2021

Nursing Faculty Experiences With Mobile Technology Use in the Classroom

Sue Ellen Clark
Walden University

Walden University

College of Health Professions

This is to certify that the doctoral dissertation by

Sue Ellen Clark

has been found to be complete and satisfactory in all respects,

and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Edna Hull, Committee Chairperson, Nursing Faculty
Dr. Donna Bailey, Committee Member, Nursing Faculty
Dr. Maria Ojeda, University Reviewer, Nursing Faculty

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

Walden University
2021

Abstract

Nursing Faculty Experiences With Mobile Technology Use in the Classroom

by

Sue Ellen Clark

MSN, Walden University, 2013

BSN, Pennsylvania State University, 2010

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Nursing Education

Walden University

May 2021

Abstract

Research to date on faculty use of technology in the classroom has largely focused on student perceptions of technology, technology use in higher education, and benefits of technology use in teaching and learning. A critical factor in integrating technology relates to nursing faculty members' mobile technology (MT) experience. The aim of this descriptive phenomenological study was to explore the experiences of nursing faculty when integrating MT in the face-to-face classroom. More precisely, this study was designed to explore the reasons for inconsistencies among faculty in the integration of MT in the face-to-face classroom in baccalaureate nursing education programs. Experiences of Bachelor of Science in Nursing (BSN) faculty with MT use in the face-to-face classroom were viewed through the conceptual framework of Davis's technology acceptance model. Semistructured one-on-one interviews were conducted via Zoom with 10 BSN program faculty on their experiences using MT in the face-to-face classroom setting in central Pennsylvania. Using Creswell's six steps for qualitative data analysis, the following major themes were generated from the data: the shift to permitting MT in the classroom, the use of MT to promote student learning, and challenges and opportunities in using MT in the classroom. Lasting social change may result from greater awareness of the challenges that nursing faculty experience when using MT in the classroom. Furthermore, the study findings may assist academic leaders in supporting nursing faculty through the provision of time, education, and ongoing training to better prepare nursing students for practice in an increasingly complex, technologically rich health care environment.

Nursing Faculty Experiences With Mobile Technology Use in the Classroom

by

Sue Ellen Clark

MSN, Walden University 2013

BSN, Pennsylvania State University

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Nursing Education

Walden University

May 2021

Dedication

This study is dedicated to Craig, Taylor, Chelsey, Cameryn, Jayden, and Kyle. Without your love, support, understanding, and encouragement, I would have never finished. Thanks for listening when I had to work and pushing me to complete this educational journey. I would also like to thank my friend and colleague Nicole for providing me such valuable advice, mentoring and motivating me to continue each and every day. It was such a challenge to juggle teaching and completing my dissertation. I would also like to thank my mother for sharing her time to assist me during the last few steps of the dissertation process.

Acknowledgments

This dissertation would not have been possible without the support and mentoring of my committee chair, Dr. Edna Hull. Dr. Hull provided prompt feedback and support throughout this dissertation process. She assisted me in finding my scholarly voice; provided advice, mentoring, and editing; and shared her knowledge in nursing education and qualitative research. I have learned so much through our conversations and collaborations. In addition, I would like to thank Dr. Bailey for her timely feedback, expertise, and advice through this very challenging journey.

Last, I want to express gratitude for the nurse educators who participated in the study. These educators donated their time to participate in my study during the very challenging Covid-19 pandemic. Their shared experiences will drive possible social changes and initiatives to support nurse educators in the future.

Table of Contents

iii

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Introduction

Mobile technology (MT) use in the classroom to deliver educational content has shown significant growth, yet the introduction of technology into the curriculum and assimilation of faculty in acceptance and adaptation of MT has been slow (Dickens, 2017). To address nursing educators' acceptance of MT use in the classroom, it was essential to explore faculty experiences with the use of MT for teaching and learning (Davis et al., 1989). In this study, I explored the types of support that faculty needed to adapt to MT use in the classroom. To improve faculty adjustment to MT in the face-to-face classroom in baccalaureate nursing programs, it was essential to explore the challenges and barriers that faculty experienced in using MT. To date, research on MT in the classroom has focused on its benefits and challenges, rather than faculty experiences with MT in the classroom.

A study addressing nurse educators' experiences with MT use in nursing education was essential in understanding the needs of faculty in integrating MT in teaching and learning. The results of this study may assist the leaders of nursing education programs in developing the necessary strategies to support nursing faculty integrating new technology in the face-to-face classroom setting (Carter-Templeton et al., 2013). To address the lack of MT adoption by nursing faculty in the face-to-face classroom, it was important to explore the experiences of faculty when integrating technology. This study was a beginning attempt to address this void in the literature.

This paper is a research study, with the current chapter serving as an introduction. More specifically, the current chapter includes background information, the problem

statement, the purpose for the study, the research questions, the conceptual framework, the nature of the study, definitions of key terms, assumptions, delimitations, and limitations. Additionally, the chapter outlines the significance of the study for students, faculty, academic leaders, and policy makers. In conclusion, the chapter presents the implications of the study, summarizes the main points presented in this chapter, and provides a transition to the literature review presented in Chapter 2.

Background

The use and applications of MT have changed since the technology was pioneered in the 1970s. Since its initial development, MT has transformed from a relatively simple two-way messaging system to more advanced technology capable of browsing the internet, playing games, taking photographs, and numerous other capabilities. These technological hand-held tools can support computer applications for teaching and learning in the classroom (Criollo & Lujan-Mora, 2017). Nursing students have reported numerous benefits of MT, including their ability to access educational materials such as calculators, practice questions, medical dictionaries, virtual clinical experiences, demonstration videos, and drug reference guides that help to improve their knowledge and confidence in the classroom and clinical setting (Buabeng-Andoh, 2018; Hay et al., 2018; O'Conner & Andrews, 2015; Secco et al., 2016; Sheikhtaheri et al., 2018; Sheikhtaheri & Kermani, 2018).

It is critical to integrate MT devices in the classroom because MT devices are becoming ubiquitous in the daily lives of students in higher education (Hay et al., 2018; Kukulska-Hulme et al., 2010). Furthermore, MT is being used by students personally in their daily routine performing research, obtaining health information, doing online

banking, searching for employment, taking classes, and communicating via social media (Pew Research Center, 2015). For these reasons, MT use is critical for nurse educators in the academic setting to facilitate the students' transition to becoming competent practitioners. In addition, obtaining and keeping the interest of college students requires a variety of innovative teaching strategies that go beyond traditional lecture to promote learning and engage students in the classroom (Ferreri & O'Connor, 2013). According to Spector and Smart Learning Futures Group (2018), technology expands learning opportunities for students, as well as helps prepare them for a technological working environment.

The terms *mobile devices* and *MT* refer to technology that goes wherever the student goes and assists in engaging learners who are on the go in just about any setting (O'Conner & Andrews, 2015; Spector & Smart Learning Futures Group, 2018). Although research has indicated that students have found a variety of benefits of MT use for learning, faculty and nursing programs have been inconsistent in the introduction of MT into the nursing curriculum (Dickens, 2017). Currently, there is a gap in the literature on the perception of nursing faculty concerning their use of MT in the face-to-face classroom in baccalaureate nursing (BS) education programs (Lee et al., 2018). This study was needed to understand what motivated nursing educators to use MT for teaching and learning, as well as how their prior experiences influenced MT use.

Statement of the Problem

Although the use of technology is well documented in the literature, there have been few studies addressing faculty experiences in adapting and using MT in the college classroom (Lee et al., 2018). Research to date on faculty use of technology in the

classroom has largely focused on student perceptions of technology, technology use in higher education, and benefits of technology use for teaching and learning (Gan & Balakrishnan, 2018; Harerimana & Mtshali, 2019; Kim et al., 2020). While the use of technology is essential for student success, a critical factor in integrating technology relates to nursing faculty members' understanding and technological expertise (Battle & Tyson, 2018). It was critical to explore the experiences of nursing faculty with MT use for teaching and learning to understand reasons for inconsistent technology integration.

To explore reasons for inconsistent MT integration for teaching and learning in the classroom by faculty, it was critical to explore the prior technological experiences of nursing faculty. There was evidence that nursing faculty were apprehensive about the use of MT due to their prior technological experiences not being favorable toward technology (Davis, 1989; Jena & Mahanti, 2014). In addition, the overall integration and satisfaction integrating technology in the face-to-face classroom by faculty was influenced by faculty values and beliefs about the impact that technology had on teaching and learning in the classroom (Miranda & Russell, 2012). Furthermore, while technology seems to impact student success favorably, a critical factor for integrating technology relates to nursing faculty members' understanding and technological expertise (Battle & Tyson, 2018). To understand reasons for inconsistencies among nursing educators in regard to MT use, this study explored nursing faculty experiences, beliefs, and feelings on MT use in the face-to-face classroom in BSN academic programs.

The synthesis of the literature on faculty use of MT in undergraduate nursing programs indicated that the attitude of faculty toward MT and technical skills using these devices limited the frequency of MT use (Alshehri & Cumming, 2020; Dolawattha et al.,

2019; Mann et al., 2015; Shim & Shim, 2000). What is unknown on the topic is how nursing faculty teaching in the face-to-face classroom in BSN programs experience MT use for teaching and learning. This study was developed to explore faculty experiences with the integration of mobile learning platforms to support strategies to help nursing faculty accept and incorporate MT in the classroom setting. More specifically, the aim of this study was to explore inconsistencies and beliefs of faculty concerning MT by exploring the experiences of faculty when integrating technology, including those related to faculty users' experiences, satisfaction, and personal feelings on the use of MT in the face-to-face classroom setting.

Purpose of the Study

The purpose of this qualitative study was to explore the experiences of nursing faculty when integrating MT in the face-to-face classroom. More precisely, this study was designed to explore the reasons for inconsistencies among faculty concerning the integration of MT in the face-to-face classroom in baccalaureate nursing education programs. To create and improve the work environment for faculty using MT, it was necessary to explore and understand the views of nursing faculty integrating MT in the classroom. Findings from this study may raise awareness of the challenges associated with integrating MT in the face-to-face classroom. Additionally, findings generated from this study have the potential to help nurse educators raise awareness of the barriers and challenges encountered when using MT as a teaching adjunct.

Faculty use of MT served as the phenomenon of interest for this study. Broadly speaking, MT is defined as smartphones, iPods, and tablet computers, which are frequently used and common in the educational setting due to their convenience (Ke &

Hsu, 2015; Wu et al., 2012). This study may help in understanding the experiences of faculty, raise awareness of challenges, and help nursing leaders develop strategies to support faculty use of MT in the classroom. According to Davis (1989), faculty who lack training, administrative support, and technical skills may not integrate MT into the classroom setting due to their current or past experiences. To improve faculty adjustment to MT in the face-to-face classroom in BSN programs, the purpose of this study was to address a void in the literature on the experiences, feelings, and beliefs of nursing faculty teaching in the classroom.

Research Questions

As stated previously, faculty use of MT served as the phenomenon of interest for this study. Recognizing this factor, I developed research questions that were bound by the experiences reported by faculty who had integrated MT in their respective classrooms. Thus, the primary research question guiding this study was the following: What are the lived experiences of BSN faculty on the use of mobile technology in the face-to-face classroom in baccalaureate nursing education programs?

Secondary questions guiding this study included the following:

- What specific barriers do BSN faculty experience when integrating mobile technology in the nursing classroom?
- What strategies do BSN faculty use to overcome barriers experienced when implementing mobile technology in the nursing classroom?

Conceptual Framework

To explore the gap in research on the problem of inconsistent faculty integration of MT in the face-to-face classroom, this study was guided by the technology acceptance

model (TAM). The concepts included in the TAM were adapted for the study to understand the factors that may promote or impede technology acceptance among BSN faculty members (Davis et al., 1989). The model's key concepts include perceived usefulness (PU) and perceived ease of use (PEOU), which were used to guide the study (Davis et al., 1989). Furthermore, technology users are impacted by external variables that, in the context of this study, encompassed faculty users' experiences, beliefs, and personal feelings on the use of MT in the classroom. The concepts from the TAM assisted in understanding what influences the intention of nursing faculty to integrate MT in the face-to-face classroom, such as technostress, PU, PEOU, attitude toward using MT, and satisfaction (Davis, 1989).

As reported by Fred D. Davis, developer of the TAM, use of MT, satisfaction, and intent to use MT are consistently influenced by the stress experienced by faculty when using MT (Davis, 1989). According to the conceptual framework of the TAM, behavioral intention (BI) is determined by an individual's attitude, which is influenced by PEOU and PU (Davis, 1989). Simply speaking, if a nursing faculty member does not feel that MT is easy to use and/or useful in class, they will have a poor attitude about MT and therefore may believe that technology in the classroom is not useful (Davis, 1989).

The current study addressed how faculty users' experiences, beliefs, and personal feelings on the use of MT in the classroom influenced their PU and PEOU regarding MT use. More importantly, the PU and PEOU of nursing faculty influenced their BI to integrate MT in the face-to-face classroom in BSN education. Hence, the focus of this study was on exploring the experiences of nursing faculty to better understand how their

lived experiences with MT use influenced their BI to integrate MT in the face-to-face classroom in BSN education.

Nature of the Study

As previously discussed, this study was designed to explore the experiences of BSN faculty on the integration of MT in the face-to-face classroom in baccalaureate nursing education programs. Recognizing this objective, I used a qualitative phenomenological approach to obtain answers to the research questions guiding this study. In-depth interviews with full-time nursing faculty teaching in the face-to-face classroom in baccalaureate nursing programs were conducted to explore faculty experiences, beliefs, and feelings on the challenges, factors, strategies, barriers, support, and/or lack of support that faculty experience when integrating technology in the classroom. A qualitative research study of data inquiry was consistent with seeking to understand the experiences of nursing faculty on integrating technology in the classroom (Creswell, 2014). Using a phenomenological approach, the study focused on the thoughts, feelings, and experiences of faculty members to better understand their perceptions and points of view about integrating technology in the classroom setting.

In-person and online qualitative interviews were conducted with research participants. For this study, which focused on BSN programs, faculty teaching in the face-to-face classroom in BSN programs were interviewed. The interviews were recorded and transcribed to analyze the data, code the data, identify patterns, and classify the coded data into themes. Direct quotations, in the participants' own words, provided their perception of the value and meaning of MT, barriers, and support experienced when using MT in the face-to-face classroom. The research study results fill a gap in the

knowledge base about nursing faculty and their perception of the challenges and support that they experience. Through this study, I sought to understand the factors associated with MT integration in the classroom in baccalaureate nursing programs.

Definition of Terms

This section identifies definitions of key terms that were pertinent to the study.

Mobile technology (MT): Mobile learning technology can be defined as "any educational provision where the sole or dominant technologies are handheld or palmtop devices" (Traxler, 2005, p. 262).

Mobile device: A mobile device is "any device that is small, autonomous, and obtrusive enough to accompany us in every moment" (Trifanova & Ronechetti, 2003, p. 3).

Game-based learning: Electronic gaming environment that engages and challenges learners to solve problems (Kim et al., 2009).

Technostress or technology overload: "Device proliferation and/or information overload that causes cognitive and physical burdens on human beings due to the use of multiple gadgets with multiple functions to accomplish multiple tasks in everyday activities" (Grandhi et al., 2005, p. 2291).

Assumptions

Assumptions in qualitative research are variables that are somewhat outside the researcher's control (Creswell, 2014). I made various assumptions for this qualitative study exploring faculty experiences with MT in the face-to-face classroom in BSN programs. For this study, I relied on the personal feelings, beliefs, and experiences of nursing faculty and thus assumed that nursing faculty did respond truthfully and candidly

during the interviews. According to the Pew Research Center (2017), 95% of Americans

own a MT device. This study was guided by the assumption that faculty participants for

the study had access to MT. Furthermore, I assumed that federally funded higher

education institutions have access to the internet and technological tools for teaching and

learning in the classroom. Finally, because participation in this study was voluntary, I

assumed that nursing faculty had interest in participating in the study. The credibility of

the study findings relied on the faculty honestly and candidly sharing their experiences

using MT in the face-to-face classroom in BSN programs. These assumptions were

essential to gain a deeper understanding regarding participants' personal experiences,

beliefs, and values pertaining to MT use in the classroom for teaching and learning.

Delimitations

This study focused on the phenomenon of how nursing faculty teaching in the

face-to-face classroom experience the use of MT in teaching and learning. The

boundaries set by a researcher to define the scope of a research study can be described as

delimitations (Creswell, 2014). This study was delimited in numerous ways. First, a

purposeful sample of nursing faculty teaching in baccalaureate nursing programs in

Pennsylvania limited the ability to transfer the findings outside of this geographical

region. Additional delimitations of the study included interviewing only faculty who

taught in the face-to-face classroom in BSN programs. Faculty who taught primarily

online were excluded from the study. To address nurse educators' acceptance of MT use

in the face-to-face classroom, it was critical to explore face-to-face classroom

experiences using MT for teaching and learning. Additionally, to address the delimitation

of the interview setting, faculty participants chose to engage in the interviews via the

internet on their personal computer or in person in a face-to-face format.

This study was exploratory in nature, and thus only an initial sample of

schools/faculty were chosen to participate, limiting the larger sample seen in a broader

study. This study was also limited by my time and financial constraints. To address

potential transferability to other academic settings, the evidence collected was in-depth,

thick, and rich in descriptions of participant experiences from each interview so that other

disciplines may benefit from the findings of the study (Creswell, 2014).

Limitations

Limitations are elements that appear in every study and are beyond the control of

the researcher. It was critical to reduce limitations to improve reliability and

transferability for the research findings (Creswell, 2014). Due to the qualitative nature of

the study, the first limitation of the study was the number of nursing faculty participants.

This study was exploratory in nature, and thus only a small sample of nursing faculty

were recruited to participate. The study involved interviewing five to 15 nursing faculty

who taught in the face-to-face classroom in BSN programs (Creswell, 2014). The number

of individuals questioned was limited in order to ensure that enough time was dedicated

to each interview. Furthermore, a smaller sample size did limit transferability of the

findings. Despite the relatively small number of participants for the study, findings

generated from this research study can help in better understanding the broader

population (Ravitch & Carl, 2016).

For this study, the focus was the experiences of nursing faculty teaching in the

face-to-face classroom, specifically in BSN programs. The specific population of interest

was chosen because there is a gap in research on perceptions and experiences of MT use for teaching and learning in the face-to-face classroom in BSN programs. The participants represented various BSN nursing education programs; diploma and associate degree nursing programs were not represented. It was particularly important to choose a similar representative population to ensure validity of the results. For this reason, the study was limited to the represented faculty from a variety of BSN nursing education programs located in west central Pennsylvania who were members of the American Association of Colleges of Nursing (AACN). Finally, faculty having prior experience teaching, age of the participant, rapport of researcher and participants, as well as teaching experience online and in the face-to-face classroom setting also influenced and limited the results (Creswell, 2014). To manage some of these challenges, a demographic questionnaire was developed to better understand the specific population (Appendix A).

For this study, participants chose to complete their interview online via computer or face-to-face in person, which could also have been a potential limitation for the study. For this reason, I identified in the results section whether the participants interviewed online via computer or face-to-face to understand whether this influenced the responses of the participants. To manage these limitations, it was also important to compare and contrast the interviews and responses provided and to take into consideration the interview method chosen by participants. Finally, the BSN undergraduate nursing program in which the faculty taught and worked, as well as their geographical location, could have also limited the study. These limitations were addressed in detail with the data and results of the study.

Significance

To address nurse educators' acceptance of MT use in the classroom, it was essential to understand faculty experience using MT in teaching and learning. This study may contribute to improving faculty adjustment to MT in the face-to-face classroom in baccalaureate nursing programs. This study is of critical importance for raising awareness of the experiences, feelings, and values of nursing faculty integrating MT in the face-to-face classroom for teaching and learning. To date, research on MT in the classroom has focused on its benefits and challenges, rather than faculty experiences with MT in the classroom. Furthermore, findings from this research fill a void in the literature on the teaching experiences of faculty who use MT for teaching and learning in the face-to-face classroom in BSN programs. According to O'Conner and Andrews (2015), the perspectives of all stakeholders in nursing education are essential to ensure that MT is developed and implemented appropriately. Thus, findings from this research may impact multiple stakeholders including students, faculty, academic leaders, and policy makers.

Students

The younger generation of students has grown up with the very rapid development of technology and may be more motivated and engaged in learning when technology is integrated into the face-to-face classroom (Barry, 2014; Cahill & Cima, 2016). Nursing education is in the early stages of implementation of MT and devices in the curriculum. This study justified, assessed, and improved the current conditions in nursing education to better support students in the classroom. Combining technology with teaching strategies in class can create a student-centered atmosphere that is conducive to learning, which can provide students with numerous educational opportunities (Alghamdi

et al., 2013). Findings from this study may enhance understanding of how to assist faculty more effectively with integrating MT in the classroom. Students in the classroom have a variety of learning styles, including verbal, audio, and kinesthetic; the use of MT provides educators the opportunity to reach students with diverse learning styles (Rusli & Yasa, 2017).

Faculty

Studying faculty experience using MT in the classroom in BSN programs may help in understanding what experiences, values, and feelings influence the intention of faculty to integrate MT into the classroom. According to Gallo (2011), technology should be integrated into the face-to-face classroom when educating multigenerational learners, but some faculty remain apprehensive about incorporating new technology. To improve the integration of MT into the classroom, it is critical to understand faculty experiences related to MT implementation for teaching and learning. According to O'Conner and Andrews (2015), nursing educators should consider the integration of handheld devices to augment nursing education in the classroom, but this requires investigation of faculty experiences implementing MT.

This study further explored faculty experiences to understand the current condition of MT use in class for teaching and learning. In addition, the results may assist with assessing, raising awareness of, and improving the current conditions in nursing education to support nursing faculty with the integration of technology and mobile devices in the face-to-face classroom (Lee et al., 2018). Furthermore, exploring faculty experiences may raise the awareness of academic leaders concerning the faculty support needed to integrate technological tools into the classroom consistently and effectively.

Academic Leaders

Understanding the experience, beliefs, and values of faculty using MT in the classroom, leaders can address concerns throughout the integration of MT in the classroom. The findings from the study may be used by academic leaders to advocate for faculty, address challenges, improve the consistency of MT integration, and bring about social change in the classroom experience for students as well as faculty. Thus, findings from this study may be used by academic leaders not only to assist faculty, but also to encourage the use of innovative technological teaching approaches in the face-to-face classroom. Furthermore, this study provides valuable information to academic leaders to better support nursing faculty using MT in the classroom. Understanding the experiences of faculty using MT in the classroom, academic leaders may be better prepared to advocate for nursing faculty and to provide the appropriate support, education, and tools necessary for MT integration in class.

Policy Makers

As the education setting changes, nursing policy makers are challenged to create policies that support the preparation of students for a technologically challenging environment. Policy makers in nursing education are required to create policies that adhere to and support their accreditation agencies to ensure the integrity and quality of their nursing programs. Nursing schools offering a baccalaureate education in nursing are required to adhere to their accreditation agencies to ensure the integrity and quality of their nursing programs. According to the AACN (2015), teaching and learning practices in the classroom environment must foster the achievement of expected learning outcomes.

The Commission on Collegiate Nursing Education (CCNE, 2020) recommended that nursing faculty in a baccalaureate education program should be creating an environment to achieve student learning outcomes, and this involves educating a technology-savvy generation of students. Additionally, the Accreditation Commission for Education in Nursing (ACEN, 2017) requires that faculty and student resources must be sustainable to achieve learning outcomes, including physical resources for teaching and learning such as technological resources. Further, resources such as technology should be selected with the input of the nursing faculty teaching in the classroom, and the technology must meet the needs of students and faculty in the classroom (ACEN, 2017).

Through this study, I sought to assist policy makers in nursing education programs, as well as accreditation bodies, to better understand the challenges that faculty experience when using MT. The findings from the study may be used by policy makers to better understand experiences of nursing faculty concerning MT integration. Policy makers can use the findings from the study to improve physical resources for teaching and learning. Finally, findings from the study can be used to ensure that policies and procedures developed for MT use are in compliance with all accreditation agencies.

Implications for Positive Social Change

There is very little research literature about the experiences of nursing faculty and reasons for the inconsistent use of MT in the face-to-face classroom in baccalaureate nursing education programs (Lee et al., 2018). Nursing educators' experiences of MT use in nursing education are essential to design more efficient programs to support faculty when integrating new technology into the classroom setting (Carter-Templeton et al., 2013). When nursing faculty lack the support and education needed to integrate MT and

software, there will be a negative impact on student learning, as well as on the faculty members' attitude toward using MT in the classroom (Axley, 2008). In this study, I sought to explore the challenges and support perceived by nursing educators when integrating MT into the face-to-face classroom setting in baccalaureate nursing education programs.

To address faculty inconsistencies using MT, this study is critical to understanding the experiences of faculty with specific attention to their needs and challenges. Social change efforts involve the aim of improving the human condition and moving organizations toward a favorable future. For this study to influence the behavior of faculty concerning MT use in the classroom, it was critical to understand how participants' prior experiences influenced their use of MT for teaching and learning in the classroom. This study has the potential to impact social change by increasing awareness of the support needed by nursing faculty to integrate MT into the classroom. It was critical to explore faculty members' past experiences using MT in the classroom to understand and improve their challenges and usage of MT. The findings from the study can be used to advocate for faculty, address barriers, assess faculty needs, and improve the consistency with which MT is integrated.

Furthermore, the study may impact not only faculty, but also students, academic leaders, and policy makers. The findings from the study may assist academic leaders and policy makers in understanding experiences as reported by faculty concerning the use of MT for teaching and learning in nursing education. Policy makers and academic leaders may use the findings from this study to address the challenges and needs experienced by faculty to improve the current condition of MT integration in nursing education. Finally, I

sought to influence social change in the face-to-face classroom by improving faculty experiences with integrating MT, as well as by enhancing and improving the classroom experience for students.

Summary

In summary, the purpose of this qualitative study was to explore the experiences of nursing faculty when integrating MT in the face-to-face classroom. More specifically, I attempted through this study to determine inconsistencies among faculty concerning the integration of MT in the face-to-face classroom in baccalaureate nursing education programs. This chapter presented the background of MT in nursing education and the rationale for studying faculty experiences involving the integration of MT in the face-to-face classroom in baccalaureate nursing education programs.

Chapter 2 of this study serves as the literature review focusing on faculty MT use for teaching and learning in nursing, as well as in higher education. The review of literature in the next chapter provides an update on current literature regarding MT use in nursing education. The review addresses the literature review strategy, conceptual framework, key concepts, anecdotal literature, as well as the challenge of technology use in nursing and higher education. The chapter concludes with a comprehensive summary and review of the literature on MT in higher education and nursing education.

Chapter 2: Literature Review

Literature Review

While the use of MT in higher education has risen over the years, little has been

done to explore nursing faculty's use of MT in the college classroom setting. This is

particularly true in nursing education, where reports indicate a lack of integration of MT

in undergraduate nursing education (Battle & Tyson, 2018; Dickens, 2017; Lee et al.,

2018; Raman, 2015). Lack of or inconsistent use of technology in teaching led to

questions as to what factors impede faculty use of MT in the face-to-face classroom in

BSN programs. This chapter serves as a literature review focusing on the topic of MT use

in nursing education. The primary purpose of this literature review is to provide an

update on the current literature regarding the use of MT in nursing education. More

specifically, the aim of the review is to address the perceptions of nursing faculty on the

use of MT in the face-to-face classroom setting. Included in this chapter is the search

strategy used to locate literature to answer the research question as well as the conceptual

framework used to guide this study. Additionally, the chapter contains a comprehensive

review of the literature on MT in higher education and nursing education.

Literature Search Strategy

Sources presented in this chapter were reviewed to answer the following research

question: What are the experiences of nursing faculty on the use of MT in the face-to-

face classroom setting? More specifically, the primary purpose of this literature review

was to explore the experiences of faculty related to using technology in the BSN

classroom. A comprehensive review of the literature exploring several electronic

databases was conducted including EBSCOhost, Academic Search Complete, CINAHL,

Education Index Retrospective, Education Research Complete, Education Source, ERIC,

Health Source: Nursing/Academic Edition, MEDLINE, ProQuest, particles, PsycINFO,

and Psychology and Behavioral Sciences Collection. The search was performed with a

focus on current literature published during the period 2014 through 2019. The goal of

the literature search was to locate the most relevant and current publications, as well as to

understand how MT is currently being used for teaching and learning in nursing

education.

An initial search was performed using the key terms *mobile technology*,

technology in nursing, *faculty perception of technology*, *iPad*, *iPhones*, *smartphones*,

curriculum, *students*, *nursing*, *qualitative*, *quantitative*, *higher education*, *teaching*,

learning, and *education*. A detailed, comprehensive search with a search result of

approximately 3,000 publications was conducted. The search was narrowed down by

adding the key terms *mobile technology* and *nursing education*, with a result of 306 peer-

reviewed publications produced. The research studies included in the literature review

were limited to those pertaining specifically to MT use, particularly in the face-to-face

classroom setting. Hence, the literature review included approximately 70 publications,

including anecdotal notes and empirical studies, technological challenges, technology use

in higher education, and technology use in nursing education.

Conceptual Framework

To answer the question of what the experiences of nursing faculty are regarding

the use of MT in the face-to-face classroom setting, the TAM served as the conceptual

framework guiding this study. Designed by Davis (1989), the TAM was developed to

study the acceptance of technology by an individual. The TAM suggests that when an

individual is presented with technology, there are a number of factors that influence the individual's decisions regarding when, how, and whether the individual chooses to use technology (Davis, 1989). The model has key concepts that include the user's PU and PEOU in regard to technology use. Furthermore, these key concepts of PU and PEOU influence the technology user's attitude, as well as the technology user's BI to integrate the new technology (Davis, 1989).

The theory models how individuals' attitude and/or prior technological experiences may forecast their behavior to choose technology. When users' attitude is positive, they are more likely to adopt technology because their PU and PEOU are more favorable toward MT use. Similarly, when users' position is negative toward MT use in the classroom, they will reject technology use due to an unfavorable PU and PEOU, which are both influenced by users' prior experiences (Davis, 1989). Hence, BI to use technology is closely linked to users' attitude and prior technological experiences (Davis, 1989). The goal of the current study was to better understand the external variables, attitude, and experiences that influence nursing educators' PU and PEOU in regard to MT integration in the face-to-face classroom in BSN programs. Figure 1 illustrates major concepts included in this study of faculty experiences regarding the use of MT in the face-to-face classroom.

Figure 1

Major Concepts Related to Faculty Experiences With Mobile Technology Use
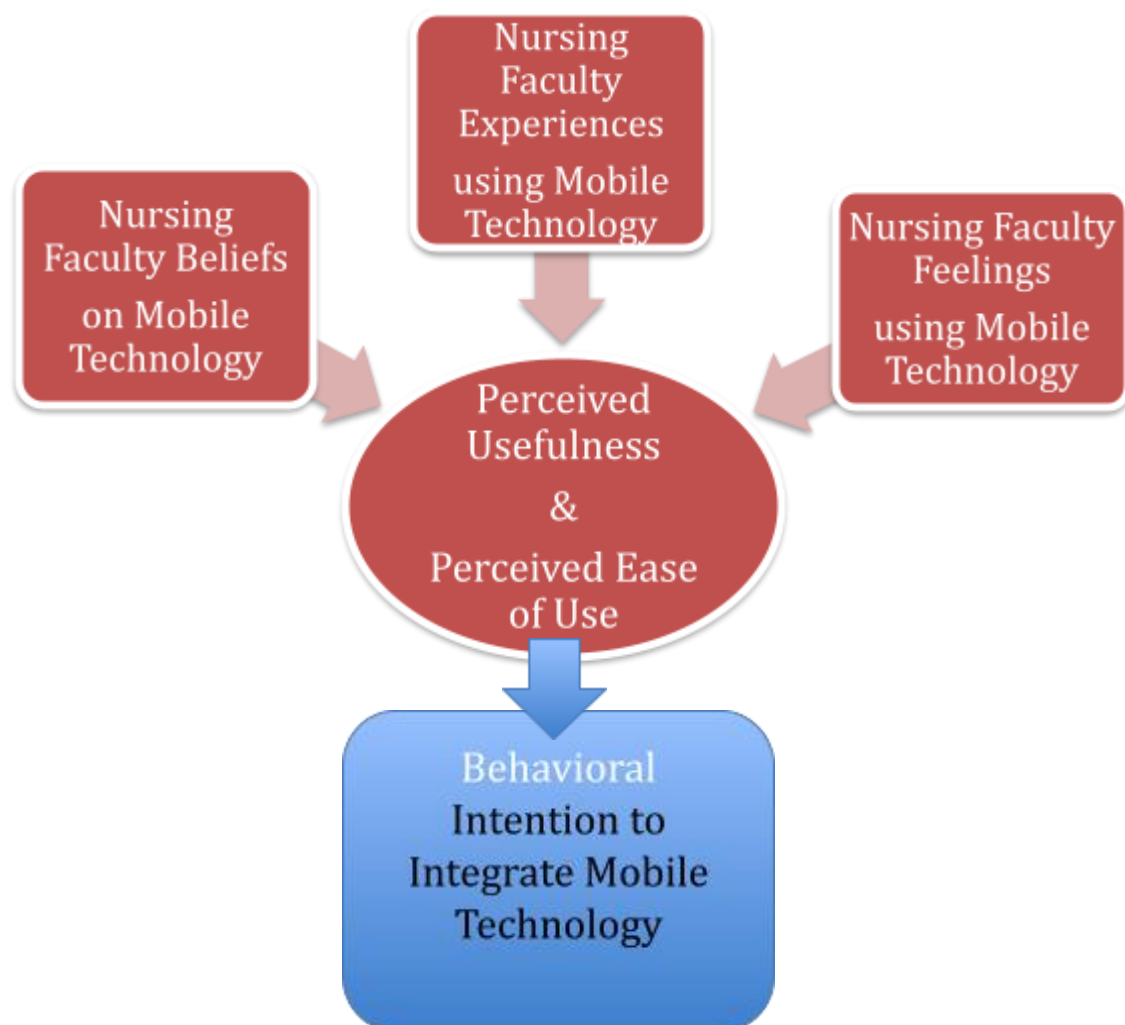
Note. Major Concepts Encompassing Faculty Experiences with Mobile Technology Use.

