The COVID-19 Pivot to Online Education and BSN Graduates’ Readiness to Practice

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The COVID-19 Pivot to Online Education and BSN Graduates’ Readiness to Practice

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COVID-19’s PIVOT TO ONLINE EDUCATION

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Abstract

There is a major nursing shortage worldwide, and amid the COVID-19 pandemic, it is essential to invest in the acceleration of nursing education to meet global needs. Nursing schools had to pivot to online education overnight, and many are unsure how this has impacted students. The purpose of this study is to see if the pivot to online education, prompted by COVID-19, impacted the readiness to practice and grade point averages (GPA) of graduating Bachelor of Nursing students. In this quantitative study, a casual-comparative survey design is used to test for readiness to practice and program modality. A cross-sectional design is used to look at GPA and program modality. This data suggests that when face-to-face nursing education, though ideal, is not possible, then the online format does deliver much, though not all, of the benefits of face-to-face nursing education.

*Keywords: Readiness to practice, nursing education, online education, covid-19, program modality*
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Chapter 1 - Introduction

Higher education institutions are continually offering more online courses. This modality of learning is becoming popular due to advancements in computer-mediated communication technologies (Lu, 2020). “In Fall 2018, there were 6,932,074 students enrolled in distance education courses at degree-granting postsecondary institutions.” Of those students, 3,257,897 were exclusively online (National Center for Education Statistics, n.d.). In 2020 and 2021, many schools and universities used online education more than ever due to the COVID-19 pandemic. According to Education Data, in June 2020, “97% of college students have switched to online instruction” (Bastrikin, 2020, para. 7). Today, knowing the quality of online education is crucial (Dhawan, 2020).

America must prioritize getting schools open for in-person learning as soon as it is safely possible. But, whether or not in-person schools open soon, we must increase online education’s capability… it is no longer a choice between in-person and online. Both are needed. Education is not only necessary for an adequately prepared workforce; it is a national security and economic imperative.

(Taylor & Mallery, 2020, para. 1)

Despite all this interest, the question remains, which modality of education better prepares students for the workplace, traditional or online?

One field in need of a new workforce is nurses. The World Health Organization states that six million new nursing jobs must be created by 2030, and that people must invest in the acceleration of nursing education to meet global needs (Ghebreyesus, et al., 2020).
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When looking at the literature review in McCutcheon et al. (2014), no significant difference was found between online and traditional clinical nursing classes in fourteen qualitative, one quantitative, and three mixed method studies. However, “the results of this review are inconclusive as to which teaching method is best supported by student satisfaction” (p.267). In addition, three of the eighteen studies found that online groups had higher scores than traditional groups. Because of this, “Further exploration in this area is necessary before any assumptions can be made on the usefulness of employing an online or blending learning approach in teaching clinical skills in undergraduate nurse education” (p. 268).

Purpose Statement

Many newly graduated nurses have thought about leaving their career because of burnout. “The feeling of being poorly prepared for nursing is a sign of developing burnout” (Pasila et al., 2017, p. 18). Additionally, “worldwide, countries are facing a nursing shortage. It is estimated that the US will be short 918,232 nurses by 2030” (Read & Laschinger, 2017, p. 58). Because there is a nursing shortage and a possibility of under prepared nurses leaving their jobs, it is important to look at nursing education and teaching for job preparation. The purpose of this study is to see if the pivot to online education, prompted by COVID-19, impacted the readiness to practice and GPA of graduating Bachelor of Nursing (BSN) students at a Midwest University. The BSN, December 2019 graduates completed their entire program traditionally (face-to-face), while the December 2020 graduates were forced to complete their last year of school online due to the COVID-19 pandemic. The independent variable, program modality, will be defined as how the student graduated, traditionally or online. Online education is
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defined as learning through the internet at home using a computer outside of a physical
classroom. Traditional education is defined as face-to-face, in a physical classroom. The
dependent variables are grade point average (GPA) and readiness to practice. Readiness
to practice is defined as: how comfortable students are at clinical problem solving,
learning techniques, professional identity, and trials and tribulations. This study builds on
research by McCutcheon et al. (2014) by further examining student satisfaction levels
between different programs, and by comparing student GPAs between different
programs.

The theoretical framework that relates to this study is the community of inquiry.
“The Community of Inquiry theoretical framework represents a process of creating a
deep and meaningful (collaborative-constructivist) learning experience through the
development of three interdependent elements – social, cognitive, and teaching presence”
(Koole, 2013, para. 2). Social presence is how connected everyone feels while forming
interpersonal relationships and a classroom community. Teaching presence is embedded
in how the class is designed and facilitated. Cognitive presence is how students construct
meaning and confirm understanding through reflection. See Figure 1 below of how the
three elements of community of inquiry make up one’s educational experience. Adapted
from (Garrison et al., 1999, p. 2).
When comparing the modalities (online and traditional), using the community of inquiry framework will help decipher which mode provides the best educational experience for the students. This research aims to answer the following research questions:

**Research Questions**

**RQ1:** To what extent has the pivot to online education, prompted by COVID-19, impacted graduating Bachelor of Nursing students’ readiness to practice?

**RQ2:** To what extent has the pivot to online education, prompted by COVID-19, impacted graduating Bachelor of Nursing students’ GPA?

**Significance**

This study is needed for nursing schools and students because we need to know if online program outcomes, such as GPA and readiness to practice, are similar to the outcomes of traditional programs. It is important that nursing students feel ready for the
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workforce when leaving school, and if one mode of education, online or traditional, is better at training nurses than the other, it will be beneficial to both students and schools for future planning. “Career aspirations remain the primary driver for online education, with more than three-quarters of online students furthering their education for career-related reasons” (Clinefelter & Aslanian, 2016, p. 21). We need to know if nursing students are prepared for their careers, and if program modality affects students’ readiness to practice. Because all Bachelor of Nursing (BSN) students are preparing for the same job, it is useful to look at the BSN programs compared to any other program when comparing readiness to practice. Additionally, this study is needed so that schools can assess their goals for the future. If online learning is equal to or better than traditional learning for job preparation, it will open doors for many. Online courses can reach a much larger audience; for example, people can attend from any geographic location, and adults with full time jobs and busy lives can now attend online. This in turn will increase enrollment for many institutions and will help with nursing turnover. If we are confident there is no significant difference between online and traditional learning, institutions can then become more technologically innovative with their program offerings and plan accordingly to maximize students’ readiness to practice.

**Delimitations**

There are several delimitations for this study including the time, location, and sample. The time of the study will be restricted to BSN students who graduated in December 2019 and December 2020. Only Bachelor of Nursing students from one Midwest University will be included in the sample. Since the researcher is trying to determine if online learning is equivalent to traditional learning, looking at Bachelor of
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Nursing students will be the most reliable group since they are all preparing for the same job. For example, if the researcher looked at Bachelor of Business students, it would be harder to measure readiness to practice since the students would be going into many different types of professions. In addition, the researcher looked at online classes that had a combination of live Zoom lectures with activities and pre-recorded lectures on PowerPoint, with one class using discussion boards. These classes used both synchronous and asynchronous online learning, where students met in real time to simultaneously learn in addition to learning online individually. Lastly, the researcher has no experience or training in the nursing field. The researcher has a background in education and is focusing more on the educational aspects and outcomes of nursing education.

Organization of the Study

The remainder of this study is structured into five chapters. Chapter Two will contain a literature review discussing previous research about online and traditional courses, along with COVID-19 and nursing literature. Chapter Three will discuss the research design and methodology, including, instruments, procedures, and sampling. Chapter Four will include the data analysis and findings. Lastly, Chapter Five will summarize the study, discuss the conclusion, and address recommendations for future research.
Online and Traditional Learning Overview

There is an ongoing debate over what form of instruction is better: online or traditional (face-to-face). Many researchers have found evidence that traditional and online courses are equally effective (Driscoll, et al., 2012; Johnson, et al., 2000; York, 2008). But this result is not unanimous; Lacatan (2013) found hybrid to be better than face-to-face, whereas Johnson et al. (2000) found hybrid scores to be much lower than both face-to-face and online. These contradictory conclusions call for more research. In addition, this researcher has found no research directly comparing online nursing programs to traditional nursing programs. Most research about online learning focuses on individual classes, not programs. Throughout the world, more K-12 schools and universities are implementing online programs for students. Research is necessary to determine what program is best in terms of GPA and job preparation.

Some researchers think technology does not promote learning. Clark (1994) claims that technologies deliver instruction; they do not influence learning. Only “proper” instruction methods influence learning. But many believe this is not the case today.

People’s minds have changed drastically over the past ten years. Carr (2008) explains that the way humans think and learn has changed. The human attention span is getting shorter and shorter because of the Internet. Many have trouble focusing on books because they are used to going from link to link, video to video, article to article, never focusing on one thing for an extended amount of time. Carr views this new mindset as a negative, but others think that it does not have to be. For example, I contend that instead
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of spending hours reading a book to understand a topic, students are now able to learn similar content from a video or a collection of websites.

Hann (2012) found that students had positive feedback when given the option to watch video lectures. In his research, students were given the choice to read or watch video lectures of the course material. 57% of students chose to watch video lectures (19% exclusively watched videos, and 38% did a combination of videos and reading). 43% exclusively read the course materials. Students stated, “Videos helped to fill in some of the gaps missed from the reading material,” “[The] option of not always having to read the material online was a welcome change,” and “Videos resembled a classroom experience” (para. 24). Overall, Hann found that students liked having the option to watch or read the course material.

