE2: Mean Scores

	N	Mean
GSE1_1	21	3.4762
GSE2_1	21	2.5714
GSE3_1	21	3.3810
GSE4_1	21	3.3810
GSE5_1	21	3.2857
GSE6_1	21	3.5238
GSE7_1	21	3.5238
GSE8_1	21	3.2381
GSE9_1	21	3.4762
GSE10_1	21	3.4286
GSE1_2	21	3.5714
GSE2_2	21	3.0000
GSE3_2	21	3.5238
GSE4_2	21	3.5238
GSE5_2	21	3.5238
GSE6_2	21	3.7143
GSE7_2	21	3.6667
GSE8_2	21	3.4762
GSE9_2	21	3.7143
GSE10_2	21	3.6667
Valid N (listwise)	21	

Note: GSE1 represents GSES at beginning of course, GSE2 represents GSES

GSE2 represents GSES at the end of course (Schwarzer & Jerusalem, 1995).

Inferential Statistics

To answer research questions one and two, I conducted a chi-square analysis. The

chi-square is an appropriate statistical measure when the purpose of the research is to test

the relationship between two nominal level variables (Statistics Solutions, 2013b). The

calculated chi-square coefficient (χ^2) and the critical value coefficient were compared, to

evaluate the significance of the study results (2013b). When the calculated value is larger

than the critical value, with an alpha of .05, the null hypothesis will be rejected

(suggesting a significant relationship). In order to determine the degrees of freedom for a

chi-square, it is necessary to use the following equation: $df = (r-1)(c-1)$ (2016).

The r value equals the number of rows, and the c value equals the number of columns

from the raw data table (2013b).

Research Questions

    RQ: Is there a relationship between the BSN students' perceived self-efficacy at

the beginning of the course and at the end of the course, when participating in

collaborative learning in an innovative classroom that integrated technology?

    $H_0 1$: There is no relationship between the BSN students' perceived self-efficacy

at the beginning of the course and at the end of the course when participating in

collaborative learning in an innovative classroom that integrated technology.

    H1: There is a positive relationship between the BSN students' perceived self-

efficacy at the beginning of the course and at the end of the course when participating in

collaborative learning in an innovative classroom that integrated technology.

    RQ2. Is there a relationship between the BSN students' end-of-course grades and

their end of course perceived self-efficacy?

    $H_0 2$: There is no relationship between the BSN students' end-of-course grades

and their end of course perceived self-efficacy.

    H2: There is a positive relationship between the BSN students' end-of-course

grades and their end of course perceived self-efficacy.

Table 5

Chi-square analysis of Self-Efficacy at the Beginning and at the End of the Course

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	73.675[a]	72	.423
Likelihood Ratio	57.003	72	.902
Linear-by-Linear Association	10.425	1	.001
N of Valid Cases	21		

a. 90 cells (100.0%) have expected count less than 5. The minimum expected count is .05.

The first research question sought to determine if there was a relationship between the students' level of self-efficacy at the beginning of the course and at the end of the course. The chi-square analysis (Table 5) revealed a level of significance that was not statistically significant value (p =.423). Therefore the null hypothesis cannot be rejected.

The second research question asked whether there was a relationship between the students' end of course evaluation of self-efficacy and their final course grade. A chi-square analysis (Table 6) revealed a significant value (p =.074), but because the assumptions were violated, with 36 cells having values less than five, the results of the likelihood ratio were assessed, with a value of p =.614, indicating that the results are not statistically significant, and therefore the null hypothesis cannot be rejected.

Table 6

Chi-Square Analysis of Self-Efficacy at the End of the Course and Final Course Grades

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.660	24	.074
Likelihood Ratio	21.411	24	.614
Linear-by-Linear Association	3.133	1	.077
N of Valid Cases	21		

a. 36 cells (100.0%) have expected count less than 5. The minimum expected count is .05.