Adapted from Technology Acceptance Model (TAM) by Davis (1989). by Clark, S. E.,

2019.

To explain technology users' readiness, the model includes key concepts that

influence PU and PEOU for the technology user (Davis et al., 1989). The PU and PEOU

of technology users are impacted by external variables that encompass users'

experiences, satisfaction, and personal feelings regarding the use of MT in the classroom.

Hence, the focus of this study was exploring the experiences of nursing faculty to better understand how their lived experiences with MT use influence their BI to integrate MT in the face-to-face classroom in BSN education.

PU is defined as the extent to which a technology user feels that using MT enhances the student and faculty classroom experience (Lu et al., 2005). PEOU is defined as the extent to which the technology user believes that the technology requires little effort and therefore is easy to use, and that it serves a purpose in the classroom (Davis et al., 1989). The focus of this study was exploring the lived experiences of faculty regarding MT use, thereby understanding the extent of PU and PEOU in regard to MT use. It was critical to understand whether faculty felt that they had the training, support, and technical skills necessary to integrate MT into the classroom.

According to Davis (1989), if technology users lack training, support, and technical skills, they may choose to not integrate technology due to their perception that the technology is too challenging. Additionally, if technology users feel that the technology is not elevating the classroom experience or the technology is having a negative impact on student learning or class instruction, they will not perceive the technology as useful. Furthermore, faculty members' prior experience, beliefs, and feelings regarding MT directly influence PU and PEOU, as well as their BI to use MT (Davis, 1989). In addition, BI is the likelihood that an individual will adapt to a given behavior (Davis, 1989). For this study, the BI was the likelihood that faculty would choose to integrate MT in the face-to-face classroom in BSN programs (Davis, 1989).

Due to the rapid development of technology, there has been a plethora of studies in which the TAM has served as the framework to understand behavioral acceptance of

technology. For example, using a quantitative research approach, Bayraktaroglu et al. (2019) explored the conditions necessary for successful implementation of technology. Bayraktaroglu et al. used a 43-question survey with a 5-point Likert scale to collect data on the factors for effective technology implementation. The results indicated that there is a relationship between technology acceptance and technology users' satisfaction.

In a separate study, Ferreria et al. (2014) conducted a cross-sectional survey with a nonprobabilistic sampling of 402 students at a Brazilian university. Structured questionnaires were administered to the students. Ferreria et al. used the TAM to identify factors that influence students to use mobile learning devices. The authors found that perceptions of short-term usefulness influence students' intention to use mobile devices in higher education. In another study, Abdullah and Ward (2016) completed a meta-analysis of 107 e-learning acceptance studies. Abdullah and Ward identified that self-efficacy, subjective norms, enjoyment, anxiety, and experience are the external factors of the TAM that most commonly influence PU and PEOU for the technology user. The TAM has been accepted for decades, has been adapted to predict the acceptance of technology, and is still used frequently in research (Al-Adwan et al., 2018; Cakiroglu et al., 2017; Davis et al., 1989; Ruangvanich et al., 2019; Tarhini et al., 2015).

With a focus on teaching using MT in higher education, in particular nursing education, it made sense to use the TAM to examine the perceptions of faculty concerning the use of MT in the face-to-face classroom. The TAM was chosen for the study because the model clearly and simply illustrates key variables including external variables influencing the users' PU and PEOU, attitude, BI, and actual technology use. To better understand the external variables that influence PU and PEOU, it was critical to

explore the lived experiences of nursing faculty with MT integration in the face-to-face classroom in BSN education. The faculty members' PU and PEOU toward MT use were influenced by prior experiences, which affected positive or negative attitudes toward MT use in the classroom. Therefore, the faculty members' tendency or BI to use MT in the classroom was predicted by their positive or negative experiences with using MT in the classroom (Davis, 1989). Additionally, these key variables help in forecasting users' technology acceptance, BI, and actual use of technology (Davis, 1989).

The TAM was used to better understand prior experiences, how these experiences influenced personal perception of usefulness and ease of use, and, more importantly, BI to use MT in the classroom. Using the TAM, I sought in the current study to better understand the reasons for inconsistencies related to technology integration in the BSN classroom, as well as what particular situations have an effect on BI to use MT and actual use of MT in the classroom. The study aimed to understand participants' perceptions and lived experiences; therefore, the use of in-depth, one-on-one interviews helped to provide a close look into the perceived variables that influence faculty attitude, PU, and PEOU to better understand what influences faculty members' BI to use MT in BSN education.

To begin with, the TAM includes internal psychological factors that may influence acceptance of technology, such as technology users' perceived anxiety and stress when using technology, which, more importantly, have a negative impact on their attitude toward MT (Teo, 2012). The problem was that some faculty felt apprehensive in implementing new technology due to present or past experiences; therefore, their consistency of MT use might be poor. According to Davis (1989), faculty who perceive technology as useful and easy have a more favorable attitude toward technology. In

contrast, faculty who perceive MT as stressful, challenging, and difficult to integrate in class may view technology negatively. Furthermore, technology skills influence the feeling of job satisfaction and attitude, as well as BI to use technology, making it important to further explore these variables that influence nursing faculty perceptions (Compeau & Higgins, 1995).

According to Davis (1989), there are external as well as internal variables influencing the PU and PEOU of the technology user. For successful implementation of technology, it was critical to explore, from the nursing faculty perspective, what experiences, situations, training, resources, support, and feelings that nurse educators experience when integrating MT into the classroom. For example, to understand technology integration, it was critical to understand faculty experiences with technology integration, as well as the expectations for the academic setting. According to Douglas (1977), a subjective norm is whether faculty feel that there is an expectation from leaders or colleagues to integrate MT into the classroom. When faculty view technology as a professional expectation, their perceived view toward technology may be more positive. According to Schere et al. (2019), technological experience also has an effect on faculty intention to use technology in the academic setting. In addition, the technological training and resources that are available to faculty when integrating technology represent an important external variable that impacts PU and PEOU for the technology user.

To date, there has been a paucity of research describing the application of the TAM by nurse researchers. The TAM was used to guide this research study to understand faculty experiences, PU, PEOU, attitude, BI, and actual MT use in the classroom. In addition, the TAM was used to better understand internal and external factors that impede

faculty use of MT related to PU and PEOU. Furthermore, the conceptual model helped in understanding experiences by organizing data into themes that included the external variables and internal variables, as experienced by faculty, and how these influenced PU, PEOU, attitude, BI, and faculty members' choice to use MT in the classroom.

Technology Acceptance Model in Nursing Research

The TAM was chosen for this study because the model is well regarded in technological research and has been used in many disciplines, including nursing research. For this study, the model was applicable to interpret the meaning of nursing faculty experiences with MT use in the classroom for teaching and learning. To study the prior experiences of nursing faculty pertaining to MT use, the TAM assisted in exploring and analyzing faculty experiences to understand how particular experiences influenced PU and PEOU in regard to MT use for teaching and learning. Furthermore, the model helped in understanding how these experiences influenced participants' BI to use MT in the classroom. BI, which is a major factor that impacts individuals' use of technology, must be understood with greater clarity (Davis, 1989). The TAM has been employed in nursing education research to explore various types of learning. In this section, examples of research using the TAM, specifically within the nursing discipline, are presented.

Tsai et al. (2018) conducted quantitative research on nursing student intentions using blended e-learning in hospitals. This type of educational technique uses traditional classes with e-learning modules for educating students (Tsai et al., 2018). The authors distributed self-reporting questionnaires and received 557 completed questionnaires at hospitals in central Taiwan. Tsai et al. used structural equation modeling to show that information, system, and service quality significantly affected the PU and PEOU of

participants. The authors found that the attitude of a nurse on blended e-learning significantly influenced PU and PEOU in regard to the BI to use blended e-learning (Tsai et al., 2018).

In another study, a school of nursing in New Zealand initiated the use of an ePortfolio platform in a Bachelor of Nursing program. To evaluate the ePortfolio implementation, Collins and O'Brien (2018) conducted a mixed-method study using surveys and focus groups with faculty and students using the TAM. Their findings supported specific recommendations to increase the acceptance of the ePortfolio by students.

To assess ease, usefulness, and intention of nursing students to use a clinical virtual simulator, Padihla et al. (2018) conducted an exploratory, descriptive, and cross-sectional quantitative study based on the TAM. Their results indicated that nursing students' PEOU, PU, and BI were high when using the clinical virtual simulator in class (Padihla, 2018). Furthermore, their data revealed that preparedness and availability of younger generations of students to use virtual technology improve their education (Padihla, 2018). The results of this study supported the need to explore faculty experiences of MT integration in class to understand faculty experiences to change current conditions and better support technological educational tools.

Buabeng-Andoh (2018) used the TAM to investigate undergraduate nursing students' use of mobile learning in Ghana. At three universities in Ghana, 586 nursing students completed questionnaires to collect data on MT use. Their results indicated that gender differences and age influence PU and PEOU for technology users (Buabeng-Andoh, 2018). Furthermore, the results indicated that the students had a positive attitude

toward the use of technology (Buabeng-Andoh, 2018). In summary, the author

discovered that PU and a positive attitude predict the favorable BI of a technology user

(Buabeng-Andoh, 2018).

Kowitlawakul et al. (2015) employed the TAM with self-efficacy as a conceptual

framework to explore the factors that influence the nursing students' acceptance of the

electronic health record (EHR). The authors initiated a quantitative descriptive design

using self-reported questionnaires with 212 student participants. The results found that

the student attitudes toward the EHR were the most influential factor on students'

acceptance of the EHR. This study supported the need to explore faculty experiences on

MT integration to understand their thoughts and feelings toward MT use for teaching and

learning in the classroom, to support successful MT implementation.

Williamson and Muckle (2018) used the TAM to evaluate nursing student PU and

PEOU of technology into teaching pedagogy of faculty. The authors used both

quantitative and qualitative data to explore the external influences of nursing students on

their belief and attitudes towards technology for learning (Williamson & Muckle, 2018).

The results found that a majority of student participants were confident using

technology (Williamson & Muckle, 2018). It was critical to understand the experiences of

faculty on MT use for teaching and learning so policy makers and academic leaders can

support the implementation of technology into pedagogy.

Tacy et al. (2016) explored the effects of technostress on technology acceptance

among nursing educators. An online quantitative survey of 1,017 nursing faculty tested

the TAM, which was adapted to include technostress, job satisfaction, and intent to leave

teaching. The authors found that the use and integration of technology by faculty has the

potential to create stress, called technostress, and this may influence their use of technology in the classroom (Tacy et al., 2016). The findings suggested that technostress, PU, PEOU, attitude, and BI explain 80% of technology use (Tacy et al., 2016). Thus, making this study critical to understand the experiences of faculty using technology to better understand experiences related to integration of technological tools. Furthermore, poor job satisfaction of nursing faculty, pressure, and stress to use technology in teaching is also experienced by nursing faculty (Tacy et al., 2016). Therefore, it was critical to understand and explore the experiences of nursing faculty with MT integration, from their perspective, to better support faculty in the classroom.

Literature Review Related to Key Concepts

As previously stated, the primary research question guiding this study was what are the perceptions of nursing faculty on the use of MT in the face-to-face classroom setting? A search of the literature indicated three major sources of literature on the perceptions of faculty on using MT in the college and nursing classroom. The current review of literature on MT in nursing education included the themes of anecdotal literature, technological challenges, technology use in higher education, and technology use in nursing education. Each theme with supporting literature was discussed in the next section of the literature review. Thus, this literature review has been organized and will be presented under the headings of anecdotal literature, technological challenges, technology use in higher education, and technology use in nursing education.

Anecdotal Literature

While MT has been in use for many years, most of the literature to date on MT use in the classroom has been defined as anecdotal. Due to the nature of MT, the topic is

constantly evolving and there is an abundance of anecdotal evidence related to the

popularity of MT. Furthermore, there is also a generous amount of literature regarding

how MT is used by students, faculty, and nursing organizations. MT is changing the way

students learn, access information, and communicate personally, professionally, as well

as educationally. In addition, MT is changing nursing requirements for licensure,

education, accrediting bodies, and research. According to the Institute of Medicine (2011)

and the Affordable Care Act (2010), it is essential for nursing education to integrate and

use technology in teaching and learning to provide safe patient care.

In the 21st century, teaching and learning is not limited to the traditional classroom

and the use of MT by educators and students can impact the classroom positively, but

design, application, and implementation is pivotal to the successful use of mobile devices

for educating students (Keengwe & Bhargava, 2014). The mobile devices that students

use on a daily basis are equipped with technology capable of much more than just making

phone calls to friends and family. MT provides individuals with the ability to not only

make calls and text message friends but these technological devices may be used to

access emails, store information, play games, access the internet, access educational

materials, view instructional videos, as well as download application software,

subscriptions, and reference materials (Phillippi & Wyatt, n.d.)

Mobile Technology Popularity

A majority of students and faculty own a mobile device with the Pew Research

Center (2017) reporting that 95% of Americans own a cellular phone and 77% have a

smartphone. These findings illustrate how embedded mobile devices are in society. The

use of MT allows students and faculty the ability to access networks, communicate,

interact on social media, access the internet, and numerous other applications at any time (Poll, 2015). This cost effective hand-held mobile device provides faculty and students with the ability to broadcast learning materials and interact with every student in the face-to-face classroom due to their wide variety of capabilities. The implication here is that MT is relatively inexpensive to integrate in the college classroom because nearly every student has a mobile device which makes the initial costs relatively low for educational institutions (Poll, 2015).

In the 21st century, teaching and learning is not limited to the traditional face-to-face classroom. The use of MT by educators and students can impact the classroom positively, but design, application, and implementation is pivotal to the successful use of mobile devices for educating students (Keengwe & Bhargava, 2014). As student reliance on technology grows, the users' relationship with MT increases due to the intelligence of MT. Unlike previous generations, the use of mobile devices by students in today's classroom setting is a common occurrence (Herold, 2016). The mobile devices that are currently being used can process information, access the internet, make basic phone calls, play games, store information, take a picture, download computer application software, access reference material, and a plethora of other capabilities to assist the MT user (Phillippi & Wyatt, n.d.). Due to their numerous capabilities, mobile devices are often referred to as smartphones.

Software Capabilities

MT provides educators with the ability to create an interactive classroom by creating presentations allowing students to participate in the face-to-face classroom anonymously with the use of their mobile devices. Engaging students in class discussion

can frequently be challenging for educators. MT software use can improve student participation in the learning process, as well as student and faculty interaction in the classroom setting by allowing students to interact in a technological environment (Žitný et al., 2016). Online audience response systems such as Mentimeter, Socrative, and Kahoot can be used by students with their mobile devices in class by connecting to the internet on their mobile devices (Mentimeter, n.d.; Kahoot!|-Game-based digital learning platform, n.d.; Socrative, n.d.). This interactive software provides students the ability to respond to questions in class, promote their critical thinking, and improve in class collaboration. In addition, interactive software use in the face-to-face classroom provides faculty the opportunity to gather data on whether students are achieving the learning outcomes for the lesson they are teaching during class by asking questions related to the course content.

Technological Challenges

Faculty and Student Experience

Many educators, unlike their students, may not have grown up using technology and technology use requires knowledge, training, and skills. For faculty to feel confident and competent integrating teaching in the classroom, he/she must acquire technological training. Moreover, with many faculty teaching in BSN programs between the ages of 50 to 60 years old, faculty in this age range have not grown up using technology on a daily basis (AACN, 2015). According to a quantitative study conducted by Kotcherlakota et al. (2017), there is a relationship between the age of a faculty member and their use of technology. The authors in the study surveyed 118 nursing faculty via online and found there is a more unfavorable relationship between technology with older faculty compared

to newer faculty with technology use (Kotcherlakota et al., 2017). Similarly, many experienced faculty encounter challenges related to technology and may suffer anxiety and stress related to technology implementation which results in overall job dissatisfaction (Yedidia et al., 2014). It is critical to help the more experienced nursing faculty with newer technological pedagogical teaching approaches to improve retention in the field of nursing education.

According to Scherer et al. (2019) the faculty members' experience with technology and attitude influences their intention to use technology in the classroom. In one study, Dickens (2017) explored nurse educators and their experiences integrating MT in the classroom. Carrying out the study with associate degree nursing faculty, Dickens (2017) findings showed that there is a lack of faculty development programs focusing on technology. In a separate study, Fiedler et al. (2014) conducted a qualitative study on faculty experiences with a virtual community. Their 18-month, multisite, descriptive, mixed-methods study of faculty in 14 nursing programs found that optimal support is necessary for faculty and there are also constraints such as lack of commitment by administration to support faculty using technology, as well as high cost for students (Fiedler et al., 2014).

Another qualitative study explored faculty integration of MT in the clinical learning environment by having faculty complete journals regarding their experiences. Themes generated from the study include how resources, technology, management, and support influence success of MT in the clinical setting (Mackay et al., 2017). It is not only the faculty member who experiences challenges with technology use but also the students. Student perception and experience with technology use in the classroom will

also influence the faculty members' perception that technology is useful in the classroom (Mackay et al., 2017). Furthermore, if faculty experience challenges using technology, this may in-turn impact students, making it critical to explore faculty experience using MT in the classroom (Mackay et al., 2017).

When examining student experiences with technology, research concluded that perceived experiences by faculty with technology also influence the perceived experiences of students in the classroom with technology (Wingo et al., 2017). Day-Black & Merrill (2015) conducted research on how mobile devices may be used to enhance nursing care in a psychiatric-mental health setting. Thirty-four BSN nursing students enrolled in a public university in a psychiatric-mental health course were provided with a mobile device and the necessary software for training (Day-Black & Merrill, 2015). The author collected data on the students' medication administration skills. Students completed a survey before the experience, at midpoint, and at the end of two semesters. The results found that when students have limited experience with the technological devices, as well as poor technical support, the students' attitude and intention to use technology is not as favorable in the classroom, which may influence faculty integration of technology (Day-Black & Merrill, 2105). While these findings may explain some of the reasons for inconsistencies with the use of MT by faculty, it was essential to understand the challenges from the faculty perspective to understand the problem with inconsistent technology use of MT for teaching and learning in nursing education.

Attitude of the Technology User

It was critical to explore the experiences of faculty on MT use to understand their attitude toward technology. Tubaishat et al. (2016) conducted a longitudinal panel study in a single nursing school in Jordan. Over four years, 140 students were followed, the students completed the Technology Attitude Scale each year to document changes in their attitude toward technology over a four-year period (Tubaishat et al., 2016). The attitudes of students toward technology were the most favorable in the fourth year (Tubaishat et al., 2016). Acceptance of technology may be influenced by the users' perceived attitude toward technology (Tubaishat et al., 2016). This study supported that there is a correlation between education in technology and attitude. This study enforced the need to further explore faculty experiences to better understand how these may influence their attitude, as well as use of MT for teaching and learning.

In healthcare, the current trend is toward the use of technology for teaching and learning (McInerney & Druva, 2019). McInerney and Druva (2019) explored experiences of clinical educators' implementing technology for teaching (McInerney & Druva, 2019).

Their research examined the attitude of the educator toward technology in a clinical setting using a mixed method approach (McInerney & Druva, 2019). The authors used a validated technology attitude survey, as well as open ended responses for the study (McInerney & Druva, 2019). The results found that positive attitudes towards technology was crucial when using technology in clinical education. These findings supported that implementation of technology was influenced by the attitude of the technology user, making research on faculty experiences, behaviors, and feelings critical to better understand MT integration and in the classroom.

Technological Limitations

Using any type of new technology can be challenging, particularly when implementing technology into teaching and learning. The current evidence found there is both enabling and limiting elements which influence the use of MT such as availability of resources, technology, technical expertise, student engagement, connectivity, and management support (Mackay et al., 2017). According to Li et al. (2017), in the nursing education setting, the design of MT influences whether or not there are benefits to use for teaching and learning. The technological design is critical when selecting, integrating, or developing technology for use in the classroom. The technological design impacts the usefulness, as well as the potential technological challenges that faculty may experience with MT use in the classroom (Li et al., 2017).

The proposed study sought to explore faculty perceptions, to better understand from the nursing faculty prospective, their experiences with MT use in the face-to-face classroom in BSN programs. There are strengths and weaknesses of MT use which made the study relevant to fill a gap in the literature on faculty perception of MT use in the face-to-face classroom in BSN programs. By gaining a better understanding of nursing faculty perceptions on the use of MT and technological challenges, findings generated from the study helped to raise awareness of nursing faculty needs when integrating technology. Such needs may include technological support, faculty development, and the barriers associated with MT use in the face-to-face classroom in BSN programs.

Technology Use in Higher Education

To better understand how technology is being used to educate students it was crucial to also explore how technology is being used by faculty in non-nursing disciplines

to support student learning. In higher education, MT is being used in the classroom to support teaching and learning. Understanding how other disciplines are integrating technology may help provide additional insights on the problem of inconsistent use in nursing education. At the university level, a survey was conducted using questionnaires distributed to 66 academic staff randomly and found that email was the most used application despite other benefits of MT use (Al Fawareh, & Jusoh, 2017). In higher education, Hinze et al. (2017) found that MT is currently being used by students and educators regularly to share, access, reference, manage projects, as well as analyze and collect data. In another study in Zimbabwe, universities explored how educators, students, information technology, and librarians are using MT learning activities for teaching and learning and discovered there are challenges such as internet access, high costs, an unfavorable attitude of educators toward technology, and a faculty resistance to changing that influence MT integration (Mupfiga et al., 2017).

In a college biological science course, Voelkel and Bennett (2014) introduced an audience response system using MT during a lecture with student feedback. Findings were favorable in raising awareness of teaching weak areas, as well as increasing improvement of student interaction in classroom lectures (Voelkel & Bennett, 2014). In regard to improving academic performance, Spartak et al. (2019) found that MT stimulates the interest of students, improves academic performance, and provides flexibility for students to complete classroom assignments. In one study in higher education, game-based learning was integrated into the classroom and found that students learn differently now and teachers must adapt (Micaela et al., 2018). In addition, this study found that use of MT games improved student motivation and success in the

classroom setting (Micaela et al., 2018). Finally, research from MacNeil (2016) suggested that the selection and requirements of mobile applications chosen for use by educators is crucial for MT success in the classroom setting. It was critical to explore the experiences of nursing faculty regarding their chosen technological approaches in the classroom.

Literature also provides research to support the benefits of integrating MT in higher education. In the field of nursing education, students must apply theoretical content to the clinical care setting. According to a case study performed by Swanson (2018), MT has the capability to enhance experiential learning, which is critical for nursing students. The results support the benefit of MT use for teaching and learning in experiential learning, specifically in nursing education (Swanson, 2018). Abramson et al. (2015) conducted research in the community college setting and found that there is a relationship between prior use of technology and the BI of faculty to integrate technology into the classroom. Al-Emran and Salloum (2017) performed quantitative research on the attitude of students' regarding MT use for teaching and learning. The study included a purposeful sample of 354 students of a variety of ages and different majors. The students completed a questionnaire and the authors found that 99% of students own a phone and students' attitude was influenced by age, degree, and the academic department (Al-Emran & Salloum, 2017). There still is a need to further research the nursing faculty perspective of MT use for teaching and learning to support a new generation of students in the classroom.

In higher education, Çakıroğlu et al. (2017) performed a quantitative study to investigate the integration of MT by computer teachers at a public university in Turkey.

The authors used the TAM to explore the adoption of MT in the classroom to educate

students (Çakıroğlu et al., 2017). A questionnaire was administered to 466 pre-service

computer teachers and the results concluded that current use and instructional use factors

had a favorable correlation on MT use of the teachers (Çakıroğlu et al., 2017).

Furthermore, BI of faculty regarding MT is influenced by factors such as ease of use,

technical problems, and the design of the technology (Çakıroğlu et al., 2017).

To explore the current use of MT by nursing faculty, the TAM was useful to

understand reasons faculty choose to use technology in their teaching practices in the

face-to-face classroom. Biddix et al. (n.d) explored qualitative faculty responses about

specific communication technology for teaching amongst 59 Korean and US faculty at

three different institutions. The results found that mobile communication tools for

teaching in the US and Korea are used but there are variations in how faculty

communicate, as well as differences in how faculty are using MT for education and when

interacting with students in the classroom (Biddix et al., n.d.). Using MT in the classroom

for teaching and learning is a fairly new pedagogical approach. This study supported the

need to further explore the experiences of nursing faculty on MT use in the classroom to

better promote the effective use of MT in teaching and learning.

The use of MT can enhance and improve learning outcomes for students in the

academic setting. In higher education, an experimental study on 45 students in a

computing course found that the use of audience response systems improved students'

interaction, enjoyment, academic performance, and classroom interaction (Lim, 2017).

Another experimental study involving 22 participants in higher education found that MT

support can create dynamic learning spaces and collaborative learning to support student

learning outcomes (Bhati & Song, 2019). The use of MT for teaching and learning encourages students to engage in active learning and take responsibility for their personal learning (Bhati & Song, 2019). Thus, use of MT by faculty is critical to engage learners in higher education, making a study on faculty experience critical to better support student learning.

As reported in the literature, social media has also played a key role in higher education. A mixed method research study was used to collect data to understand what influences lecturers at a university to use social media in class (Murire & Cilliers, 2019).

The results found that using social media in education requires that faculty have adequate resources, support and training for successful integration in the classroom (Murire & Cilliers, 2019). Unfortunately, this study only provided a 39% response rate which limits the implications of the results (Murire & Cilliers, 2019). Furthermore, the study further supports the need to explore faculty perceptions towards MT in the classroom to understand the experiences of nursing faculty associated with MT use for teaching and learning.

The authors Lai and Smith (2018) investigated how gender, teaching discipline, and experience influence MT use in the educational setting. In the study, 308 participants completed questionnaires and 30 of the 308 completed interviews with follow-up questions. Results of the study found a positive correlation between faculty use of MT for personal learning and their actual integration in teaching practices (Lai & Smith, 2019). In regard to gender, the perception of MT was more favorable for the female gender than male gender (Lai & Smith, 2019). Furthermore, the study found that female teachers use of MT and their attention to pedagogy was greater than that of male teachers (Lai &

Smith, 2019). It was critical to better understand faculty experiences to understand

reasons for inconsistencies related to MT use in the classroom to better understand the

problem.

To establish, identify and improve challenges of mobile learning in Zimbabwean

universities, Mupfiga et al. (2017), conducted a descriptive research method and

triangulation methodology to make meaning out of the data collected. A random sample

of faculty and students at the university completed questionnaires and interviews

regarding MT use and challenges (Mupfiga et al., 2017). The results concluded that a

majority faculty and students have mobile devices and they are being used for research

but there are equipment challenges associated with the use of MT such as internet

connectivity, costs, and faculty negative perceptions (Mupfiga et al., 2017). This study

supports the need to explore faculty experiences on MT use to better understand their PU

and PEOU, in regard to MT use in the classroom setting. In another study, Morgan

(2018) explored student attitudes on MT using a qualitative research approach. The

results found that MT promotes student interaction in the classroom but there are factors

related to MT implementation such as the students' age, gender, socio economic

background, culture, technology experience, and MT competencies that influence

successful integration (Morgan, 2018). Therefore, it was essential to consider a wide

range of factors that potentially influence the frequency that MT is integrated in the

classroom including faculty perceptions.

The literature presented on MT in higher education highlighted key aspects on the

integration of MT in higher education. The literature review included the influence MT

has on students and faculty in the classroom in higher education. In addition, the

literature explained how student and faculty prior experience also influenced how MT is being used in their current teaching practice. The literature summarizes how MT integration in the classroom influenced student access to content, improves integration, and increased student academic performance. A study focusing on faculty perceptions of MT used in the classroom was essential in identifying strategies that will capture students' attention and assess their progress in meeting learning objectives in a course. It was crucial to explore the current perceptions of nursing faculty on MT use in BSN programs in the face-to-face classroom to better understand reasons faculty choose to integrate MT into their own teaching pedagogies.

Technology Use in Nursing Education

Benefits of Technology

There are numerous benefits of MT use in nursing education such as the ability to access reference guides, textbooks, research, communicate, as well as access numerous videos and practice questions. The use of MT by students and faculty provided an innovative resource to support communication and student learning outcomes in the academic setting (Damewood, 2016). MT provided faculty with technological resources to help students prepare to practice in a complex healthcare environment, as well as prepare for the NCLEX exam upon graduation. The technology that is available on mobile devices provides students and faculty with resources and software to support, assess, and evaluate students' practical and critical thinking skills (Jobnetwork, 2017). More importantly in the nursing education settings, integrating MT in teaching and learning practices was associated with improved academic performance on exams by students, thus making technology integration essential (Shyshkanova et al., 2017).

Importance of Technology Integration

It was crucial to answer the research question of what are the perceptions of nursing faculty on the use of MT in the face-to-face classroom setting. Participant responses to this question enhanced an understanding of faculty reasons for using MT, as well as their actual MT use. According to the National League for Nurses (2015), technological skills is a recommended competence for academic nurse educators. There is a plethora of national web sites in which technological skill by nurse educators is recommended (Chen et al., 2015; Dahlstrom, 2015; National Council of State Boards of Nursing, 2019; National League for Nurses, 2015; Quality and Safety Education for Nurses, n.d.). Educators must be concerned with the preferences of the students in the classroom in regard to teaching and learning styles to achieve learning outcomes.

Technology in nursing education is imperative. It is crucial for leaders in the field of nursing education to support the need for nursing faculty to be technologically fluent and competent (National League for Nursing, 2015). In nursing education, faculty spend countless hours helping students learn to critically think and analyze patient care situations and scenarios. Furthermore, upon graduation from nursing, students are required to sit and pass the National Council Licensure Examination (NCLEX) to become a Registered Nurse (NCSBON, 2019). The NCLEX examination uses computerized adaptive testing (CAT) making it essential to integrate technology into teaching and learning practices to assist students to be competent and confident using technology for assessment, learning and evaluation.

The questions on the NCLEX exam test students' ability to recall information, synthesize and analyze data, and apply theoretical knowledge to clinical situations to

ensure novice nurses will practice in a safe and ethical manner in the clinical setting

(NCSBON, 2019). One of the most challenging aspects for students and faculty in

nursing education is assisting students to improve their test taking skills in preparation for

the NCLEX exam. MT provides a method for faculty to integrate NCLEX style questions

into their lectures to test practice-related questions in class by downloading online

audience response systems to their mobile devices. More importantly, MT use in class

provides faculty with a platform to capture student's attention during a lecture and get

instant feedback from students regarding their understanding on key concepts. The

information collected provides faculty some data regarding whether students are meeting

student learning outcomes throughout the lecture.

