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Student Perceptions About Critical Thinking in Online Psychiatric Nurse Education

KIm Bagshaw
Walden University

Walden University

College of Education

This is to certify that the doctoral study by

Kimberly Bagshaw

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

Walden University
2020

Abstract

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MN, Charles Sturt University, 2012

BSN, University of Saskatchewan, 2008

Doctoral Study Submitted in Partial Fulfillment

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Abstract

Psychiatric nurse educators in Canada's western provinces identified a need to create innovative, collaborative, and technology-rich online educational programs to support new nurses in delivering increasingly complex care. The purpose of this study was to explore psychiatric nursing student perceptions about critical thinking development in online courses and to explore how student experiences influenced their entry-level competencies and problem-solving development. Critical thinking stage theory, which is characterized by complex interactive and social phenomenon involved in learning, provided the conceptual framework for the study. The research questions focused on student perceptions about professional problem solving and critical thinking skills. A phenomenographic design was used to capture the insights of 15 students from 2 cohorts through semistructured interviews; a purposeful sampling process was used to select the participants. Emergent themes were identified through open coding, and the findings were developed and checked for trustworthiness through member checking, rich descriptions, and researcher reflexivity. The findings revealed that how instructors teach content and how they provide feedback have a significant influence on critical thinking and problem-solving skill development. An educational blog was created to provide students with a forum to share their diverse experiences and to engage in critical thinking with peers. This study has implications for positive social change by offering a supportive setting to enhance student growth in critical thinking and to support professional problem solving among psychiatric nursing students.

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Dedication

To my husband, Jeff for his infallible support and dedication to me throughout this process, and to my children, Liam and Kate, for seeing past the messy house and still coming home to hang out every once in a while.

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Section 1: The Problem

The Local Problem

In psychiatric nursing, technological advances and complex care situations have created rapid change, and academic leaders must provide innovative and collaborative educational preparation. Psychiatric nursing educators in an online school in Canada's western provinces have been tasked with creating dynamic and contemporary curricula through the application of critical thinking, clinical, and professional judgment for beginning practitioners (British Columbia College of Nursing Professionals [BCCNP], 2014). Among local nurse educators and academic administrators, some argue that the critical thinking required for entry-level psychiatric nursing practice cannot be effectively learned in a setting where all theoretical education is provided in an online environment (Allen & Seaman, 2015). With the current nursing shortage of more the 450 jobs in the mental health sector in Canada (Canadian Institute for Health Research [CIHI], 2017), expanding asynchronous training opportunities for new psychiatric nurses has strong positive social change implications.

Increasing pressure from local stakeholders to incorporate educational technology and online learning methodologies into teaching pedagogy is difficult for academic leaders in Canada as governmental cuts to both education and health care continue (Allen & Seaman, 2015; Wingo, Ivankova, & Moss, 2017). Face-to-face teaching methodologies have become so habitual in psychiatric nursing education that the absence of digital knowledge and understanding regarding online technology advances has posed significant barriers to creating contemporary curricula that appeals to today's learners

(Bates et al., 2017; Contact North/Contact Nord, 2012).The belief that a degree-prepared, face-to-face entry-level psychiatric nursing program is superior to an online basic-entry psychiatric nursing program has created situations where graduates from this program have not been considered for employment due to the misunderstandings expressed by stakeholders regarding the abilities of these students to think critically (M. Jordan, personal communication, January, 2018).

The Canadian province where the study was conducted is experiencing a shortage of nurses with an estimated 25,000 nurses needed by 2022, less than 5% of current nurses work in psychiatric nursing (CIHI, 2017). With limited seats in the traditional face-to-face psychiatric nursing education programs in the province, the region has experienced a decrease in psychiatric nursing graduates, down by 46% since 2012; asynchronous psychiatric nurse education could enhance access to nurse education opportunities (CIHI, 2017). Positive social change implications include an enhanced conceptualization of what practices support higher-order thinking (Paans, Robbe, Wijkamp, & Wolfensberger, 2017). Although Canada has been a leader in educational technology for online learning, significant barriers to its use for basic-entry education in nursing include (a) the digital divide between students and faculty, (b) lack of strategic focus by academic leadership, (c) potential lack of acceptance from stakeholders, (d) additional teaching effort, and (e) lack of government and institutional investment (Allen & Seaman, 2015; Bates et al., 2017; Contact North/Contact Nord, 2012).

Due to the increasingly challenging and changing context of psychiatric nursing practice, educators must continue to provide informed, effective, and evidence-based

education that addresses the need for beginning psychiatric nurses to possess more sophisticated critical thinking and reflective capabilities (Roberts, 2016). This has historically been accomplished through the traditional method of face-to-face, synchronous learning that was seen to support the opportunity to interact, connect, and collaborate (Lukenchuk, 2016). In both nursing and general education literature, critical thinking development in online learning has moved forward positively in the last 20 years to provide evidence that this method of learning is equal to or better than traditional face-to-face methods (Carter, Creedy, & Sidebotham, 2015; Legg, Adelman, Meuller, & Levitt, 2009; Wingo et al., 2017).