In order to analyze the strength of the relationship between collaborative learning in an innovative classroom that integrated technology and BSN students' self-efficacy and academic performance, a Pearson product-moment *r* correlation was conducted. Pearson *r* correlation is a bivariate measure of association (strength) of the relationship between two variables (Statistics Solutions, 2013a). Correlation coefficients, *r*, vary from 0 (no relationship) to 1 (perfect linear relationship) or -1 (perfect negative linear relationship) (2013a). Positive coefficients indicate a direct relationship, indicating that as one variable increases, the other variable also increases. Negative correlation coefficients indicate an inverse relationship, indicating that as one variable increases, the other variable decreases. Cohen's standard was used to evaluate the correlation coefficient, where 0.10 represents a weak association between the two variables, 0.30 represents a moderate association, and 0.50 represents a strong association (2013a).

Results from the Pearson (*r*) correlation revealed a strong association between the scores from the students' level of self-efficacy at the beginning of the course and at the end of the course (Table 7), which was statistically significant, p = .000. Calculations

for the correlation between the end-of-course self-efficacy scores and final course grade

were found to be a moderate level of effect, but not statistically significant; p = .076

(Table 8) .

Table 7
Pearson (r) Correlational Data for GSE1 and GSE2

		GSE1	GSE2
GSE1	Pearson Correlation	1	.722[**]
	Sig. (2-tailed)		.000
	N	21	21
GSE2	Pearson Correlation	.722[**]	1
	Sig. (2-tailed)	.000	
	N	21	21

**. Correlation is significant at the 0.01 level (2-tailed).
Note: GSE1 represents GSES at beginning of course; GSE2 represents GSES at the end of course (Schwarzer & Jerusalem, 1995).

Table 8
Pearson Product-Moment (r) Correlation Data for GSE2 and EOC grade

		EOC grade	GSE2
EOC grade	Pearson Correlation	1	.396
	Sig. (2-tailed)		.076
	N	21	21
GSE2	Pearson Correlation	.396	1
	Sig. (2-tailed)	.076	
	N	21	21

Note: EOC represents the students' final end of course grade in Nursing and Health Promotion in the Community, and GSE2 represents GSES at the end of course (Schwarzer & Jerusalem, 1995).

Summary

The results of this study failed to reach a statistically significant level for the chi-

square or Pearson (*r*) correlation tests. Therefore the null hypotheses could not be

rejected for either RQ1 or RQ2. Trends in the data for individual responses to the GSES

were noted to show increases in self-efficacy scores at the end of the course, compared to the scores at the beginning of the course, but these could not be validated due to the statistical analyses calculations reflecting p> .05. There was an overall response rate of 81%, with 22 of 26 surveys returned, but one survey was found to be incomplete, resulting in a final sample of 21 completed surveys for analysis.

Chapter 4 provided a discussion of the data collection process, including recruitment and actual response rates. Next demographic and descriptive statistics of the sample population were presented, with the detailing of representativeness of the sample to the larger population of BSN nursing students. Study results were then presented, including specific inferential statistical analyses of chi-square and Pearson (r) correlations that were conducted to determine if a relationship existed between students' self-efficacy and academic performance, as measured by their final course grade. Although a large effect size was determined, the lack of statistical significance for RQ2 prevented generalization of the findings to other populations. Chapter 5 provides a discussion of the findings of the study and recommendations for application to future studies.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative, correlational study was to explore the impact of collaborative learning in an innovative classroom that integrated technology on the self-efficacy and academic performance of BSN students. In this study, results from a modified version of the GSES (Appendix B) were used to explore the relationship between BSN students' perceived levels of self-efficacy and their academic performance, as measured by the final course grade, which I hypothesized would be impacted by collaborative learning in an innovative classroom that integrated technology (Schwarzer & Jerusalem, 1995). The study failed to determine a statistically significant correlation between the students' GSES scores at the beginning of the course with their GSES scores at the end of the course. Additionally, no statistically significant correlation was found between the students' GSES score at the end of the course and their final course grade