Nursing Student Perceptions of Technology

With the TAM as the lens guiding this study, the choice to integrate technology in

the classroom setting must be concerned with whether students and faculty view

technology use for teaching and learning as beneficial. The millennial generation has

grown up using MT in their daily lives for communication. The younger generation of

students have grown up with the very rapid growth of technology and may be more

motivated and engaged in learning when technology is integrated into the face-to-face

classroom (Barry, 2016; Cahill & Cima, 2016). The use of MT devices by students to

conduct research and communicate is a daily occurrence (Herold, 2016). In one study,

conducted in a public university, 387 students in nursing education preferred the use of

mobile devices in the upper level nursing education courses but faculty in nursing

education still remain inconsistent on their integration of MT in baccalaureate nursing

education programs (Zayim, & Ozel, n.d).

If students do not perceive that technology is useful for learning then technology is not viewed as useful by faculty or students (Davis, 1989). To date, there is an abundance of research supporting the favorable perception students have toward technology use for learning. In one quantitative study, 586 undergraduate students from three universities in Ghana completed survey questionnaires on their use of mobile learning (Buabeng-Andoh, 2018). Buabeng-Andoh found that a majority of students own a smartphone and overall students perceive MT as useful for learning.

Lou and Yang (2018) utilized a case study approach to explore the academic success of nursing students with technology-enhanced assignments. The authors found that careful consideration must be provided to how faculty design online assignments for students (Lou & Yang, 2018). Therefore, it was critical to explore how MT is currently integrated by nursing faculty to better understand the problems related to their use. When faculty and students use technology there are internal, as well as external factors which influence success for teaching and learning. A quantitative survey found that while the convenience of MT allows students and faculty to take responsibility for teaching and learning, little has been done to explore the barriers faculty face when using these devices in the classroom (Iverson et al., 2016).

A study on the attitudes and perceptions of medical and nursing students found that students perceive MT to be useful but it is essential to explore barriers associated with MT use such as faculty perceptions (Sheikhtaheri et al. 2018). The authors Hay et al. (2017) performed a quantitative study that involved 386 undergraduate nursing students regarding how MT assists with teaching and learning in the academic setting. The authors

found that most students are in favor of MT use for collaboration, as well as learning in the face-to-face classroom (Hay et al., 2017).

MT has the capability for enhancing collaboration between faculty and students in the classroom. Gallegos et al. (2019) conducted a mixed methods study on students' experiences using MT for teaching and learning. For this study students completed surveys and oral interviews on their personal experiences with MT for learning (Gallegos et al., 2019). The authors found that students reported positive experiences, less distractions, and more collaboration with peers and faculty using MT (Gallegos et al., 2019). Li et al. (2017) conducted a qualitative study involving focus groups with 20 nursing student participants. The authors found that overall MT enhances and facilitates classroom learning but constraints such as a small screen, reliability of the web-site, and an overwhelming number of resources may limit the usefulness of mobile devices (Li et al., 2017). The current study supported the use of technology in the classroom but it's essential to gain a better understanding of faculty experiences on MT to more effectively employ this pedagogy for teaching and learning.

Conclusion

In summary, this chapter served as the literature review which informs the topic of MT in nursing education. The recent research supported the need to better understand what are the perceptions of nursing faculty on the use of MT in the face-to-face classroom setting to better understand actual technology use. For the topic of MT, the literature review outlined the importance and benefits of technology as well as the challenges in higher education but did not identify how faculty perceive they are supported or encouraged to integrate technology in the classroom. It was evident from the

review of the literature that students view technology positively for educational use, but evidence is lacking on how nursing faculty perceive technology use in the classroom, particularly in BSN programs. Furthermore, the literature identified that technological training on MT use was essential for both students and faculty for successful integration in the classroom. It was critical to understand nursing faculty experiences with MT use to understand their feelings of technological support, education, ease of use, and perceived anxiety to understand reasons behind their decision to use MT for teaching and learning.

While we know the technological challenges, benefits, student perceptions, and beneficial uses for technology in nursing education, there remained a gap in the literature on nursing faculty perceptions on their challenges and experiences when integrating MT in the face-to-face classroom in BSN education programs. To date a review of the literature indicated there are no prior studies published that specifically target BSN education on nursing faculty perceptions on MT use in the face-to-face classroom. More specifically a review of literature thus far indicated previous literature has largely addressed student experiences in using MT, technology popularity, specific technological tools, benefits of technology, as well as strengths and weaknesses of MT. Recognizing this void in the literature and the fact that MT plays a major role in today's complex healthcare and educational arenas, it made sense to explore the experiences of BSN faculty on the use of MT in the face-to-face classroom.

Chapter three outlines the rationale for choosing the research approach for this problem and for answering the research questions. This section includes information regarding the participants for the study, interviewing techniques, data collection, ethical implications, and the plan to protect the confidentiality of study participants. In addition,

a plan was outlined on how the participants were chosen and criteria for participant selection, which included how I contacted participants meeting the criteria set for the study. I described the process for data collection and analysis, as well as my procedure for coding patterns and themes for the study. Finally, I addressed issues of trustworthiness including credibility, transferability, dependability, confirmability, and the ethical procedures for gaining access to participants, Institutional Review Board (IRB) application, ethical concerns, and described the plans for security and storage of data generated from the study.

Chapter 3: Research Method

Introduction

Lack of or inconsistent use of MT in teaching leads to questions as to what motivates faculty to use MT in the face-to-face classroom in BSN programs. It was critical to explore faculty members' lived experiences and their technological skills to understand their motivation regarding the use of MT in the face-to-face classroom in BSN programs. This was a qualitative study; its primary purpose was to explore the lived experiences of nursing faculty when integrating MT into the face-to-face classroom in undergraduate BSN programs. More specifically, I attempted in this study to answer the following research question: What are the lived experiences of nursing faculty on the use of MT in the face-to-face classroom setting? In qualitative research, the researcher makes inquiries in an effort to deeply understand human behavior (Creswell, 2014). In this research study, I more broadly attempted to understand experiences of nursing faculty teaching in BSN programs integrating MT into the classroom for teaching and learning.

This chapter presents the methodology for the study. Included in this chapter is a discussion of my selection of a qualitative approach for conducting the study. In addition, this chapter includes detailed information regarding the selection of participants for the study, interviewing techniques, data collection, the plan for data analysis, ethical implications, and how I protected the confidentiality of the participants in the study. Furthermore, I outline the plan for how participants were recruited and criteria for participant selection, including how I contacted participants who met the criteria set for the study. I also the process for data collection and analysis, as well as my procedure for coding patterns and identifying themes for the study. I also addressed issues of

trustworthiness, including credibility, transferability, dependability, confirmability, and ethical procedures for gaining access to host sites. Finally, I discuss the Institutional Review Board (IRB) application and ethical concerns, and I describe the storage measures for securing data generated from the study.

Research Questions, Design, and Qualitative History

Questions

The central research question guiding this study was the following: What are the lived experiences of BSN faculty on the use of mobile technology in the face-to-face classroom in baccalaureate nursing education programs? In addition, the study answered the following secondary research questions:

- What specific barriers do BSN faculty experience when integrating mobile technology in the nursing classroom?
- What strategies do BSN faculty use to overcome barriers experienced when implementing mobile technology in the nursing classroom?

Design

A research study generating data reflective of nursing faculty beliefs in regard to the use of MT in teaching and learning practices served as the foundation for addressing the research questions guiding this qualitative study (Battle & Tyson, 2018). To better understand the problem of inconsistent MT integration in the classroom, it was critical to explore faculty experiences with using MT for teaching and learning in the classroom. A qualitative research design was used to understand the lived experiences of nursing faculty regarding their use of MT in the face-to-face classroom in BSN programs (Creswell, 2014; Ravitch & Carl, 2016). The qualitative research approach is appropriate

for encapsulating key components of the human experience (Creswell, 2014). For these reasons, a qualitative phenomenology research framework was best suited for this research study on expressing the experiences of nursing faculty and their perceptions of the use of MT for teaching and learning in the face-to-face classroom in BSN programs.

A qualitative phenomenology approach was chosen to share the lived current and prior experiences of nursing faculty using MT in the face-to-face classroom from their point of view (Creswell, 2014). The participants were requested to share their experiences using MT in the face-to-face classroom for teaching and learning during face-to-face interviews. Through my research, I sought to determine how faculty described their current or past experiences using MT in the face-to-face classroom in baccalaureate nursing education programs. With the goal of improving teaching and learning in nursing, I intended for the findings generated from this study to expand understanding of the reasons for inconsistent MT integration in the classroom. Furthermore, this study makes an essential contribution to nursing education to fill the gap of empirical work on how educators experience the use of MT in the academic setting.

To explore the research questions in depth, I collected data from nursing faculty who taught in BSN nursing programs in the face-to-face classroom. The nursing faculty participants had the opportunity to participate in interviews via the internet or physically in-person regarding their perspective on the use of MT for teaching and learning in the face-to-face classroom. Open-ended questions were used to allow faculty the opportunity to express their experiences regarding the use of MT in the classroom and what influenced their decision to integrate MT into the classroom. In phenomenological research, the researcher attempts to understand the essence of participants' experience,

and personal views are discouraged (Creswell, 2014). In this study, I requested that

participants share events that involved using MT in the classroom using descriptions that

were as rich as possible. I analyzed the participants' descriptions of their experiences

with MT to provide a description of their experience using MT without preconceived

ideas or opinions and to provide a narrative analysis (Creswell, 2014). There was not a

pre- or posttest assessment, only a description of the faculty members' experiences with

MT integration in the classroom for teaching and learning.

This qualitative study included a purposeful sample of nursing faculty who taught

in the face-to-face classroom in BSN programs. The interviews were recorded,

transcribed, and coded. The data collected were analyzed to understand faculty

experiences using MT in the face-to-face classroom for teaching and learning. The goal

of this research was to explore the lived experiences of nursing faculty regarding the use

of MT in the face-to-face classroom setting. Furthermore, I attempted to understand

faculty motivation to integrate MT in the face-to-face classroom for teaching and

learning. A quantitative research design would have been appropriate if the research

study had focused on the number of faculty using MT rather than exploring how faculty

members' perceptions and experiences influenced their intention to integrate MT into the

classroom (Creswell, 2014). Through my research, I sought to explore the current or past

experiences of nursing faculty using MT in the face-to-face classroom in BSN education

programs.

Qualitative History

Qualitative research is used in many disciplines and has developed significantly

over time, with researchers conducting this type of inquiry seeking to better understand

experiences and actions of individuals (Creswell, 2014). When using a qualitative

research design to study a phenomenon, a researcher interacts with participants to better

understand their behaviors as well as their thought processes (Creswell, 2014; Glesne,

2016). In qualitative research, the researcher serves as the instrument and is used to

explore the experiences and perceptions of the participants (Alvesson & Skolberg, 2009).

It is critical for a qualitative researcher to gain the deeper meaning of participants'

experiences of a particular phenomenon in order to understand their relationship and

feelings (Maxwell, 2013). The qualitative research process is inductive, meaning that the

researcher uses the data collected to develop patterns, themes, concepts, and theories

from interactions with research participants (Maxwell, 2013).

Phenomenological Approach

To explore the experiences of nursing faculty when integrating MT into the face-

to-face classroom in undergraduate BSN programs, a descriptive phenomenological

research study approach was chosen. I was interested in gaining a deeper understanding

of the lived experiences of nursing faculty teaching in the classroom in BSN programs on

their experiences with MT use. According to Creswell (2014), researchers who employ

the phenomenological qualitative approach are interested in individuals' lived

experiences. There are two main phenomenological research approaches: interpretive and

descriptive (Connelly, 2010). Interpretive phenomenologists believe that researchers

cannot put their personal ideas aside regarding a topic of interest (Connelly, 2010). In

order to remain neutral, descriptive phenomenologists attempt to lay aside any personal

presuppositions regarding a phenomenon (Jaromhum & Fowler, 2010).

For this study, a descriptive phenomenological approach was employed for the study. In descriptive phenomenological qualitative data analysis, from the beginning of an interview, all of the data collected reflect the lived experience of each participant (Giorgi & Giorgi, 2003). The focus of this study was describing the lived experience of faculty on MT use for teaching and learning. In addition, I was concerned with understanding the meanings associated with these experiences in regard to MT use for teaching and learning in the classroom. For this study, interpretation or meaning making regarding the participants' inner lives, which is the focus of interpretive phenomenological qualitative studies, was not as critical to the topic (Connelly, 2010). Therefore, the descriptive phenomenological qualitative approach was well suited to exploring the experiences of nursing faculty on MT use in the classroom, which was the purpose of this study.

For descriptive phenomenological research, it is critical for the researcher to remain neutral throughout the study (Connelly, 2010). For this study, I used bracketing to ensure that personal biases did not influence the study and to remain objective throughout the entire research process (Carpenter & Streaubert, 2007; Creswell, 2014; Giorgi, 2011). To discover the essence of the lived experience of faculty, I identified and coded sentences, phrases, and keywords during the descriptive phase of the study (Giorgi & Giorgi, 2003).

The primary aim of the study was to gain a deeper understanding of the personal experiences of nursing faculty regarding implementation and usage of MT in the classroom setting in undergraduate BSN programs. Furthermore, the focus of the study was exploring the experiences of faculty on MT use to understand how their perceptions,

experiences, and beliefs influenced MT use in the classroom. Therefore, to understand the PEOU and usefulness of MT for faculty in the classroom, it was critical to gain a deeper understanding of nursing educators' personal experiences. Thus, one-on-one qualitative semistructured interviews were the most appropriate data collection method for exploring the personal perceptions and experiences of faculty on their integration of MT in the face-to-face classroom (Creswell, 2014).

The aim of the study was to generate data that reflected the nurse educators' experiences and beliefs on using MT for teaching and learning. In-depth interviews of full-time nursing faculty teaching in the face-to-face classroom in BSN programs were conducted to explore faculty experiences of the challenges, factors, strategies, barriers, support, and/or lack of support that they experienced when integrating MT in the classroom. Findings from this study led to a deeper understanding of what influences faculty members' choice of whether to integrate MT into the face-to-face classroom. Through the research findings, I attempted to reveal participants' thoughts and opinions, provide insights, uncover trends, develop ideas, and plunge deeper into the problem of inconsistent faculty behaviors and attitudes on MT use in the face-to-face classroom setting in BSN programs (Abramson et al., 2015; Alrasheedi & Capretz, 2015; Dickens, 2017; Lall et al., 2019).

Role of the Researcher

In qualitative research, the researcher was considered the primary research instrument, thus positionality and social location were of great importance in every stage of the research process (Maxwell, 2013). In this study, I served in the role of researcher and observer responsible for gathering data to understand faculty experiences on MT

integration in the BSN classroom. My role included contacting the administrators at the academic sites of study participants and obtaining IRB permission to conduct the study as was required at each institution selected. I was required, before recruiting research participants, to obtain ethical approval to conduct research from the IRB (Creswell, 2014; Ravitch & Carl, 2016). As the primary researcher, I was responsible for obtaining IRB approval, contacting academic leaders and potential participants, conducting interviews, and collecting, recording, transcribing, analyzing, and storing the data for this research study (Creswell, 2014).

My professional relationship with faculty and current position as BSN program coordinator at a college limited me from conducting the study in my home institution. The relationship that a researcher has with the participants of a study has the potential to influence the research results, hence, the college I worked at was excluded from the study (Creswell, 2014; MacNeill et al., 2016). It was critical to collect data, as well as analyze subjective information and observations of study participants to better understand faculty experiences with MT use in the face-to-face classroom in BSN programs (Creswell, 2014). More importantly, to interpret data gathered from research participants, researchers must make an effort to study data without outside influences or biases (Ravitch & Carl, 2016). More precisely, qualitative research involves exploring a phenomenon and aiming to understand a problem by gathering data and analyzing subjective information and observations of study participants (Ravitch & Carl, 2016).

I have worked in the field of nursing education for the past 6 years in an Associate of Science in Nursing (ASN) education program. I began my career as a nursing faculty member 6 years ago and have strived to maintain a professional relationship of respect,

trust, and confidentiality with all faculty, staff, and nursing schools in Pennsylvania. For this study, due to working primarily in an ASN program, I did not have close personal relationships with BSN participants or close working relationships with the faculty being interviewed for the study. My own role as a nurse educator presented a benefit for the study, as my colleagues and I had professional connections with other faculty in BSN programs. This connection assisted with recruiting participants for the study.

Last, I am not an expert on the use of MT in the classroom, but I use technology for teaching and learning, which has been successful, as evidenced by peer reviews and student evaluations. In qualitative research, data collected from participants can be subjective in nature. This subjectivity can be challenging for a researcher to recognize in order to remedy researcher- or participant-induced bias (Creswell, 2014). To bring out accurate and unbiased data, a review of the university guidelines was conducted, and an IRB application was completed prior to the study. Before data collection, I drafted the expectations for the study, which assisted me in recognizing biases during the research process (Ravitch & Carl, 2016).

Finally, I kept detailed notes during the interviews and recorded the meetings using a digital voice recorder (Ravitch & Carl, 2016). Specifically, the ASR Voice Recorder was used to audio record interviews (Google, 2020). This computer application allows the user to group recordings, add notes while listening and recording, pause recordings, customize recordings in a folder, as well as upload recordings to the Cloud and Google Drive for storage (Google, 2020). Waiting to record data at a future time after the interview had the potential to introduce errors or misinformation into the data (Creswell, 2014). When analyzing the research results from this study, I included all

research findings and preliminary data gathered, even if the data did not feel useful at the time of the interview (Ravitch & Carl, 2016). Additionally, I acknowledge that I had some preconceived expectations; in the research report, I detailed how those ideas were confirmed or contradicted by the research results (Creswell, 2014). By providing all of the collected data, I prevented any misinterpretation of the information to avoid biases in the study (Creswell, 2014).

Target Population and Sampling

In this section, I describe the strategies that were used to address the research problem, addressing the target population and sampling, inclusion criteria, and exclusion criteria. Furthermore, the number of participants for the study and rationale for the sample size are described. To explore the experiences of BSN faculty members regarding the use of MT in the face-to-face classroom, it was critical to select participants who were knowledgeable about and experienced with teaching in the face-to-face classroom setting in BSN programs (Creswell, 2014).

Target Population

For qualitative research, the population is chosen with a clear understanding of the goals of the research question (Ravitch & Carl, 2016). For this study, the population was chosen to meet the goal for the research question, which was to explore the experiences of BSN faculty regarding their use of MT in the classroom (Ravitch & Carl, 2016). The nursing educators taught in a number of settings, including Associate of Science programs, baccalaureate nursing programs, and hospital-based diploma programs. The specific population for this study was nursing faculty who taught in BSN programs in Pennsylvania.

A demographic questionnaire (Appendix A) was developed by the researcher ensuring that the target population for the study was identified. The population chosen for the study was significant and justified to fill a gap in the literature on the reasons for inconsistent MT integration the face-to-face classroom in specifically BSN programs (Abramso, et al., 2015; Alrasheedi & Capretz, 2015; Dickens, 2017; Lall, et al., 2019). The goal for this target population was that participants in the study have significant traits in common (Creswell, 2014). Therefore, the nursing faculty population being explored were educators who teach in BSN programs, specifically in the face-to-face classroom setting. Furthermore, the educators had a minimum of a master degree in nursing, as well as current experience in the academic setting.

Sampling

In research, sampling refers to the selection process that the researcher employed to identify individuals for a study (Creswell, 2014). For qualitative research, it was critical to have a clear and detailed rationale for why individuals were chosen to be included in a study (Ravitch & Carl, 2016). For this study, purposeful sampling was used to identify and select individuals who were knowledgeable and experienced in teaching in the face-to-face classroom setting in baccalaureate nursing (BSN) programs (Creswell, 2014). As previously mentioned, experienced nursing educators in the face-to-face classroom in BSN programs served as the target population in this study.

This qualitative study included purposeful sampling which was widely used in narrative inquiries. The use of purposeful sampling in qualitative research entailed that participants were purposefully chosen due to their particular experience, traits, or work in a particular setting (Ravitch & Carl, 2016). Purposefully selecting faculty deliberately,

helped to obtain the information necessary to answer the research question," What are the experiences of BSN faculty on the use of mobile technology in the face-to-face classroom in baccalaureate nursing education programs?". Thus, faculty whose primary responsibility was teaching in the online environment was excluded from the study.

Exclusion Criteria

For this study, the personal, as well as the professional experiences and motivation to use MT in the face-to-face classroom in BSN education was the focus for the study. Therefore, nursing faculty who taught in associate degree nursing programs or hospital-based nursing education programs were excluded from participating in this study. In addition, as previously stated, nursing faculty who taught solely in the online setting were excluded from participating in the study. Furthermore, faculty teaching in another state or country were excluded from participating in this study. Finally, to participate in this study nursing faculty held a minimum of a master degree in nursing. For this qualitative study, for purposeful sampling, a demographic instrument was developed by the researcher ensuring that participants met the inclusion criteria for study participation (Appendix A) (Creswell, 2014).

Inclusion Criteria

As previously mentioned, the nursing educators interviewed were required to hold a minimum of a master's degree, have current experience teaching in the face-to-face classroom setting, and teach in a BSN education program. To ensure participants met the inclusion criteria, participants volunteering for the study were required to complete demographic questions (Appendix A). These demographic questions (Appendix A) were used to gain background information on the participants in the study to better analyze the

data collected, as well as exclude those participants who did not meet the criteria for the study. Nursing faculty who taught hybrid were included in the study because the hybrid instruction combines face-to face instruction with technology mediated instruction (Siemens et al., 2015). Thus, faculty who taught hybrid did meet with students in the face-to-face classroom setting, which again met the inclusion criteria for this study.

Sample Size

In qualitative research, there was no rule or requirement regarding the number of participants needed for a study (Ravitch & Carl, 2016). For this study, the researcher anticipated interviewing 5 to 15 nursing faculty educators who met the inclusion criteria. The goal for sample size for this study was to rigorously and thoroughly answer the research question to achieve an understanding of faculty experiences on their use of MT in the face-to-face classroom in BSN programs. Data saturation occurs during qualitative research when no new information or themes emerge from analysis, thus no more data needed to be collected (Saumure & Given. 2008). According to Merriam and Tisdell (2016) data saturation occurs when no new insights are found in the data. Furthermore, the cessation for data collecting and sampling in this study was determined by the findings from the concurrent data collection and analysis by the researcher.

Instrumentation

For this qualitative study, three instruments were developed by the researcher including a demographic questionnaire (Appendix A), an interview guide (Appendix D), as well as an interview protocol (Appendix H). According to Creswell (2014), it was required for the researcher to provide detailed information regarding instruments used in

a proposed study. The instruments for this study were designed by the researcher to address this particular research study.

The demographic questionnaire (Appendix A) developed by the researcher was to ensure that the participants for the study met the inclusion criteria for the study. According to Creswell (2007) for purposeful sampling, it was critical for participants in a study to complete demographic questions. In addition, research questions, included on the interview guide, were developed by the researcher to explore faculty experiences on integrating MT in the face-to-face classroom (Appendix D). As previously mentioned, what was unknown on the topic was how nursing faculty teaching in the face-to-face classroom in BSN programs experience MT use for teaching and learning. The interview questions were developed to explore and understand faculty experiences on the integration of mobile learning platforms in the classroom setting (Appendix D).

Each interview question was developed and aligned to the research questions (Table1). In addition, the concepts from the TAM were utilized to understand what influences a technology users' PU and the users' PEOU, in regards to technology (Davis, 1989). Factors such as PU and attitude of the technology user influence MT use for teaching and learning (Buabeng-Andoh, 2018). Thus, the TAM guided the development of the questions on the interview guide to understand how particular experiences, feelings, and beliefs influence the technology users' PU and PEOU. According to Salmon (2008), to establish face validity of a research instrument, it was necessary for an expert review of the research instrument. For this study, a doctoral level nurse in the field of nursing research, specifically qualitative research and education reviewed each instrument to ensure the tools measure the phenomenon of interest.

An interview protocol detailing the procedures to be used for each interview was developed by the researcher to guide each interview (Appendix H). The protocol included the instructions and procedures that the interview followed with each interview (Creswell, 2014). I primarily used the questions on the interview guide (Appendix D) throughout the interview but the interview protocol (Appendix H) assisted the researcher to standardize each interview (Van De Wiel, 2017). As recommended, the interview protocol contained an introduction to the study, main questions, brief transitions, and a conclusion (Emans, 2004; King & Horrocks, 2010).

Procedures

In this section, the methods for procedures related to participant selection, recruitment, and protection for the participants is described. Additionally, the data collection process and data analysis methods are described. For the study, participants were provided the option of participating in a face-to-face interview method or online interview. This section also included how the face-to-face data collection was performed, as well as the online interview data collection. Finally, this section included the strategies that were employed to protect, share, and store the data collected for the study.

Sampling Selection

For this study, a purposeful sampling strategy was employed to identify participants for the study. Purposeful sampling required the researcher to deliberately identify individuals with certain characteristics from specific populations to answer the research question (Ravitch & Carl, 2016). To participate in the study, participants met the inclusion criteria for the study. For this study, the participant selection included identifying nursing faculty who had a master of science degree in nursing or higher,

current experience teaching in the academic setting, speak fluent English, and they gave

verbal and signed consent. Furthermore, nursing faculty participants taught in the face-to-

face classroom in a BSN program in Pennsylvania.

In addition to ensuring inclusion criteria, demographic questions (Appendix A)

were developed and participants were required to complete the demographic questions

(Appendix A) prior to the interview. These demographic questions (Appendix A) were

used to gain background information on the participants in the study to better analyze the

data collected, as well as exclude those participants who did not meet the criteria for the

study.

As previously stated, faculty whose primary teaching is online were excluded

from participating in the study. In addition, faculty teaching in associate degree nursing

education programs, hospital-based programs, and diploma nursing programs were

excluded from participating in the study. Nursing faculty who taught hybrid were

included in the study but faculty who taught solely in the online setting were excluded.

Rationale for including faculty teaching hybrid was that these educators blend both

traditional face-to-face in-person course lecture approaches and online learning.

According to Siemens et al. (2015) blended learning combines face-to-face instruction

with technology mediated instruction. Hence, faculty teaching hybrid courses have face-

to-face in-person interactions with their students in the physical classroom. On the other

hand, a faculty member teaching solely in the online setting did not meet criteria for the

study because they had no in-person face-to-face contact with students in a classroom.

Recruitment

Recruitment for this study included procedures for gaining access to study sites and the process for recruiting participants. Prior to data collection and recruitment, approval was obtained from the university's IRB (Ravitch & Carl, 2016). The University IRB certified that all students comply with all the ethical standards for research to ensure the rights, welfare, and safety of participants are protected (Creswell, 2014). Furthermore, the IRB application was required for all students and faculty who are completing research which involved collection of data (Creswell, 2014).

After receiving university IRB approval, to gain access, written permission, and consent to interview participants, I contacted the dean, program director, chairperson, or organizational leaders in forty-five Pennsylvania schools that are members of the AACN. The AACN is an association for nurses that sets high standards for nursing education, influences the nursing profession, and promotes nursing education research. (AACN, 2020). Thus, this agency supports nursing education research, which was the focus of this study. It was expected that findings from this study will contribute to the body of knowledge on how faculty experience MT use in the face-to-face classroom.

Currently there are over eight hundred and forty member schools of nursing nationwide in this association (AACN, 2020). I used the AACN website to obtain contact information for the dean, program director, chairperson, or organizational leaders in Pennsylvania nursing schools. This web site contained a database including the names and contact information for the dean, program director, chairperson, or organizational leaders to forty-five Pennsylvania universities who have BSN programs. The site also provided the name of the school, location, programs offered, and school affiliations

(AACN, 2020). And while the AACN provided names and contact information of the forty-five listed Pennsylvania nursing programs, it could not be assumed that all organizational leaders would respond to the letter of request for gaining program access (Appendix E). The plan was to recruit and interview between five to 15 BSN faculty until data saturation is achieved.

The researcher kept an email folder containing the faculty who had identified interest in participating in the study. The researcher chose volunteer participants based on the calendar date that they responded to the email to participate. The first 15 faculty volunteers, chosen by the calendar date, who identified interest in study participation were selected first for the study. In the event that data saturation does not occur with the first 15 faculty recruited, additional participants were chosen in the same manner from the email folder based on the calendar date that they responded to the email to participate. As previously stated, data saturation occurs during a qualitative research study when no new information or themes emerge from analysis, indicating that no more data needs to be collected (Saumure & Given. 2008). Furthermore, the cessation of data collection and sampling in this study was determined by the findings gathered by the researcher. Hence, when no new insights were found in the data collected, cessation followed (Merriam & Tisdell, 2016).

Upon obtaining the contact information for the dean, program director, chairperson, or organizational leader at the AACN website. I sent the gatekeeper letter, as indicated in Appendix E, to the dean, program director, chairperson, or organizational leaders at these forty-five AACN member Pennsylvania schools. Once a program director/dean agreed to participation of faculty in the study, host organizational

agreement was sought. Host organizational agreement included organizational consent and/or IRB required by the research site. Upon completing and obtaining the required

IRB and/or organizational consent from the research site, I shared the recruitment flyer (Appendix F) with the dean, program director, chairperson, or organizational leader at the institution. The recruitment flyer contained an abbreviated overview of the study. Specifically, the recruitment flyer (Appendix F) included the study title, purpose, method, participation requirements, length of time for participation, inclusion criteria for the study, and contact information for the researcher. I requested that the dean, program director, chairperson, or organizational leader review the flyer and provided an opportunity for them to ask further questions.

After providing clarification on the study as needed to the dean, program director, chairperson, or organizational leader, I requested that he/she forward the email to participate (Appendix B) to faculty who met the inclusion criteria for the study. More importantly, as indicated in the email to participate (Appendix B), I made it clear that participation is completely voluntary with no employment obligation to participate from the organizational leader. This email to participate (Appendix B) was sent directly to the dean, program director, chairperson, or organizational leader to forward to the nursing faculty who met the inclusion criteria for the study. Furthermore, the recruitment flyer (Appendix F) was also attached to the email requesting participation. The recruitment flyer (Appendix F) provided a simple overview of the study. I also attached the demographic questions (Appendix A) for review. In addition, I attached the informed consent to the email for the interested potential participants to review.

Snowball Sampling

For this study, snowball sampling was used to recruit potential participants. Snowball sampling involved asking participants in the study to recommend potential contacts who may be suitable candidates for the study (Merriam & Tisdell, 2016). Snowball sampling in this study included asking participants in the study for additional relevant contacts who were a potentially appropriate source for the proposed study (Ravitch & Carl, 2016). Hence, the participants who volunteer for the study were requested to refer colleagues to participate in the study who met the study inclusion criteria. The recruitment flyer (Appendix F) was provided to study participants to share with their relevant nursing faculty contacts who also met the criteria for the study. Finally, recruitment for this study was totally voluntary and I attempted to avoid conducting interviews during business hours.

Coercion and biases are often associated with research. These practices can occur during participant recruitment. Steps to minimize coercion and research biases during recruitment included considering the relationship between the researcher and the participant (Ravitch & Carl, 2016). For this study, the researcher avoided interviewing friends or individuals that the researcher had any prior relationship personally or professionally. Close relationships had the potential to bias research data (Ravitch & Carl, 2016). Furthermore, there was no exchange of gifts or services in exchange for participation in the study. Promising small gifts or favors would be viewed as inappropriate and have had the potential to influence the relationship between the researcher and participant (Ravitch & Carl, 2016).

Protection of Participants' Privacy and Confidentiality

As previously mentioned, most importantly, prior to recruiting participants, to ensure that university ethical standards and United States federal regulations, IRB approval were obtained (Creswell, 2014). As previously mentioned, recruitment for this study was totally voluntary and I attempted to avoid conducting interviews during business hours. According to Creswell (2014) it was critical to respect and avoid disruptions at the research sites. Prior to the interview, I gained informed consent from participants to conduct my study. According to Ravitch and Carl (2016) signed consent was required from all participants in the study and this included the organizational leaders.

It was required that researchers protect all research participants, and this included protecting the confidentiality of the participants (Burkholder et al., 2016; Creswell, 2014). According to the research guidelines from the university, to avoid ethical problems, it was recommended using anonymous methods (Creswell, 2014). Thus, to protect confidentiality of participants, pseudonyms were used to protect their identity. A pseudonym or false name was provided to the participant to ensure there was no way for anyone to identify an individual within a sample in the study (Allen & Wiles, 2016; Ravitch & Carl, 2016). These pseudonyms were used on all transcripts rather than the participants real name to further protect the participants' identity. Additionally, only de identified information was included in the written report. Knowledge of potential sharing of de identified data in the dissertation process was shared with participants as a part of informed consent (Appendix A).