Game based learning is also becoming more popular, and it has shown to improve academic performance, motivation, and satisfaction. Virtual worlds, where students are represented as avatars, allow students to feel like they are playing a video game. In the virtual world students are immersed with rich graphics that engage the student to perform specific tasks while being simultaneously entertained. Ijaz et al. (2017) compared traditional learners who read information, video learners who watched corresponding videos/documentaries, and virtual learners who visited an online virtual world. Of the groups, the virtual learners had the best academic performance, followed by the traditional readers and lastly the video learners. The video group was thought to have the lowest scores because watching videos is passive, whereas reading and playing a game are active. Ijaz et al. (2017) concluded that:
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We would like to stress that results of this study do not advocate discarding textbooks or video documentaries in favor of virtual worlds. What we suggest is to use virtual worlds as additional motivation for students to learn from traditional sources of knowledge. We believe that textbooks and videos should still remain the primary learning resources and must be used in combination with modern technology. (p. 22)

History of Distance Education

Distance education, now often referred to as online education, has been around since the 1700s through postal service correspondence. Although, without a daily mail service, receiving assignments and feedback were often delayed. In the 1800s, Boston Massachusetts had one of the first correspondence schools offering twenty-four subjects including, history, literature, and science. Many of the students were women at home. Other distance learning courses at that time were mine safety, shorthand, and accounting. Back then, learning happened independently, and courses were limited. By 1928, radio was introduced to adult education and continued through the 1950s, although radio education was not successful in the United States. In 1932, the University of Iowa began using television courses which grew rapidly in the 1960s. By 1972 there were 233 stations that played educational content, but it was concluded that the television was an instrument for giving information, not instruction (Harting & Erthal, 2005).

Computers were introduced in the late 1970s and early 1980s as a tool for delivering information, but many saw that form of learning as boring and unimaginative. By the 1990s more people had personal computers, and with broadband communications and digital video came a new potential for distance education. Many schools saw
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phenomenal growth in online courses. By 2000, 90% of institutions offered distance courses through asynchronous internet (Harting & Erthal, 2005).

Benefits of Online Learning

Online school programs offer many benefits for students. York’s (2008) surveys showed that women and men who are working or have families prefer online education because of its convenience. Having access to online education also helped those in rural areas who are not able to move or drive to a university. Overall, asynchronicity, efficient information access, and increased social distance are all major advantages in online education. Asynchronous online learning lets students learn at their convenience, control their own schedule, and allows students the time to reflect and collect their thoughts. There is not any competition for who gets to speak in class, because everyone can write their thoughts for everyone to read. Online learning also allows for efficient access to information, which means students can access posted material at any time. They can re-watch lectures, look back on past discussions, and review anything in the past, which is harder to do in a face-to-face setting. Increased social distance is another major benefit to online education. When taking an online class people are not defined by how they look. The focus is not on one’s race, gender, and social status, but is instead on the students’ messages and contributions to the class (McComb, 1993).

Negative Aspects of Online Learning

While asynchronous online education is a positive experience for some students, others find difficulties in communication due to the delayed responses and multiple speeds of users. For example, in group discussion boards one user might check in every
day and respond to everyone in the group, while another user might only check in once a week. Not having timely feedback from other students can hinder one’s education. Additionally, many find it easier to procrastinate on assignments when not in a classroom setting. Not having face-to-face contact with other students also takes away non-verbal communication, which inhibits expression. Some online users think technical problems and/or limited access to technology can cause a negative impact towards their education. Other students are not as inclined to commit their thoughts onto a printed document; they would much rather discuss in person where it feels more informal. Also, many have “reservations about the use of distance education in the health professions including the teaching of clinical skills and the socialization of the learner to the culture of the profession” (McDonald, 2002, p. 19-20). Students who take more online courses are also “less likely to engage in collaborative learning, student-faculty interactions, and discussions.” In addition, they have “less exposure to effective teaching practices and lower quality of interactions” (Dumford & Miller, 2018, p. 452).

Another concern for online education is creating authentic assessments. Testing in an online environment has many challenges that a traditional classroom does not have. Academic integrity is often a concern; for example, it is easy for groups to partner up and cheat on a test. While teachers allow students to use their books and notes on online tests, they do not want students sharing answers. Because of this, many teachers have writing assignments instead of tests, but there is no way to prove who is writing the paper as well (Smith et al., 2009).

Students in online courses also need to be more disciplined and responsible with their learning since they are self-directing their education. This is often an issue because
many students do not have sufficient self-discipline and self-direction skills. Additional support and assistance should be available to students taking online courses, but this is rarely the case. Xu and Jaggars (2014) noted that:

> It is not clear whether most online courses incorporate such scaffolding [to help with self-discipline and self-direction]. However, a recent qualitative study at two community colleges found that many faculty expected their online students to arrive in the course with a preexisting set of self-directed learning skills and did not believe that faculty should be responsible for helping students develop these skills. Other qualitative studies have found that students in online courses experience higher levels of dissatisfaction, interpersonal isolation, feelings of unclear direction and uncertainty, and a lack of engagement in the learning process. These studies suggest that the typical online course is not explicitly designed to help students develop the skills they need to succeed in this new context. Accordingly, some students may struggle to perform as well in an online course as they would in a similar face-to-face course. (p. 634)

It may also be more difficult to create online courses for fields that require hands-on interactions. I would think that this might be an issue with nursing education as well since much of nursing involves hands-on training. “No empirical research has yet examined variation across subject areas in terms of how well students perform online versus face-to-face” (Xu & Jaggars, 2014, p. 636). When looking at a database of 500,000 online and face-to-face courses taken by 40,000 students in 34 of Washington states community college and technical schools in 2004, “all types of students performed
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more poorly in online courses than they did in face-to-face courses” (Xu & Jaggars, 2014, p. 637).

Accessibility and affordability are also concerning for some. There is a digital divide for many low income and minority students who do not have broadband capabilities.

Recent research shows that when schools went online this past spring, [due to COVID-19], learning rates among those in the bottom income quartile fell by 60 percent, compared with just 20 percent for those in the top quartile… A third of households with an annual income under $30,000 and children ages 6 to 17 do not have access to broadband. (Taylor & Mallery, 2020, para. 4)

The digital divide is defined as the gap between those who have access to the internet or digital media devices and those who do not have access. This can mean both physical access, such as equipment and subscriptions, and conceptual access, such as people who might not be able to mentally understand or have the skills to use technologies. This is also known as digital literacy (Van Dijk, 2017).

The Pivot to Online Learning due to the COVID-19 Pandemic

In March 2020, the World Health Organization declared a pandemic. Many schools worldwide had to discontinue in-person teaching overnight and pivot to online teaching and learning. This caused university faculty additional stressors and workloads when they are already trying to balance research, teaching, and service obligations. Teachers now had to teach from home without proper technical support. One significant challenge for many teachers is a lack of online teaching pedagogical content knowledge
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(PCK). “PCK includes technical and administrative aspects of teaching online (e.g. respectively, using platforms and tools and organizing workflows). More significantly, it includes the pedagogical foundations and knowledge of principles needed to design for, and facilitate, meaningful online learning experiences” (Rapanta, et al., 2020, p. 924).

One thing teachers must do at this time of online learning is make open communication channels and be alert to students’ needs. Face-to-face learning often has many opportunities for communication, so teachers must have a reliable way to send and receive messages to their students when teaching online. Additionally, teachers should shift from teacher/subject centered to student/activity centered ways of educating. Activities can make or break one’s way of learning. “It is actually easier to organize a much wider array of activities for [students] in a novel (online) situation than in well-established face-to-face teaching situations (where practices are engrained and harder to modify)” (Rapanta, et al., 2020, p. 929). Lastly, during this time, teachers should help reduce student’s anxieties by cutting back on expectations. Students too are adapting to a new way of learning and are having to deal with new logistical complications and stressors (Rapanta, et al., 2020).

While students did learn online during the pandemic, the emergency pivot to online learning has not been identical to thoughtfully designed online programs and classes. A fully developed online course typically takes months to develop when planned properly. During COVID-19, classes had to pivot online nearly overnight, therefore they should be referred to as emergency remote teaching and learning.

Emergency remote teaching (ERT) is a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances. It involves the use of fully
remote teaching solutions for instruction or education that would otherwise be delivered face-to-face or as blended or hybrid courses and that will return to that format once the crisis or emergency has abated. The primary objective in these circumstances is not to re-create a robust educational ecosystem but rather to provide temporary access to instruction and instructional supports in a manner that is quick to set up and is reliably available during an emergency or crisis. (Hodges, et al., 2020, para. 13)

**Online Learning Environments**

A major component of online learning environments is organization and instructional design. Good quality instructional design has, “clear learning objectives, carefully structured content, controlled workloads for faculty and students, integrated media, relevant student activities, and assessment strongly tied to desired learning outcomes” (Bates, 2019, p. 167). Online course designs are strongly student-centered. Teachers’ roles are to facilitate and support, while students need to take ownership of the learning process by self-pace learning and reflecting. Online learning should not be lecture-based and teacher-centered, which is how many face-to-face classrooms are organized. Instead, students should have meaningful activities and opportunities to collaborate with each other while teachers provide feedback and answer questions (Rapanta, et al., 2020). In online collaborative learning:

students are encouraged and supported to work together to create knowledge: to invent, to explore ways to innovate, and, by so doing, to seek the conceptual knowledge needed to solve problems rather than recite what they think is the right answer. (Bates, 2019, p. 170)
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One way many teachers utilize online collaborative learning is through discussion boards. Quality discussion boards require that students generate ideas, organize their ideas, apply their ideas, and reflect on their ideas while responding to their classmates. This allows students to connect with each other and bounce ideas off one another where dynamic sub-topics can be developed and ‘threaded’ into the discussion board for students to look back on. The teacher then moderates the discussion board making sure core concepts are fully integrated. Online discussions are managed to construct knowledge. “Textbooks, readings and other resources are chosen to support the discussion, not the other way round” (Bates, 2019, p. 172).