Interpretation of Findings

The framework for this study is based on Bandura's theory of self-efficacy (1977, 1995, 1997). The components of self-efficacy include "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). In previous studies, researchers have validated that high levels of self-efficacy are associated with academic success, motivation, and persistence in the face of challenging situations (Beauvais et al., 2014; Brady-Amoon & Fuertes, 2011; Burlison et al., 2009; Chernomas & Shapiro, 2013; Goff, 2011; Harris, et al., 2014). Although studies examining self-efficacy and academic performance in nursing students have been conducted, the vast majority only focused on the associations between stress

and anxiety and poor academic performance, or helping students complete their remediation, once they have failed. This study was conducted with the purpose of understanding the impact of the innovative teaching environment on students' self-efficacy and their academic performance, and to better inform nurse educators on how to design and deliver nursing educational experiences.

The study results aligned with previous research studies examining the relationship between self-efficacy and stressors (Brady-Amoon & Fuertes, 2011; Chernomas & Shapiro, 2013; Goff, 2011), showing that students who scored themselves lower in GSES scores at the beginning of the semester struggled with the BSN program. The increased GSES scores at the end of the course supported research findings that persistence (Beauvais et al., 2014), coping (Pulido-Martos et al., 2012; Taylor & Reyes, 2012), and academic performance were related to each other (Goff, 2011; Harris et al., 2014; Jaret & Reitzes, 2009; Miller, 2010).

Cassidy (2015) explored how self-efficacy related to undergraduate students' perceptions of their capabilities and their resilience when facing challenging situations. Similarly, this study's results mirrored a study by Fenning and May (2013), in which college freshmen employed self-efficacy strategies as a moderating effect for challenges they faced, which impacted their academic performance (Fenning & May 2013). Putwain et al., (2013) also found self-efficacy as a predictor of academic achievement. Results of my study reflect findings from Luszczynska et al. (2005), who conducted an extensive review of the literature across five countries, exploring the relationship between General Self-Efficacy and a number of other psychological constructs. Luszczynska's research

showed the "highest positive associations were optimism, self-regulation, and self-esteem… and academic performance was found to be associated with self-efficacy as hypothesized," which supports my beginning findings (2005, p. 80). These studies provide further evidence of the strength of the relationship between self-efficacy and a person's academic performance.

It should be noted that the majority of students earned high academic grades at the end of the course, had successfully completed their third semester, and would enroll in their last year of the BSN program [Fall 2016], which may have influenced their scoring decisions and could account for the increased self-efficacy scores at the end of the semester (Bandura, 1997).

Robb (2012) determined that creating a student-centered learning environment and implementing active learning strategies raise perceived self-efficacy beliefs and promote knowledge acquisition (p. 170), which further supports this study premise and framework. Recognizing the multicultural student population in the BSN program, it was reassuring to see study results correlating with previous findings from studies involving African-American (Maropamabi, 2014), Hispanic students (Pulido-Martos et al., 2012), and international students (Metofe, Gardiner, Walker & Wedlow, 2014) examining the impact of psychological factors such as self-efficacy on academic performance

Limitations of the Study

There were limitations to this quantitative study, including concerns about the quantitative approach. A quantitative research methodology did not allow for a more in-depth understanding of the phenomenon or answer questions about how the innovative

classroom affected students, their self-efficacy, or their academic performance. Using a larger class of nursing students, multiple classes, or multiple nursing programs would have provided a better representation of the nursing student population and allow for greater generalization. The sample population was limited to a particular class of students, at a specific level within the BSN program at XXX. Of the 26 students enrolled in the spring 2016 course, only 22 responded to the survey request, and 21 surveys were complete. The findings from this study cannot be generalized to other nursing students in BSN programs, as the findings were not found to be statistically significant. Due to the small sample size and private, religious university setting at XXX, it would be difficult to generalize to a large, public university. The factors being studied may be of interest to other studies and used for additional research to validate findings.