For this research study, the researcher collected data including audio-recorded data, written transcripts, and field notes. To protect confidentiality of the participants, the data collected during the interviews including audio-recorded data, written transcripts, and field notes was stored in a locked filing cabinet that was password protected on a personal computer for at least 5 years. The data on the researchers' computer will be sanitized after 5 years, and the files will be removed securely from research files on the computer processor. In addition, all written transcription created by the researcher will be shredded and all video and audio files will be destroyed after 5 years.

Data Recording Procedures

It was critical, particularly in qualitative research, to plan an approach to record data in a study (Creswell, 2014). For this study, because the researcher engaged in 5 to 15 interviews, this researcher utilized an observational protocol. An observational protocol required the researcher to develop a plan for collecting and recording data (Creswell, 2014). In order to engage and observe with each participant throughout the interview, the interviews were audio recorded (Creswell, 2014).

For this study, the use of an audio/voice recorder was used to record and collect data during each interview. For this study, an ASR voice and sound recorder, which is an application for MT to record meetings, was used for recording the interviews (Google, 2020). The ASR application for MT was free and without any limitations on the recording time for the user (Google, 2020). Furthermore, the recordings were uploaded to Google Drive, Cloud, and Dropbox for storage. In addition, the user labeled recordings, added notes when listening, cut and saved parts from the recording, paused, and deleted recordings (Google, 2020). In qualitative research, it was recommended to keep a record

of what was stated during the interview for later analysis (Ravitch & Carl, 2016; Rubin &

Rubin, 2012). Thus, the features available on this technological application were useful to

keep an audio record, upload recordings for storage in the Google Drive, add notes or

pause during the interview, as well as delete any recordings as necessary. The recordings

were useful during the data analysis and interpretation to review interviews as needed.

Finally, the audio recordings during the interview assisted the researcher when coding,

enabled self-evaluation and reflection by the researcher, and allowed the researcher to

review the interactions repeatedly with the potential to listen to recordings multiple times

(Asan & Montague, 2014).

For this qualitative study, the audio data collected for the study was transcribed

for closer study (Creswell, 2014). Transcribing the data collected on the audio required

the researcher to represent the spoken words of the interview in written form (Ravitch &

Carl, 2016). To ensure the fidelity, the developed transcripts were written verbatim, in the

participants exact words (Ravitch & Carl, 2016). Interview transcripts were developed

from each interview which assisted the researcher in organizing and preparing data for

analysis (Creswell, 2014).

In addition to recording interviews and transcripts, field notes or observational

notes were taken during each interview. To enhance data for analysis, fields notes were

encouraged as a critical element of rigorous qualitative research (Creswell, 2014; Lofland

et al., 2005; Mulhall, 2003; Patton, 2002). For qualitative research, the purpose of taking

field notes was to develop thick and rich illustrations of the topic of interest (Phillippi &

Lauderdale, n.d.). To study nursing faculty experiences using MT in the classroom, field

notes contain basic information such as the date of data collection, setting, demographics,

participant response to interview, as well as any non-verbal behaviors (Phillippi &

Lauderdale, n.d.). Finally, critical reflection regarding the interview was noted in the field

notes. Critical reflection required the researcher to take note of any relevant details of the

interview, as well as self-reflection on the performance of the researcher during the

interview (Elo & Kyngas, 2008).

Data Collection

For this study, the perceptions, point of view, and personal lived teaching and

learning experiences on the integration of MT by nursing faculty in the face-to-face

classroom in undergraduate BSN programs was the focus for the study. Hence, the data

collection method for the study included semi-structured interview questions to gather an

in-depth understanding and personal point of view on the lived experiences of BSN

faculty on MT integration in the classroom. The rationale for using one-on-one

interviews was to conduct in-depth individual interviews with a small number of

participants to explore their personal perspectives on the use of MT for teaching and

learning in the classroom (Ravitch & Carl, 2016). In addition, individualized interviews

with participants were useful to gather detailed information regarding their personal

feelings, perceptions, experiences, and opinions on the use of MT in the classroom which

was the focus of this study. Lasting one hour, one on one interviews provided an

opportunity for the researcher to ask comprehensive probing questions to better

understand their feelings on the use of MT in the classroom. For this study, an interview

guide or protocol was developed and assisted the researcher ensuring that every interview

is conducted consistently with each participant (Appendix H).

Online Interviews

As previously mentioned, an interview protocol was used during each interview, regardless of online or in-person interview method (Appendix H). For this study, participants chose to engage in the interviews via internet based online on their personal computer or physically in-person face-to-face. The reason for offering the participants a choice was because geographical location of individuals has shown to influence recruitment rates (Ravitch & Carl, 2016). Technology offered the ability for individuals who live geographically a distance apart from each other to meet face-to-face in the online setting via computer (Creswell, 2014). Nursing faculty who are repeatedly approached to participate in research face an additional set of issues associated with their location and time. Technology-mediated interviews provided the researcher the potential to reach people who may be challenged to participate in research due to geographical challenges (Creswell, 2014). In addition, the use of technology can lower costs for both the participant and researcher given that there is no travel involved (Ravitch & Carl, 2016).

To manage challenges associated with technology mediated online interviewing, the participants and the researcher needed to test equipment and internet access prior to the interview. It was critical for participants and the researcher to understand how to access and use the online platform chosen to conduct the interview. For participation in the study via the online interview method, Zoom software application was downloaded to the computers being used by the participants and researcher prior to the interview. In addition, the participants were requested to meet using Zoom in the online chat room with the video option, making a working web camera on their computer critical for

participation. To be clear, the participants in the study were not required to have a Zoom online account to attend the meeting but have internet access and a computer with a web camera was essential to attend the meeting. To join the meeting, the participants were invited to the meeting by the researcher, a link was provided to participants by email invitation (Appendix I) from the researcher conducting the interview prior to the chosen date and time.

For this study, participants were requested to join with the video setting so the researcher and participant could meet face-to-face. The online interviews were audio recorded on Zoom, after obtaining permission from the participant. During the online meetings, Zoom allowed subscribers to record meetings audio to a computer. The recorded files were uploaded to the file storage service Google Drive. Furthermore, a participant could stop or pause the recording at any time during the meeting. When the participant chose to stop the recording and started the recording again, a new file was created for the next interview segment (Zoom Video Communications Inc., 2019). If the participant paused the recording and started again, Zoom will record to the same video file (Zoom Video Communications Inc., 2019).

For online meeting participation, there was no cost for participants to attend the online Zoom meetings. Online interview participants were provided written instructions on how to use and download the Zoom software on their computer device as indicated in Appendix C in the study. The participants also provided their availability to meet online and the researcher provided an invitation (Appendix J) to the participant in the meeting, which included the time, as well as the date of the meeting. Furthermore, interview transcripts were developed from each online interview, as well as field notes were taken

during each interview. Finally, during the online video interview, observations were collected regarding non-verbal cues by the participants during the interview.

Face-to-Face Interview

For participants who felt more comfortable meeting physically in-person face-to-face, the researcher explored the setting in which the participant felt most comfortable to conduct the interview. It was critical to meet the study participants in a setting in which they were comfortable, free of distractions, and convenient for them to participate (Ravitch & Carl, 2016). For this study, the researcher did not want to inconvenience participants so participants were given an opportunity to choose the time, location, and setting for the interview. The location agreed upon by the participants and researcher was quiet, private, and free of distractions. Some appropriate examples for suitable interview locations include private offices, campus conference rooms or libraries. In addition, the interview guide was used during each interview so every participant had the same interview experience regardless of the choosing online or face-to-face interview (Appendix H).

The in-person face-to-face interview was also audio recorded, after obtaining permission from the participant. A voice recorder device was used to record the face-to-face meetings. During the interview the participant was told they could request that the researcher stop recording for any reason throughout the interview. During in-person face-to-face interviews, observations and field notes were collected by the researcher to further explore participant feelings and behaviors. Observations and field notes were critical because they allowed the researcher to visualize and keep a record of the activities and context in which the activities occurred (Ravitch & Carl, 2016).

As previously mentioned, interview transcripts were developed from all interviews including both in-person and online to be used for valid and rigorous data analysis. Transcribing interviews from oral to written format was essential to ensure accuracy and avoid misinterpretation (Ravitch & Carl, 2016). Lastly, observations were collected regarding non-verbal cues by participants via field notes. Hence, the field notes described participant's non-verbal behaviors throughout the interview to enhance data collection (Creswell, 2014).

Rationale for Data Collection Techniques

Of course there are advantages and disadvantages to interviewing participants online versus face-to-face in person. An advantage to allowing faculty an option to interview online or face-to-face was that this choice may increase participation in the study by making it more convenient for individuals to participate. In addition, the use of technology to perform the interviews allowed faculty who were not geographically located near the researcher an opportunity to participate without traveling long distance (Creswell. 2014). The advantages for using technology for the study was the ability to gain a greater number of participants, flexibility, low cost, ability to record the meetings, and convenience due to not having to travel to meet the participants in a neutral site (Ravitch & Carl, 2016).

Online interviewing, which can happen with or without the physical presence of the interviewer and interviewee, could have posed some disadvantages such as technological challenges and expertise of the participants (Fontana & Prokos, 2008). For online interviewing not being in-person physically could have limited the ability of the researcher to explore non-verbal behaviors of the participant (Ravitch & Carl, 2016).

According to O'Conner et al. (2008) it may be challenging to develop a rapport with participants online and there is a potential for procedural, as well as technical challenges. First, the interview protocol (Appendix H) was developed to ensure online and in-person interviews will be standardized. To manage technological issues associated with online interviewing, instructions on how to use and download the Zoom software on their computer device will be provided (Appendix C). Finally, participants who choose to interview online will be requested to test equipment and internet access prior to the interview.

Reporting, Sharing, and Storing Data

For this study, the data collected during the interviews such as the audio recordings, transcripts, and field notes was locked in a password protected computer for the next five years (Creswell, 2014). Furthermore, any paper documents or USB flash drives, or audio files with data stored were locked in a filing cabinet in the researcher's home for five years. After five years, paper documentation will be shredded, USB flash drive and audio tapes will be destroyed. It was critical to protect the confidentiality and anonymity of the data and research participants therefore the researcher is the only person with access to this data. According to Ravitch and Carl (2016), it is imperative that confidentiality of the participants be maintained and research data collected be managed and secured. Upon request, access to data will only be permitted by my Walden University's IRB and my supervising committee members.

<div align="center">

Interview Process

</div>

This section of the study includes the process and procedures that were employed to prepare for each interview, conducting the interviews, and how each interview was

concluded. According to Ravitch and Carl (2016) it was critical to consider factors before, during, and upon completion of interviews. Furthermore, in qualitative research, the data collected in an interview was largely dependent on the interviewer themselves (Patton, 2015). Hence, procedural factors for interviewing were outlined in this section.

Interview Preparation

As previously mentioned, the interview process steps were the same for both methods of data collection including the physically in-person interviews and the Zoom online interview method. To ensure participants meet the inclusion criteria, participants volunteering for the study were first required to complete demographic questions (Appendix A). Second, participants were required to read and sign the informed consent prior to starting the interview. Participants were emailed these forms once agreeing to participate in the interview. Upon receiving the demographic questions and signed consent form, the researcher then contacted the participant via email and scheduled a time to discuss the selected interview method, as well as the time and date for the interview. For participants who chose to interview online, the written instructions were provided regarding how to use and download the Zoom software on their computer device, as indicated in Appendix C in the study.

It was imperative to respect the time of the participants, for this reason the participants were given the flexibility to choose when they would complete the one-hour interview (Creswell, 2016). Prior to each interview, a private and quiet place was selected and agreed upon by the researcher and participant. Each participant was provided with a clear explanation to the purpose of the study and for the interview. The researcher ensured the participants were comfortable participating in the study, as well as provided

the opportunity for participants to ask any questions prior to beginning the interview. Lastly, instructions were provided to the participants regarding what occurred at the conclusion of the interview.

Conducting Interviews

As previously mentioned, an interview protocol detailing the procedures to be used for each interview was developed by the researcher and was used as a guide for conducting each interview (Appendix H). In the interview introduction, participants were reminded that the interview was audio recorded (Appendix H). In addition, they were reminded that they could stop the recording during the interview at any time. Although signed consent had already been obtained, at the start of each interview, when the recording has begun, verbal consent was obtained. By verbally reviewing the informed consent, the researcher was further protecting the human rights of the participant (Creswell, 2014). The interview protocol (Appendix H) was used for in-person and online interviews to ensure that every interview was standardized (Van De Wiel, 2017). The use of the interview protocol assisted in guiding, standardizing, and organizing each interview (Ravitch & Carl, 2016).

In addition, probing was utilized during each interview to address follow-up questions (Ravitch & Carl, 2016). Probing can be defined as a method of gathering information to explore a phenomenon of interest thoroughly (Rubin & Rubin, 2012). Probing included the use of verbal and nonverbal cues to clarify a conversation to keep the interview focused on the topic of interest (Rubin & Rubin, 2012). There were various probing techniques which were used to assist the research during the interview to keep the conversation on the topic. For this study the researcher used attention probes to

indicate to the participant that the researcher is listening attentively (Rubin & Rubin, 2012). In addition, conversational management probes were used to help clarify any ambiguous information during the interview (Rubin & Rubin, 2012).

Throughout each interview, the researcher attempted to engage the participant in a conversation regarding the topic of MT and avoided asking controversial questions throughout the interview process (Creswell, 2014). The information provided to participants was clear, concise, and timely while providing time throughout the interview to avoid interrupting the participant, as well as actively listening and maintaining eye contact (Ravitch & Carl, 2016). An interview guide (Appendix D) developed by the researcher was used to ask neutral, open ended questions to the participants during the interview. The interview guide contained the questions developed by the researcher and had been structured to align to answer each research question (Appendix D).

To answer the question of what are the perceptions of nursing faculty on the use of MT in the face-to-face classroom setting, the TAM served as the conceptual framework guiding this study and research questions. The model had key concepts including the PU and PEOU, which influenced their attitude, as well as BI to integrate new technology (Davis, 1989). The theory models how an individuals' attitude will forecast their behavior to choose technology. The questions developed for the interview guide (Appendix D) were developed using the TAM. Participant responses to these questions help describe faculty perceptions and experiences on the inconsistent use of MT in BSN education.

The interview guide (Appendix D) outlined key questions that were used throughout the interview. Throughout the interview, the researcher provided clear

information on the process and timing for each interview (Ravitch & Carl, 2016). In addition, the researcher demonstrated active listening during each interview, took notes, and was thoughtful and attentive to each participants' thoughts and feelings (Ravitch & Carl, 2016). Furthermore, the anonymity of every participant was protected throughout the interview process. Finally, the researcher respected the time of the participants, as well as allowed time for each individual to provide comments or questions at the conclusion of the interview (Creswell, 2014).

Interview Conclusion

Upon completion of each interview, I respectfully expressed my appreciation to the participant for providing time away from their busy schedule to participate in the study. I immediately wrote the participant's pseudonym, date, and time of the interview on the notes, as well as any observations made during the interview. Furthermore, an email of thanks was written upon completion of the interview to acknowledge my gratitude for participating in the study (Appendix G).

<center>**Data Analysis**</center>

This section provides an overview of the considerations to critically approach data analysis in this study. Data analysis included the analysis of demographic information including participant age, ethnicity, years of teaching experience, highest level of degree completion, teaching delivery method and teaching setting. Demographic information was analyzed using SPSS version 26 and was summarized in narrative and table format. Qualitative data was analyzed using Creswell's (2014) six step process for qualitative data analysis. The six steps included: Organizing Data, Read the Data, Code the Data, Generate Descriptions and Themes, Represent the Description and Themes, and finally

interpretation of study results. Once data was collected, via face-to-face interview or online interview, the process of data analysis began. Data analysis began during the first interview and continued through each interview, until data saturation was achieved. According to Charmaz (2006) data collection stops when no new insights are revealed.

Analysis and Interpretation Considerations

This study used a phenomenological qualitative research approach. Data analysis in the study focused on the faculty experiences making it critical to remain as close to the data as possible (Creswell, 2014). Thus, prior to beginning data collection and analysis steps for the study, the fundamental methodology of bracketing was employed during data collection and analysis. The concept of bracketing included "bracketing" the personal experiences of the researcher regarding the research phenomenon (Ravitch & Carl, 2016). The use of bracketing was critical to assist the researcher in having an open and clear mind to effectively discover the true meaning of the data (Giorgi, 2011). It was critical to set aside personal beliefs, knowledge, and experiences regarding a phenomenon of interest when conducting a phenomenological study (Carpenter & Streubert, 2007). The use of bracketing was a systematic effort by the researcher to remain objective during the research process, data collection, and analysis (Creswell, 2014). Hence, the researcher bracketed any personal reactions regarding the experiences of BSN faculty on their use of MT to minimize biases of the researcher throughout the research process (Chan et al., 2013).

Organizing Data

Each interview question on the interview guide (Appendix D) was developed and aligned to the research questions. During each interview notes were kept and these notes were transcribed, cataloged, and aligned with each research question (Creswell, 2014).

The connection of the data to each specific research question was outlined in Table 1.

Table 1

Alignment of Research and Interview Questions

Research questions	Interview questions
Primary research question: What are the lived experiences of BSN faculty on the use of mobile technology the face-to-face classroom in baccalaureate nursing education programs?	IQ1 – Elaborate on the types of technology you have integrated into the classroom setting in the past or present and your experiences?
	IQ2-What types of experience do you have with technology use personally or professionally?
	IQ3-How did you view your past experiences using mobile technology in the classroom positive or negative and why?
	IQ4 – What influences your decision to incorporate advanced technology into the classroom?
RQ1: What specific barriers do BSN faculty experience when integrating mobile technology in the nursing classroom?	IQ5 – Describe the support that is provided at the institution you are teaching to assist you to integrate technology into the classroom including teaching, education, technological, and financial?
	IQ6- What types of challenges did you experience when incorporating new technology into the classroom?
	IQ7- Explain how you felt integrating new advanced technology into the classroom?
RQ2: What strategies do BSN faculty use to overcome barriers experienced when implementing mobile technology in the nursing classroom?	IQ9-Describe the strategies that help you when you integrate technology in the classroom.
	IQ10-What are some helpful resources you have used to assist you when you integrate technology in the classroom?
	IQ11- What factors influence your decision to incorporate new advanced technology into the classroom setting?

Reading the Data

During this step, the data collected, created transcripts, and notes were read to

check for the accuracy. According to Creswell (2014) this provided the researcher a

general idea and overall impression of the meaning of the data collected. This step

offered an opportunity for the researcher to reflect on the overall meaning of the data,

general ideas, tone of the ideas, as well as the overall credibility of the information for

use (Creswell, 2014). During this step, the researcher documented notes in margins of the

transcript to begin generating ideas and thoughts on the data (Creswell, 2014).

Coding the Data

Following the first interview, the first data analysis was conducted and others

followed concurrently. The researcher began to open coding data into codes or tags using

colored highlighters to organize data into categories (Miles et al., 2014). Open coding

was the initial level of coding the data; this step formed the basic units of the data

analysis and summarizes segments of the data (Ravitch & Carl, 2016). The researcher

made decisions regarding what to collate, after organizing the data into thematic

categories, patterns and themes were drawn from the meaning of the data (Miles et al.,

2014). In addition, I completed a journal during the coding process, as this assisted me in

identifying how my personal beliefs, experiences, and knowledge will influence the data

analysis process (Creswell, 2014).

In qualitative research, to organize the data, the data was organized into words

such as feelings, experiences, and beliefs (Creswell, 2014). The aim of this research was

to understand faculty perceptions on MT use in the face-to-face classroom in BSN

programs. To analyze data, NVivo, a computer-generated software program, was used to

quickly assist the researcher identify connections and themes from the interview transcripts.

Generating Descriptions and Themes

A coding process was employed to generate a description of the people, categories, and the themes (Creswell, 2014). This process involved developing the major themes or categories for a research study (Creswell, 2014). Once coding the data began, the researcher used the coded interviews and field notes to identify any relationships between the evidence to develop a description (Ravitch & Carl, 2016). According to Creswell (2014), a researcher, may initially have a number of themes in the beginning but these should be narrowed down to five to seven for a research study. The themes developed will serve as the major findings for the qualitative study (Creswell, 2014). Furthermore, the TAM key variables and framework, PU, and PEOU was used to organize patterns and themes emerging from the findings (Davis, 1989). It was critical, to keep in mind the concepts being explored in the study. The research questions were aligned to the concepts being explored in this study in Table 2. The following table assisted the researcher to organize themes and descriptions. Table 2 represents how each research question aligns with the concepts being explored in this study including: nursing faculty experiences, beliefs, and feelings regarding MT use in the face-to-face classroom.

Table 2

Alignment of Research Questions, Key Concepts, and Interview Questions

Research questions	Key concepts	Interview questions
Primary research question: What are the lived experiences of BSN faculty on the use of mobile technology the face-to-face classroom in baccalaureate nursing education programs? RQ1: What specific barriers do BSN faculty experience when integrating mobile technology in the nursing classroom? RQ2: What strategies do BSN faculty use to overcome barriers experienced when implementing mobile technology in the nursing classroom?	Faculty experiences using mobile technology	IQ1 – Elaborate on the types of technology you have integrated into the classroom setting in the past or present and your experiences? IQ2-What types of experience do you have with technology use personally or professionally? IQ5 – Describe the support that is provided at the institution you are teaching to assist you to integrate technology into the classroom including teaching, education, technological, and financial? IQ6- What types of challenges did you experience when incorporating new technology into the classroom?
	Faculty beliefs regarding mobile technology use	IQ4 – What influences your decision to incorporate advanced technology into the classroom? IQ9-Describe the strategies that help you when you integrate technology in the classroom. IQ10-What are some helpful resources you have used to assist you when you integrate technology in the classroom? IQ11- What factors influence your decision to incorporate new advanced technology into the classroom setting?
	Faculty feelings using mobile technology	IQ3-How did you view your past experiences using mobile technology in the classroom positive or negative and why? IQ7- Explain how you felt integrating new advanced technology into the classroom?

Representing the Description and Themes

The major themes were represented in a written narrative to convey the findings from the research study (Creswell, 2014). A narrative of the findings from the study include a detailed discussion regarding study findings and themes. Furthermore, the TAM concepts PU and PEOU were explored to understand how the themes influence BI of the technology user. The faculty perceptions of MT in the classroom were represented within the themes in the qualitative narrative to understand what influences PU and PEOU of the technology user.

Interpreting the Results

In the final stage of data analysis, the findings from the study were analyzed and written in narrative form (Creswell, 2014). During this stage, the researcher made inferences regarding what experiences influence PU and PEOU. Furthermore, the researcher used the TAM framework to understand how particular experiences influenced the BI of the technology user. During this stage, the researcher conveyed what is learned from the study, as well as raised new questions for suggestions for future research (Creswell, 2014). Table 3: Represents how the key concepts align to the concepts in the TAM. Finally, the table was used to organize the data collected into themes to understand what influences the BI of the technology user.

Table 3

Alignment of Research Study Themes and Technology Acceptance Model Concepts

Key concepts and research questions	Themes generated	Perceived usefulness (PU)	Perceived ease of use (PEOU)	Impact on behavioral intention
Faculty experiences using mobile technology				
Faculty beliefs regarding mobile technology use				
Faculty feelings using mobile technology				

Issues of Trustworthiness

For qualitative research, trustworthiness refers to the manner that findings from the study reflect the honest thoughts, feelings, and experiences of the participants in the study (Ravitch & Carl, 2016). As previously mentioned, the use of bracketing was employed for the study. According to Ahern (1999) the use of bracketing in data collection and analysis is a process for ensuring validity of the study. The terms validity and reliability are often used to describe the approaches that a researcher uses to evaluate the accuracy of the research and results. It was essential to understand the methods used by the researcher to help improve the thoroughness of the research and results to affirm the findings of the study (Ravitch & Carl, 2016). Furthermore, it was critical for qualitative researchers to follow and assess these standards including credibility, transferability, dependability, confirmability, as well as the ethical procedures used to conduct the study which are further explained in this chapter.

Credibility

In research, credibility refers to the researchers' ability to demonstrate the reality and truth of the findings of a study (Ravitch & Carl, 2016). To obtain credibility, validity strategies of triangulation including transferability, dependability, and confirmability were implemented to assess the study's rigor. In this qualitative research, to address credibility, the study findings, participants' experiences were explored in-depth during the interviews which lasted approximately one hour. The audio recordings were transcribed verbatim and field notes serve as supporting data for the study. Field notes were documented during each interview and later compared to the interview transcripts (Ravitch & Carl, 2016). The transcripts include the participants' pseudonym, time, and date of the interview. The use of pseudonyms or false names was done to protect anonymity of the research participants (Allen & Wiles, 2016).

In the field notes, specific details were documented regarding particular discussions, inferential observations, judgements of the researcher on themes, and connection between the perceptions of participants that were identified during the interview (Ravitch & Carl, 2016). Furthermore, any observations about the participants' attitude were highlighted to be easily found during the process of data analysis (Creswell, 2014). Finally, the interviews were structured and conducted the same for each interview participant. According to Ravitch and Carl (2016) presenting thick descriptions of faculty experiences and structuring the interview assists the researcher to establish credibility for study findings. As the researcher, the primary instrument of the research study, I engaged with the data through analysis to develop themes which were revised by rereading data

sets to determine if the themes accurately reflect the data. This process may require re-coding some sections of the data throughout the study (Braum & Clarke, 2006).

Transferability

The concept of transferability is that others can fully contextualize the findings from the study and findings can be used in similar settings (Ravitch & Carl, 2016). Transferability is often associated with generalization in quantitative research. To address transferability, the evidence collected was in-depth, thick, and a rich description of participant experiences from each interview so that other disciplines may benefit from the findings of the study (Creswell, 2014). Information about the researcher including experiences, training, programs, relationship to participants, as well as the specific setting for the study was critical in qualitative research (Ravitch & Carl, 2016). In addition, it was also critical for the researcher to describe in detail the context of the study and its participants so that the study may be replicated (Creswell, 2014). Finally, direct discussion quotes and summaries of participants' responses during the interview additionally supported the findings from the study (Ravitch & Carl, 2016).

Dependability

In order to achieve triangulation, which supports dependability in this study, data was collected from multiple participants, and participant interviews were used to build themes and identify patterns among different individuals participating within the study. These themes and patterns allowed me to build a more complete picture of how nursing faculty perceive the use of MT in the face-to-face classroom setting in BSN education.

Creswell (2014) stated that validity is viewed as a strength of qualitative research.

Internal validity concerns for this study were the experiences of the research participants that could have potentially threatened the ability of the researcher to draw the correct inferences regarding the sample population (Creswell, 2014). Internal validity for this study was achieved by comparing the multiple faculty interviews that compose the triangulation process (Creswell, 2014). The triangulation strategy was achieved for the study by exploring the perspectives and experiences of a variety of nursing educators in different BSN programs in Pennsylvania. When themes were established from several participant perspectives, this process provided validity for a study (Creswell, 2014).

In addition, the researcher in this study was self-reflective in order to clarify any bias the researcher brought to the study. For reflexivity, the researcher reflected on how their own background and experiences may influence research conclusions (Creswell, 2014). Reflexivity in this qualitative study was essential because as the researcher I was the primary instrument of the study; therefore, to express and represent the participants' experiences I had to monitor my own feelings and position related to the research topic through the study (Ravitch & Carl, 2016). In addition, the use of bracketing was employed to assist the researcher in recognizing personal opinions to accurately discover the true meaning in the data collected for the study (Giorgi, 201). Finally, the research method was described in detail to allow future researchers to replicate their work, although there may be variations in the results (Creswell, 2014).

Confirmability

To establish confirmability, it was recommended to maintain the integrity of a research study. Reflexivity was the continued awareness and monitoring of the researchers' personal role and influence on the research topic and study (Ravitch & Carl,

2016) Hence, reflexivity was related to the researchers' self-awareness and the strategies they used to manage potentially biasing factors within the study (Miles et al., 2014). In addition, it was critical for the researcher to acknowledge potential research biases. Managing research biases required reflexivity of the researcher to reflect critically on themselves (Merriam, 2009). Managing potential biases within the study, assisted in maintaining the research integrity for the study results.

Ethical Procedures

The study was conducted within the constraints of the host research site's IRB and the university's IRB had developed to guarantee that my research was carried out ethically and that my participants were protected. Upon receiving approval for the study from the university's IRB, I began data collection. More importantly, I obtained the required IRB permission from each institution prior to contacting or interviewing nursing faculty members at their institution.

Obtaining Permission

To obtain access to nursing faculty teaching in various BSN programs, which was the population of interest, it was critical to obtain permission from the dean, program director, chairperson, and organization leaders. A written gatekeeper email (Appendix E) requesting permission and assistance to recruit participants at each organization specified purpose and guidelines for the study. The gatekeeper's letter also provided the leaders my contact information including email and telephone number.

No Harm

To ensure beneficence, a researcher must ensure the welfare of the participants a priority at all times throughout the study (Ravitch & Carl, 2016). In research, harm can

occur if participants are physically harmed, pressured to engage in research, misled, have their confidentiality compromised, misjudged, inaccurately represented, or feel coerced (Ravitch & Carl, 2016). This qualitative study explored faculty experiences and is non-interventional, which eliminated the chance of physical harm. Participants for the study were voluntary, thus there was no expectation to participate. As previously mentioned, transcripts from the audio recorded interviews were developed verbatim to accurately represent participant experiences (Creswell, 2014). To avoid misleading, participants were provided an information flyer (Appendix F) containing the criteria, purpose, length of time for the interview, and contact information for the researcher.

Protection of Privacy and Confidentiality

As previously mentioned, the data collected during the interviews such as the audio recordings, transcripts, field notes, and discussion threads have been locked in a password protected computer for the next five years as required by the University's (Creswell, 2014). After five years, paper documentation will be shredded, USB flash drives and tapes will be destroyed. It was critical to protect the confidentiality and anonymity of the data and research participants therefore the researcher will be the only person with access to this data (Creswell, 2014). In addition, pseudonyms were used to protect the identity of research participants (Allen & Wiles, 2016; Ravitch & Carl, 2016). All identifying information was removed from study data including transcripts, audio interview labels, and field notes to protect participants (Ogden, 2008). During the interview, participants could request to stop or pause the audio recordings at any time throughout the interview.

Additionally, de identified data was shared only with participants and committee members as required for notability in the dissertation process. Finally, knowledge of potential sharing of de identified data in the dissertation process was shared with participants as a part of informed consent process (Appendix A). Access to data was permitted by the university's IRB and my supervising committee members.

Informed Consent

Individuals who were interested in participation were given an informed consent form (Appendix A) outlining the benefits and risks of the study as well as the ability to leave the study at any time (Burkholder et al., 2016; Creswell, 2014). In qualitative research, informed consent is required when researchers seek to gain data to understand experiences from research participants by means of interview (Hammersely &Trianou, 2012). The consent form was required to contain clear and concise language, expectations, risks, and information regarding reports and confidentiality (Ravitch & Carl, 2016). The informed consent for this study contained a description, purpose, and method for the study (Appendix A). In addition, the consent contained the length of time for the study, potential risks, benefits, issues regarding confidentiality processes, clear information regarding compensation, how results were disseminated, and contact information of the principle researcher (Appendix A) (Ravitch & Carl, 2016). Finally, the participants were required to sign, date, and print their name, as well as sign the informed consent (Ravitch & Carl, 2016)

The consent form for this study invited participants to volunteer for the study, outlined participants' protection and ethical guidelines followed during the research study, such as the voluntary nature of the study and participants had the right to withdraw

at any time (Appendix A). The consent form also outlined the physical or psychological risks that the participants might experience, and also explained that they were not obligated to complete any parts of the study with which they were not comfortable. This study exploring faculty experiences was very unlikely to cause any safety risks due to the methodology of conducting interviews, which has a low likelihood of causing injury (Creswell, 2014).

However, if participants experienced any negative effects from taking part in this research, they were directed to discuss concerns with a counselor. Furthermore, gathering data for the study, required the participant to participate in one interview session lasting no longer than one hour, which was indicated on the informed consent (Appendix A). For the study, participants had the right to stop the interview at any time, in addition they were not obligated to answer interview questions in which they felt uncomfortable addressing. Participation in the study was very unlikely to cause any acute discomfort because participants were not obligated to answer all interview questions. However, participants were informed that if they experienced any negative effects from taking part in this research study, they should discuss concerns with a counselor.