In-Person Learning Environments

In a traditional, in-person learning environment, students are together learning simultaneously. Often instructor-centered, the environment encourages students to observe and listen to teachers’ lectures, often accompanied by PowerPoint slides. Since learning is in-person, the instructor and students can interact in real time, becoming familiar with each other while building a social community (Zhang et al., 2004). In the classroom, students often learn passively, listening to the teacher’s expertise on the topic (Zohrabi et al., 2012). Recently, teachers have started to integrate a more active, cooperative learning approach in their classrooms, allowing for more peer and faculty interaction. This way students are more social, interactive, and engaged, while given opportunities for group discussion and activities (Park & Choi, 2014). Many times, the classroom layout changes with the instructors’ teaching style. The traditional, instructor-centered classrooms are often rows of desks or tables all facing the front of the classroom. This puts the focus on the teacher. The active learning, student centered
classrooms often are laid out to allow for more collaboration. This layout can be a U-shape or pods of desks put together to allow for group work and discussions. Many teachers utilize multiple screens when using active learning layouts (Byers et al., 2018).

Community of Inquiry Model

The Community of Inquiry Model was formed by Garrison, Anderson, and Archer (1999) stating that learning occurs in the community through the interaction of cognitive presence, social presence, and teaching presence. Cognitive presence is when one is “able to construct meaning through sustained communication [and reflection]… cognitive presence is a vital element in critical thinking, a process and outcome that is frequently presented as the ostensible goal of all higher education” (Garrison et al., 1999, p. 4). Social presence is when one can identify with the community and see others as real people while building relationships. Teaching presence is how teachers design and facilitate the learning experience through selection, organization, and presentation of content, activities, and assessment. Combining all three of these types of presence creates an educational experience (Garrison et al., 1999). Below Figure 2 shows the relationship among the three elements along with indicators when using computer mediated communication (Garrison & Arbaugh, 2007).
Nursing Education

Nurse Satisfaction and Program Modality

McCutcheon et al. (2014) reported on eleven articles that explored the satisfaction of online nursing classes. “Five studies indicated that students had a higher satisfaction with online learning… Four papers reported no significant difference with student satisfaction” (p. 266). Johnson et al. (2000) looked at student satisfaction and found that the “face-to-face course held slightly more positive perceptions about the instructor and overall course quality, although there was no difference between the two course formats in several measures of learning outcomes” (p. 29).

Milton-Wildey et al. (2013) research looked at nursing students’ satisfaction towards preparation for work stating:
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Graduate nurses and third year students were more dissatisfied than first and second year students with their preparation for work as nurses… Graduate nurses and students at the end of their program would have had some experience of their role in the hospital settings, which may have assisted them in more clearly understanding where the gaps were with regard to their preparation for the reality of the workplace. Whereas students in the early stages of the program may not have this level of understanding about the responsibilities inherent in their future role. (pp. 652-653)

This study did not differentiate between program types. Further research is needed to know if program modality and job preparation has any significant difference.

**Online Nursing Courses**

There is currently a shortage of qualified, professional nurses in the United States, so hospitals are encouraging registered nurses to complete bachelor’s and master’s degrees. Many nurses working full time find online education to be more convenient, although, they did think they worked harder in their online class than in their face-to-face class (Smith et al, 2009). Even though students put in more time for an online course, they thought the asynchronous format made it worthwhile. Smith et al, (2009) states that:

Online nursing education delivers applied information in a human interactive environment. This means that the knowledge learned in the discipline is applied to people and is therefore unpredictable and requires critical thinking skills to be used by the students. Nursing is a high-demand field with highly specific needs for the students. The issues of nursing are in many ways different than the issues
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of other disciplines and thus require the online delivery to be modified in unique ways. By understanding the issues within the domain, the online education of nursing can be more productive. (p. 99)

Assessments in nursing education must be applicable to real life situations as well, which might be a challenge in an online course. Nursing practice requires face-to-face discussions, and it is a practice-oriented field, so knowing technologies and incorporating them into online instruction is key to simulating real-world experiences for students. Nurses do not just need to know theories, but they need to know how to perform physically and interact with patients. While online assessments might not be as realistic as face-to-face assessments, having online tests and assignments is often beneficial to nurses. Nurses need to be able to use technology. Everything in a hospital is computerized; every aspirin, every note, must be coded into the hospital’s computer system. “Core clinical courses are typically not taught online, for the obvious reason that nurses need to learn procedural medical skills, which have life and death implications, in the context of face-to-face supervision and feedback” (Faught, 2009, p. 102).

Nursing Alumni Feedback

It is essential that nurses feel prepared before entering in the workforce. Alumni surveys show important information on how well nurses’ education prepared them for their practice. Recent BSN graduates “feel adequately prepared when their programs have a higher percentage of faculty who teach both theory and clinical courses, teach the use of information technology and evidence-based practice, and integrate pathophysiology and critical thinking throughout the curriculum” (Chappy et al., 2010, p. 20). When surveying 880 alumni, 67% felt they needed more clinical time, 32% reported needing more
technical skills and 24% wanted more real-life experiences. Respondents stated the class size was too large and that more clinical teachers were needed. Nurses wanted more one-on-one time with their clinical instructors. Although, “it was impossible to interpret if [alumni] wanted more hours, more concentrated hours, or more experiences during the allotted clinical time. Increasing clinical hours without changing the focus of clinical instruction does not enhance new graduates’ readiness for practice” (Chappy et al., 2010, p. 21). Unfortunately, it is not financially or feasibly possible for many schools to increase clinical hours. Many nursing programs in the US are cutting budgets. Decreasing a class size by just two people would approximately cost an extra $14,400 per semester per level, which ends up being about $57,600 annually (Chappy et al., 2010, p. 21).

**Online vs. Face-to-Face Research Nursing Courses**

Campbell et al. (2008) looked at a graduate research methods nursing course and compared the educational outcomes between the online and face-to-face discussion boards between the years 2002-2004. The design was quasi-experimental, and participants were able to choose between the two classes. The primary outcome measure were the students’ grades on a single summative essay assignment. The second outcome measure was the students’ final grades (pass or fail) and completion time of the course (did they finish the course on time). Campbell et al. (2008) found that, “online activity within WebCT, measured in terms of non-discussion hits, discussion messages read, discussion messages posted and all hits, was far higher for online discussion students than for face-to-face discussion students” (p. 754). Additionally, there was no significant difference in the final grades between the online and face-to-face courses. When looking at the essay assignment grade, online discussion students had a mean of 60.4 whereas the
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face-to-face discussion board had a mean of 54.4, showing that the online students score significantly higher, which suggests higher achievement, although other factors might account for the grade difference. For example:

Increases in online activity were associated with higher assignment marks. Face-to-face seminar students who registered more hits in WebCT achieved higher marks in the assignments. Online discussion students who read more postings achieved higher marks and the highest average mark was obtained by the group who posted most often to the online discussion. (Campbell et al., 2008, p. 758)

Age had no significant difference between the two programs. Overall, how often students interact is what promotes positive educational outcomes, not the mode of learning (Campbell et al., 2008).

COVID-19 and Nursing Shortages

The COVID-19 pandemic has caused many colleges and universities to close their campuses nationwide. Prelicensure nurses had to transition from a predominantly face-to-face environment to an online environment. This restricted nursing students from visiting clinical sites due to a lack of personal protective equipment (PPE). Fortunately, nursing education is known for embracing learning technologies, distance education, and simulations (Spurlock, 2020).

Simulations are “real-world replications for teaching problem-solving and clinical-reasoning skills in nonthreatening environments” (Jeffries, 2005, p. 163). “A variety of simulation methodologies can be used for education and training of practicing nurses. This can include high and low fidelity mannequins, virtual environments, and unfolding
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video case simulations” (Aebersold & Tschannen, 2013, para. 21). The researched Midwest University’s simulations utilized mannequins where students performed tasks, including: completing assessments based on salient points of patient report, clinical problem and initial patient interaction, identifying and verbalizing the most immediate/pertinent patient assessment needs in each scenario, prioritizing patient needs and nursing interventions according to patient assessment and identified patient needs, recognizing and intervening appropriately with at least three nursing interventions to prevent adverse outcomes, delegating to patient care team according to role and practice expectations, managing the multiple needs that may occur in critical care situations, and communicating clearly and professionally with patient care team and family.

Despite these innovations in digital education, it is still unclear how many nurses will be able to graduate on time during the pandemic due to program requirements. Some regulations will be challenging to complete in an entirely online environment. This is daunting due to the shortage of nurses in the United States.

According to aggregate counts from NCSBN (2019), 252,311 new RNs entered the U.S. nursing workforce by taking the NCLEX-RN in 2019. Recent estimates by Buerhaus et al. (2017) suggest the country needs more than double that number, approximately 550,000, new RNs to enter the workforce in 2020 and 2021 to address a projected shortage of 1.1 million RNs in 2022, thought to be fueled in large part by a wave of RNs starting to age out of the nursing workforce. (Spurlock, 2020, p. 303)

Current registered nurses are becoming fatigued even more so during the pandemic, and many are leaving the profession earlier than planned (Spurlock, 2020). This is further
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exaggerating the need for nurses. With COVID-19 still on the rise, the only thing we can do to help the existing and prelicensure nurses is to strictly practice social distance guidelines. Nurses are there for us when we enter the world, and they comfort us when we are leaving the world. Snow, hurricanes, and even pandemics do not keep them from their jobs. Now is the time to help build a larger nursing workforce (Spurlock, 2020).