Due to the particular focus of the study, there were limited threats to external validity, which did not develop. The sample population was restricted to only those students enrolled in the Nursing and Health Promotion in the Community course at XXX, in which the faculty conducted the class using collaborative learning in an innovative classroom that integrated technology. The sample size was small, but adequate according to power analysis calculations (Heine, 2014). Use of the GSES was easy to replicate, with permission for use available at no cost to the researcher (Schwarzer & Jerusalem, 1995). Issues with trustworthiness in transferability were addressed by fully describing the study, participant selection, and methodology, to allow other researchers to be able to replicate this study. Concerns about controlling the environment were addressed by scheduling data collection and participant contact at the end of the course. This was done

to limit any undue influence between the researcher and participants, and to limit any possible impact of the researcher's other role as faculty in the university could have had.

Using only one class of students and online data collection also helped to address concerns about the environment influencing responses. The measuring instrument was related to the theoretical framework of the study to ensure construct validity. The research questions were developed based on the conceptual framework of self-efficacy (Bandura, 1977, 1995, 1997) and selection of the GSES aligned those constructs with that theory.

Recommendations

While the findings from this study were not statistically significant, the evidence contributes to the existing body of knowledge and provides a platform for future studies. Additional studies, including qualitative and mixed-method designs, can build on this template. Assessing more BSN students from future cohorts in this innovative course may strengthen the statistical analysis and provide a more in-depth understanding of the phenomenon of students' self-efficacy and academic performance (Cassidy, 2015). Some researchers have extended their findings from the classroom into the clinical lab setting, building on the self-efficacy and academic performance correlation to improve student outcomes (Karabacak, Serbest, Kan Öntürk, Eti Aslan & Olgun, 2013).A possible future study could begin with the quantitative survey and add student focus group discussions to gather the thick, rich descriptions of personal experiences while learning in an innovative classroom. The ease of access to the GSES, which is free and open to the public for use in research and education, provides a flexible survey template which can be modified to

match the educational program specifics, student populations, and level of academic performance. Once the quantitative data was collected and analyzed, it could inform the qualitative portion of the study, helping to refine focus group questions and add statistical validity to themes developed from student feedback.

Another follow-up study could be done using the current design and recruiting an interdisciplinary sample of university students, including human performance, kinesiology, nuclear medicine, and pre-pharmacy undergraduates. The current healthcare work environment follows an interdisciplinary patient care team model, and conducting research that combines BSN students with other healthcare team members would help faculty and administrators understand which learning environments promote student self-efficacy and academic performance. An additional bonus of this approach would be the experiences with future healthcare colleagues, which may strengthen those interdisciplinary relationships after graduation.

The advantages of using an online survey with today's traditional college students are their interest in technology, the ease of accessing the survey, flexibility in the setting, and protection of anonymity of the students. The addition of an in-person presentation of the study and explanation of the informed consent, with a question and answer period, may be beneficial to recruit more participants.

Increasing the data collection period to at least 2 weeks would also allow for more flexibility for the students and a possible increase in the survey response. Another possibility is to include multiple cohorts from fall and spring semester offerings of this innovative course to increase numbers of potential recruits. The timing of the email

invitation is important, so it is suggested that researchers send emails after the course is finished, to recruit more students. Once students have finished classes and left the campus, other distractions will take priority over completing a research study survey.

Implications for Social Change

Nurses can have a powerful impact for positive social change, providing the critically needed professional patient care in times of emergency and improving the quality of life for people in communities across the United States through health promotion, education, and preventative health services. Increasing the numbers of successful BSN graduates means more nurses for hospitals, clinics, and home health agencies, and in particular for those in underserved populations. Designing effective educational teaching environments and strategies uses resources of time, money, personnel with less waste.