Most importantly, informed consent from all participants was obtained prior to interview participation, which also included permission for audiotaping (Appendix A). The informed consent informed the participants that online interviews were audio recorded and face-to-face interviews were recorded using a voice recorder. For the study, participants had the right to stop the audio recording at any time. Additionally, participants were not obligated to answer interview questions in which they felt uncomfortable addressing. Finally, a verbatim transcription for analysis was created. In

the consent form, my contact information was also provided to participants so I could have been reached by participants in the event of any further concerns or questions (Appendix A).

No Deception

For this study, the researcher respected the research sites and minimized potential disruptions (Ravitch & Carl, 2016). For this study, the researcher sought the guidelines at all research sites for conducting research (Creswell, 2014). To avoid deception, the participants were required to sign the informed consent, prior to gathering data (Appendix A). In addition, the participants were provided the opportunity to ask questions prior to beginning the data collection process to ensure participants understood the purpose of the study (Ravitch & Carl, 2016). It was critical in qualitative interviewing to avoid revealing any personal preferences or experiences during the interview (Ravitch & Carl, 2016). During the interview the researcher did not reveal any personal preferences or experiences to avoid leading the participants. In addition, the researcher provided clear communication and avoided disclosing any information that could potentially harm participants or influence their responses (Ravitch & Carl, 2016).

<div align="center">Summary</div>

In summary, this chapter serves as the methodology section of the research study. The methodology section describes the components of data collection and analysis as well as the rationale for the chosen methodology to answer the research question: What are the perceptions of nursing faculty on the use of MT in the face-to-face classroom setting? The participant selection process for the study, interview process, data collection method, ethical implications, and finally the plan to protect participants are highlighted in

this chapter. The data analysis and procedure for coding are also outlined in detail in this chapter.

More importantly, issues of trustworthiness including credibility, transferability, dependability, confirmability, and the ethical procedures for gaining access to research sites have been addressed in detail. Furthermore, IRB application, ethical concerns, and a description of how the data was handled have been carefully outlined. The ethical procedures and potential issues are included in this chapter in detail. Finally, after committee approval of the proposal, proposal defense, and IRB approval, participant recruitment and data collection were officially started. Results are presented in Chapter 4 and l include participant demographics and data analysis findings.

Chapter 4: Results

Introduction

The purpose of this research study was to explore the lived experiences of nursing faculty using MT in the face-to-face classroom. More specifically, this study was undertaken to describe how faculty address the challenges encountered when they use MT as an adjunct. The primary question guiding this study was the following: What are the lived experiences of BSN faculty on the use of mobile technology in the face-to-face classroom in baccalaureate nursing education programs?

Additionally, this study addressed the following secondary research questions: What specific barriers do BSN faculty experience when integrating mobile technology in the nursing classroom? What strategies do BSN faculty use to overcome barriers experienced when implementing mobile technology in the nursing classroom?

The focus of Chapter 4 is the presentation of research findings. Beginning with a definition of MT, the chapter includes a discussion of the research setting, a description of participant demographics, procedures for data collection and analysis, and steps for enhancing the trustworthiness of the research findings. The chapter ends with a presentation of research results.

Mobile Technology

This was a phenomenological study focusing on the lived experiences of BSN faculty who integrated MT into their daily teaching practice. Because MT was a major phenomenon addressed in this study, I begin this chapter with a definition of the term as it is used in this study. For this study, MT is an educational provision where dominant technologies are handheld (Traxler, 2005). An MT device is a technological tool that is

small, autonomous, and inobtrusive enough to accompany a student to every class

(Trifanova & Ronechetti, 2003, p. 3). Mobile devices or MT are technology that goes

wherever a student goes and may assist in engaging learners who are on the go in just

about any setting (O'Conner & Andrews, 2015; Spector & Smart Learning Futures

Group, 2018). For this study, a mobile tool was considered a mobile phone, cellular

phone, wireless phone, or a mobile handheld tablet device that an individual may easily

carry on a daily basis. Specifically, I was most interested in understanding faculty

experiences with integrating these handheld MT devices that students use daily for

communication and entertainment into classroom teaching, lectures, and instruction (Hay

et al., 2018; Kukulska-Hulme et al., 2010).

Research Setting

Two undergraduate BSN programs located in central Pennsylvania were selected

as sites to capture the lived experiences of faculty using MT in the face-to-face

classroom. Historically, undergraduate nurse educators taught in several prelicensure

nursing programs: hospital-based diploma programs, Associate of Science programs, and

baccalaureate nursing programs. BSN faculty teaching in central Pennsylvania served as

the population for this study.

Although I designed the study to focus on undergraduate nursing faculty teaching

face-to-face in the classroom, the Covid-19 pandemic crisis hit and became an

influencing factor. Factoring in the pandemic required rethinking not only data collection

but working with faculty who were now teaching in the online environment and not the

face-to-face classroom. A majority of higher education settings have offered distance

education instruction as an option to address the Covid-19 challenges faced by faculty,

staff, and students. During the time of the participant interviews, many nursing education programs shifted to online instruction in an effort to educate students while avoiding the spread of the virus. For this reason, faculty who were interviewed for the study were forced to engage in online teaching prior to being interviewed, which may have influenced the final study results. The current Covid-19 pandemic has been an unprecedented moment for academic leaders and faculty, who have been required to create instructional resources online with little or no formal training in a short period of time.

After obtaining university IRB approval (approval # 11-11-20-0312705) and host organizational approval, I shared the recruitment flyer (Appendix F) designed for the study with the academic leader of the host institutions. The dean/director, in turn, forwarded the recruitment flyer to nursing faculty who met the criteria for participating in the study. Faculty who agreed to participate in the study contacted me. Potential participants who contacted me were sent an email to participate in the study (Appendix B). An informed consent and demographic questionnaire (Appendix A) were attached to the email request for participation in the study. Participants agreed to participate in the study by responding to an invitation to participate with the words "I consent." Once signed, the consent form was forwarded to my school-based email address. Last, after providing written consent to participate in the study, participants were requested to provide responses to the demographic questions and return the responses to my email address.

Prior to inviting each participant to take part in an interview, I reviewed completed demographic questionnaires to ensure that participants met the inclusion

criteria for the research study. For this study, all 10 participants ($n = 10$) who volunteered for the study completed the demographic questions, meeting inclusion criteria to be interviewed. Upon review of the demographic information, participants were contacted to determine their preferred interview method and date/time of availability for the interview (Appendix J). For this study, volunteer participants had the option of being interviewed via Zoom online or being interviewed in person, face to face.

Due to the pandemic, all faculty participants agreed to be interviewed online using Zoom technology software. Upon receipt of the participant availability and interview preference option, each participant was sent an invitation to be interviewed (Appendix I). Volunteer participants were also provided a link to join the meeting on Zoom technology. During all interviews, I upheld the privacy of the participants. An interview protocol detailing topics and questions to cover was used to guide each participant interview (Appendix H). More specifically, I used the interview guide (Appendix D) to ensure consistency in data collection. Last, all participants were assigned a researcher-issued pseudonym to protect their identity.

Demographics

Participants for the study met the previously established inclusion criteria of possessing experience teaching in the face-to-face BSN classroom. A demographic questionnaire (Appendix A) was developed and used to ensure that the target population for the study was identified and screened. Ten participants ($n = 10$) completed the demographic questionnaire before the interview. The questionnaire provided data on age, teaching experience, educational degree, education setting experience, and the participant's preferred setting for teaching nursing students.

Ten BSN faculty participated in the study; of the 10 participants, four (40%) ranged in age from 35-54 years, with no participants under the age of 25 or over the age of 65 years. Of the 10 participants, the majority (40%) had 1-5 years of teaching experience. Only one of the participants indicated over 31 years of teaching experience. Of the 10 participants, six (60%) had an earned a doctoral degree, and four (40%) a master's degree as the highest level of education achieved. Specifically, for the nurse educators who identified having a doctoral degree, three (30%) earned a Doctor of Nursing Practice (DNP) degree, and three (30%) earned a Doctor of Philosophy in Nursing (PhD) degree. For nursing educators, a DNP degree is a clinical practice degree, whereas a PhD is considered a research-focused doctorate degree. No other earned graduate degree types were indicated by the participants. A total of six (60%) of the participants indicated that they had teaching experience in all forms of course delivery methods, including online, face-to-face, clinical, and hybrid. All participants ($n = 10$) indicated experience teaching in the online environment. Surprisingly, all 10 (100%) participants indicated a preference for face-to-face teaching, and six (60%) participants indicated a preference for clinical teaching, while only three (30%) indicated a preference for online teaching. Each participant was assigned a researcher-issued pseudonym to protect their identity. The demographic data for study participants are summarized and reflected in Table 4.

Table 4

Participants' Demographic Information

Years of age	Years of teaching experience	Educational degree	Education setting experience	Preferred setting
25-34 10%	1-5 40%	Master's degree 40%	Online/face-to-face/ clinical/hybrid 60%	Online/face-to-face/ clinical/hybrid 20%
35-44 40%	6-10 20%	DNP 30%	Online/face-to-face/ clinical 30%	Online/face-to-face 10%
45-54 30%	11-20 30%	PhD 30%	Online/face-to-face 10%	Face-to-face/clinical 40%
55-64 20%	More than 31 10%			Face-to-face 30%

Note. Table 4 indicates the frequency of participants' responses.

Data Collection

One-on-one interviews served as the data collection method for this study. Once participants identified individual availability for an interview, I arranged the date, time, and location for each interview. A total of ten ($n = 10$) BSN faculty were interviewed one-on-one, with interviews conducted over a 6-week period. Participants for this study were academic nursing educators who engaged in classroom-based teaching in two different 4-year baccalaureate programs located in central Pennsylvania. For the study, the academic leaders of these two nursing programs responded and provided approval to recruit nursing faculty from their nursing education program. Each interview took place in a private location designated by the study participant. The interviews were conducted and scheduled based upon availability of the participant. More specifically, each participant interviewed at their preferred location using Zoom software in a private space, alone in an office or other setting using their personal computer.

For this study, I was not able to provide the participants with a choice to interview in-person, as outlined in Chapter 3, due to a global pandemic. To manage challenges associated with data collection during a pandemic, all participants were interviewed via Zoom rather than in person to decrease the chance of Covid exposure. Prior to starting each interview, I explained the purpose of the study to participants. During the initial contact with the participant, I reviewed the completed demographic questionnaire, which had been emailed. Additionally, to ensure understanding of the study and participants' agreement to participate, I also reviewed the signed consent form with each participant prior to starting the one-on-one interview. Following completion of each interview, I used a binder clip to secure the demographic survey to field notes taken during the interview.

I used semistructured interview questions (Appendix D) to explore and understand the experiences of faculty participants regarding the use of MT when teaching in the face-to-face classroom. More precisely, I used an interview guide (Appendix H) that included questions that could be used for probing and clarifying the responses of participants. During each interview, I asked the same questions and asked additional probing questions as needed to gain clarity on participants' responses. The length of time for which I recorded each interview ranged from 25 to 52 minutes, with an average interview "face time" of 38 minutes. I was attentive to participant responses during each interview so that the lived experience of using MT in the face-to-face classroom could be captured and later articulated in the final report.

At the end of each interview, the participant was informed that they would be provided an opportunity to review their individual interview transcript to confirm the accuracy of their responses to the interview questions. Immediately after each interview, I

wrote the participant's pseudonym and the date and time of the interview on my field

notes, as well as any observations made during the interview.

All interviews were audio recorded using an automatic speech recognition (ASR)

voice recorder. ASR was the technology that I used to automatically process audio data

on my mobile phone during participant interviews. For the study, I saved and transferred

the audio files from my mobile phone to a secure drive for transcription. After each

interview, I took time to bracket or set aside my own biases and preconceptions and to

listen to the audio recordings at least twice. I then had the interviews transcribed. When

the interviews were transcribed, I forwarded a Microsoft Word document to each

participant for validation of the accuracy of the transcript. I requested that the participants

contact me with any questions or concerns that might need to be addressed. None of the

participants contacted me regarding the accuracy of the information included in their

individual written transcript.

The demographic information was collected and reported as an aggregate group

for the study. After member checking and validation of the transcribed interviews by the

participants, I began initial coding of the data. Patterns began to emerge after the third

participant interview, and, after the seventh interview, I began noting repetition and

patterns in the data reported by the participants. As I continued interviewing, questioning,

and coding, I ascertained that no new patterns emerged and that data saturation had been

reached. To keep the identities of the participants confidential, signed consent forms,

demographic questionnaires, field notes, and typed interviews transcripts (i.e., hard

copies) were stored in a locked filing cabinet in my home. I have also uploaded

transcripts of the recorded interviews onto a secure flash drive, which is locked in a filing

cabinet in my home. To acknowledge gratitude for participating in the study, I sent a thank-you email to each participant (Appendix G).

Data Analysis

To understand the feelings, opinions, perceptions, and experiences of faculty, I conducted face-to-face interviews via Zoom. Interviews were recorded, with the recordings listened to repeatedly. This process provided a deeper understanding of each participant's experiences with MT use in the face-to-face classroom. I also collected detailed narrative field notes during the interviews. For the study, the fundamental methodology of bracketing (Creswell, 2014) was employed during data collection and analysis. I used bracketing to set aside personal reactions regarding the experiences of BSN faculty on their use of MT and to minimize biases throughout the research process. Data analysis began at the completion of the first interview and followed with the transcription of each interview and field notes. All transcripts were read multiple times to ensure accuracy.

Data analysis for this study was conducted using Creswell's (2014) six steps for qualitative data analysis. The six steps included organizing the data, reading the data, coding the data, generating descriptions and themes, representing the description and themes, and finally, interpretation of study results. Data analysis began during the first interview and continued with each interview until data saturation was achieved and no new insights were revealed (Charmaz, 2006).

Organizing and Reading Data

Each question on the interview guide (Appendix D) was developed and aligned to the research questions. I took notes during each interview, and these notes were

transcribed, cataloged, and aligned with each research question (Creswell, 2014). The

connection of the data to each specific research question was outlined and organized in

table format (Chapter 3, Table 1). After each interview, the audio data were uploaded

onto a secure platform, and transcripts were generated using artificial intelligence

software. The transcripts were checked for accuracy against the interview file and labeled

using the participants' pseudonyms. I also reviewed each transcript meticulously line by

line to eliminate any discrepancies between the transcript and audio file.

I edited each transcript twice to ensure that data collection from each participant

was captured accurately. At the completion of editing, transcripts were emailed to all

participants as Word documents for member checking. Member checking was included to

ensure credibility of the written transcripts by each participant (Creswell, 2014). When I

established that the written transcripts were accurate, the completed transcripts were

uploaded to NVivo software to facilitate coding and thematic data analysis. Next, I typed

each participant's interview notes. Upon completion, the interview notes were loaded into

NVivo software to assist with facilitating the coding and analysis of the data collected.

The use of NVivo software assisted me in gaining a deeper understanding and generating

thoughts and the meaning of faculty experiences regarding the phenomenon under study

(Creswell, 2014).

Coding Data

I began open coding the data into codes or tags using colored highlighters to

organize the data collected into categories (Miles et al., 2014). The process of open

coding formed the basic unit of data analysis (Ravitch & Carl, 2016). NVivo software

was also used to assist with coding and thematic analysis of the data. NVivo software

also helped with organizing larger points of the data into words or phrases (Creswell, 2014). NVivo software expedited the coding process and assisted me in identifying connections and themes generated from the interview transcripts.

After organizing the data into thematic categories, patterns, and themes the researcher made decisions about which data to aggregate (Miles et al., 2014). In qualitative research data is organized into words to identify codes. NVivo, a computer-generated software program, was used to quickly assist me in identifying connections and themes from the interview transcripts. More specifically, the TAM key variables and framework, PU, and PEOU were used to organize patterns and themes emerging from the findings (Davis, 1989). For the study, the research questions were aligned to the concepts being explored in this study in Table 5. The table assisted the researcher to organize themes and descriptions that emerged from the study findings. Additionally, Table 5 represents how each research question aligns with the concepts being explored in this study including: nursing faculty experiences, beliefs, and feelings regarding MT use in the face-to-face classroom.

Last, I kept a journal throughout the coding process to recognize, identify, and bracket biases of my personal feelings, experiences, and beliefs that may influence data analysis (Burkholder et al., 2016; Creswell, 2014). As the researcher, I read the data and discovered codes and themes, with reflective journaling continuing throughout the process (Creswell, 2014; Ravitch & Carl. 2016). The aim of this research is to understand faculty experiences on MT use in the face-to-face classroom in BSN programs. Through reading the data tediously, I was able to gain a deeper understanding of the meaning of participant experiences to understand the phenomenon.

Generating Descriptions and Themes

The coding process was employed to degenerate a description of the participants, categories, and themes (Creswell, 2014). This process involved developing major themes or categories for the research findings (Creswell, 2014). I used the coded interviews and field notes to identify relationships between the evidence to develop descriptions (Ravitch & Carl, 2016).

Initially, I identified over 40 themes, but the themes were narrowed down by using the TAM key concepts and framework, PU, and PEOU were used to organize patterns and themes emerging from the findings (Davis, 1989). The research questions were aligned to the concepts being explored in this study (Table 5). This table was created and used to organize themes and descriptions. The themes and descriptions were categorized under experiences, beliefs, or feelings to better understand the experiences of faculty. Last, discussion of the interpretation of data are reported in Chapter 5.

Representing Descriptions and Themes

The major themes are represented in a written narrative to convey the findings from the research study. Specifically, the major theme included permitting MT in the classroom. Additional themes emerged including using MT to promote student learning and last, challenges versus opportunities in implementing MT in the classroom.

The narrative of the findings from the study also includes a detailed discussion regarding study findings and themes. Furthermore, the TAM concepts PU and PEOU were used as a lens to understand how the themes influenced the BI of the technology user. The faculty experiences in using MT in the classroom are represented within the

themes in the qualitative narrative to understand what influences PU and PEOU of the technology user.

Interpreting the Research Results

In the final stage of data analysis, the findings from the study were analyzed and written in narrative format. All data analysis for this study was conducted using Creswell's (2014) six steps for qualitative data analysis. Discrepant cases were not identified in the study, although faculty experiences with MT varied among interview participants. The themes that emerged from the study were extracted from the nursing faculty lived experiences with MT in the classroom in BSN programs. During this stage, the researcher made inferences regarding what experiences influence PU and PEOU. Furthermore, the researcher used the TAM framework to understand how particular experiences influence the BI of the faculty member. Table 5 was completed to demonstrate how major themes align to the key concepts in the TAM. This table was used to organize the data collected into themes and to understand what influences the BI of BSN faculty as technology user.

<div align="center">

Evidence of Trustworthiness

</div>

Unlike quantitative research which uses statistical analysis, formulas, and rules to report study findings, qualitative research produces data that are reported in words. A qualitative researcher must employ steps to enhance believability or validity of research data. Defined as trustworthiness or creditability, I employed several procedures for enhancing trustworthiness of findings generated from this research. Major steps taken to enhance trustworthiness in this study included credibility, transferability, dependability, and last, confirmability (Creswell, 2016; Jaromahum & Fowler, 2010; Ravitch & Carl,

2016). It is critical for qualitative researchers to follow these procedures as each is used to enhance believability of study findings.

Credibility

In qualitative research, credibility refers to the researchers' ability to demonstrate the reality and truth of the findings of a study (Ravitch & Carl, 2016). Strategies to ensure credibility of research findings for this study included pro-longed engagement and persistent observation. For example, prolonged engagement included the collection of data over six weeks. Persistent observation included identifying specific characteristics and elements most relevant to the research problem under study with the goal of articulating these elements in the final report. Additionally, while member check was attempted, questions on the accuracy of transcript information was not communicated by participants.

Transferability

The concept of transferability is that others can fully contextualize the findings from the study and findings can be used in similar settings (Ravitch & Carl, 2016). To address transferability, I gathered rich, thick descriptions of faculty experiences to increase transferability of study findings (Ravitch & Carl, 2016). Information about my role as researcher including experiences, training, programs, relationship to participants, as well as the specific setting for the study were disclosed (Ravitch & Carl, 2016). Additionally, details of the context of the study and its participants were provided so that the study can be replicated. (Creswell, 2014). Finally, direct discussion quotes and summaries of participant responses during the interviews are provided to support findings from the study (Ravitch & Carl, 2016).

Dependability

Dependability is the ability of the research findings to be replicated, if the study was performed again as outlined in the methodology (Creswell, 2016; Ravitch & Carl, 2016). In qualitative research, validity, also used to describe dependability, is viewed as the strength of a study (Creswell, 2014; Ravitch & Carl, 2016). Triangulation, a term associated with the use of multiple methods of data collection was used to achieve triangulation (Creswell, 2014; Ravitch & Carl, 2016). To achieve triangulation in the study, data was collected from multiple participants from two BSN programs in central Pennsylvania (Creswell, 2014). Study findings were also viewed and related to previous research reported on the phenomenon of study.

In-depth, thick, rich quotes of faculty experiences were collected and used to identify patterns and themes among different individuals participating in the study. The patterns and themes allowed me to build a more complete picture of how nursing faculty perceive the use of MT in the face-to-face classroom setting in BSN education. When themes were established from several participant perspectives, in different education programs, this process provided validity for the study findings (Creswell, 2014). Additionally, internal validity for this study was achieved by comparing multiple faculty interviews.

To enhance dependability, I was also self-reflective on my own background and experiences to limit biases that may influence study findings (Creswell, 2014). Throughout the study and analysis process I kept a journal to express, monitor, and recognize my own thoughts and feelings related to the research topic (Creswell, 2014; Ravitch & Carl, 2016). For reflexivity, I reflected in the journal on how my own

background and experiences may influence research conclusions (Creswell, 2014). Furthermore, I employed the use of bracketing to help recognize my personal opinions so I could accurately discover the true meaning in the data I collected for the study (Giorgi, 201). Last, the research process is described in detail to allow future researchers to replicate this study, although there may be variations in the results (Creswell, 2014).

Confirmability

Last, confirmability is established by the research findings by reducing researcher bias and accurately representing participant experiences (Creswell, 2016; Ravitch & Carl, 2016). Confirmability was maintained continuously throughout the study. To manage potential bias factors associated with study findings, I practiced self-awareness of my own personal perceptions and past experiences during the research process (Miles et al., 2014). Additionally, I maintained reflexivity regarding personal beliefs, judgements and practices related to MT use in the classroom. Managing potential biases and remaining reflexive throughout the study helped maintain research integrity for the study results (Merriam, 2009).

Results

As previously stated, the purpose of this descriptive qualitative phenomenological study was to explore the experiences of BSN faculty when integrating MT in the face-to-face classroom. Using the TAM (Davis, 1989) as a lens, the primary research question guiding this study was, what are the lived experiences of BSN faculty on the use of mobile technology in the face-to-face classroom? Secondary research questions included: what specific barriers do BSN faculty experience when integrating mobile technology in the nursing classroom and what strategies do BSN faculty use to overcome barriers

experienced when implementing mobile technology in the nursing classroom? Following

extensive coding and thematic analysis of participant interview transcripts, three major

themes were identified to describe and understand faculty experiences in the use of MT in

the classroom: permitting MT in the classroom, using MT to promote student learning

and last, challenges versus opportunities in implementing MT in the classroom. What

follows is a presentation of major themes, respective subthemes, and participant quotes to

support each.

Theme 1: Permitting Mobile Technology in the Classroom

To understand the lived experiences of BSN faculty on the use of MT in the face-

to-face classroom in BSN education programs each interview began by asking

participants to elaborate on the types of technology they have integrated when teaching in

the classroom. More specifically, each participant was asked to elaborate on their past,

and present experiences integrating MT into the classroom setting. Through data analysis,

a primary theme shared among all study participants was the shift from classroom-based

instruction driven by faculty-controlled instruction to a change in attitude by allowing

students to bring their own mobile device into the classroom to support learning. Two

subthemes recognizing this shift in instructional approach surfaced among study

participants: attitude and acceptance of MT along with self-direction and motivation.

Attitude and Acceptance of MT

A subtheme adapted from Davis's TAM (1989), each faculty member shared their

attitude shift by permitting students to bring their own individual mobile device in the

BSN classroom. According to Davis' model, an individual's attitude and prior

technological experience plays a key role in predicting their behavior and ultimate

decision to use technology. Examined through the lens of Davis' model, the experiences

of faculty participants in this study can best be described as PU and PEOU of the

technology. And while technology has been a major tool used in teaching and learning in

nursing for a number of years, allowing students to bring their own mobile device to class

has seldom been discussed in the literature. Often referred to as bring your own device

(Benham et al., 2014 [BYOD]), this shift in attitude and acceptance was shared by faculty

participants.

      Amy, a DNP prepared faculty member, was among the first participants

interviewed. Poised and direct in her responses, Amy explained her current and past

experiences using MT in the BSN classroom. As reported by Amy,

> Well…..I have let students use their phones to respond to questions or look up
>
> medical terminology in class when they do not know what a term means. I
>
> frequently use *Canvas, Zoom, You-tube videos*, and *Web-Cams* in class.

      Similar to the experiences of Amy in using MT in the BSN classroom, Betty, a

DNP prepared nurse shared multiple approaches used to integrate MT in the classroom.

With little hesitation, when asked to elaborate on the types of technology she had

integrated while teaching in the face-to-face BSN classroom, Betty commented that,

> There are a lot of mobile technology application resources offered by the
>
> textbooks we use in the course. Students can listen to their textbook and practice
>
> questions on their mobile devices. In my course, we have used Canvas for
>
> assignments, grades, and announcements which students can download to their
>
> mobile phone.

A shift in attitude from the traditional lecture dominated classroom to the incorporation of MT was shared through lessons learned from Claire, an MSN faculty member.

> I have attempted to use a variety of things in the classroom like Poll Everywhere.com but I am a big fan of implementing things because I do not want it to flop with a bunch of students. I have used *Flipgrid* to help students with communication and this was successful.

Like Amy and Betty, Claire provided additional validation of how mobile devices have been allowed to be used by students in the BSN classroom. As explained by Claire, "students use cell phones brought into class to access Canvas, the course management system."

Eve, a seasoned faculty member with some five years of teaching experience provided additional validation of the shift of attitude and acceptance of the use of MT in the classroom. An MSN prepared faculty, Eve shared this experience,

> I have used a lot of videos being pulled from the internet and chat rooms. I have permitted students during the course to utilize their cellphones, iPad, or laptops in class. I have used *Poll Everywhere* to understand if students are achieving the learning objectives in the class.

Supporting the shift in teaching using MT, Faith, a doctorate-prepared nurse summarized her experiences on how MT has been used to enhance student learning,

> I have previously used *Clicker* devices in class and *Kahoot* is another technology application I have used to quiz students in class and have them respond to

questions. Currently, my primary duty is simulation experiences for students. I think communication is better using the students' mobile devices.

Responding excitingly to the researcher's questions, Grace, a PhD-prepared faculty with some 31 years of academic teaching experience provided this perspective on the shift in attitude from teaching using lecture to teaching using MT. As reported by Grace,

> I am using a new technology called *Top Hat*. There are a ton of features with it but for now I am slowly integrating the tool into class. I place my presentation slides into the technological platform and imbed questions into the slides and I actually award them [students] credit each time they answer a question. I got really frustrated that students were not engaged in class so I purely use this for participation and engagement.

Less enthusiastic but committed to teaching and learning, Hope reported her experience in using MT as a BSN educator,

> I try to integrate cell phones in class when I have taught in the past by using *Poll Everywhere* so that students can actively engage in answering questions during class. I guess that might be the only thing I use with mobile technology.

Less vocal on specifics related to mobile devices used in the BSN classroom, Isaac, the youngest faculty participant and also a PhD, offered a different view understanding his experiences using MT. Described as a generational approach in understanding the shift from lecture-dominated teaching to teaching using technology, Isaac reported this viewpoint:

I have used *Zoom, Prezi*, and different technology to *Poll* students in class.

Technology is helpful to keep everybody up to date on what is happening. I am

in the generation that is more apt than some faculty to use technology.

Last, Joyce the last faculty participant interviewed, offered a compelling

position on the change in attitude and acceptance of MT to enhance student

learning. A doctorate-prepared educator, Joyce stated that,

I have used *Kahoot and Poll Everywhere* in class. I primarily use mobile

technology for questions and answers to engage and determine if students are

achieving learning objectives. I like using MT to engage students by using

practice questions in class.

Self-Direction and Motivation

Teaching and learning in the classroom can be defined as a core responsibility of

the nursing faculty role. And while college boards, academic administrators and

accreditation bodies set policies on how institutions function, standards on how to teach

and what tools to use to teach in the classroom do not exist. The implication is that the

decision to integrate MT in the classroom lies with the faculty member. Similarly, few

institutions have implemented policies on allowing student use of their own mobile

device in the classroom. So, what factors influence a faculty member to use MT as an

instructional tool? Using this question in interviewing faculty led to the identification of

the subtheme, self-direction and motivation. Using Davis' TAM, this subtheme supports

the concept of BI. According to Davis, BI is the likelihood that an individual will adopt to

a given behavior (Davis, 1989). As shared by faculty participants, self-direction and

motivation were key factors instrumental in their decision to use MT as an instructional approach to promote and support student learning.

Self-direction can be defined as accepting responsibility for one's own learning and viewing problems as challenges and not obstacles. On the other hand, motivation is used to describe the driving force behind human behavior. Six faculty participants interviewed shared similar experiences on self-direction and motivation in deciding to incorporate MT in the classroom. Amy began by explaining that she did feel a bit uneasy when integrating new technology but stated that as long as she prepared carefully, this eased her anxiety. She further commented that when she practiced and gained additional experience this decreased her apprehension on new technological tools. In probing her reason for integrating MT as an instructional tool, Amy offered the following point,

I think my kids motivate me because I can see how they primarily communicate on their cell phone. Collaboration helps so much because a faculty may inform me that they have tried something and it was successful or not successful. I think going to conferences helps faculty get new ideas.

Betty commented that "improving student engagement" as a reason for using MT in the classroom. She further added that while resources are available to support faculty deciding to use MT in their classroom instructional role, motivation to integrate MT can originate from faculty colleagues. Probing Betty further led to the following comment,

I talk to faculty who may have used a technological resource to gain their perspective. Other faculty are supportive to integrate mobile technology. I feel there is a shortfall of resources by colleges or institutions to offer suggestions on how to integrate new technological resources into the classroom.

The influence of other colleagues who use MT while teaching as an inspirational source was also shared by Claire, "Conferences, networking, and colleagues influence my decision to integrate mobile technology into classes. Getting feedback on technology by students is very important. When another colleague has success with some MT, that *motivates* me too."

While faculty play a significant role in integrating MT in the classroom, students are a contributing factor as well. Donna offered this perspective to support students as a motivating force, "I use technology to keep my course current but I also want to keep my students interested. I work hard as a faculty to find alternative methods for students to learn." Sharing a similar but slightly different experience, Eve added the addition of available funding as a motivating factor. Eve added, "The student population *motivates* me. The students are very savvy with technology. If we have financial funding for technology, this makes everything a lot easier. Financial funding is always a *motivator* with MT because it can be expensive."

Confirming how self-direction and motivation serve as key factors in deciding to use MT in the classroom, Grace shared this experience,

> There is a learning curve to feeling confident with technology, especially the technology *Top Hat* I use. I was committed to using the technology so I signed up for trainings, back-to-back trainings, and also have somebody on speed dial from *Top Hat.* I am learning as I go. The learning curve has been the biggest hurdle. I was confident in what the technology could do, but I was nervous about my personal ability. I had to find a balance between not wasting a lot of time

fumbling around with what I was doing versus making sure the students saw the

importance of it so there was buy-in by the students.

Theme 2: Mobile Technology to Promote Learning

Beyond attitude and acceptance of MT use in the BSN classroom, MT as a

teaching tool in promoting learning surfaced as a theme shared by study participants. Few

will argue that the goal of teaching is learning. And while there has been a pedagogical

shift from teaching to learning (Barr & Tagg, 1995), experiences shared by faculty

interviewed for this study indicates that MT plays a key role in not only teaching but in

learning also. Experiences shared by faculty participants led to two subthemes describing

the pedagogical shift to MT as a source for promoting student learning: recognition of

learning style preferences and student engagement.

Learning Style Preferences

Learning style preference pertains to the strengths, characteristics, and

preferences that students prefer to learn and process information. A term associated with

changing demographics and different learning needs, faculty participants described the

challenges of working with students entering the face-to-face classroom with

technological backgrounds and experiences that often differed from those of their own.

Most notable is the challenge of working with students whose learning style preference or

preferred way of learning is through the use of MT.