Looking at Programs Instead of Classes

Teo et al. (2005) discuss effective online learning, and state that, “learning will not necessarily emanate from one specific source, and when it happens it will occur through different means” (p. 1). McDonald (2002) also suggests further research is needed to look at “total programs versus individual courses or individual students” (p. 20). This is why comparing online and traditional programs is important. Comparing a single class will not show the true effects and differences between the different modes of teaching. McCutcheon et al. (2014) concluded that:

There is an absolute need for the future design of online and blended learning innovations to include a robust methodologically strong study in their implementation process, to help close this gap in the evidence base of online learning and clinical skill development. Further exploration in this area is necessary before any assumptions can be made on the usefulness of employing an online or blending learning approach in teaching clinical skills in undergraduate nurse education. (p. 268)
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Additionally, due to the aging US population there is a demand for more nurses. With the rise of online education, we need to know if online nursing programs are effective (Smith et al., 2009).
Chapter 3 – Methods

Introduction

In this section, I discuss research design, population and sample, sampling procedures, instrumentation, data collection procedures, data analysis, and limitations. The purpose of this study is to compare online and traditional Bachelor or Nursing graduates’ readiness to practice and their GPA. The research questions are:

**RQ1:** To what extent has the pivot to online education, prompted by COVID-19, impacted graduating Bachelor of Nursing students’ readiness to practice?

**RQ2:** To what extent has the pivot to online education, prompted by COVID-19, impacted graduating Bachelor of Nursing students’ GPA?

Research Design

In this quantitative study, a casual-comparative survey design will be used to test for readiness to practice and program modality. A cross-sectional design will be used to look at GPA and program modality. The researcher selected these methods to look for associations between and among variables. The goal is to determine to what extent COVID-19’s pivot to online education impacted graduating nurses’ readiness to practice and GPA by comparing two groups, traditional 2019 graduating Bachelor of Nursing students and online 2020 graduating Bachelor of Nursing students.

Population and Sample

This study will help generalize attitudes from a sample to a population so that inferences can be made about online and traditional BSN students’ readiness to practice.
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The sample consists of graduating Bachelor of Nursing students from a Midwest University. The students range from 20-48 years of age. Not all students in the program have nursing experience, but others have experience as Nursing Assistants, Medical Assistants, Volunteers, Unit Secretaries, EMTs, EMT Paramedics, Student Externships, Nurse Interns, and Advanced Care Partners. Additionally, some students have previous degrees that are non-nursing related, such as: Associate of Arts, Bachelor of Psychology, Bachelor of Communications, Bachelor of Public Health, Bachelor of Health Science, and Bachelor of Economics. For this study, the researcher will be looking at graduating seniors at a Midwest University’s BSN program. Sixteen students did not work while going to school, and 81 students did work while going to school. Of those working, \((N=59)\) students did work in healthcare and \((N=22)\) did not work in healthcare. Students worked between 2-80 hours per week. Most of the students were female, with 88 females and 9 males. The ethnicities of the students are: \((N=73)\) Caucasian, \((N=20)\) African American, \((N=3)\) Asian, \((N=1)\) Other. Because the students are graduating, they should know whether they feel prepared or unprepared for the workforce based on the education they received. Many schools have pivoted online due to COVID-19, so studying this sample of students could have implications for other nursing students.

The Online Pivot Sample and Concept-Based Curriculum

The online 2020 graduates were taught with a new concept-based curriculum, whereas the traditional 2019 students were taught with a traditional curriculum. Many institutions are transitioning from traditional practice-model curriculum to concept-based curriculum (CBC). “A shift from memorization to higher-order thinking is one of the key differences between traditional curricula and CBCs… learning facilitated by CBCs is
more generalizable and less context specific, thus allowing for application of knowledge to multiple settings” (Brussow et al., paras. 3-4, 2019). A concept-based curriculum encourages student centered, active learning, whereas a traditional curriculum is more instructor centered.

The promise of CBCs resides in its potential to produce better-equipped entry-level practitioners with the conceptual reasoning skills required for today’s increasingly complex clinical environment. Because CBCs have only recently begun being implemented, little efficacy research exists; however, an initial small-scale study indicates that CBCs may have beneficial effects on student retention, graduation, and NCLEX outcomes. (Brussow et al., para. 4, 2019)

This new concept-based curriculum that was implemented has the potential to improve BSN graduates’ readiness to practice. Also, due to COVID-19, the online graduates had seven weeks less of their preceptor clinicals than the 2019 traditional graduates. While in their clinicals, their workload, patient caseload, and experiences were similar for both graduating groups.

It is important to note that the professors who taught during the online pivot were put in a situation that was not ideal. Teachers had carefully planned in-person courses that incorporated active learning strategies and group conversations. However, due to COVID-19, they were forced to switch their courses online with only a week’s notice, having to re-do their entire format. Transitioning from teaching in-person to teaching through Zoom required an extensive amount of time, and the teachers did not have any experience teaching online. Teachers were not able to make the Zoom lessons mandatory.
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Because of this, only 15-20 students (out of the 73 students) participated in online courses each week. When classes were in-person, most of the students attended classes.

Sampling Procedures

The researcher emailed senior level BSN teachers from a Midwest University to help distribute the survey. There were two senior level classes in both 2019 and 2020, both taught by the same two professors. Both professors agreed to distribute the survey each semester. There was a total of 133 combined students surveyed for the 2019 and 2020 semesters. For the 2019 traditional students, the researcher came into the class and physically distributed the printed, hardcopy, survey out to the students. Then, the researcher manually copied the data into Qualtrics. For the 2020 online students, the instructors posted a survey link to be filled out online, via Qualtrics. This was not an experimental study because two existing groups were already formed (the traditional 2019 graduates and the online 2020 graduates). The researcher has more than thirty students from each graduation group to complete a multivariate analysis of variance (MANOVA), which I will discuss later in the data analysis section. There was a total of 36 non-respondents, which the researcher will explain further in the data collection section. At the end of the survey, students were asked if the researcher could contact them for a follow-up interview. If any of the surveys had unique or interesting information the researcher could then interview the student to figure out more information regarding their opinion and experiences in their program. However, the researcher did not find any information that required her to follow up. This sample was chosen to see to what extent COVID-19’s pivot to online education impacted nurses’
readiness to practice since the 2020 graduates had to complete their last year online. All IRB requirements were met when asking students to participate.

**Instrumentation**

This study uses the Casey-Fink Readiness for Practice Survey (Casey et al., 2011). The Casey-Fink Readiness for Practice Survey was developed in 2007 and has been widely used since. The survey measures senior level BSN students’ perception of readiness for their professional practice. “Items were designed to target specific skills and nursing activities that senior nursing students would be expected to perform prior to graduation from their nursing education program and analyze levels of perceived readiness in light of personal characteristics and experience factors that were believed by the panel to influence readiness” (Casey et al., 2011, p. 647). The researcher was granted permission to use the survey on March 1, 2019. The survey consists of three sections. The first section asks for self-reported demographic information: age, gender, ethnicity, non-nursing degrees, previous healthcare experience, employment status and GPA.

The second section focuses on the student’s comfort with both clinical and relational skill performance. Participants are asked to identify the top three skills/procedures they are uncomfortable performing independently. Next, students are asked about their level of confidence in managing multiple patient assignments [using a Likert scale. (1 being NOT Confident and 5 being VERY Confident)]. Lastly, students are presented with a list of twenty items asking for a self-report about level of comfort/confidence in performing key nursing activities using a Likert scale (1=strongly disagree, 2=disagree, 3=agree, 4=strongly
agreed). This comfort/confidence questionnaire was used to identify the four domains of readiness. (Casey & Fink, n.d., p. 1)

The third section asks two open ended questions: what could have been done to help them feel more prepared for their nursing practice, and how their mode of education (traditional or online) played a role in how prepared they are. For instance, would they have preferred face-to-face classes vs. online or vice versa. The survey ended asking if the researcher could contact them if additional information was needed.

The Casey-Fink Readiness to Practice Survey was reviewed by a panel of expert clinical faculty. The items regarding the 18 skills/procedures students were most uncomfortable with were divided into four subscales with Cronbach’s alphas of: Clinical Problem Solving ($\alpha = .80$), Learning Techniques ($\alpha = .50$), Professional Identity ($\alpha = .65$), and Trials and Tribulations ($\alpha = .63$). These Cronbach’s alphas are not ideal, but since the researcher is interested in comparing the skills/procedures between groups it is acceptable for research use.

The items measuring comfort with patient caseloads of one, two, three, or four patients using a 1-5 Likert-type scale was modified by the researcher to include the comfort managing one patient. The original survey only measured for two, three, four patients. The analyses stated:

Across both the development and validation samples the items measuring comfort managing 2 patients ($s^2 = 0.42$) and 3 patients ($s^2 = 0.72$) had limited variability, with most students reporting a high level of comfort managing both of these caseload sizes ($M = 4.7$ for the 2-patient caseload and $M = 4.1$ for the 3-patient
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caseload, on a 1-5 Likert-type scale with 5 indicating the highest level of comfort
caring for this many patients at once). The item measuring comfort managing 4
patients simultaneously had greater variability, \( s^2 = 1.13 \), and a lower mean, \( M = 3.2 \). Therefore the 4-patient caseload item may have the greatest validity in
differentiating between students with higher versus lower readiness to manage the
typical patient caseloads seen in practice settings. (Casey & Fink, n.d., p. 4)

The researcher used the Casey-Fink Readiness for Practice Survey to measure
GPA and readiness to practice. Three measures of readiness to practice were assessed:
confidence performing nursing activities, confidence managing multiple patients, and
skills most uncomfortable performing. This survey was chosen because it provides a list
of skills and activities that graduating BSN students should be able to perform. Using
these items allowed the researcher to compare the skills of the 2019 traditional BSN
graduates to the 2020 online BSN graduates to see to what extent COVID-19’s pivot to
online education impacted the nurses’ readiness to practice. Since the researcher is more
interested in the educational aspect (online vs. traditional), she chose this nursing survey
because it provided an extensive list of what BSN graduates should know at the time of
graduation.