Students graduating on time and entering their professional careers eliminate additional costs in additional courses, fees, and more important, lost wages from a delayed start in the workplace. Nurse leaders across the nation have called for a "radical transformation of nursing education," recognizing that outdated teaching pedagogies no longer work; we are losing too many valuable future nurses due to frustration, stress, or worse, boredom in the classroom (Benner et al., 2010). Conducting this study was a step toward understanding the impact of an innovative teaching environment that integrated technology on BSN students' self-efficacy and academic performance. By reversing the trend of failures, more nursing graduates will be produced, which directly impacts patients' access to healthcare, in particular among the underserved populations (AACN,

2014b; AACN, 2013a, 2013b, Chernomas & Shapiro, 2013). Future studies can build on this work to advance the evidence on how we can assist BSN students to be academically successful, graduate on time, and address the critical shortage of RNs in our community and the United States.

Conclusion

The BSN students enrolled in the innovative course that integrated technology provided the first examination of the possible impact this type of teaching environment could have on students' self-efficacy and academic performance, and a stepping stone to build on for future studies. The knowledge gained from this study involved direct application of current teaching strategies and use of technology in an innovative classroom to real-world problems. Nurse educators must move beyond the trial-and-error method of educational reform and base actions on valid evidence, to ensure the students are presented with the most effective teaching-learning experience they can have. Applying the same scientific concepts we use in nursing to make clinical decisions, nursing educators can make changes which lead to more successful BSN graduates, an increase in the RN workforce, and a happier, healthier future for our communities.

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Appendix A: Email Invitation for Participation in the Research Study

 Good afternoon-

You are invited to take part in a research study of how BSN students feel about learning in an innovative classroom using technology. The researcher is inviting BSN students who are enrolled in the xxx course to be in the study.

This study is being conducted by a researcher named Laurie Singel, who is a doctoral student at XXX. You may already know Laurie Singel as a nursing faculty, but this study is separate from that role.

Background Information:

The purpose of this study is to explore how nursing students feel about using learning strategies in an innovative classroom design, instead of traditional classroom practices.

Procedures:

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

      1. **Complete an online survey through Survey Monkey** which has:

    a. A demographic section that asks your gender and what age group you belong to.

        b. A short, two-part questionnaire that asks you to think about your self-efficacy (academic abilities to be successful in this course) at the beginning of the semester and how you feel about your self-efficacy at the end of the semester. This questionnaire will take no more than 30 minutes to complete.

        c. A section that asks you to enter your final grade in Nursing and Health Promotion in the Community course for Spring 2016.

Here are some sample statements from the questionnaire on rating your self-efficacy:

"Please rate the following items based on your behavior in this class. Your rating should be on a 4- point scale where 1= "not at all true" to 4= "exactly true".

_____ "It is easy for me to stick to my plans and accomplish my goals for this class."

_____"I am confident that I could deal efficiently with unexpected events."

The email link to Survey Monkey is: <u>xxxx</u> and all responses collected will be anonymous.

Appendix B: General Self-Efficacy Scale for BSN Students Study

General Self-Efficacy Scale for BSN students study

Welcome to My Survey

Thank you for participating in my survey.

You are invited to complete this questionnaire as part of a research study of how BSN students feel about learning in an innovative classroom using technology. This survey will be asking specifically about your experiences in your Health Promotion course during the Spring semester.

All of your answers in this survey will be anonymous and will not be linked to your name or email address.

Your feedback is important! -I appreciate you sharing your thoughts with me.

sincerely,

Laurie Singel
Walden University PhD Student

General Self-Efficacy Scale for BSN students study

I. Demographic Information and Course Grade

1. Please complete the following demographic information by placing an "X" on the appropriate line

Gender: Female

Gender: Male

2. Please place an "X" on the choice that best matches your age group

18-21 years old

22-25 years old

25+ years old

3. Please enter your *final letter grade* for Nursing and Health Promotion in the Community

General Self-Efficacy Scale for BSN students study

II. General Self-Efficacy Scale - adapted from Schwarzer & Jerusalem (1995) with permission.

For each statement below, think about how you feel that you deal with each situation and select a score ranging from 1-4 that matches your belief about your abilities *at the beginning of the course* .