When asked to describe 'teaching' when the learning style preference of the

student is MT, faculty participants provided, rich, descriptive experiences. For example,

Faith was quick to respond by commenting that "the student population is more tech

savvy than I am." The importance of being attentive to student learning preference was

also reported by Joyce, who reported that "the age and generation of students in class is important to consider."

More elaborate but consistent with Faith and Joyce's experience, Amy offered this response:

> I have done a lot of research and if my students are struggling, I want to use strategies that are most effective for their success. I think because of the current generation of students in class, I like to integrate technology. I want to support my students. I think mobile technology helps faculty better engage students in class.

As a strategy for understanding personal biases in teaching, learning style preferences and preferred method for teaching, Betty offered this perspective,

> The age of students really influences me when I create lessons. If my students in class are younger or older this impacts their desire to use technological resources. I do not adopt using any technology unless I feel as though it will help my students.

Like most faculty members who are learning-centered, Betty commented further by asking: "How I can help the students meet the course objectives? How can I improve their understanding? How can I improve the outcome? This is cool but how can I use this [mobile technology] to help the students?"

Recognizing generational differences among nursing students and thus preference in learning style, Betty further commented,

> Sometimes I think with the best of intentions, people do like shiny, sparkly things, let's do it all, and it takes away the intent and purpose. I have worked with faculty who are quick adopters of technology, but they do not think through adoption and

I hear grumbling about that. You need to consider how the technology can link

into the lesson.

As shared by Hope, understanding the learning style of a demographically

changing student body can benefit not only students but faculty as well.

I think everyone learns differently. I am a hands-on learner and need to see it too.

I always say my hands are my eyes. Sometimes to learn things and practice

things, students can visually watch a video. MT presents the opportunity to show

or present something in another way. Students all learn differently so we need to

understand various learners and help them understand what you are teaching.

Recognizing shifting demographics and the learning style preference for the

technologically oriented student, it's important for faculty to stay abreast of new mobile

devices arriving on campus and entering the BSN classroom. This point was shared by

Isaac when asked to describe 'teaching' when the preference of the student is learning

through the use of a mobile device. As reported by Isaac,

Students are using technology daily, so we need to keep up with new teaching

strategies. It is important to consider the age of the learner. Students in the

classroom are using MT daily so it just makes sense to use MT. It is important to

integrate MT to meet learning styles of the students in the classroom.

Student Engagement

In addition to teaching with attention given to learning style preference, the use

of MT as a tool to enhance student engagement was a shared experience and thus

subtheme noted among faculty participants. For the purpose of this study, student

engagement relates to the degree of attention, interest, curiosity, and passion that student

leaners display to the educator when they are actively involved in the classroom setting. Interviews with faculty participants indicate that MT such as cell phones and tablets brought to the classroom by students are used as tools to enhance learning. The implication is the use of MT in the classroom leads to active involvement of the student in course content and learning as an outcome.

Over the years, student engagement and active learning have become synonymous in nursing education with higher order thinking (Herold, 2016). Simply speaking, active involvement and engagement of the student in the classroom can lead to learning outcomes that will prepare the student to become competent, practicing nurses. Acknowledging the contributions of student engagement in the classroom aligns with the concepts of PU and BI from Davis' TAM (1989). All 10 faculty participants shared experiences on using MT to ensure a high degree of interactivity and class participation. More precisely, this means the design of classroom activities that involve student engagement with course content and peer collaboration.

Amy was among the first faculty participants interviewed who shared her views on how MT is used to enhance student engagement.

I am in favor of technology. I also think because I have children in this generation, I know what they can do with MT. I like to incorporate it a little bit and I have found ways of engaging students using MT. If I want to engage students in class, I need to learn to use MT. MT is a good resource for students to look up information.

Betty shared her experience on using MT to actively engage students in the BSN classroom.

I have used MT to determine if students were understanding the material I presented in class. I would have students take out their cell phones, present questions in the power point, and they would use their MT to select the correct answer. I would show students how well they were performing overall, then I could clarify concepts that a majority of the class missed.

Similar to Amy and Betty, Faith provided the following comment on how MT can be used to enhance the classroom setting,

I like innovation so if it is something innovative for the students, I think it is worth taking the extra time in order to figure it out. I like to show the students new things and get the students involved during class. I guess engaged is the word I am looking for, I use MT to *engage students* in class.

Giving an opportunity to elaborate her position on MT as it relates to student engagement, Faith added, "Using online resources is very beneficial because the world is borderless. You can put up a link for students to access additional learning resources to help support their learning."

Additional faculty participants shared experiences of shifting to an instructional approach that included class activities that actively engage students in the learning process. As reported in the literature, well-planned learning activities that connect students to the content and to each other will motivate students to learn (Barr & Tagg, 1995). This shift requires a change in the faculty role from sage on the stage to instructional facilitator (Barr & Tagg, 1995).

Claire discussed how she has used MT to generate active student engagement and learning,

I do try to get students involved in class when I include activities so they all have

the opportunity to answer questions in class, rather than having the students shout

out the correct answer. I have done quizzing kind of things in the beginning of

class to see where students stand. There is also a *Flip Grid* I have used to help

students with communication.

Donna shared classroom activities designed through the use of student mobile

devices to achieve active student engagement,

I have had students use MT in class integrating *Poll Everywhere.* I try to integrate

questions into lectures in the class. I try to use cellphones because students like

those. I plan to integrate MT in my class I am teaching next fall too. I have also

had the students watch short video clips from the internet on their phone.

Following years of passive learning through the use of the traditional lecture,

Grace shared this view on how MT can contribute to active engagement in the

teaching/learning process.

I think I am late in the game for MT. I have done the obligatory power points and

discussion so I am late and but do see the value of MT use. I wish I had done this

sooner. I could see with integrating more MT, doing some networking, finding

out what other people are doing that MT is useful. I think with our audience they

want it. I think they are bored without technology integration.

Acknowledging that students learn in various ways, Eve provided a view on

incorporating MT in contrast to the traditional classroom lecture.

What influences my decision to integrate MT in the classroom is that we as

nursing faculty are coming from various areas of expertise and years in the

profession of teaching. We need to teach to our audience that technology is explosive, everyday something is coming out. It is difficult for us to keep up with technology capabilities, but need to try and meet the students' learning needs from an educational point of view. While I still embrace lecture in the classroom, there still needs to be an element of MT integration for supplemental learning and student comprehension.

Last, as the literature points out (Bhati & Song, 2019), increase student participation in class can be achieved if there are a variety of teaching/learning activities offered during class such as lecture, case studies, video clips, audio Podcasts, smartphones, and tablets. This point was shared by Joyce who commented that,

Using MT specifically, I think if the MT can get the students involved and more interactive to learn, I am more likely to use it. I feel like depending on the student population, a traditional undergraduate student is so savvy with technology and they are so quick on their mobile phone. I feel like they would be receptive to activities using their mobile phones. I think if it is fun and they learn from it, I would be more likely to use MT. I use MT to *engage students* into learning in class.

Theme 3: Challenges Versus Opportunities

This study included secondary research questions related to barriers and strategies identified by participants in adapting MT in the face-to-face classroom. Listening to the voices of participants led to the theme of challenges versus opportunities and the identification of two subthemes: barriers that can be defined as challenges, and opportunities to overcome barriers. First, participants were asked to describe challenges

encountered during the integration of technology. Secondly, participants were requested

to describe the support needed for integrating MT in the BSN classroom including

instructional, technological, and financial provided by their institution. Finally, faculty

were asked to describe opportunities or strategies to be considered when integrating new

technology into the classroom. Challenges and opportunities in using technology align

with the concept of PEOU. According to Davis' model, PEOU is defined as the degree to

which a person believes that using a particular system would be free from effort (1989).

In other words, if the technology is not easy to use and the interface with it is

complicated, no one has a positive attitude towards it.

Challenges

As discussed previously, the presence of personal mobile devices in the classroom

changes the dynamics of the teaching and learning process. Similar to other technological

advances, MT requires an investment of time in learning how to use the device by both

students and faculty. Faculty who use these devices must be well-versed on how to not

only use the devices but how the device supports student learning. And while literature

on the use of mobile devices in the classroom has grown exponentially over the years,

there are challenges to the concept of bringing your own device (BYOD) to class

(Benham et al., 2014). Responding to the secondary research question, what specific

barriers do faculty encounter when integrating MT in the BSN classroom, faculty shared

issues largely related to planning, connectivity, funding and training.

Faculty using MT in the classroom must not only be well versed in how to use the

technology but also have the time to plan classes where MT is used as an instructional

tool or strategy. As reported by several faculty participants, lack of time for preparation,

and practice in using MT as a teaching aide emerged as a challenge. Amy mentioned that

faculty must be "self-motivated" to obtain training to use technological resources. Donna

mentioned that she must devote extra time to prepare for class when using technological

tools. Eve also mentioned that while time is in short demand for faculty, the need for

practicing with technological tools prior to use is critical. Similarly, Grace reported that

"using technology in class requires additional practice time to ensure successful

integration." Hope commented that she attends training sessions personally to help

improve confidence using technological tools. Additionally, in a one-on-one interview,

Joyce reported that using technology requires additional "time" and "support" to integrate

positively.

Use of mobile devices in the classroom requires connecting the classroom to the

Internet. A key resource for connecting the classroom to the Internet is the availability of

WiFi. A classroom equipped with WiFi capabilities improves student engagement,

increases the exchange of information between faculty and student, and gives both

students and faculty immediate access to information resources (Li et al., 2017). When

directions are given for BYOD, a robust network infrastructure is needed to support

multiple wireless mobile devices in the classroom (Benham et al., 2014). This challenge

was confirmed by Amy,

> Wi-Fi connectivity can be a challenge when using web-based technology.
>
> Students who had technical challenges is a barrier to MT use. Technology support
>
> at the college is great. Sometimes, I have to teach myself many things regarding
>
> technology. I figure it out myself and test any technology prior to using.

A similar problem with connectivity was shared by Claire who reported,

Technology challenges with software often occur. When I used mobile technology in class there was usually one or two students who never participated. When we were working remote for some reason the conference button would not work. I set it up the day before and tested it, but it still did not work. It was like everyone was in panic mode when the technology did not function as intended.

Sharing her experience on connection problems as a challenge, Hope related this story,

Challenges with technology integration is due to connectivity problems. I have played around with technology, set it up and everything before class, so that I had this done on my own before class. I think we are all learning as instructors. Being nurses we know that but having to learn how to implement a new learning platform is challenging. I have been playing around with this new software on my own time just trying to learn and understand it and learn how to do it. It is challenging in the beginning because you have to learn it and you are learning something new but once you realize the bugs and stuff, it is a good thing. It is just that you have to put in the time to understand the technology and learn it. I feel sort of stupid when I cannot figure it out.

Several study participants voiced concern of cost as a challenge when deciding to integrate MT in the classroom. While Donna shared this concern, she also provided a strategy for addressing the challenge. As reported by Donna, "I stick to using apps that are free, I do not have students pay for new applications." Relating the challenge of cost involved in using MT in the classroom, Joyce shared a similar perspective "It's important to explore the resources we have prior to purchasing additional resources." Similarly

Hope reported, "unscheduled software updates" can limit the use of the technology in the classroom. Last, in probing her experience on the challenge of cost when deciding on student owned mobile devices in the classroom, Faith offered this perspective from her experience, "the cost of new technological tools is high, so it is critical to explore prices and investigate free tools for use to decrease costs."

Technology support is needed by both faculty and students when technology is used as an instructional source in the classroom. Support includes not only connection capabilities, hardware and software access, but faculty and student training on how to use technology. Success in using mobile devices in the classroom is critically important in keeping current with changing technology. And while most academic institutions have implemented sophisticated information technology (IT) departments and systems, faculty and student orientation and ongoing training are not guaranteed. As reported by Joyce,

Technology trainings are not mandatory, but faculty are given incentives to attend, like raffling off prizes. When something doesn't go right with technology it can be frustrating when you can't figure it out for yourself. I practice first, test things out, and trouble shoot before class on my own. I rely on other faculty who may have used the resources, websites, or go to the application I am using for help. If students purchase the technology, I try to integrate it in the course.

Finally, an additional challenge experienced by faculty participants is associated with the lack of communication with the IT department. Discussions indicate that while IT support is available, many faculty participants did not verbalize using the support offered by the university. In fact, there was only one of the participants who mentioned using IT at the college to assist in technology integration. Amy explained that she

explores technology independently prior to use. Similarly, Betty said that she utilizes other nursing colleagues for feedback and support related to technology, rather than the technology experts at the college. Clair also clarified that she accessed other colleagues and nurse educators regarding successful technology integration and resources prior to use. Furthermore, faculty participants also accessed the technological resources and personnel offered by the technological platform being used, rather than the IT department at the college.

Opportunities

To answer the secondary research question of *what strategies, do BSN faculty use to overcome barriers experienced when implementing mobile technology in the nursing classroom,* faculty were asked to describe resources or strategies used to integrate MT in the classroom setting. Responses to this question surfaced as the subtheme of opportunities. Opportunities implies understanding how MT can be used not as just novelty devices in the classroom but an opportunity as a resource to support learning (Shyshkanova et al., 2017). When asked to comment on strategies in overcoming barriers associated with the use of MT in the classroom, Amy commented,

> When students are struggling, technology really makes a difference. I refer student resources to practice NCLEX questions. I do not feel that technology makes my students more successful, but it can help with test taking. I make them look things up on their phone like labs or terminology. I want my students to understand that they have to do some of this work on their own. I also refer students to helpful websites because this can help given them a visual to help them understand. I cannot say that IT [information technology] support helps to

integrate MT because they really do not know the products but if I need help, I am sure they could help.

Similar to Amy, Betty shared this example from her classroom teaching experience on how MT can be used as a form of formative evaluation.

I used MT last semester to have students answer questions during class. I would have students take out their phone to select the correct answer to better understand if the students understood a concept. I would show students how well they performed on questions in class so they could also see how they were doing.

Finally, at least two faculty participants commented on how integration of MT is an opportunity to remain current in their faculty role. As suggested by Faith, "Using online resources is very beneficial because the world is borderless. You can put up a link for students to additional learning resources to help support their learning." As reported by Hope, "I think in healthcare you have to be a lifelong learner as you are always learning new things. There are always new techniques and new things to learn. Everyone learns differently so you can add a video to a lesson."

When asked to provide strategies or opportunities for incorporating MT in the BSN classroom, Isaac commented, "I think with the Covid changes and pandemic I have gone more into the online environment. Technology provides educators the ability to reach students at distance. Learning to overcome technological challenges is important. I have asked colleagues for help."

Similar to other faculty participants, Grace commented on her ideas of the opportunities of having MT in the BSN class.

I decided to use technology purely for participation and student engagement because with Covid one of the things students were saying is they found it really irritating that lots of students could sit back and be not engaged. There are a ton of features with the technology I am using. I have gone to a lot of classes and use the support provided by the MT platform to help.

Finally, when exploring MT and opportunities, Joyce expressed, "I have integrated MT in class to ask the students questions, they can answer electronically on their device, and be actively involved in learning." She admitted that questions and answers, as well as communication is how she has used MT in the classroom. When she was probed on the strategies to support MT use, she said she educates herself and practices with the technology.

Summary

Chapter 4 of this research study provides an analysis of the lived experiences of BSN faculty who use MT while teaching in the face-to-face classroom. To best understand the lived experience, one primary research question and two secondary research questions guided the study. Ten participants teaching in two nursing programs in central Pennsylvania provided rich, thick data detailing their experiences when teaching using MT. From that data, themes and subthemes emerged to answer the research questions.

The primary research question guiding the study was: *what are the lived experiences of BSN faculty on the use of mobile technology in the face-to-face baccalaureate nursing education programs?* Using the TAM as a lens, participants described their shift from a teacher dominated classroom to a classroom setting

permitting students to bring their own mobile device to class. Subthemes explaining this shift included a change in attitude and acceptance of MT in the classroom and in the importance of self-direction and motivation as key factors in the acceptance of MT.

The use of MT as a source for promoting learning served as a secondary theme describing the experiences of faculty when integrating MT in the classroom. Providing teaching that addresses MT as a learning style preference surfaced as another subtheme in understanding the faculty experience. Additionally, recognizing the use of MT as a source for actively engaging students in the learning process served as a reoccurring subtheme of discussion among faculty participants.

The secondary research question guiding this qualitative research study was: *what specific barriers do BSN faculty experience when integrating mobile technology in the nursing classroom?* Faculty provided descriptive descriptions identifying barriers encountered during the integration of MT in the BSN classroom. Self-reported barriers included planning time, education, training, connectivity, and knowledge required by the faculty in integrating MT in the classroom. In addition, it is critical for faculty using MT to plan for unexpected challenges so problems can be resolved quickly and efficiently.

An additional secondary research question sought answers to the question: *what strategies do BSN faculty use to overcome barriers experienced when implementing mobile technology in the nursing classroom?* Specific strategies that emerged from the data collected from participants includes seeking education and planning for unexpected problems related to technology is critical

Chapter 5 is the concluding chapter for this study. In Chapter 5, I discuss findings and limitations of this study. Specifically, I will discuss results related to the

technological acceptance model. Further, in Chapter 5, I will discuss recommendations

and implications of study findings. Moreover, the implications will include the impact of

positive social change from study results.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this qualitative study was to explore the experiences of nursing faculty when integrating MT in the face-to-face classroom. More specifically, the study was designed to explore the reasons for inconsistencies among faculty on the integration of MT in the face-to-face classroom in baccalaureate nursing education programs. While use of technology is well documented in the literature, there have been few studies addressing faculty experiences in adapting and using MT in the college classroom. Research to date on faculty use of technology in the classroom has largely focused on student perceptions of technology, technology use in higher education, and benefits of technology use for teaching and learning (Gan & Balakrishnan, 2018; Harerimana & Mtshali, 2019; Kim et al., 2020). To create and improve the work environment for faculty using mobile MT, it is necessary to explore and understand the views of nursing faculty integrating MT in the classroom. Findings from this study will be used to raise awareness of the challenges associated with integrating MT in the face-to-face classroom. Additionally, findings generated from this study may be used to assist nurse educators in raising awareness of the barriers and challenges encountered when using MT as a teaching adjunct.

Chapter 5 provides a summary of this study. In Chapter 5, I discuss findings and limitations of this research study. Specifically, I discuss findings related to previous literature and the TAM. Additionally, I discuss recommendations and implications of study findings. The implications will include the impact of positive social change arising from the study results.

Interpretation of Findings Related to Previous Literature

Despite the benefit of technology use for teaching and learning in higher education, little attention has been paid to understanding the experiences of faculty with technology use in the face-to-face classroom setting in BSN programs (Gan & Balakrishnan, 2018; Harerimana & Mtshali, 2019; Kim et al., 2020). The synthesis of literature on faculty use of MT in undergraduate nursing education indicates that the attitude of faculty toward MT and technical skills using these devices may limit the frequency of use (Alshehri & Cumming, 2020; Dolawattha et al., 2019; Mann et al., 2015; Shim & Shim, 2000). What was unknown on the topic is how nursing faculty teaching in the face-to-face classroom in BSN programs experience MT use for teaching and learning. The aim of the study was to understand how nursing faculty are using MT, as well as their personal beliefs on MT, by exploring present and past experiences of faculty with MT use in the face-to-face classroom in BSN programs. Furthermore, rich, thick, descriptive data collected through in-depth interviews with nursing faculty helped in understanding their experiences of, satisfaction with, and personal feelings on the use of MT in the face-to-face classroom setting. To understand nursing faculty experiences on MT integration in the classroom, 10 nursing faculty participants from two nursing programs were interviewed to explore and describe their perceived experiences.

While the use of MT in higher education has risen over the years, reports indicate that there is a lack of integration of MT in undergraduate nursing education programs (Battle & Tyson, 2018; Dickens, 2017, Lee et al., 2018, Raman, 2015). The findings from this study provide data and support to better understand the lived experiences of nursing faculty on MT integration and use in the face-to-face classroom in BSN programs.

Furthermore, the analysis of the lived experiences of nursing faculty assists in better understanding problems related to inconsistent integration of MT tools for teaching and learning in BSN education programs. Last, exploring nursing faculty beliefs in regard to MT use assists in understanding the BI of nursing faculty toward MT use in the classroom to support teaching and learning.

In the current study, nursing faculty participants described their lived experiences with MT use in the face-to-face classroom in BSN programs. Through their explanation of individual experiences, participants provided thick, rich descriptions of their personal experiences with MT in the classroom setting. Data analysis conducted for this study led to the identification of three major themes describing the lived experiences of faculty using MT in the BSN classroom. These themes included permitting MT in the classroom, using MT to promote learning, as well as reported challenges and opportunities using MT in the classroom. In the section that follows, I discuss study themes in relation to previous literature.

Theme 1: Permitting Mobile Technology in the Classroom

The purpose of this descriptive qualitative phenomenological study was to explore the experiences of nursing faculty with MT in the classroom. The TAM was used as a lens to understand the lived experiences of faculty regarding their use of MT in the face-to-face classroom in baccalaureate nursing education programs (Davis, 1989). To understand the lived experiences of BSN faculty on their use of MT in the face-to-face classroom in BSN education programs, I began each interview by asking the participants to elaborate on the types of technology they had integrated while teaching in the face-to-face BSN classroom. More specifically, each participant was asked to elaborate on their

past and present experiences integrating MT into the classroom setting. The first major theme shared among the participants was the academic shift from traditional classroom-based instruction to the use of MT to support student learning. Additionally, there were two subthemes that emerged among the participants, which included their attitude and acceptance, as well as self-direction and motivation.

The participants in the study verbalized that a majority of their students owned and brought a mobile device to class daily. Additionally, the 10 faculty participants in the study verbalized having a mobile device they used daily professionally and personally to access data. According to Pew Center (2017), a majority of students and faculty own a mobile device, which illustrates how embedded mobile devices are in society. In the 21st century, teaching and learning are not limited to the traditional face-to-face classroom, and interview participants identified that they had attempted to use the MT devices that students had to engage students in learning. The faculty participants verbalized using MT to engage students in class during lectures using questions to engage and evaluate student learning. In addition, the faculty members viewed MT as useful for communication with students. Furthermore, some participants stated that using MT devices in class to research theoretical topics was not an uncommon occurrence (Herold, 2016). All participants but one were open to student use of MT devices in the face-to-face classroom setting.

Attitude and Acceptance

The demographic questionnaire data indicated that 70% of the participants ranged from 35-54 years old, and no participants were under the age of 25 or over 65. This supports the evidence that many educators who are currently teaching in the classroom may not have grown up using technology on a daily basis. Educators between the ages of

50 and 60 years old did not grow up using technology on a daily basis (AACN, 2015).

The study participants were primarily middle aged in this study. All 10 ($n = 10$) of the

participants in the study used technology personally and professionally daily, but they

consistently used the same software and applications. Literature on MT revealed that

there is a relationship between the age of a faculty member and their use of technology

(Kotcherlakota et al., 2017). In fact, there were no participants over the age of 65 years.

Self-Direction and Motivation

The faculty whom I interviewed were self-directed to use MT but explained that

integrating MT requires preparation and education for successful use in the classroom.

Participants stated that integrating MT requires planning, detailed instructions, as well as

practice time. The fact that using MT takes additional preparation and training time could

have an unfavorable impact on the attitude of faculty and students (Davis, 1989).

Acceptance of technology may be influenced by technology users' perceived attitude

toward technology and PEOU (Davis, 1989; Tubaishat et al., 2016). These findings

support that implementation of technology is influenced by the attitude of the technology

user, making research on faculty experiences, behaviors, and feelings important to better

understand MT integration in the classroom. Furthermore, improving the education and

training of faculty on MT may improve attitudes toward MT integration, as well as

integration in the classroom (McInerney & Druva, 2019).

Theme 2: Mobile Technology to Promote Learning

To better understand the lived experiences of BSN faculty on their use of MT in

the face-to-face classroom in BSN education programs, each participant was asked to

elaborate on their past and present experiences integrating MT into the classroom setting.

Using the TAM as a lens, the second major theme that was discovered in the findings relates to faculty feelings on perceived usefulness and perceived ease of use of MT to support student learning in the classroom. According to Davis (1989), if a faculty member does not view MT as useful in class, this may influence their attitude negatively. Therefore, if a faculty member feels that MT is not useful, they may choose not to integrate MT into the classroom. I used probing questions to gain a better understanding of whether the participants in the study viewed MT as useful to support student learning in the classroom. The second major theme discovered in the findings was the use of MT to promote learning. The participants in the study described their use of MT in the classroom to support student learning. Specifically, faculty described their present and past experiences with MT use. Data analysis revealed two subthemes: learning style preferences and student engagement.

Learning Style Preference and Student Engagement

The findings from the study indicated that faculty's views of MT and technological tools are important when teaching nursing students. Interestingly, there still appeared to be inconsistent integration of MT by the faculty participants in this study (Alshehri & Cumming, 2020; Dolawattha et al., 2019; Mann et al., 2015). The participants whom I interviewed did not use language that led me to believe that use of MT was integrated regularly or consistently. The participants reflected upon particular experiences in which MT was used but did not identify or verbalize that MT was used consistently in their courses weekly. Although members of the younger generation of students have grown up with the very rapid expansion of technology and may be more motivated and engaged in learning when technology is integrated, there still appears to be

inconsistent MT integration (Barry, 2016; Buabeng-Andoh; 2018; Cahill & Cima, 2016). In this study, faculty viewed MT as beneficial for student engagement, motivation, and evaluating learning objectives, but MT was not used on a regular basis in the face-to-face classroom setting by a majority of the study participants. Only one of the participants identified that she consistently integrated MT in her course to support student learning.

According to the National League for Nurses (2015), technological skills constitute a recommended competence for academic nurse educators. There is a plethora of national websites on which technological skill by nurse educators is recommended (Chen et al., 2015; Dahlstrom, 2015; National Council of State Boards of Nursing, 2019; National League for Nurses, 2015; Quality and Safety Education for Nurses, n.d.). Findings from the study revealed that participants understand that MT is critical to assist students in achieving student learning outcomes, but faculty may not have the necessary education and skills to integrate technology successfully. In addition, the additional time required to prepare for class instruction using MT tools may have a negative impact on the consistency with which MT is integrated by faculty into the face-to-face classroom setting. According to Davis (1989), the PU and PEOU of the faculty who are using a technology predict their BI to use the technology, which was discovered during the interviews.

Previous research found that is there is a more unfavorable relationship between technology and older faculty compared to newer faculty (Kotcherlakota et al., 2017). Surprisingly, in this study, the faculty member with the most years of experience seemed to be more enthusiastic about the topic of MT use in the classroom. She was 55 to 65 years of age, which does not support the notion that older faculty view technology more

unfavorably compared to newer faculty. The faculty with the most experience seemed to understand the importance and benefits of integrating MT into the classroom (Buabeng-Andoh, 2018; Hay et al., 2018; O'Conner & Andrews, 2015; Secco et al., 2016; Sheikhtaheri et al., 2018; Sheikhtaheri & Kermani, 2018).

Student Engagement

For students to achieve learning outcomes, it is critical to choose MT that supports student learning. Findings from the study indicate that participants agreed that students and faculty are both impacted by the technology used in the classroom (Mackay et al., 2017). In addition, faculty participants verbalized that student feedback on MT use in the classroom impacts their perception, decisions, and use of MT tools for teaching and learning (Mackay et al., 2017). Further, participants in the study agreed that MT can support, engage, and motivate students in the classroom (Day-Black & Merrill, 2015; Wing et al.2017). The participants in this study agreed that MT is useful to engage, evaluate, and support student learning in the classroom.

There are numerous benefits of MT use in the classroom, such as the ability to implement reference guides, interactive quizzing, communication tools, videos, and research tools. Using MT supports and improves communication between faculty and students in the face-to-face classroom setting (Damewood, 2016). Participants frequently used MT to test student knowledge and learning in class by providing students the opportunity to answer questions anonymously during class. Using MT provides participants the opportunity to evaluate students' practical and critical thinking skills (Jobnetwork, 2017). A consistent theme for participants was the use of MT to answer questions interactively in class via audience-response technology software.

By engaging students, MT software has the potential to improve student participation in the learning process (Žitný et al., 2016). In addition, findings indicate that participants in the study were familiar with online audience-response systems such as Mentimeter, Socrative, and Kahoot (Mentimeter, n.d.; Kahoot!|-Game-Based Digital Learning Platform, n.d.; Socrative, n.d.). These platforms provide faculty with MT tools to promote students' critical thinking and improve in-class collaboration.

Theme 3: Challenges and Opportunities

The secondary research questions that guided this study involved understanding the MT experiences of faculty teaching in the classroom in BSN programs. Specifically, I sought to determine what specific barriers BSN faculty experience when integrating MT in the nursing classroom and what strategies BSN faculty use to overcome barriers experienced when implementing MT in the nursing classroom. Following extensive coding and thematic analysis of participants' interview transcripts, the next major theme of challenges and opportunities involving MT emerged.

Challenges

The study participants expressed that using new technology was stressful and challenging but that careful preparation, planning, and practice time alleviated feelings related to stress. Participants stated that to minimize problems, care and time needed to be taken when choosing technological tools to be used in class. Technological design impacts the usefulness as well as the potential technological challenges that faculty may experience with MT use in the classroom (Li et al., 2017). The evidence suggests that connectivity, support, technical expertise, and education on technology influence the use of technology (Mackay et al., 2017). The study participants also mentioned that

connectivity, technical support, education, and the technology they were using influenced their decisions regarding the use of MT in the classroom to support student learning.

Findings from the study suggested that participants using MT in the study expressed anxiety, stress, and frustration with MT integration in the classroom. Many of the experienced faculty encountered challenges related to MT use and verbalized anxiety as well as stress related to technology implementation, which might result in overall job dissatisfaction over time (Yedidia et al., 2014). To improve job satisfaction and stress, understanding MT experiences will help more experienced nursing faculty with newer technological pedagogical teaching approaches, as well as improve retention in the field of nursing education.

In regard to the choice of MT used in the classroom by faculty, the participants understood that technology choice must be carefully considered. The design, application, and implementation of MT tools are of pivotal importance to students, and they can be successful for educating students (Keengwe & Bhargava, 2014). Some of the faculty participants verbalized that the mobile devices that most students own are used to support learning because these MT devices are equipped with technology to support learning in the classroom such as videos, games, software, and reference materials to support teaching and learning (Phillippi & Wyatt, n.d.). Study findings also indicated that the software's capability is important, so careful selection of MT software is critical for successful integration. In addition, participants suggested the potentials to use MT to engage students, evaluate student learning, and motivate students were primary motivators for MT use.

Opportunities

Study findings indicated the software capability is important making the careful selection of MT tools critical for successful integration of MT in the face-to-face classroom setting. In addition, participants suggested using MT to engage students, evaluate student learning, and motivate students are primary motivators for MT use. To engage students, MT software has the potential to improve student participation in the learning process (Žitný et al., 2016). In addition, findings indicate that participants, in the study, are familiar with online audience response systems such as Mentimeter, Socrative, and Kahoot (Mentimeter, n.d.; Kahoot!|-Game-based digital learning platform, n.d.; Socrative, n.d.). These platforms provide faculty a MT tool to promote student critical thinking and improve in-class collaboration.

To understand consistencies related to technology integration, the findings from the study support the research that a faculty members' experience with technology and attitude influences their intention to use technology in the classroom (Scherer et al., 2019). In fact, due to the extensive education, training, and the preparation time required to successfully integrate technology, faculty may not use MT as frequently. To decrease the length of time it takes to integrate MT tools in the classroom, it is critical to provide ongoing education. When exploring barriers to MT integration findings suggest that support from administration including educational and financial are important factors to consider in regard to MT consistencies (Fiedler et al., 2014). In addition, more collaboration between nursing faculty and informational technology experts may potentially improve the experience for both students and faculty using MT for teaching and learning.

According to Iverson et al. (2016), there are internal and external factors that influence success for teaching and learning. In the current study, time was a reoccurring factor that seemed to inhibit the success and integration of MT in the face-to-face classroom. For example, participants needed to dedicate time to education, practice, and preparation prior to MT use. The added time required of the faculty may negatively influence BI to use MT in the classroom. Nursing faculty who are employed at universities have many responsibilities outside teaching students, which limits the time that they are able to dedicate to integrating new technological tools for teaching and learning.

Although MT has the capability of enhancing collaboration between faculty and students in the classroom, many faculty members may lack time to adequately prepare to integrate new MT strategies in the classroom (Gallegos et al., 2019). In addition, connectivity and Wi-Fi availability are factors limiting MT use in the classroom. Constraints such as a small screen, website reliability, and an overwhelming number of resources may limit the usefulness of mobile devices (Li et al., 2017). The current study supports the use of technology in the classroom but it's essential for faculty to gain education, training, and support to effectively employ this pedagogy for teaching and learning.