Data Collections Procedures

Data collection began on November 18, 2019 and was completed by December 11, 2020. On November 18 and 21, 2019, the researcher visited the two traditional classes
in person and physically handed the survey out to students. All 60 students that were
present completed the survey. The researcher then manually entered the data into
Qualtrics. On November 4, 2020, the two instructors posted a link to the Qualtrics survey
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in their Canvas classroom. On November 18, 2020, both instructors posted a reminder
about the survey. The survey was optional. Of the online 2020 graduates, 37 students
responded out of the 73 students in both classes. There was a total of 36 non-respondents
out of the 133 students given the survey; all non-respondents were from the 2020 online
graduate group. The survey had a cover letter describing the purpose of the research.
Participants were assured their information would be kept confidential and that
participation was optional. The participants then had to check a box to give their consent.
All IRB requirements were met when collecting data.

Data Analysis

**RQ1:** To what extent has the pivot to online education, prompted by COVID-19,
impacted graduating Bachelor of Nursing students’ readiness to practice?

The researcher answered the first research question using a one-way multivariate
analysis of variance (MANOVA) to see the similarities and differences between the 2019
traditional BSN graduates and the 2020 online BSN graduates’ readiness to practice. Two
measures of readiness to practice were assessed: confidence performing nursing activities
and confidence managing multiple patients. In addition, the researcher looked at the
frequencies for skills most uncomfortable performing and the frequencies in the answered
of the two open ended questions: What could have been done to help you feel more
prepared for this profession? And do you think your mode of education (face-to-face or
online) played a role in how prepared you are/ Would you have rather taken face-to-face
classes vs. online or vice versa?
RQ2: To what extent has the pivot to online education, prompted by COVID-19, impacted graduating Bachelor of Nursing students’ GPA?

The researcher answered the second research question using an independent-samples t-test to determine if there were differences in GPA between 2019 traditional BSN graduates and 2020 online BSN graduates.

Limitations

One limitation of this study was the relatively small sample size. Only one Midwestern school and two graduating classes within that school were included in the study. This may affect the generalizability to other universities. One threat to internal validity was the selection of participants. Students were not randomly assigned to each graduating group; the researcher used students that are already in each graduating class. There was no way to minimize this threat, although since the study had a total of 97 participants it does somewhat help with generalizability. Demographic data was self-reported, which is also a threat to validity. In addition, the survey question asking about the skills most uncomfortable performing was answered incorrectly which effected the quality of the findings. There were 20 items, and students were supposed to choose their top three most uncomfortable skills, but many chose more than three. Because of this, this question was not included in the MANOVA analysis, but looked at individually. For future research it will be beneficial to remind students to only choose three skills. It would also be beneficial to look at a wide variety of schools instead of just one to help with generalizability. Also, the researched Midwest university implemented a new concept-based curriculum for the BSN degree starting in the Fall 2019 semester. The students graduating in December 2019 completed coursework under the original
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Curriculum; the students graduating in December 2020 completed courses redesigned for the concept-based curriculum. Both the 2019 and 2020 graduates completed their immersion clinical experience face-to-face, but the 2020 graduates completed their last year of coursework online. The 2020 graduates also had seven weeks less of clinical time than the 2019 graduates. Lastly, students in the 2020 online group faced many challenges due to COVID-19. While many use the term online education, these students were faced with emergency remote learning. Emergency remote learning is different from online education due to the fact teachers were not able to thoughtfully prepare the online classroom structure. The COVID-19 pandemic brought many challenges to everyone, especially students preparing to graduate; this might have contributed to a lack of confidence for the 2020 online graduates.
Chapter 4 - Data Analysis

In this section, the researcher presents descriptive statistics using a univariate analysis looking at the distribution, central tendency, and dispersion of the independent variables to see if the pivot to online education, prompted by COVID-19, impacted the readiness to practice and GPA of graduating Bachelor of Nursing students. Charts will show the similarities and differences between the 2019 traditional graduates and the 2020 online graduates. The following research questions will be addressed and discussed in further detail throughout this chapter.

**RQ1:** To what extent has the pivot to online education, prompted by COVID-19, impacted graduating Bachelor of Nursing students’ readiness to practice?

Students in the 2019 traditional group (N=59) and the 2020 online group (N=38) scored similarly in their confidence performing nursing activities ($M = 2.86$, $SD = .204$; $M = 2.81$, $SD = .196$, respectively). However, 2019 traditional students scored higher in their confidence managing multiple patients than the 2020 online students ($M = 3.42$, $SD = .471$; $M = 3.13$, $SD = .474$, respectively).

**RQ2:** To what extent has the pivot to online education, prompted by COVID-19, impacted graduating Bachelor of Nursing students’ GPA?

Students in the 2019 traditional graduates (N = 57) and 2020 online graduates (N = 38), had similar GPA’s, showing 2019 traditional graduates’ GPA ($M = 3.35$, $SD = .271$), and 2020 online graduates’ GPA ($M = 3.42$, $SD = .296$).
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Testing the Assumptions

First, the researcher determined the data for univariate outliers by inspection of boxplots for values greater than 1.5 box-lengths from the edge of the box. This inspection was performed for each of the dependent variables for each group of graduates. GPA had no outliers for either graduating group, as you can see in Figure 3. Confidence performing nursing activities had no outliers in the 2019 traditional group but had two outliers for the 2020 online group, as you can see in Figure 4. Confidence managing multiple patients had one outlier in the 2019 traditional group, but no outliers for the 2020 online group, as you can see in Figure 5.

Figure 3

GPA boxplot
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Figure 4

Confidence Performing Nursing Activities Boxplot

Figure 5

Confidence Managing Multiple Patients Boxplot
COVID-19’s PIVOT TO ONLINE EDUCATION

GPA, confidence performing nursing activities, and confidence managing multiple patients were normally distributed for both 2019 traditional graduates and 2020 online graduates, as assessed by visual inspection of Normal Q-Q Plots (see Figures 6-11). This graphical method was used due to a large sample size.

Figure 6

Normal Q-Q Plot of 2019 Traditional Graduates GPA

Figure 7

Normal Q-Q plot of 2020 Online Graduates GPA
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Figure 8

*Normal Q-Q plot of 2019 Traditional Graduates’ Confidence Performing Nursing Activities*

Figure 9

*Normal Q-Q Plot of 2020 Online Graduates’ Confidence Performing Nursing Activities*
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Figure 10

*Normal Q-Q Plot of 2019 Traditional Graduates’ Confidence Managing Multiple Patients*

![Figure 10 Graph](image)

Figure 11

*Normal Q-Q Plot of 2020 Online Graduates’ Confidence Managing Multiple Patients*

![Figure 11 Graph](image)
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There was no multicollinearity between confidence performing nursing activities and confidence managing multiple patients, assessed by Pearson correlation ($r = .199, p = .049$). GPA did show multicollinearity (see Table 1). Because of this, the researcher ran GPA separately using an independent-samples t-test.

**Table 1**

*Pearson Correlation*

<table>
<thead>
<tr>
<th></th>
<th>GPA</th>
<th>Confidence_performing_nursing_activities</th>
<th>Confidence_managing_multiple_patients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GPA</strong></td>
<td>1</td>
<td>.007</td>
<td>.199*</td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td>.949</td>
<td>1</td>
<td>.049</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>95</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td><strong>Confidence_performing_nursing_activities</strong></td>
<td>.007</td>
<td>1</td>
<td>.199*</td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td>.949</td>
<td>1</td>
<td>.049</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>95</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td><strong>Confidence_managing_multiple_patients</strong></td>
<td>.108</td>
<td>.199*</td>
<td>1</td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td>.298</td>
<td>.049</td>
<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>95</td>
<td>96</td>
<td>98</td>
</tr>
</tbody>
</table>

*. Correlation is significant at the 0.05 level (2-tailed).*
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In addition, there was a linear relationship between confidence performing nursing activities and confidence managing multiple patients, assessed by a scatterplot (see Figures 13 and 14).

**Figure 13**

*2019 Traditional Graduates’ Scatterplot Matrix*

**Figure 14**

*2020 Online Graduates’ Scatterplot Matrix*
One multivariate outlier was found, as assessed by Mahalanobis distance ($p > .001$). When checking on this multivariate outlier, the researcher noticed that the student answered “4” on the Likert scale for all 20 items regarding confidence performing nursing activities and answered “3” on the Likert Scale for all four questions regarding confidence managing multiple patients. The questions regarding confidence performing nursing activities switched from “I have difficulty” to “I am confident” to “I am overwhelmed” indicating that all 20 items should not have been answered as a “3” or “agree” since the questions switched from positive to negative connotations. In addition, this participant left all skills most uncomfortable performing blank. Because this data was filled out incorrectly, the researcher decided to remove the multivariate outlier.

After removing the multivariate outlier, the researcher re-ran the tests of assumptions to find GPA had no univariate outliers for either graduating group. Confidence performing nursing activities had no univariate outliers in the 2019 traditional group but had two outliers for the 2020 online group. Confidence managing multiple patients had two univariate outliers in the 2019 traditional group but no outliers for the 2020 online group. (After removing the multivariate outlier, one univariate outlier was added to the 2019 traditional group for managing multiple patients.) In addition, GPA, confidence performing nursing activities, confidence managing multiple patients, and skills and procedures most uncomfortable performing were normally distributed for both 2019 traditional graduates and 2020 online graduates, as assessed by visual inspection of Normal Q-Q Plots.

When re-testing for multicollinearity, there was no multicollinearity between confidence performing nursing activities and confidence managing multiple patients,
assessed by Pearson correlation ($r = .260, p = .010$). This correlation changed slightly from the previous test, still showing significance. GPA still showed multicollinearity (see Table 2). Because of this the researcher continued to run GPA separately using an independent-samples t-test.