1= Not at all true   2= Hardly true   3= Moderately true   4= Exactly true

4. "I can always manage to solve difficult problems if I try hard enough"

Self-Efficacy Score=

5. "If someone disagrees with me in a class discussion, I can find the means and ways to get what I want"

Self-Efficacy score=

6. "It is easy for me to stick to my plans and accomplish my goals for this class"

Self-Efficacy score=

7. "I am confident that I could deal efficiently with unexpected events"

Self-Efficacy score =

8. "Thanks to my resourcefulness, I know how to handle unexpected situations that may come up"

Self-Efficacy score=

9. "I can solve most problems that come up with this course if I make the necessary effort"

Self-Efficacy score=

10. "I can remain calm when facing difficulties in this course because I can use my coping abilities"

Self-Efficacy Score=

11. "When I am confronted with a problem within this course, I can usually find several solutions that work"

Self-Efficacy Score =

12. "If I am in trouble with my school work, I can usually think of a solution to fix it"

Self-Efficacy Score =

13. "I can usually handle whatever problem I am faced with in school"

Self-Efficacy Score =

General Self-Efficacy Scale for BSN students study

General Self-Efficacy Scale - adapted from Schwarzer & Jerusalem (1995) with permission

For each statement below, think about how you feel that you deal with each situation and select a score ranging from 1-4 that matches your belief about your abilities *at the end of the course*.

1= Not at all true   2= Hardly true   3= Moderately true   4= Exactly true

14. "I can always manage to solve difficult problems if I try hard enough"

Self-Efficacy Score=

15. "If someone disagrees with me in a class discussion, I can find the means and ways to get what I want"

Self-Efficacy score=

16. "It is easy for me to stick to my plans and accomplish my goals for this class"

Self-Efficacy score=

17. "I am confident that I could deal efficiently with unexpected events"

Self-Efficacy score =

18. "Thanks to my resourcefulness, I know how to handle unexpected situations that may come up"

Self-Efficacy score=

19. "I can solve most problems that come up with this course if I make the necessary effort"

Self-Efficacy score=

20. "I can remain calm when facing difficulties in this course because I can use my coping abilities"

Self-Efficacy Score=

21. "When I am confronted with a problem within this course, I can usually find several solutions that work"

Self-Efficacy Score =

22. "If I am in trouble with my school work, I can usually think of a solution to fix it"

Self-Efficacy Score =

23. "I can usually handle whatever problem I am faced with in school"

Self-Efficacy Score =

General Self-Efficacy Scale for BSN students study

4

Appendix C: Permission for use and adaptation of the General Self-Efficacy Scale

Documentation of the General Self-Efficacy Scale   *8*

Freie Universität Berlin

Fachbereich Erziehungs-
wissenschaft und Psychologie
- Gesundheitspsychologie -

Freie Universität Berlin, Gesundheitspsychologie (PF 10),
Habelschwerdter Allee 45, 14195 Berlin, Germany

Professor Dr. Ralf Schwarzer
Habelschwerdter Allee 45
14195 Berlin, Germany

Fax   +49 30 838 55634
health@zedat.fu-berlin.de
www.fu-berlin.de/gesund

Permission granted

to use the General Self-Efficacy Scale for non-commercial reseach and
development purposes. The scale may be shortened and/or modified to meet the
particular requirements of the research context.

http://userpage.fu-berlin.de/~health/selfscal.htm

You may print an unlimited number of copies on paper for distribution to research
participants. Or the scale may be used in online survey research if the user group
is limited to certified users who enter the website with a password.

There is no permission to publish the scale in the Internet, or to print it in
publications (except 1 sample item).

The source needs to be cited, the URL mentioned above as well as the book
publication:

Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman,
S. Wright, & M. Johnston, *Measures in health psychology: A user's portfolio. Causal and
control beliefs* (pp.35-37). Windsor, UK: NFER-NELSON.

Professor Dr. Ralf Schwarzer
www.ralfschwarzer.de