Interpretation of Findings as Related to Conceptual Framework

To answer the question of *what are the experiences of nursing faculty on the use of MT in the face-to-face classroom* setting, the TAM served as the conceptual framework guiding this study. The TAM suggests that there are a number of factors influencing a faculty members' decision to integrate MT (Davis, 1989). For this study,

nursing faculty experiences, beliefs, and feelings about MT were explored to better understand what influences their PU and PEOU, in regards to specifically MT use in the face-to-face classroom in BSN programs (Davis, 1989).

To understand MT use, the researcher first explored the personal experiences of nursing faculty on their MT use for teaching and learning in the classroom. In the study, the researcher discovered that common themes related to their personal current and past experiences include permitting student use of personal MT in the classroom, using MT to promote learning and challenges as well as opportunities in using MT in the classroom. The faculty perceive MT useful in the classroom to improve student motivation, engage students, and improve class participation. The nursing faculty perceived that MT use required extra practice, education, and preparation time to successfully integrate, which may influence their PEOU unfavorably. Both PU and PEOU influences the BI to integrate and use MT, either favorably or unfavorably (Davis, 1989). In other words, if a faculty views a prior MT experience easy and useful in the classroom, they will be more likely to use MT in the future. Similarly, the nursing faculty perceive that MT can be useful, as evidenced by the themes that MT is used to motivate, engage, and improve student participation in the face-to-face classroom.

The next factor explored was the nursing faculty personal beliefs on MT use in the classroom. Themes generated during the interviews included: challenges and opportunities. The faculty interviewed viewed that using MT is useful but time-consuming, requires practice, requires education, and requires additional preparation time. As a result of the added time, practice, and education, the faculty may be less likely to implement MT. According to Davis (1989), the extensive preparation required for

successful implementation, influences their PEOU, which impacts BI unfavorably. In other words, faculty do not perceive that using MT is easy so they may less frequently integrate MT in the classroom.

In regard to faculty beliefs, faculty also viewed MT useful for evaluating student learning and engaging students in the learning process during the class. In regard to BI, if faculty view MT useful for evaluating learning and engaging students, then they may be more likely to integrate MT in the future. According to Davis (1989), the PU and PEOU influences the BI of the technology user. Simply, if the faculty view that using MT takes a lot of time to use in the classroom, they may be less likely to use MT regularly. On the other hand, faculty who view MT as useful to engage students in class and evaluate student learning may be more likely to use MT in the classroom due to the benefits of MT use.

The faculty participants in the study also cited that MT requires extensive practice and preparation time to integrate. These perceptions of faculty will influence the frequency that MT is used, as well as the choice of MT platform they choose to integrate. It will be more likely that faculty will select an easy-to-use MT tool, rather than a more complex technologically challenging MT tool for use in the classroom. In addition, because faculty perceive using technology as time consuming this will influence them to integrate MT less frequently in the classroom.

The final factor explored was the nursing faculty feelings on MT use in the classroom. The theme generated during the interviews was primarily their motivation to use MT. Although faculty are motivated to use MT in class, faculty feel as though they are inexperienced with technology, which impacts the ease of MT use. Specifically,

faculty feel like using MT requires practice, preparation, and education, which requires more time to implement. According to Davis (1989), these feelings will decrease the frequency or BI that MT is used by nursing faculty in BSN programs. In regard to faculty motivation to use MT, nursing faculty feel that MT is useful to engage, motivate, and evaluate student learning, which positively impacts their PU. Thus, their view that MT is useful in the classroom will improve their use or intention to use MT in the future for teaching and learning.

The TAM as a lens, adds further validity of how faculty member's prior MT experience, belief, and feelings forecasts their behavior to choose technology. When the faculty experience is positive, he/she will more likely adopt technology because their PU and PEOU are more favorable toward MT use. Similarly, when the users' belief is more negative toward MT use in the classroom, he/she will reject technology use due to an unfavorable PU and PEOU which are both influenced by the users' prior experiences (Davis, 1989). Hence, BI to use technology is closely linked to the faculty members' feelings and technological experiences (Davis, 1989). The goal of the study was to better understand the experiences, beliefs, and feelings that influence nursing educators' PU and PEOU in regard to MT integration in the face-to-face classroom in BSN programs. Table 5 represents how the key concepts align to the concepts in the TAM. This table was used to organize the data collected into themes to understand what influences the BI of the technology user.

Table 5

Alignment of Research Findings and Technology Acceptance Model Concepts

Key concepts and research questions	Themes generated	Perceived usefulness (PU)	Perceived ease of use (PEOU)	Impact on behavioral intention
Faculty experiences using mobile technology	- Permitting mobile technology in the classroom - Attitudes and acceptance of mobile technology - Self-direction and motivation	- Improves student motivation - Engages students - Improves participation in class	- Requires practice time - Requires careful preparation time	- Impacts the frequency that MT is used - Impacts the choice of technological platform selected by the faculty - Impacts the frequency that MT is used
Faculty beliefs regarding mobile technology use	- Mobile technology to promote learning - Learning styles and preferences - Student engagement	- Improves student motivation - Engages students - Improves participation in class	- Requires extensive practice time - Requires careful preparation time - Requires a lot of time to prepare	- Impacts the frequency that MT is used - Impacts the choice of technological platform selected by the faculty
Faculty feelings using mobile technology	- Challenges and opportunities	- Improves student motivation - Engages students - Improves participation in class	- Requires practice time - Requires careful preparation time - Time consuming - Requires education and practice time	- Impacts the frequency that MT is used

Limitations of the Study

For this study, a qualitative descriptive phenomenological approach was employed by the researcher. According to Creswell (2014), limitations are incidences that appear in every study and are beyond the control of the researcher; every study has limitations. To gain transferability, it is critical to reduce limitations to improve reliability and transferability of the research findings (Creswell, 2014). Traditionally, sample sizes in qualitative phenomenology research are small due to the nature of the work. Despite the small sample size, findings generated from this study can be applied to the broader population of nurse educators.

The focus of the study is to explore the experiences of nursing faculty teaching in the face-to-face classroom, specifically in BSN programs. The specific population of interest was chosen because there is a gap in the literature on the perceptions and experiences of MT use for teaching and learning in the face-to-face classroom in BSN programs. The participants represent two BSN nursing education programs. It was particularly important to choose a similar representative population to ensure validity of the results. The nursing programs were both located in central Pennsylvania. For this reason, findings are limited to the represented faculty from two BSN nursing education programs located in central Pennsylvania who are members of the AACN.

Finally, faculty having prior experience teaching, age of participant, rapport of researcher and participants, as well as teaching experience online and in the face-to-face classroom setting could also influence and limit the results (Creswell, 2014). For this study, participants volunteered for the study, which limits the findings to those who are interested in MT use in nursing education. Nursing faculty who are not interested in technology may not have volunteered for this study involving MT, especially if the faculty member does not use MT or view that MT is an important tool to use in nursing education. The study is further limited to participants who may be particularly interested in MT use for teaching and learning, thus volunteered for the study.

Recommendations

The use of MT in undergraduate nursing education has been an unexplored topic. This is particularly true in BSN education. It is important to understand faculty experiences in using MT in the BSN classroom. And while this study is a beginning

attempt to provide a clearer understanding of the use of MT by faculty in BSN education, further research is needed.

Future research studies should focus on a larger and more diverse nursing education population. Specifically, future research should include participants from associate degree and/or hospital-based nursing education programs. Additionally, a wider geographic range of participants should be included in another study. Further, research on the topic using grounded theory may also be useful to uncover things such as behaviors of faculty who have different educational backgrounds. Last, quantitative research on the faculty perceived workload and/or time required to prepare when integrating MT in the classroom could add to the research on the topic of faculty experiences integrating MT in the classroom.

Implications

This study adds to research on the lived experiences of nursing faculty to understand the reasons for inconsistent integration of MT in the face-to-face classroom in baccalaureate nursing education programs (Lee et al., 2018). The findings from the study will assist nursing education leaders, faculty, and academic leaders to understand how to improve MT integration in the classroom. The current generation of students have grown up with technology, but a majority of faculty teaching have not been exposed to technology throughout their lifetime (Barry, 2016; Buabeng-Andoh; 2018; Cahill & Cima, 2016). Nursing faculty need support and time for faculty development to integrate new technological tools, making this study critical to better support faculty and students in the classroom (Carter-Templeton et al, 2013).

Students

Due to the nature of MT, the topic is constantly evolving and there is an abundance of anecdotal evidence related to the popularity of MT. According to the Institute of Medicine (2011) and the Affordable Care Act (2010), it is essential for nursing education to integrate and use technology in teaching and learning to provide safe patient care. Further, the younger generation of students may be more motivated and engaged when MT is integrated in the classroom (Barry, 2014; Cahill & Cima, 2016). Nursing educators are in the early stages of MT implementation and can create a student-centered atmosphere in class using MT (Alghamdi et al., 2013). Students in the classroom have diverse learning styles and preferences and the use of MT can provide educators the opportunity to engage learners with various learning preferences (Rusli & Yasa, 2017). Study findings indicated that participants are in agreement due to the student population in the current nursing educational setting that MT integration is critical. Students being taught in the classroom have grown up with technology which makes implementation of MT pivotal for student satisfaction.

The participants in this study primarily use MT for communication, engagement, and evaluation in class by having students anonymously answer questions to test their knowledge on concepts. Findings from this study can help enhance understanding and use of MT to assist faculty to better support a wide variety of students in the classroom. When faculty experience challenges using MT, the challenges also impact students (Mackay et al., 2017). Therefore, it is critical to better educate, train, and assist faculty with MT implantation in the classroom.

Faculty participants in the study primarily rely on other faculty and collegial support with MT integration in the classroom. Interestingly, in this area of central Pennsylvania where the study was conducted, there are numerous nursing programs in close proximity, which is a benefit for nursing and academic leaders. There is always a need for nurses at the bedside, which has been made evident during the pandemic. In addition, the student population is diverse, and each university has a slightly different student population. There is also a consistent enrollment of students in nursing education programs. It would be beneficial for nursing programs to collaborate with each other to better support students in the academic setting.

Nursing leaders may be able to assist faculty in the classroom by working together with other nursing program leaders in their geographical area to plan more networking events frequently. Networking events for nursing programs in the same geographical location can be planned with little or no cost to faculty or universities. Events held in the same geographical area limit the need for expensive travel and lodging costs that occur when faculty travel to conferences outside of their geographical location. Networking allows educators to exchange knowledge, educational resources, social support, as well as provides faculty trusted colleagues they can turn to as a sounding board (Porter & Woo, 2015). Finally, a little networking can expand the learning opportunities and helps to better support students in the classroom.

Faculty

The research discovered that the additional time that nursing educators are spending trying to figure out technology independently may also be influencing job satisfaction. It is critical for nursing educators to obtain work-life balance. The additional

time is not only influencing BI to use technology but overall confidence and job

satisfaction. These beliefs and feelings discovered by the researcher are not only

influencing PU and PEOU with technology but also their professional identity. One

faculty member stated that she feels "stupid" when she cannot figure things out related to

technology on her own. The findings from the study may be used to better support faculty

using MT to improve their confidence, as well as use of MT.

When faculty expressed their experiences with MT, time was mentioned

repeatedly during data collection. Faculty have numerous employment responsibilities,

which are outside of normal teaching duties. Academic leaders must understand and be

made aware that faculty are using personal time to prepare, educate, and practice using

technological tools. The added time the faculty are dedicating may also influence their

overall feelings of job satisfaction, as well as support. It is critical for academic deans,

university presidents, and college board leaders to be aware of the challenges faculty

experience to balance responsibilities successfully. Faculty must be provided education

on technology regularly to keep up with new pedological teaching approaches to support

the generation of students in the classroom.

Academic Leaders

Another factor that the researcher found was that faculty rely on faculty and

colleagues when integrating technology. In addition, faculty are not using an

interdisciplinary approach to implement new technology. It is important for nursing

faculty to understand that they are not expected to be experts with technology. A majority

of the educators were self-directed educating themselves to use technology independently

in this study. Nurses are problem-solvers and from their first educational degree, they

learn to apply theoretical principles to clinical situations to solve problems. It was not surprising to me as a nurse myself that the nursing faculty preferred to solve their own problems related to technology, as evidenced by only one participant mentioning that she contacted information technology for support. It is important for academic leaders and deans to emphasize to their nursing faculty experts that being a technology expert is not a requirement for nursing education. Furthermore, academic deans and leaders should stress the importance of attending technological training sessions, as well as providing faculty the time to attend the trainings to support student learning and improve their technological skills. The findings support that time must be set aside and prioritized so faculty understand the importance of trainings, as well as being provided the time to attend.

The study also revealed that faculty and information technology must work collaboratively to choose technological tools. Again, nursing faculty are not the experts with technology, making it critical to utilize the experts that are available for support at the college. When nursing educators plan a lesson, they are teaching particular concepts and skills, as well as creating learning objectives to meet the goal of a lecture or activity in class. Collaboration with technological support experts will assist faculty to understand the technology that may best match the learning objectives for a course. Academic deans, leaders, and university boards should be made aware that the technological choice is critical and must be carefully considered when choosing technology. It is necessary for academic leaders, deans, and university leaders to create an interdisciplinary approach when they make choices related to technology. The costs of technology are high and the return for investments in influenced by the technology they choose to purchase. The

technology user, technology experts, various departments within the college, faculty, and students should be involved with technological decisions and purchases.

Policy Makers

This study explored experiences of faculty to better understand their experiences with MT. The researcher discovered that universities provide education and training but faculty are not required to attend training on a regular basis. It may be beneficial to expose faculty to education and set aside designated times for faculty to attend trainings. Nursing faculty in the study did not verbalize being confident using technology, which will influence BI negatively (Davis, 1989). According to Davis (1989), there are a number of factors that influence the nursing faculty members' decision to integrate MT (Davis, 1989). Nursing faculty feelings, including PEOU, directly influence the BI or use of MT by faculty. The research findings support that if universities and academic leaders improve education, mandate regular training, encourage networking with other nursing programs, and support for nursing faculty these factors may impact faculty turnover, by improving job satisfaction.

As previously mentioned, faculty verbalized that they are offered training but do not frequently attend regularly. Rather, faculty rely on collegial support when implementing MT in the classroom. It may be beneficial for policy makers at the college to mandate yearly MT education for faculty. To impact academic success of students it is critical to educate faculty on new pedogeological teaching approaches, to improve student engagement, as well as satisfaction in class. The findings from the study may be used to not only improve MT use in the classroom, but also the education that faculty receive to build their confidence and skills using MT tools.

Positive Social Change

There is very little research known about the experiences of nursing faculty using MT in the classroom (Lee et al., 2018). The findings from this study will not only impact faculty but also students, academic leaders, and policy makers. Understanding the experiences of faculty will assist academic leaders and policy makers to address the challenges and needs experienced by faculty to improve the current condition of MT integration in nursing education (Carter-Templeton et al, 2013). In addition, improving faculty experiences, education, support, and training with MT use will enhance the classroom experience for students.

It is critical to make academic leaders and policy makers aware that when nursing faculty do not have the support, time, education, and training required for MT integration, it has a negative impact on faculty experience, integration, attitudes, and behaviors with MT (Axley, 2008). It is critical for academic leaders and policy makers to address challenges experienced by faculty related to inadequate time, education, training, and support using MT. Social change seeks to improve the human condition and move organizations toward a favorable future. For this study, to influence the behavior of faculty on MT use in the classroom, it is critical to understand that faculty are utilizing additional time to support and integrate MT in the classroom. Although MT is viewed favorably to engage and support student learning, using MT requires faculty to spend countless hours preparing, educating, and practicing for use educating students in the classroom.

Findings generated from the study have the potential for positively impacting social change by increasing the awareness of the time, education, training, and support

needed by nursing faculty to integration MT in the classroom. In addition, findings from the study should raise awareness of MT use to engage, support, and evaluate student learning in the classroom. Faculty in the study view MT as favorable, but due to the added time, education, preparation, and training required, they do not frequently integrate MT in the classroom. Finally, the researcher strives to influence social change in the face-to-face classroom by raising awareness of the challenges to improve the classroom experience for the students, as well as faculty, to better support MT use and integration.

In summary, the findings from the study outlined will raise awareness of the challenges that nursing faculty experience with MT in the classroom. It is critical for academic leaders to understand that MT integration and new pedogeological teaching approaches require education, planning, and practice time. Nursing faculty time is also limited due to the numerous duties and responsibilities that are expected in their faculty positions by the universities and academic leaders. For example, in addition to classroom teaching nursing professors supervise and advise students, conduct clinical research, present scholarly work at conferences, serve on college committees, as well as develop and implement curricula to prepare students adequately for the challenges of the nursing profession. Faculty are also expected to keep current in their areas of expertise by reading professional journals, and some work as part-time clinicians in order to maintain clinical competence.

Furthermore, to improve the consistency that MT is integrated in the classroom, academic leaders must have a multidisciplinary approach on their technological decisions. The decisions made about MT and resources impact faculty, schedules, information technology, and most importantly the students. To improve MT use in class,

collaboration with nursing faculty from other programs may also be beneficial, at a lower cost when nursing leaders in similar geographical locations collaborate to better support students in the academic setting. To help students achieve learning outcomes, it is critical to use innovative approaches.

Finally, improving student support may also improve attrition and student completion of nursing programs. The covid-19 pandemic is current and being experienced all over the United States and abroad. Healthcare agencies are counting on nursing education programs to educate students with the knowledge and skills needed to care for a critically ill patient population. Using MT and new technological approaches may improve student learning outcomes to help students achieve academic success. It is critical for academic leaders to improve the experiences, education, and training for faculty to better support MT use in the classroom. Additionally, understanding the challenges experienced by faculty will assist academic leaders in helping nursing faculty by providing time and also mandating training to better support students in the classroom. Last, academic leaders must make nursing faculty aware and encourage more collaboration between informational technology experts and nursing faculty to improve faculty confidence and student experiences in the classroom.

Conclusion

This study was undertaken to explore and describe the lived experiences of BSN faculty using MT in the face-to-face classroom. As a researcher, I discovered that training with technology is not mandated or required at the universities, which must be re-evaluated by academic leaders to make sure faculty have the education and support they need to improve and support MT integration in the classroom. Also, faculty must be

provided the necessary time to explore new MT resources for use in the classroom. Using new technological resources requires extensive education and training, for faculty to feel confident integrating MT in the classroom. Currently, faculty are not provided time during work hours to accomplish their tasks or explore new innovative strategies to support learning. It is necessary for academic leaders to re-evaluate the numerous responsibilities, committee work, and service that faculty provide to the universities they are employed to allow faculty to explore innovative teaching approaches.

Findings of the study provide evidence that MT use can assist students to achieve student learning outcomes, engage, evaluate, and support learning, and MT should be integrated regularly to support learning in the classroom. I feel that faculty should be required to integrate MT in the classroom, to support student engagement and academic achievement. Furthermore, it is critical for academic leaders to plan networking events for faculty to collaborate in other nursing education programs. Finally, nursing educators, academic leaders, and technology departments must collaborate regularly about technology choices, integration, and best practices using MT to better support successful implementation of MT in the face-to-face classroom in BSN programs.

References

Abdullah, F., & Ward, R. (2016). Developing a General Extended Technology Acceptance Model for E-Learning (GETAMEL) by analyzing commonly used external factors. *Computers in Human Behavior*, *56*, 238–256. https://doi.org/10.1016/j.chd.2015.11.036

Abramson, J., Dawson, M., & Stevens, J. (2015). An examination of the prior use of elearning within an extended technology acceptance model and the factors that influence the behavioral intention of users to use m-learning. *SAGE Open*, *5*(4), 1-9. https://doi.org/10.1177/2158244015621114

Accreditation Commission for Education in Nursing. (2017). *ACEN accreditation manual: 2017 standards and criteria*. (2017). https://www.acenursing.org/for-programs/general-resources/resources-acen-accreditation-manual/

Ahern, K. J. (1999). Ten tips for reflexive bracketing. *Qualitative Health Research*, 9, 407-441. https://doi.org/10.1177/104973239900900309

Al-Adwan, A. S., Al-Madadha, A., & Zvirzdinaite, Z. (2018). Modeling students' readiness to adopt mobile learning in higher education: An empirical study. *International Review of Research in Open & Distance Learning*, *19*(1), 221–241. https://doi.org/10.19173/irrodl.v19i1.3256

Al-Emran, M., & Salloum, S. A. (2017). Students' attitudes towards the use of mobile technologies in e-evaluation. *International Journal of Interactive Mobile Technologies*, *11*(5), 195–202. https://doi.org/10.3991/ijim.v11i5.6879

Al Fawareh, H. M., & Jusoh, S. (2017). The use and effects of smartphones in higher

    education. *International Journal of Interactive Mobile Technologies*, *11*(6), 103–

    111. https://doi.org/10.3991/ijim.v11i6.7453

Alghamdi, M., Lamb, D. J., Al-Jumeily, D., & Hussain, A. J. (2013). Assessing the

    impact of web-based technology on learning styles in education. In *2013 Sixth*

    International Conference on Developments in eSystems Engineering (pp. 48–

    353). IEEE. https://doi.org/10.1109/DeSE.2013.68

Allen, R. E. S., & Wiles, J. L. (2016). A rose by any other name: Participants choosing

    research pseudonyms. *Qualitative Research in Psychology*, *13*(2), 149–165.

    https://doi.org/ 10.1080/14780887.2015.1133746

Alrasheedi, M., & Capretz, L. F. (2015), Determination of critical success factors

    affecting mobile learning: A meta-analysis approach. *The Turkish Online Journal*

    of Educational Technology, *14*(2), 41-51.

    https://www.researchgate.net/publication/274696222_Determination_of_Critical_

    Success_Factors_Affecting_Mobile_Learning_A_Meta-Analysis_Approach

Alshehri, A., & Cumming, T. M. (2020). Mobile technologies and knowledge

    management in higher education institutions: students' educators' perspectives.

    World Journal of Education, *10* (1), 21-22.

    http://www.sciedu.ca/journal/index.php/wje/article/view/16809/10789

Alvesson, M., & Skoldberg, K. (2009). *Reflexive methodology: New vistas for qualitative*

    research. Sage Publications.

American Association of Colleges of Nursing. (2015). *Nurse faculty shortage*.

    http://www.aacn.nche.edu/media-relations/fact-sheets/nursing-faculty-shortage

American Association of Critical Care Nurses. (2020). *Member program directory search*. https://www.aacnnursing.org/About-AACN/Who-We-Are/Member-Schools

American Health Information Management Association. (2015). *Global academic curricula competencies for health information professionals*. https://ifhima.org/global-health-information-curricula-competencies/

Asan, O., & Montague, A. (2014). Using video-based observation research methods in primary care health encounters to evaluate complex interactions. *Informatics in Primary Care*, *21*(4), 161-170. https://doi.org/10.14236/jhi.v21i4.72

Axley, L. (2008). The integration of technology into nursing curricula: Supporting faculty via the Technology Fellowship Program. *Online Journal of Issues in Nursing*, *13*(3).

Barr, R. B., & Tagg, J. (1995). From teaching to learning: A new paradigm for undergraduate education. *Change*, *27*(6), 12–23. https://doi.org/10.1080/00091383.1995.10544672

Barry, M. E. (2014). Creating a practice environment that supports multigenerational workforce collaboration. *The American Nurse*, *46*(1), Article 13.

Battle, L. H., & Tyson, T. (2018). Academic strategies that facilitate learning in millennial nursing students. *Journal of Nursing*, *8*(1), 1-10. https://doi.org/10.26634/JNUR.8.1.14234

Bayraktaroglu, S., Kahya, V., Atay, E., & Ilhan, H. (2019). Application of expanded technology acceptance model for enhancing the HRIS usage in SMEs.

International Journal of Applied Management and Technology, *18*(1), 48–66. https://doi.org/10.5590/IJMAT.2020.19.1.01

Benham, H., Carvalho,J., & Cassens. M. (2014). Student Perceptions on the impact of mobile technology in the classroom. *Issues in Information Systems*, *15*(2), 141–150. https://doi.org/10.48009/2_iis_2014_141-150

Bhati, A., & Song, I. (2019). New methods for collaborative experiential learning to provide personalised formative assessment. *International Journal of Emerging Technologies in Learning*, *14*(7), 179. https://doi.org/10.3991/ijet.v14i07.9173

Biddix, J. P., Chung, C. J., & Park, H. W. (n.d). Faculty use and perception of mobile information and communication technology (m-ICT) for teaching practices. *Innovations in education and teaching international*, *53*(4), 375–387. https://doi.org/10.1080/14703297.2014.997778

Braun, V., & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Buabeng-Andoh, C. (2018). New technology in health education. *Interactive Technology and Smart Education, 15*(1), 46-58. https://doi.org/10.1108/ITSE-09-2016-0039

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

Cahill, T. F, & Cima, L. E. (2016). On common ground: Addressing generational issues in nursing services. *Health Progress*, *97*(1), 63-67.

Çakıroğlu, Ü. Gökoğlu, S., & Öztürk, M. (2017). Pre-service computer teachers'

tendencies towards the use of mobile technologies: A technology acceptance
model perspective. *European Journal of Open, Distance & E-Learning*, *20*(1),
176–191. https://doi.org/10.1515/eurodl-2017-0011

Carpenter, D. R., & Streubert, H. J. (2007). *Qualitative research in nursing: Advancing the humanistic imperative*. Wolters Kluwer Publications.

Carter-Templeton, H. D., Patterson, R. B., & Mackey, S. T. N. (2013). Nursing faculty and student experiences with information literacy: A pilot study. *Journal of Nursing Education and Practice,* 4 (1).
http://www.sciedu.ca/journal/index.php/jnep/article/view/2985

Chan, Z. C. Y., Yuen-ling Fung, & Wai-tong Chien. (2013). Bracketing in phenomenology: only undertaken in the data collection and analysis process? *Qualitative Report*, *18*(30), 1.
http://www.nova.edu/ssss/QR/QR18/chan59.pdf

Charmaz, K. (2006). *Constructing grounded theory.* Sage Publications.

Chen, K. , Z., Anderson J., Hannah, E., L., Bauer C., & Provant-Robishaw, C. (2015). Resolving bottlenecks: Converting three high-enrollment nursing courses to an online format. *Journal of Nursing Education, 54*, 404 - 408.
https://doi.org/10.3928/01484834-20150617-09

Collins, E., & O'Brien, R. (2018). Highly structured ePortfolio platform for bachelor of nursing students: Lessons learned in implementation. *International Journal of EPortfolio*, *8*(1), 43–55. http://www.theijep.com/

Commission on Collegiate Nursing Education (CCNE). (2020). *CCNE Accreditation*

Process. https://www. aacnnursing.org/CCNE=Accreditation/What-We-
Do/CCNE-Accreditation-Process

Connelly, L. N. (2010). What is phenomenology? *Medical-Surgical Nursing*, 19(2).
http://medsurgnursing.net/archives/10apr/127.pdf

Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a
measure and initial test. *Management Information Systems Quarterly*, *19*(2), 189–
211. https://doi.org/10.2307/249688

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

Criollo-C, S., & Lujan-Mora, S. (2017). M-learning and their potential use in the higher
education: a literature review. *2017 International Conference on Information
Systems and Computer Science,* 268–273.
https://doi.org/10.1109/INCISCOS.2017.43

Dahlstrom E. (2015). *Educational technology and faculty development in higher
Education*. ECAR Publications.

Damewood, A. M. (2016). Current trends in higher education technology: *Simulation.
Tech Trends*, 60(3), 268271.
https://library.educause.edu/resources/2015/6/educational-technology-andfaculty-
development-in-higher-education

Davis, F.D. (1989). Perceived usefulness, perceived ease of use and user acceptance of
information technology**.** *Management Information Systems Quarterly*, *13*(3), 983-
1003.

Davis, F.D., Bagozzi, R.P., & Warshaw, P.R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science*, 35(8), 982-1003. https://doi.org/10.2307/249008

Day-Black, C., & Merrill, E. B. (2015). Using mobile devices in nursing education. *Official Journal of the Association of Black Nursing Faculty in Higher Education, Inc. 26*(4), 78–84.

Dele-Ajayi, O., Strachan, R., Sanderson, J., & Pickard, A. (2017). A modified TAM for predicting acceptance of digital educational games by teachers. *2017 Global Engineering Education Conference*, 961–968. https://doi.org/10.1109/EDUCON.2017.7942965

Dickens, M. (2017). Exploration of the use of mobile technology in an ADN program. *Kentucky Nurse, 65*(2), 14.

Dolawattha, D. D. M., Pramadasa, H. K. S., & Jayaweera, P. M. (2019). The impact model: teachers' mobile learning adoption in higher education. *International Journal of Education and Development Using Information and Communication Technology*, *15*(4), 71–88.

Douglas, R. B. (1977). Belief, attitude, intention, and behavior: An introduction to theory and research. *Philosophy & Rhetoric*, *10*(2), 130–132.

Elo, S., & Kyngas, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*, 107–115. https://journals.sagepub.com/doi/10.1177/1049732317697102

Emans, B. (2004). *Interviewing: Theory, techniques and training*. Groningen: Stenfert

Kroese Publications.

Ferreira, J. B., De Freitas, A. S., De Carvalho, M. L. A., De Azevedo, H. C., Calvão

    Gobbo, A. M., and Giovannini, C. J. (2014). Intention to use m-learning in higher

    education settings. *Revista Pretexto*, *15*, 11–28,

    https://doaj.org/article/ce663f47deb4462f807fa9c71c0d0d85

Ferreri, S. P., & O'Connor, S. K. (2013). Instructional design and assessment: Redesign

    of a large lecture course into a small-group learning course. *American Journal of*

    Pharmaceutical Education, 77(1), 1–9.

    https://www.researchgate.net/publication/235786490_Redesign_of_a_Large_Lect

    ure_Course_Into_a_Small-Group_Learning_Course

Fiedler, r., Giddens, J., & North, S. (2014). Faculty experience of a technological

    innovation in nursing education. *Nursing Education Perspectives (National*

    League for Nursing).35(6), 387-391. https://doi.org/10.5480/13-1188

Fontana, A., & Prokos, A. H. (2007). *The interview: From formal to postmodern.* Walnut

    Left Cost Press Publications.

Gallegos, C., Gehrke, P., & Nakashima, H. (2019). Can mobile devices be used as an

    active learning strategy? Student perceptions of mobile device use in a

    nursing course. *Nurse Educator*, 44(5), 270-272.

    https://doi.org/10.1097/NNE.0000000000000613

Gallo, A. (2011). Beyond the classroom: using technology to meet the educational needs

    of multigenerational prenatal nurses. *Journal of Perinatal & Neonatal Nursing*.

(2), 195. https://www.researchgate.net/publications/51096544_Beyond_the_

Classroom_Using_Technology_to_Meet_the_Educational_Needs_0f_

Multigenerational_Perinata l_Nurses

Gan, C. L., & Balakrishnan, V. (2018). Mobile technology in the classroom: What drives

student-lecturer interactions? *International Journal of Human-Computer

Interaction*, *34*(7), 666–679. https://doi.org/10.1080/10447318.2017.1380970

Giorgi, A. (2011). IPA and science: A response to Jonathan Smith. *Journal of

Phenomenological Psychology*,42, 195-216. https:// www.brill.nl/jpp

Giorgi, A. P., & Giorgi, B. M. (2003). The descriptive phenomenological psychological

method. *Journal of Phenomenological Psychology*, *43*(1), 3-12.

https://doi.org/10.1163/156916212X632934

Glesne, C. (2016). *Becoming qualitative researchers: An introduction (5ᵗʰ ed.).* Pearson

Publications.

Google. (2020). ASR Voice Recorder. Retrieved August 5, 2020, from

https://play.google.com/store/apps/details?id=com.nll.asr&hl=en_US

Grandhi, S., Jones, Q. & Hiltz, S.R. (2005), "Technology overload: is there a

technological panacea*?", Proceedings of the 11th American Conference

onInformation Systems*, Omaha, NE, 229-297.

https://pdfs.semanticscholar.org/02aa/ac5380bfcda8b0691fcc5d8289ad3b450fb5.

pdf

Hammersley, M., & Trianou, A. (2012). *Ethics in qualitative research: Controversy and

contexts.* Sage Publications.

Harerimana, A., and Mtshali, N. G. (2019). Nursing students' perceptions and

    expectations regarding the use of technology in nursing education.