Table 2

<table>
<thead>
<tr>
<th></th>
<th>Confidence_publishing_nursing_activities</th>
<th>Confidence_managing_multiple_patients</th>
<th>GPA</th>
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</thead>
<tbody>
<tr>
<td>Confidence_publishing_nursing_activities</td>
<td>Pearson Correlation</td>
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<td>.260*</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.010</td>
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<tr>
<td></td>
<td>N</td>
<td>97</td>
<td>97</td>
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<tr>
<td>Confidence_managing_multiple_patients</td>
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<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
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<td>.286</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>97</td>
<td>97</td>
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<tr>
<td>GPA</td>
<td>Pearson Correlation</td>
<td>-.015</td>
<td>111</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.884</td>
<td>286</td>
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<tr>
<td></td>
<td>N</td>
<td>95</td>
<td>95</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).

In addition, there was a linear relationship between confidence performing nursing activities and confidence managing multiple patients, when reassessed by a scatterplot.

Below the researcher interprets the results with and without the four univariate outliers.
Interpreting Results: Readiness to Practice (With Outliers)

A one-way multivariate analysis of variance was run to determine the effect of BSN students’ readiness to practice. Two measures of readiness to practice were assessed: confidence performing nursing activities and confidence managing multiple patients. Students were from two groups: 2019 traditional graduates (N = 59) and 2020 online graduates (N = 38). Preliminary assumption checking revealed that data was normally distributed, as assessed by visual inspection of Normal Q-Q Plots; there were four univariate outliers that were kept, assessed by boxplot. No multivariate outliers were found, as Mahalanobis distance (p > .001), respectively; there were linear relationships, as assessed by scatterplot; no multicollinearity (r =.260, p = .010); and there was homogeneity of variance-covariance matrices, as assessed by Box's M test (p = .976).

Students in the 2019 traditional group and the 2020 online group scored similarly in their confidence performing nursing activities. However, 2019 traditional students scored higher in their confidence managing multiple patients than the 2020 online students, as you can see below in Table 3.

Table 3

Descriptive Statistics

<table>
<thead>
<tr>
<th>Program</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Confidence_performing_nursing_activities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional_2019</td>
<td>2.8683</td>
<td>.20499</td>
<td>59</td>
</tr>
<tr>
<td>Online_2020</td>
<td>2.8181</td>
<td>.19653</td>
<td>38</td>
</tr>
<tr>
<td>Total</td>
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<td>.20219</td>
<td>97</td>
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<tr>
<td><strong>Confidence_managing_multiple_patients</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional_2019</td>
<td>3.4237</td>
<td>.47173</td>
<td>59</td>
</tr>
<tr>
<td>Online_2020</td>
<td>3.1382</td>
<td>.47469</td>
<td>38</td>
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<tr>
<td>Total</td>
<td>3.3119</td>
<td>.49084</td>
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</table>
COVID-19’s PIVOT TO ONLINE EDUCATION

As seen in Table 4, the differences between the graduating groups on the combined dependent variables was statistically significant, $F(2, 94) = 4.306, p < .05$; Wilks' $\Lambda = .916$; partial $\eta^2 = .084$.

**Table 4**

*Multivariate Tests*

<table>
<thead>
<tr>
<th>Effect</th>
<th>Pillai's Trace</th>
<th>Value</th>
<th>$F$</th>
<th>Hypothesis df</th>
<th>Error df</th>
<th>Sig</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
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<td>9715.234</td>
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<td>.000</td>
<td>.995</td>
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</tr>
<tr>
<td>Hotelling's Trace</td>
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<td>9715.234</td>
<td>2.000</td>
<td>94.000</td>
<td>.000</td>
<td>.995</td>
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</tr>
<tr>
<td>Roy's Largest Root</td>
<td>206.707</td>
<td>9715.234</td>
<td>2.000</td>
<td>94.000</td>
<td>.000</td>
<td>.995</td>
<td></td>
</tr>
<tr>
<td>Program</td>
<td>.094</td>
<td>4.306</td>
<td>2.000</td>
<td>94.000</td>
<td>.015</td>
<td>.094</td>
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</tr>
<tr>
<td>Wilks' Lambda</td>
<td>.916</td>
<td>4.306</td>
<td>2.000</td>
<td>94.000</td>
<td>.015</td>
<td>.094</td>
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<tr>
<td>Hotelling's Trace</td>
<td>.092</td>
<td>4.306</td>
<td>2.000</td>
<td>94.000</td>
<td>.015</td>
<td>.094</td>
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</tr>
<tr>
<td>Roy's Largest Root</td>
<td>.092</td>
<td>4.306</td>
<td>2.000</td>
<td>94.000</td>
<td>.015</td>
<td>.094</td>
<td></td>
</tr>
</tbody>
</table>

a. Design: Intercept + Program

b. Exact statistic
Follow-up univariate ANOVAs showed there was no significant difference in confidence performing nursing activities between the 2019 traditional group and the 2020 online group, $F(1, 95) = 1.430, p > .025$; partial $\eta^2 = .01$. Although, there was a statistically significant difference in confidence managing multiple patients between the 2019 traditional group and the 2020 online group, $F(1, 95) = 8.429, p < .025$; partial $\eta^2 = .081$, using a Bonferroni adjusted $\alpha$ level of .025 (see Table 5).

Table 5

Tests of Between-Subjects Effects

<table>
<thead>
<tr>
<th>Source</th>
<th>Dependent Variable</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>Confidence_performing_nursing_activities</td>
<td>.059&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1</td>
<td>.059</td>
<td>1.430</td>
<td>.235</td>
<td>.015</td>
</tr>
<tr>
<td></td>
<td>Confidence_managing_multiple_patients</td>
<td>1.866&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1</td>
<td>1.866</td>
<td>8.429</td>
<td>.005</td>
<td>.081</td>
</tr>
<tr>
<td>Intercept</td>
<td>Confidence_performing_nursing_activities</td>
<td>747.356</td>
<td>1</td>
<td>747.356</td>
<td>18363.400</td>
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<td>.995</td>
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<td>Confidence_managing_multiple_patients</td>
<td>995.225</td>
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<td>995.225</td>
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<td>.979</td>
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<td>1</td>
<td>.058</td>
<td>1.430</td>
<td>.235</td>
<td>.015</td>
</tr>
<tr>
<td></td>
<td>Confidence_managing_multiple_patients</td>
<td>1.866</td>
<td>1</td>
<td>1.866</td>
<td>8.429</td>
<td>.005</td>
<td>.081</td>
</tr>
<tr>
<td>Error</td>
<td>Confidence_performing_nursing_activities</td>
<td>3.866</td>
<td>95</td>
<td>.041</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Confidence_managing_multiple_patients</td>
<td>21.244</td>
<td>95</td>
<td>.224</td>
<td></td>
<td></td>
<td></td>
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<td>Total</td>
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<td>97</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confidence_managing_multiple_patients</td>
<td>1087.063</td>
<td>97</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>Confidence_performing_nursing_activities</td>
<td>3.925</td>
<td>96</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confidence_managing_multiple_patients</td>
<td>23.129</td>
<td>96</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> R Squared = .015 (Adjusted R Squared = .004)

<sup>b</sup> R Squared = .081 (Adjusted R Squared = .072)
Figure 15
Differences in Confidence Performing Nursing Activities and Managing Multiple Patients

Interpreting Results: Readiness to Practice (Without Outliers)

After removing the four outliers (two from the 2019 traditional group and two from the 2020 online group), a one-way multivariate analysis of variance was run to determine the effect of BSN students’ readiness to practice. Two measures of readiness to practice were assessed: confidence performing nursing activities and confidence managing multiple patients. Students were from two groups: 2019 traditional graduates ($N = 57$) and 2020 online graduates ($N = 36$). Preliminary assumption checking revealed that data was normally distributed, as assessed by visual inspection of Normal Q-Q Plots; there were no univariate or multivariate outliers, as assessed by boxplot and Mahalanobis distance ($p > .001$), respectively; there were linear relationships, as assessed by scatterplot; no multicollinearity ($r = .256, p = .015$); and there was homogeneity of
COVID-19’s PIVOT TO ONLINE EDUCATION

variance-covariance matrices, as assessed by Box’s M test \((p = .468)\). Students in the 2019 traditional group and the 2020 online group scored similar in their confidence performing nursing activities. Although, 2019 traditional students scored higher in their confidence managing multiple patients than the 2020 online students (see Table 6).

**Table 6**

*Descriptive Statistics Without Outliers*

<table>
<thead>
<tr>
<th>Program</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence_performing_nursing_activities</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Traditional_2019</td>
<td>2.8759</td>
<td>.20436</td>
<td>57</td>
</tr>
<tr>
<td>Online_2020</td>
<td>2.7927</td>
<td>.16793</td>
<td>36</td>
</tr>
<tr>
<td>Total</td>
<td>2.8437</td>
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<td>93</td>
</tr>
<tr>
<td>Confidence_managing_multiple_patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional_2019</td>
<td>3.4693</td>
<td>.40935</td>
<td>57</td>
</tr>
<tr>
<td>Online_2020</td>
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<tr>
<td>Total</td>
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<td>.46281</td>
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</table>

As seen in Table 7, the differences between the graduating groups on the combined dependent variables was statistically significant, \(F(2, 90) = 7.488, p < .05; \) Wilks' \(\Lambda = .857; \) partial \(\eta^2 = .173\).

**Table 7**

*Multivariate Tests Without Outliers*

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
<th>(F)</th>
<th>Hypothesis df</th>
<th>Error df</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>.996</td>
<td>10598.014b</td>
<td>2.00</td>
<td>90.000</td>
<td>.000</td>
<td>.996</td>
</tr>
<tr>
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<td>.996</td>
<td>10598.014b</td>
<td>2.00</td>
<td>90.000</td>
<td>.000</td>
<td>.996</td>
</tr>
<tr>
<td>Wilks' Lambda</td>
<td>.004</td>
<td>10598.014b</td>
<td>2.00</td>
<td>90.000</td>
<td>.000</td>
<td>.996</td>
</tr>
<tr>
<td>Hotelling's Trace</td>
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<td>10598.014b</td>
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<td>90.000</td>
<td>.000</td>
<td>.996</td>
</tr>
<tr>
<td>Roy's Largest Root</td>
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<td>10598.014b</td>
<td>2.00</td>
<td>90.000</td>
<td>.000</td>
<td>.996</td>
</tr>
<tr>
<td>Roy's Largest Root</td>
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<td>10598.014b</td>
<td>2.00</td>
<td>90.000</td>
<td>.000</td>
<td>.996</td>
</tr>
<tr>
<td>Program</td>
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<td>90.000</td>
<td>.001</td>
<td>.143</td>
</tr>
<tr>
<td>Pillai's Trace</td>
<td>.143</td>
<td>7.488b</td>
<td>2.00</td>
<td>90.000</td>
<td>.001</td>
<td>.143</td>
</tr>
<tr>
<td>Wilks' Lambda</td>
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<td>7.488b</td>
<td>2.00</td>
<td>90.000</td>
<td>.001</td>
<td>.143</td>
</tr>
<tr>
<td>Hotelling's Trace</td>
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<td>7.488b</td>
<td>2.00</td>
<td>90.000</td>
<td>.001</td>
<td>.143</td>
</tr>
<tr>
<td>Roy's Largest Root</td>
<td>.166</td>
<td>7.488b</td>
<td>2.00</td>
<td>90.000</td>
<td>.001</td>
<td>.143</td>
</tr>
</tbody>
</table>

a. Design: Intercept + Program
b. Exact statistic
COVID-19’s PIVOT TO ONLINE EDUCATION

Follow-up univariate ANOVAs showed, there was no significant difference in confidence performing nursing activities between the 2019 traditional group and the 2020 online group, $F(1, 95) = 4.181, p > .025$; partial $\eta^2 = .044$. However, there was a statistically significant difference in confidence managing multiple patients between the 2019 traditional group and the 2020 online group, $F(1, 91) = 13.290, p < .001$; partial $\eta^2 = .127$, using a Bonferroni adjusted $\alpha$ level of .025 (see Table 8).

Table 8

Tests of Between-Subjects Effects Without Outliers

<table>
<thead>
<tr>
<th>Source</th>
<th>Dependent Variable</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>Confidence_performing_nursing_activities</td>
<td>.153*</td>
<td>1</td>
<td>.153</td>
<td>4.181</td>
<td>.044</td>
<td>.044</td>
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<tr>
<td></td>
<td>Confidence_managing_multiple_patients</td>
<td>2.511b</td>
<td>1</td>
<td>2.511</td>
<td>13.290</td>
<td>.000</td>
<td>.127</td>
</tr>
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<td>.153</td>
<td>4.181</td>
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<td>.044</td>
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<td>Confidence_managing_multiple_patients</td>
<td>2.511</td>
<td>1</td>
<td>2.511</td>
<td>13.290</td>
<td>.000</td>
<td>.127</td>
</tr>
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<td>.169</td>
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<td>Total</td>
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</tr>
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<td>19.706</td>
<td>92</td>
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</tr>
</tbody>
</table>

a. $R^2$ Squared = .044 (Adjusted $R^2$ Squared = .033)
b. $R^2$ Squared = .127 (Adjusted $R^2$ Squared = .118)
Interpreting Results: GPA

An independent-samples t-test was run to determine if there were differences in GPA between 2019 traditional graduates \( (N = 57) \) and 2020 online graduates \( (N = 38) \), showing that 2019 traditional graduates’ GPA \( (M = 3.35, SD = .271) \), and 2020 online graduates’ GPA \( (M = 3.42, SD = .296) \).

There were no outliers in the data, as assessed by inspection of a boxplot. GPA was normally distributed for both 2019 traditional graduates and 2020 online graduates, as assessed by visual inspection of Normal Q-Q Plots, and there was homogeneity of variances, as assessed by Levene's test for equality of variances \( (p = .399) \). The 2020
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Online graduates’ GPA was 0.06, 95% CI [0.05 to 0.18] higher than 2019 traditional graduates’ GPA. Although, there was no significant difference in mean GPA between 2019 traditional graduates and 2020 online graduates, \( t(93) = 1.1, p = .274 \) (see Table 9).

**Table 9**

*Independent Samples Test on GPA*

<table>
<thead>
<tr>
<th></th>
<th>Levene’s Test for Equality of Variances</th>
<th><em>t</em> Test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>F</strong></td>
<td><strong>Sig</strong></td>
</tr>
<tr>
<td><strong>GPA</strong></td>
<td>7.19</td>
<td>.399</td>
</tr>
<tr>
<td>Equal variances</td>
<td>assumed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.081</td>
<td>.345</td>
</tr>
<tr>
<td>Equal variances not</td>
<td>not assumed</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 17**

*Differences between groups’ GPA*
Interpreting Results: Skills Most Uncomfortable Performing

Due to data entry errors, a statistical analysis was not able to be completed for the readiness to practice question asking participants to identify the top three skills/procedures they are uncomfortable performing independently. This was due to data entry errors while filling out the survey. Students were asked to check three skills that they were most uncomfortable performing, but many students chose more than three skills, with a few students choosing upwards of 14 skills they were uncomfortable with. This was due to student error while reading the directions. Since the 2019 students filled out the survey on paper, in person, many students chose more than three skills. So, when the 2020 students completed the survey online via Qualtrics, the researcher did not limit the students to choosing just three skills and otherwise kept the question the same. This way the error rate was solely based on the student’s ability to read the question properly.

When looking at the frequencies of the skills students were most uncomfortable performing, students replied with: 58.3% chest tube care, 50% responding to an emergency/CODE/changing patient condition, 36.5% trach care/suctioning, 34.4% central line care (dressing change, blood draws, discontinuing), 32.3% EKG/Telemetry monitoring and interpretation, 24% NG tube/Dobhoff care, 20.8% IV pumps/PCA pump operation, 18.8% bladder catheter insertion/irrigation, 17.7% intravenous (IV) starts, 13.5% wound care/dressing change/wound vac, 13.5% giving verbal report, 11.5% blood draw/venipuncture, 10.4% charting/documentation, 6.3% intravenous (IV) medication administration, 4.2% medication administration, 4.2% assessment skills, 3.1% pulse oximetry, and 2.1% blood glucose monitoring (see Table 10).
When comparing the 2019 traditional group (N= 59) to the 2020 online group (N=38), the researcher was unable to statistically differentiate between the skills most uncomfortable performing due to the uneven sample sizes. Nonetheless, it is interesting to see what skills need to be focused on further in coming semesters (see Table 11).

**Table 10**

*Skills Most Uncomfortable Performing: All Students*

<table>
<thead>
<tr>
<th>Skill</th>
<th>Responses</th>
<th>Percent</th>
<th>Percent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment_skills</td>
<td>4</td>
<td>1.2%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Bladder catheter insertion_irrigation</td>
<td>18</td>
<td>5.2%</td>
<td>18.8%</td>
</tr>
<tr>
<td>Blooddraw venipuncture</td>
<td>11</td>
<td>3.2%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Blood_glucose_monitoring</td>
<td>2</td>
<td>0.6%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Central_line_care</td>
<td>33</td>
<td>9.5%</td>
<td>34.4%</td>
</tr>
<tr>
<td>Charring_documentation</td>
<td>10</td>
<td>2.9%</td>
<td>10.4%</td>
</tr>
<tr>
<td>Chest_tubo_care</td>
<td>56</td>
<td>16.1%</td>
<td>59.3%</td>
</tr>
<tr>
<td>EKG_Telemetry_monitoring_interpretation</td>
<td>31</td>
<td>8.9%</td>
<td>32.3%</td>
</tr>
<tr>
<td>Giving_verbal_report</td>
<td>13</td>
<td>3.7%</td>
<td>13.5%</td>
</tr>
<tr>
<td>IV_medication_administration</td>
<td>6</td>
<td>1.7%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Intravenous_starts</td>
<td>17</td>
<td>4.9%</td>
<td>17.7%</td>
</tr>
<tr>
<td>IV_pumps_PCA_pump_operation</td>
<td>20</td>
<td>5.8%</td>
<td>20.8%</td>
</tr>
<tr>
<td>Medication_administration</td>
<td>4</td>
<td>1.2%</td>
<td>4.2%</td>
</tr>
<tr>
<td>NG_tube_Dobhoff_care</td>
<td>23</td>
<td>6.6%</td>
<td>24.0%</td>
</tr>
<tr>
<td>Pulse_oximetry</td>
<td>3</td>
<td>0.9%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Responding_to_emergency_CODE_changing_patient_condition</td>
<td>48</td>
<td>13.8%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Trach_care_suctioning</td>
<td>35</td>
<td>10.1%</td>
<td>36.5%</td>
</tr>
<tr>
<td>Wound_care_dressing_change_wound_vac</td>
<td>13</td>
<td>3.7%</td>
<td>13.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>347</td>
<td>100.0%</td>
<td>361.5%</td>
</tr>
</tbody>
</table>

*a. Dichotomy group tabulated at value 1.*
### Table 11

**Skills Most Uncomfortable Performing: 2019 Traditional and 2020 Online**

<table>
<thead>
<tr>
<th>Skills</th>
<th>Traditional_2019</th>
<th>Online_2020</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment_skills</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Bladder_catheter_insertion_iregiration</td>
<td>10</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td>Blooddraw_venipuncture</td>
<td>7</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Blood_glucose_monitoring</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Central_line_care</td>
<td>19</td>
<td>14</td>
<td>33</td>
</tr>
<tr>
<td>Charting_documentation</td>
<td>7</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Chest_tube_care</td>
<td>33</td>
<td>23</td>
<td>56</td>
</tr>
<tr>
<td>EKG_Telemetry_monitoring_interpretation</td>
<td>19</td>
<td>12</td>
<td>31</td>
</tr>
<tr>
<td>Giving_verbal_report</td>
<td>7</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>IV_medication_administration</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Intravenous_stars</td>
<td>11</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>IV_pumps_PCA_pump_operation</td>
<td>15</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Medication_administration</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>NG_tube_Dobhoff_care</td>
<td>12</td>
<td>11</td>
<td>23</td>
</tr>
<tr>
<td>Pulse_oximetry</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Responding_to_emergency_Code_changing_patient_condition</td>
<td>29</td>
<td>19</td>
<td>48</td>
</tr>
<tr>
<td>Trach_care_suctioning</td>
<td>21</td>
<td>14</td>
<td>35</td>
</tr>
<tr>
<td>Wound_care_dressing_change_wound_vac</td>
<td>6</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>58</strong></td>
<td><strong>38</strong></td>
<td><strong>96</strong></td>
</tr>
</tbody>
</table>

Percentages and totals are based on respondents.

a. Dichotomy group tabulated at value 1.
Interpreting Results: Open Ended Question #1

What could have been done to help you feel more prepared for this profession?