    African Journal of Nursing and Midwifery, 21(2), 1-20.

    https://doi.org/10.25159/2520-5293/5103

Hay, B., Carr, P. J., Dawe, L., & Clark-Burg, K. (2017). "Im ready to learn":

    Undergraduate nursing students' knowledge, preferences, and practice of

    mobile technology and social media. *Computers, Informatics,*

    Nursing, *35*(1), 8–17. https://doi.org/10.1097/CIN.0000000000000284

Heflin, H., Shewmaker, J., & Nguyen, J. (2017). Impact of mobile technology on student

    attitudes, engagement, and learning. *Computers & Education*, *107*, 91–99.

    https://doi.org/10.1016/j.compedu.2017.01.006

Herold, B. (2016). Technology in education: An overview. *Education Week*.

    http://www.edweek.org/ew/issues/technology-in-education/

Hinze, A., Vanderschantz, N.R., Timpany, C., Cunningham, S.J., Saravani, S.-

    J. & Wilkinson, C. (2017), "*Use of mobile apps for teaching and research*",

    (Working Paper Series 01/2017), Department of Computer Science, The

    University of Waikato, Hamilton.

    https://researchcommons.waikato.ac.nz/handle/10289/11033

Institute of Medicine. (2010). The future of nursing: Leading change, advancing

    health. *National Academies Press*. https://pubmed.ncbi.nlm.nih.gov/24983041/

Iverson, L., Ball, S., Harms, A., Murcek, C., Woods, S., & Young, T. (2016).

    Technology in the college of nursing: Perception and use to achieve learning

    outcomes. *Online Journal of Nursing Informatics*, 20(1), 12-14.

    http://www.himss.org/ojni

Jaromahum, J., & Fowler, S. (2010). Lived experience of eating after esophagectomy: A

    phenomenological study. *Medical-Surgical Nursing,* 19(1), 96-100.

    https://pubmed.ncbi.nlm.nih.gov/20476519/

Jena, R., & Mahanti, P. (2014*).* An empirical study of technostress among Indian

    academicians*. International Journal of Education and Learning, 3(2), 1-10.*

Jobnetwork (2017). Top 10 Employability Skills. Retrieved January 2019, from

    http://www.opportunityjobnetwork.com.

Kahoot! | Game-based digital learning platform. (n.d.). Retrieved February 2019, from

    https://http.kahoot.it/

Ke, F, & Hsu, Y (2015). Mobile augmented-reality artifact creation as a component of

    mobile computer-supported collaborative learning. *The Internet and*

    Higher Education, 26, 33-41. https://doi.org/10.1016/j.iheduc.2015.04.003

Keengwe, J., & Bhargava, M. (2014). Mobile learning and integration of mobile

    technologies in education. *Education and Information Technologies,*

    19(4), 737-746. https://doi.org/2048/10.1007/s10639-013-9250

Kim, H. J., Yi, P., & Hong, J. I. (2020). Students' academic use of mobile technology and

    higher-order thinking skills: the role of active engagement. *Education*

    Sciences, *10*(3), 47. https://doi.org/10.3390/educsci10030047

Kim, B., Park, H., & Baek, Y. (2009). Not just fun, but serious strategies: Using metacognitive strategies in game-based learning. *Computers & Education*, 52(4), 800-810. https://www.sciencedirect.com/science/article/abs/pii/S0360131508001954

Kim, J. H., & Park, H. (2019). Effects of smartphone-based mobile learning in nursing education: a systematic review and meta-analysis. *Asian Nursing Research*, *13*(1), 20–29https://doi.org/10.1016/j.anr.2019.01.005

King, N., & Horrocks, C. (2010). *Interviews in qualitative research*. Sage Publications.

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

Kowitlawakul, Y., Chan, S. W. C., Pulcini, J., & Wang, W. (2015). Factors influencing nursing students' acceptance of electronic health records for nursing education (EHRNE) software program. *Nurse Education Today*, *35*(1), 189–194 https://doi.org/10.1016/j.nedt.2014.05.010

Kukulska-Hulme, A. (2010). Learning cultures on the move: where are we heading? *Educational Technology & Society*, 13(4), 4-14.

Lai, K., & Smith, L. (2018). Socio-demographic factors relating to perception and use of mobile technologies in tertiary teaching. *British Journal of Educational Technology*, *49*(3), 492https://doi.org/10.1111/bjet.12544

Lall, P., Rees, R., Law, G. C. Y., Dunleavy, G., Cotič, Ž., & Car, J. (2019). Influences on the implementation of mobile learning for medical and nursing education:

qualitative systematic review by the digital health education

collaboration. *Journal of Medical Internet Research*, *21*(2), e12895.

https://doi.org/10.2196/12895

Lee, H., Min, H., Oh, S., & Shim, K. (2018). Mobile Technology in undergraduate

nursing education: A systematic review. *Healthcare Informatics Research, 24*(2),

97-108. https://doi.org/10.4258/hir.2018.24.2.97

Li, K. C., Lee, L. Y. K., Wong, S. L., Yau, I. S. Y., & Wong, B. T. M. (2017). Mobile

learning in nursing education: catering for students and teachers' needs. *Asian

Association of Open Universities Journal*, (2), 171.

https://doi.org/10.1108/AAOUJ-04-2017-0027

Lim, W. (2017). Improving student engagement in higher education through mobile

based interactive teaching model using socrative. *IEEE Global Engineering

Education Conference (EDUCON), Global Engineering Education Conference

(EDUCON), 2017 IEEE*, 404.

https://doi.org/10.1109/EDUCON.2017.7942879

Lofland, J., Snow, D., Anderson, L., & Lofland, L. H. (2005). *Analyzing social settings:

A guide to qualitative observation and analysis (4th ed.)*. Wadsworth

Publications.

Lou, S., &Yang, H. H. (2018). Using technologies in nursing research education:

a mixed methods case study. *Computers, Informatics, Nursing*,

(6), 293. https://doi.org/10.1097/CIN.0000000000000420

Lu, J., Yao, J. E., & Yu, C.-S. (2005). Personal innovativeness, social influences and adoption of wireless internet services via mobile technology. *Journal of Strategic Information Systems*, *14*(3), 245–268. https://doi.org/10.1016/j.jsis.2005.07.003

Mackay, B., Anderson, J., & Harding, T. (2017). Mobile technology in clinical teaching. *Nurse Education in Practice*, *22*, 1–6. https://doi: 10.1016/j.nepr.2016.11.001

MacNeill, V., McCambridge, J., Foley, M., & Quirk, A. (2016). Shedding light on research participation effects in behaviour change trials: a qualitative study examining research participant experiences. *BMC Public Health,* 16 (1). p. 91. https://doi.org/10.1186/s12889-016-2741-6

Mann, E. G., Medves, J., & Vanddenkerkhof, E. G. (2015). Accessing best practice resources using mobile technology in an undergraduate nursing program. *CIN: Computers, Informatics, Nursing*, *33*(3), 122–128. https://doi.org/10.1097/CIN.0000000000000135

Maxwell, J. A. (2013). *Qualitative research design: an interactive approach (3rd ed.).* Sage Publications.

McInerney, J., & Druva, R. (2019). Clinical educators' attitudes towards the use of technology in the clinical teaching environment. A mixed method study. *Journal of Medical Radiation Sciences*, *66*(2), 72–80. https://doi.org/10.1002/jmrs.335

Mentimeter, (n.d.). Interactive presentation software. https://www.mentimeter.com/

Merriam, M. B. (2009). *Qualitative research: A guide to design and implementation*. Jossey-Bass Publishing.

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass Publishing.

Micaela Dinis Esteves, Angela Pereira, Nuno Veiga, Rui Vasco, & Anabela Veiga. (2018). The Use of New Learning Technologies in Higher Education Classroom: A Case Study. *International Journal of Engineering Pedagogy*, (2), 115. https://doi.org/10.3991/ijep.v8i2.8146

Miles, M. B., Huberman, A. M., & Saldana, J. (2014). Qualitative data analysis: A methods sourcebook. Sage Publications. 1994, 336pp. *American Journal of Evaluation, 20*(1), 159-160. https://doi.org/10.1177/1098214014556146

Miranda, H. P., & Russell, M. (2012). Understanding the factors associated with teacher directed student use of technology in elementary classrooms: A structural equation modeling approach. *British Journal of Educational Technology*, *43* (4), 652-666. https://doi.org/10.1111/j.1467-8535.2011.01228.x

Mulhall, A. (2003). In the field: Notes on observation in qualitative research. *Journal of Advanced Nursing, 41*, 306–313. https://doi.org/10.1046/j.1365-2648.2003.02514.x

Morgan, R. (2018). Exploring students' uses of and dispositions towards learning technologies in an Australian enabling course. *Student Success*, (1), 35. https://doi.org/10.5204/ssj.v9i1.431

Mupfiga, M., Mupfiga, P., & Zhou, T. G. (2017). Enhancing teaching and learning through the use of mobile technologies in zimbabwean universities. *Journal of Systems Integration, 8*(2), 43–51.

   https://doi.org/10.20470/jsi.v8i2.298

Murire, O. T., & Cilliers, L. (2019). Critical success factors to improve the adoption of social media in teaching and learning: a case study at a traditional university. *International Journal of Interactive Mobile Technologies*, *13*(3), 81–94. https://doi.org/10.3991/ijim.v13i03.8485

National Council of State Boards of Nursing (2019). NCLEX-RN test plan. Retrieved July 5, 2020, from https://www.ncsbn.org/2019_RN_TestPlan-English.pdf

National League for Nursing. (2015). A vision for the changing faculty role: preparing students for the technological world of health care. Retrieved June 5, 2020, from http://www.nln.org/docs/default-source/about/nln-vision-series-%28positionstatements%29/a-vision-forthe-changing-faculty-role-preparing-students-for-thetechnological-world-of-health-care.pdf?sfvrsn=0

O'Connor, S., & Andrews, T. (2015). Mobile technology and its use in clinical nursing education: A literature review. *Journal of Nursing Education, 54*(3), 137-144. https://doi.org/10.3928/01484834-20150218-01

Ogden, R. (2008). Confidentiality. In L. M. (Ed.). *The sage encyclopedia of qualitative research methods.* (Vol. 1, pp 111-112). Sage Publications

Padilha, J. M., Machado, P. P., Ribeiro, A. L., & Ramos, J. L. (2018). Clinical Virtual Simulation in Nursing Education. *Clinical Simulation in Nursing*, *15*, 13–

18. https://doi.org/10.1016/j.ecns.2017.09.005

Patton, M. Q. (2002). *Qualitative research and evaluation methods (3rd ed.).* Thousand

Sage Publications.

Patton, M. Q. (2015). *Qualitative research and evaluation methods (4th ed.).* Thousand

Sage Publications.

Pew Research Center. (2012). The best (and worst of mobile connectivity: part IV: cell

phone attachment and etiquette. Retrieved August 5, 2019, from

http://www.pewinternet.org/2012/11/30/the best-and-worst-of-mobile-

connectivity/

Phillippi, J., & Lauderdale, J. (n.d.). A guide to field notes for qualitative research:

context and conversation. *Qualitative Health Research, 28*(3), 381-388.

https://doi.org/10.1177/1049732317697102

Phillippi, J. C., & Wyatt, T. H. (n.d.). Smartphones in nursing education.

Computers informatics nursing, *29*(8), 449–454.

https://doi.org/10.1097/NCN.0b013e3181fc411f

Poll, H. (2015). Pearson student mobile device survey 2015 national report: college

students: 52. Retrieved July 5, 2019, from https://www.pearsoned.com/wp-

content/uploads/2015-Pearson-

Student-Mobile-Device-Survey-College.pdf

Quality and Safety Education for Nurses. (n.d.). QSEN initiatives. http://qsen.org/.

QSR International (2020). Fueling academic research. Retrieved December 5, 2019, from

https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/about/
nvivo/who-its-for/academia

Raman, J. (2015). Mobile technology in nursing education: where do we go from here? A review of the literature. *Nurse Education Today*, *35*(5), 663–672. https://doi.org/10.1016/j.nedt.2015.01.018.

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

Ruangvanich, S., & Piriyasurawong, P. (2019). Structural equation model of acceptance cloud learning for sustainability usage in higher education institutes. *International Journal of Emerging Technologies in Learning*, *14*(10), 18–33. https://doi.org/10.3991/ijet.v14i10.10045

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

Rusli, M., & Yasa, K. R. (2017). The effects of animation in multimedia computer-based learning and learning styles to the learning results. *Turkish Online Journal of \ Distance Education*,18 (4), 13, 177-190. https://eric.ed.gov/?id=EJ1161807

Salmond, S. S. (2008). Evaluating the reliability and validity of measurement instruments. *Orthopedic Nursing*, *27*(1), 28. https://doi.org/10.1097/01.NOR.0000310608.00743.54

Saumure, K., & Given, L. M. (2008). Data saturation. In L. Given. (Ed.). *The sage encyclopedia of qualitative research methods (pp. 795-796).* Sage Publications

Scherer, R., Siddiq, F., & Tondeur, J. (2019). The technology acceptance model

(TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. *Computers & Education*, *128*, 13–35. https://doi.org/10.1016/j.compedu.2018.09.009

Secco, M. L., Furlong, K. E., Doyle, G., & Bailey, J. (2016). Validation of the mobile information software evaluation tool with nursing students. *The Journal of Nursing Education*, 55(7), 385–390. https://doi.org/10.3928/01484834-20160615-05

Sheikhtaheri, A., Hashemi, N., & Hashemi, N.-A. (2018). Benefits of using mobile technologies in education from the viewpoints of medical and nursing students. *Studies In Health Technology And Informatics*, *251*, 289–292. https://doi.org/10.3233/978-1-61499-880-8-289

Sheikhtaheri, A., & Kermani, F. (2018). Use of mobile apps among medical and nursing students in Iran. *Studies in Health Technology and Informatics*, 248, 33–39. https://pubmed.ncbi.nlm.nih.gov/29726416/

Shim, M. K., & Shim, S. J. (2000). Mobile computing in higher education: Faculty perceptions of benefits and barriers. *Journal of Technology Systems, 29*(4), 345-354. https://doi.org/10.2190/WG4N-BQA0-UF4E-AV0U

Shyshkanova, G., Zaytseva, T., & Frydman, O. (2017). Mobile technologies make education a part of everyday life. *Information and Learning Science, 118*(11), 570-582. https://doi.org/2048/10.1108/ILS-03-2017-0019

Siemens, G., Gašević, D., & Dawson, S. 2015. Preparing for the digital university: A review of the history and current state of distance, blended, and online

learning. Pg. 62. Athabasca University.

http://linkresearchlab.org/PreparingDigitalUniversity.pdf.GoogleScholar.

Socrative. (n.d.). Socrative Pro: student response system. Retrieved July5, 2020, from,

https://atus.wwu.edu/learning-systems/socrative

Spartak S., Razakh S., & Bela. S. (2019). The educational impact of using mobile

technology in a database course in college. *Interactive Technology and Smart

Education*, (4), 363. https://doi.org/10.1108/ITSE-12-2018-0103

Spector, J.M. & The Smart Learning Futures Group (2018). Smart learning futures: A

report from the 3rd US-China smart education conference. *Smart Learning

Environments, Vol 5, Issue 1, Pp 1-10 (2018)*, (1), 1.

https://doi.org/10.1186/s40561-018-0054-1

Swanson, J. A. (2018). Assessing the effectiveness of the use of mobile technology in a

collegiate course: A case study in m-learning. *Technology, Knowledge and

Learning: Learning Mathematics, Science and the Arts in the Context of Digital

Technologies*. https://doi.org/10.1007/s10758-018-9372-1

Tacy, J. W., Northam, S., & Wieck, K. L. (2016). Understanding the effects of

technology acceptance in nursing faculty: A hierarchical regression. *Online

Journal of Nursing Informatics*, *20*(2), 11.

https://stti.confex.com/stti/nerc18/webprogram/Paper89108.html

Tarhini, A. A. T. ac. u., Hone, K., & Liu, X. (2015). A cross-cultural examination of the

impact of social, organizational and individual factors on educational technology

acceptance between British and Lebanese university students. *British Journal of*

Educational Technology, *46*(4), 739–755. https://doi.org/10.1111/bjet.12169

Teo, T. (2012). Examining the intention to use technology among pre-service teachers: An integration of the technology acceptance model and theory of planned behavior. *Interactive Learning Environments*, *20*(1), 3–18. https://doi.org/10.1080/10494821003714632

Traxler, J. (2005) Mobile learning: It's here, but what is it? Interactions, 25. https://warwick.ac.uk/services/ldc/resource/interactions/issues/issue25/

Trifanova, A., & Ronchetti, M. (2003). Where is mobile learning going? *Proceedings of the E-learn Conference*, 1795-1801. https://www.researchgate.net/publication/228598447_Where_is_mobile_learning _going(accessed 01/01/2003).

Tsai, Y.-Y., Chao, C.-M., Lin, H.-M., & Cheng, B.-W. (2018). Nursing staff intentions to continuously use a blended e-learning system from an integrative perspective. *Quality & Quantity: International Journal of Methodology*, *52*(6), 2495–2513. https://doi.org/10.1007/s11135-017-0540-5

Tubaishat, A., Aljezawi, M., Al-Rawajfah, O. M., Habiballah, L., & Akhu-Zaheya, L. M. (2016). Exploring changes in nursing students' attitudes towards the use of technology: A four-wave longitudinal panel study. *Nurse Education Today*, *38*, 101–106. https://doi.org/10.1016/j.nedt.2015.12.006

Van De Wiel, M. W. J. (2017). Examining Expertise Using Interviews and Verbal Protocols. *Frontline Learning Research*, *5*(3), 112–140. https:// doi: https://doi.org/10.14786/flr.v5i3.257

Voelkel, & Bennett, D. (2014). New uses for a familiar technology: Introducing mobile

phone polling in large classes. *Innovations in Education & Teaching*

International, *51*(1), 46–58.

https://doi.org/10.1080/14703297.2013.770267

Walden University. (2020). Center for research quality. Retrieved December 5, 2020,

from, https://academicguides.waldenu.edu/researchcenter

Wingo, N. P., Ivankova, N. V., & Moss, J. A. (2017) Faculty perceptions about teaching

online: exploring the literature using the technology acceptance model as an

organizing framework, *Online Learning 21*(1), 15-35.

https://olj.onlinelearningconsortium.org/index.php/olj/article/view/761/249

Williamson, K., Muckle, J. (2018). Students' perception of technology use in nursing

education. *CIN: Computers, Informatics, Nursing*, *2*, 70.

https://doi.org/10.1097/CIN.0000000000000396

Wu, W. H., Chen, C. Y., Kao, C. H., Lin, S. H., Review of trends from mobile learning

studies: a meta-analysis. *Computers & Education.* 59 (2), 817-827

https://doi.org/10.1016/j.compedu.2012.03.016

Yedidia, M., J., Chou J., Brownlee, S., Flynn L., & Tanner, C., A. (2014). Association of

faculty perceptions of work-life with emotional exhaustion and intent to leave

academic nursing: Report on a national survey of nurse faculty. *Journal of*

Nursing Education, 53, 569 - 579. https://doi.org/10.3928/01484834-20140922-

03

Zayim, N., & Ozel, D. (n.d.). Factors affecting nursing students' readiness and

    perceptions toward the use of mobile technologies for learning. *Computers*

    Informatics Nursing, 33(10), 456–464.

    https://doi.org/10.1097/CIN.0000000000000172

Žitný, R., Szabó, T., Pšenáková, I., Illés, Z., & Bakonyi, V. H. Using mobile technologies

    in university education. (2016). In *2016 International Conference on Emerging*

    ELearning Technologies and Applications (pp. 387-392).

    https://doi.org/10.1109/ICETA.2016.7802042

Zoom Video Communications, Inc. (2020). Zoom meetings and chat. Retrieved July5,

    2018, from https://zoom.us/meetings

Appendix A: Participant Demographic Questions

1. Indicate which of the following best describes your age?

    a. Under 25
    b. 25-34
    c. 35-44
    d. 45-54
    e. 55-64
    f. 65 or older

2. Please specify your race.

    a. White
    b. Black or African American
    c. Asian/Pacific Islander
    d. Other

3. Which of the following best describes your years of teaching experience?

    a. 1-5 years
    b. 6-10 years
    c. 11-20 years
    d. 21-30 years
    e. More than 31 years

4. What is the highest degree or level of education you have completed? *If currently enrolled, highest degree earned.*

    a. Bachelor's Degree
    b. Master's Degree
    c. Professional Degree
    d. Doctoral Degree

5. Which of the following course delivery methods have you taught in the past?

    a. Online setting
    b. Face-to-face classroom setting
    c. Clinical setting
    d. Hybrid setting

6. Which of the following teaching settings do you prefer?

    a. Online setting
    b. Face-to-face classroom setting
    c. Clinical setting
    d. Hybrid setting
    e. All of the above

Appendix B: Sample Email

Dear Colleague,

I am conducting a study and you are invited to participate in a doctoral research study. You are eligible to participate in this study if you are a nursing educator teaching in the face-to-face classroom setting in a baccalaureate of science nursing program. Participation for this study is voluntary. The primary purpose for this study is to explore the experiences of nursing faculty when integrating mobile technology in the face-to-face classroom in undergraduate BSN programs. More specifically the study will attempt to answer the research question: what are the experiences of nursing faculty on the use of mobile technology in the face-to-face classroom setting? Please understand that participation in the study is completely voluntary and you are under no obligation from your employer to participate.

For this study, participation involves a face-to-face interview with the researcher one-on-one or online via computer via Zoom software. The interviews will last no longer than one hour. Understand, for your convenience, you may choose either a face-to-face in-person interview meeting or online via computer interview meeting via video with the researcher. If you choose to participate in the study, you will be requested to complete an informed consent and demographic questionnaire prior to start of the interview. The informed consent and demographic questionnaire are both attached to this email request for you to review prior to making your decision to participate in the study.

 If you have any further questions or concerns, you may email or call me directly for clarification. Thanks for considering my request, I look forward to your participation in this study. I have attached the Recruitment Flyer you may forward to any nursing faculty

colleagues who teach in the face-to-face setting in the state of Pennsylvania. I appreciated your consideration for participating in this study.

I look forward to hearing from you soon!

Regards,

Sue E. Clark
Walden University Doctoral Student

Appendix C: Zoom Participation Guide

1. You do not have to have a Zoom account to attend a Zoom meeting or interview.

2. You will be prompted to download the software, once you have clicked on the link that you have been provided.

3. You may also wish to create an account, but that is not required to participate in a Zoom meeting. Please see the System Requirements at the following URL to ensure that you are ready to go:

    https://support.zoom.us/hc/en-us/articles/201362023-System-Requirements-for-PC-and-Mac

4. You will need a computer or device with a webcam and microphone to participate in a Zoom session.

5. If you do not wish to have an account, all you'll need to do to participate is click on the link for the class that your contact will send to you via an email invitation.

Step 1: Click on the link provided in the email.

Step 2: Download the Zoom Desktop Client. Simply follow the prompts to download the correct Zoom desktop client for your computer and operating system.

Step 3: Your Zoom Desktop Client will download. You will then need to install the client. Note that you may also download clients for IOS and Android devices.

Step 4: Once you have downloaded the desktop client, you can now join the meeting.

NOTE: You may have to click on the link again in the email to connect to the meeting, once you have installed the client.

To ensure a good experience on Zoom:

- Need a working web camera, if your computer is less than 3 years old, the built-in camera (if it has one) should be adequate.

- Using a headset will greatly reduce the chance for feedback and improve your voice quality during the interview. Headsets that connect via USB are the best choice.

- When possible, connect to the Internet with a physical cable connection, not just Wi-Fi to improve speed and service.

- A laptop or desktop is preferred over a Smartphone or tablet.

- Don't be outside.

- Wind and background noise makes your device's microphone adjust and your voice may sound muffled.

- Don't have several programs running while using Zoom.

- Close all unnecessary applications during your call so all processing power can be used to maximize the quality of your Zoom session.

- Pay attention to your background. Too much light behind you and you appear to be only a dark figure.

- Also, don't have anything behind you that may be distracting to those who are on the other side.

- To counteract back lighting, make sure you have a good source of light in front of you and behind the camera that you are using with your computer.

- Pay attention to your attire. Don't wear stripes or anything too bright. Solid colors are best.

- Avoid moving your head too much or "talking with your hands." Video via Skype is a little different than television, and too much movement can cause the video to pixelate and degrade.

Appendix D: Interview Guide

1. Elaborate on the types of technology you have integrated into the classroom

   setting in the past or present and your experiences?

2. What type of experience do you have with technology use personally or

   professionally?

3. How did you view your past experiences using mobile technology in the

   classroom positive or negative and why?

4. What influences your decision to incorporate advanced technology into the

   classroom?

5. Describe the support that is provided at the institution you are teaching to assist

   you when integrating technology into the classroom including teaching,

   education, technological, and financial?

6. What types of challenges did you experience when incorporating new technology

   into the classroom?

7. Explain how you felt integrating new advanced technology into the classroom

8. Describe the strategies that help you when you integrate technology in the

   classroom.

9. What are some helpful resources you have used to assist you when integrating

   technology in the classroom?

10. What factors influence your decision to incorporate new advanced technology

    into the classroom setting?

Appendix E: Gatekeeper Letter

Date:

Dear (Dean, Program Director, Chairperson, Organization Leader):

I am Sue Clark, a PhD candidate in Nursing at Walden University. I write to you as I am conducting an original research study exploring faculty experience using mobile technology in the face-to-face classroom in bachelor of science nursing (BSN) programs. The purpose of this study is to explore a knowledge gap surrounding the adoption of mobile technology tools in the classroom for teaching and learning and nursing educators lived experiences with use of mobile technology tools in classroom education. The implication for positive social change through this research is to increase awareness of the support needed by faculty for adapting to technology in the classroom

I thoughtfully request your permission and assistance to solicit participants through your (program/organization). Please include the required information for whom I must contact to obtain approval to conduct research at your institution. Upon approval, additional assistance is requested to distribute a flyer to faculty members who meet the inclusion criteria.

The participants for the study should have experience teaching in the face-to-face classroom setting in your BSN program. For this study, participants may choose to engage in the interviews via internet based online on their personal computer or physically in-person face-to-face. If participants choose the face-to-face option, I will travel to meet selected participants for the interview. The interviews will be audio-taped then transcribed and last no longer than one hour. All information will be kept confidential and secured. Deidentified information will only be shared with Walden University dissertation committee members as appropriate for the completion of the dissertation process.

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

Thank you for your consideration of this request

Regards,

Sue E. Clark, MSN, RN

Appendix G: Informational Recruitment Flyer

Doctoral Research Study
Nursing Faculty Perception of Mobile Technology Use in the Classroom

I am seeking participants for my dissertation research study at Walden University.

The purpose of this research is to address a knowledge gap surrounding the bachelors of science in nursing faculty lived experience with use of mobile technology in the face-to-face classroom.

Participation in the study involves the following steps:

- Complete a confidential online demographic questionnaire and return the word document by email to the researcher (5 minutes)
- Take part in a confidential 60 minute face-to-face, audio recorded interview (online option available) (60 minutes)
- Review a written transcript of your interview to make corrections if needed (email option available) (10 minutes)

Participants will be requested to engage in interviews via internet based online on their personal computer or physically in-person face-to-face.
If you match the inclusion criteria and can assist, please contact me for further information.
Inclusion Criteria for Participation:

- Current experience teaching in the face-to-face classroom in BSN programs.
- Located within West Central Pennsylvania.
- Currently teach in higher education.
- Educate nursing students in the face-to-face classroom setting.

Sue Clark, MSN, RN
Walden University Ph.D. Student
Walden IRB Approval Number:
11-11-20-0312705

Appendix G: Email of Thanks for Participating in the Study

Dear Colleague,

I wanted to extend my deepest gratitude for participation in my research study on "Nursing Faculty Experiences with Mobile Technology Use in the Classroom". It is only with participants like you that I was able to perform this research and raise awareness to the challenges associated with technology integration. The Walden University community and public focus on interdisciplinary research in social change seeks to improve the human condition and move groups towards a positive future. While an evolving study, implications for social change for this study includes increasing awareness of the support needed by faculty for adapting to technology in the classroom. Social change is rooted in concerns of how mobile technology is experienced by faculty and students in the classroom and your input and perceptions are critical. I realize that participating in this study was time consuming and I may have asked a lot of you. I value the time you committed to my research efforts. Thanks, and please email me for any questions or concerns related to this research study. If you wish to receive the results of data collection and analysis this will be provided to you at your request upon completion of the study.

Sincerely,

Sue E. Clark

Walden University Doctoral Student
814-934-2065
Sue.clark@waldenu.edu

Appendix H: Interview Protocol

Faculty Experiences Integrating Mobile Technology in the Classroom

Interviewer: *Hello! My name is Sue Clark, I am a PhD. student from Walden University. I'm here to learn about your experiences integrating mobile technology in the face-to-face classroom setting. The purpose of the interview is to learn more about your experiences using mobile technology for teaching and learning in the classroom. Thanks so much for taking time out of your day today. Please understand, there are no wrong or right answers, or desirable or undesirable answers. I would like you to feel comfortable saying what you really think and how you really feel. If it's okay with you, I will be audio recording our conversation since it is hard for me to write down everything while simultaneously carrying an attentive conversation with you. Everything you say will remain confidential, meaning that only myself, and Walden and my supervising committee members.*
Prior to starting right into the questions, do you have any questions about the informed consent form you signed? I would be happy to review the consent if this would make you feel more comfortable.
Participant:
- **If the participant's response is to review the informed consent, I will read the informed consent form.**

Interviewer: *Before I get to the questions, can I start the recording to obtain your verbal consent on the recorded record to participate in this study?*
Participant: If the participant response is yes, I will begin the interview and questions. If the participant's response to consent is no, I will stop the interview.
Interviewer: *Before we get to the questions, do you understand the informed consent and verbally consent to the terms?* (**participant answers**) *Ok then, Thanks again and we can get to the questions because I know your time is very valuable. I have a total of ten questions that I hope to have the opportunity to address with you during this one-hour interview.*
- **I will use the interview guide question (Appendix D)**

Upon Completion of the one hour interview I will provide a wrap-up and thank you

Interviewer: *I have no more questions for you at this time. Are there any other experiences or thoughts you would like to share regarding your experience using mobile technology in the classroom before we finish the interview?*
- **If the participant has nothing more to add I will begin to thank them for participation.**

Interviewer: *I would like to thank you very much for taking time out of your busy day to complete this study. Thank you in advance for your assistance in generating research to fill this important knowledge gap. Please contact me for any questions or concerns related to this research study. I really enjoyed speaking with you very much today. I look forward to continued communication with you.*

Appendix I: Invitation to Join the Meeting

Dear Colleague,

Thanks for agreeing to participate in my research study on "Nursing Faculty Experiences with Mobile Technology Use in the Classroom". Your interview is scheduled for (date and time). If you are unable to attend this meeting, contact me to reschedule. I realize that participating in this study is time consuming and respect your right to withdraw from the interview at any time.

We will meet (enter location) on (date and time) for the one-hour interview. If you need to cancel for any reason, please contact me as soon as possible. If you chose to interview via online on Zoom, please refer to the Zoom Participation Guide to assist you. I will send you a Zoom email, which will direct you to the link to join the meeting. I look forward to meeting with you and thank you for your participation in the study. If you have any questions or concerns, please contact me.

I look forward to our meeting!

Sincerely,

Sue E. Clark
Walden University Doctoral Student
814-934-2065
Sue.clark@waldenu.edu

Appendix J: Email to Request Availability for Interview

Dear Colleague,

Thanks for agreeing to participate in my research study on "Nursing Faculty Experiences with Mobile Technology Use in the Classroom". It is only with participants like you that I was able to perform this research and raise awareness to the challenges associated with technology integration. I realize that participating in this study is time consuming, I value the time you are willing to commit to my research efforts. This interview will take approximately one hour to complete. Can you please provide your availability and your interview preference? You can choose to interview online via Zoom or in-person.

If you choose to interview via online, for you to join the meeting in Zoom, I will first have to set up the meeting. Once I start the Zoom session, you will have the ability to then meeting. In addition, if you choose to interview online via Zoom, I will send you the Zoom Participation Guide to assist you to prepare for the interview. If you choose to interview in-person, please identify a time, date, and location that you feel most comfortable or I will be happy to suggest a location.

Thanks in advance, I look forward to your response so we can get the interview set up.

Sincerely,

Sue E. Clark

Walden University Doctoral Student
814-934-2065
Sue.clark@waldenu.edu