When looking at what could have helped the graduating nurses (N=90) readiness to practice, 64% said they wanted more time in clinicals and more hands-on experience. This came from both 63% (35/56) traditional graduates and 65% (22/34) online graduates. Students reported they wanted: “More clinical experience provided, 6 hours/week does not prepare you to handle a patient load for 12 hours,” “For, me I just need more time seeing a wider variety of patients. It would have been nice to have more actors used during simulations,” “I feel that there should be a lot more hands-on learning, and I felt my knowledge was not tested enough to use my critical thinking skills,” “Better clinical experiences to reinforce skills,” and “More clinical time and less online simulations. However, due to the COVID-19 pandemic, it wasn’t possible.”

In addition, the researcher found that:

- Six students wanted fewer simulations (5 traditional, 1 online), with students reporting, “Simulation equipment was lacking,” “More time on real life skills, calling doctors and less simulations. I do not feel simulations helped me,” and “More clinical time, less simulations, more hands on/critical thinking opportunities.”

- Six students wanted better instructors (5 traditional, 1 online), stating, “I felt some faculty did not put enough energy into teaching. We did a lot of self-teaching,” “I wish I would have had better clinical instructors early in the program that
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encouraged the staff to let us do things for patients,” “Having teachers that are helpful and not so disorganized all the time,” and “Better clinical instructors.”

- Six students wanted more practice with communicating, documenting, and charting (1 traditional, 5 online), saying, “The ability to practice more documentation/charting skills,” “I think it would have been more helpful if we would have been taught how to better document,” “More practice with communication to different members of the interdisciplinary team; more practice on giving and receiving report,” and “More focus on creating care plans and having conversations with physicians.”

- Five students wanted more time spent on NCLX preparation (all traditional), with students stating, “having more NCLX questions in class to help prepare for NCLX,” “We needed more NCLEX practice questions in this curriculum, “More classes on how to answer NCLEX questions,” and “I wish we focused more on NCLEX preparation.”

- Five students wanted less writing assignments, discussion boards and busy work (3 traditional, 2 online), saying, “Too many papers to write,” “I wish I had more time to study instead of doing papers,” “Less busy paperwork,” and “Less discussion boards and busy work. I agree we should be doing care plans and continue learning, but there is a lot of work not related to patient care. Clinicals have been too focused on one patient and their diagnosis rather than actual patient care and problem solving.”

- Five students felt they were adequately prepared and would have changed nothing (3 traditional, 2 online), reporting, “nothing at this time, I feel prepared to take on
the nursing role,” “Nothing honestly. I feel that they have prepared as best they can. Now I just need to be in the field to get more hands-on experience,” “I have worked hard to ensure I already feel mostly prepared to start working,” and “Nothing at the moment.”

Interpreting Results: Open Ended Question #2

_Do you think your mode of education (face-to-face or online) played a role in how prepared you are? Would you have rather taken face-to-face classes vs. online or vice versa?_

When looking at what mode of education could have helped the graduating nurses (N =98), 81% of students thought face-to-face was a better form of instruction. This came from both 80% (49/61) traditional students, and 81% (30/37) online students. Students stated, “I feel that face-to-face prepared me much more than online or hybrid would have,” “I learn better hands on/ face-to-face,” “I think face to face helped me,” “Yes. I loved being face-to-face and hands on in the lab/simulation setting,” “I feel that a BSN online would NOT be effective,” “Going virtual was hard. There wasn’t as much hands on practice that I needed,” “I think the change in the mode of education played a huge role in how I feel prepared. Once we went to online theory classes I feel that I was not taught the information by the instructors but had to teach myself which is a huge disservice,” and “I would have rather been all face-to-face but due to the pandemic that wasn’t possible.”

However, not all students felt that way. 7% (4/61) of traditional graduates and 5% (2/37) of online graduates preferred online instruction. Students reported, “Going from in class to online was excellent,” “With how the teachers teach these days, I preferred on-
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line, and I could study the way that I wanted to. I feel that if I were to be in a class setting, there would have been little teaching so I would rather learn lessons on my own in my own time. My unpreparedness came from the lack of hands on during my clinical sessions,” “Online class is better,” and “I’d rather do online.”

In addition, one (traditional) student thought hybrid would be best, stating, “I think hybrid would be best.” Also, one (traditional) student thought both traditional and online were adequate for nurse preparation, replying, “I have taken online and face to face and didn’t notice a difference.”
Chapter 5 – Conclusions and Recommendations

After researching to what extent COVID-19’s pivot to online education impacted BSN graduates’ readiness to practice and GPA, it appears that it had a slight impact on BSN graduates’ readiness to practice for managing multiple patients. When looking at the first research question - “To what extent has the pivot to online education, prompted by COVID-19, impacted graduating Bachelor of Nursing students’ readiness to practice?” - the researcher found no significant difference between 2019 traditional graduates and 2020 online graduates in confidence performing nursing activities; however, there was a significant difference in managing multiple patients. The 2020 online graduates were not as confident managing multiple patients as the 2019 traditional graduates. In addition, many students were uncomfortable performing the same skills: 58.3% chest tube care, 50% responding to an emergency/ CODE/ changing patient condition, 36.5% trach care/suctioning, 34.4% central line care (dressing change, blood draws, discontinuing), 32.3% EKG/Telemetry monitoring and interpretation, 24% NG tube/Dobhoff care, 20.8% IV pumps/PCA pump operation. When looking at what could have been done to help students feel more prepared for their profession, both groups felt they needed more clinical time and hand on experiences, but due to COVID-19, the 2020 online graduates had even less hands-on time. When looking at what mode of education students preferred, 81% of students thought traditional, face-to-face instruction was the best form of instruction for BSN degrees. This number could have even been larger, but many of the 2019 traditional students had never taken an online course to compare it to. In the future it would be beneficial for educators to focus more on the skills students were
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uncomfortable performing, and it would be advisable for the department to allow more
time for clinical, hands-on experiences with patients.

In addition, more elaborate simulations might increase students’ enthusiasm and
lessen their need for more in-person clinical time. Six out of ninety students mentioned
that simulations did not help them feel ready to practice. The 2019 and the 2020
graduates had the same simulation experience, where each student attended a four-hour
simulation experience where they performed tasks on dummies.

The findings from the first research question indicate that the community of
inquiry framework is essential when facilitating online learning. 81% of students stated
they thought in-person learning was ideal for nursing. However, the 2020 online
graduates were faced with emergency remote education, which was not an ideal online
learning environment. The instructors in this study had no online teaching experience and
were given no time to plan an online course. Their online courses lacked social presence
because the students were not required to meet online via zoom, and most students did
not show up for the live class. If the professors in this study had online training and more
time to prepare for online teaching that included the community of inquiry framework, it
is possible that more students would have felt differently about their online learning
experience. In the future it would be beneficial for universities and K-12 schools to
provide continued training in online teaching that incorporates the community of inquiry
and other aspects of online course design.

When looking at the second research question – “To what extent has the pivot to
online education, prompted by COVID-19, impacted graduating Bachelor of Nursing
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students’ GPA?” - there was no significant difference when comparing the 2019 traditional graduates and the online 2020 graduates’ GPA.

Looking Towards the Future

There is a major nursing shortage, and if students feel they need more clinical time practicing skills hands on, it is essential they get that time to avoid burnout. Burnout is the top reason for nurses leaving their profession. The 2020 online graduates were not as comfortable managing multiple patients, and this could be a potential problem when entering the workforce. This research demonstrates that BSN programs must incorporate more clinical, hands-on time practicing the skills students are most uncomfortable with. Schools must offer more time with real patients to help with their confidence managing multiple patients. In addition, this data suggests that whenever possible, it would be beneficial for schools to offer all BSN courses in a traditional, face-to-face format, because students feel that is the best modality for them to learn the skills properly.

We must now look at ways to transition out of COVID-19’s emergency online learning. While the pivot to online education brought many challenges, it might be effective to keep aspects of the online format in the future. It would also be beneficial for universities to hire more people to promote online learning. Universities and K-12 educators need to be better prepared for online teaching and learning.

Overall, it seems that COVID-19’s pivot to online education did have a slight impact on BSN graduates’ readiness to practice for managing multiple patients, but there was no significant difference in confidence performing nursing activities or on students’ GPA. This data suggests that when face-to-face nursing education, though ideal, is not
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possible, then the online format does deliver much, though not all, of the benefits of face-to-face nursing education.
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