Using online modalities in basic-entry psychiatric nursing education is still relatively new in Canada, even though nursing research has demonstrated its effectiveness in degree and post degree education (Broadbent & Poon, 2015; Carter, Hanna, & Warry, 2016; Guri-Rosenblit, 2014; Lahti, Hatonen, & Valimaki, 2014; Swart, 2017; Wingo, Peters, Ivankova, & Gurley, 2016; Wingo et al., 2017). However, some researchers have suggested that innovative online teaching methods can assist in creating authentic, workable, and relational environments that foster the critical thinking and reflective skills required for discerning practice, while offering an educational environment that transcends time and space (Lukenchuk, 2016; Roberts, 2016).

A better understanding of how students become critical thinkers using online methodologies provides the global context for this study. Exploring the critical thinking skill development of students in a local blended learning basic-entry psychiatric nursing program, where all theory is taught online, will help to reveal whether students have

improved critical thinking skills following an enhancement to the program structure and curriculum. Academic leaders and nurse educators must keep curriculum contemporary and focused on the future needs of an increasing technologically savvy student population (McCutcheon, Lohan, Traynor, & Martin, 2015; Woods, West, Mills, Park, Southern, & Usher, 2015).

Rationale

Nursing educators continue to view critical thinking as an essential skill for nursing practice, yet it remains unclear how well critical thinking can be developed using online learning methodologies (Huber & Kuncel, 2016; Papp et al., 2014). Traditional face-to-face psychiatric nursing education has provided the foundational and relational principles to support the successful use of entry-level competencies and professional problem solving in practice. Online methods of teaching basic-entry psychiatric nursing were not introduced into psychiatric nursing education in Canada until 2006 with the creation of a diploma program to support rural areas of the province (BCCNP, 2014). Since then, no research has been conducted into the effectiveness of this program's online methodologies on the development of critical thinking skills that support entry-level competencies and professional problem solving. These students are caring for one of the most vulnerable populations in the health care sector therefore, the ability to reason with confidence, think accurately and clearly, and show empathy and fair-mindedness is vital to health care success.

It remains imperative that psychiatric nurse educators create dynamic and contemporary curricula that ensures critical thinking, and academic leaders are tasked

with ensuring that appropriate clinical and professional judgment skills are well developed in beginning practitioners (BCCNP, 2014). The concept of critical thinking in psychiatric nursing curricula is essential as practicing nurses must be able to think critically to complete complex nursing actions that directly affect patient safety and satisfaction (Naber, Hall, & Schadler, 2014). Logofatu (2017) stressed that innovative curriculum is essential for the lasting and viable success of an individual or educational organization, and Feller (2018) emphasized the need to consider "who we are teaching, what we are teaching, and how we are teaching" (p. 105). As health care continues to evolve, psychiatric nursing education must also develop to meet the changes ahead through innovative curriculum that is accessible to everyone.

Increasing pressure to incorporate educational technology and online learning methodologies into teaching pedagogy to better support strategic outcomes are essential elements of modern nurse education (Allen & Seaman, 2015; Wingo et al., 2017). Agbedia and Ogbe (2014) indicated that nurses require high levels of critical thinking skills and must be mentored for the disposition to critically analyze to work in the current complex health care environment. Online course delivery is becoming a more common instructional modality, and Ricci (2013) suggested that when applied innovatively, online learning methods provide exciting and stimulating environments that help students master higher-order intellectual skills. The ideal online classroom can provide challenging experiences through proper application of assignments and exercises that should create new vision and reflection.

A delayed implementation of innovative online methodologies in basic-entry psychiatric nursing education could create a gap in practice as other institutions begin to build nursing programs that meet the needs of the new, technologically savvy nursing student (Stephens & Gunther, 2016; Logofatu, 2017). Maxim (2015) stressed that online education remains at the tipping point for many institutions where it will either become the mainstream or remain marginalized. Although some institutions in Canada see it as critical to their strategic future, others are slower to implement these learning developments, remaining constrained, despite the pockets of innovation. This in turn affects stakeholders and educators as they attempt to understand innovative learning design that remains constrained by their own personal experience, preparation, and ongoing professional development limited by the continued content driven models of learning in many face-to-face nursing programs (Maxim, 2015).

The purpose of this study was to explore online nursing student perceptions about critical thinking experiences in their courses and how those experiences influenced their entry-level competencies and problem-solving development (BCCNP, 2014). Without this knowledge, it remains difficult to determine whether this innovative learning method can be successfully implemented in other psychiatric nursing programs at the entry-level. Agbedia and Ogbe (2014) have suggested that critical thinking continues to be an abstract concept to teach and learn and remains difficult to understand in terms of educational outcomes in practice. Conducting this research presented an opportunity to study a method of instruction not well understood by psychiatric nurse educators and

stakeholders and add to the current body of knowledge that provides a more accurate depiction of efficacious online methodologies in nursing education.

Definition of Terms

For the purpose of this research project I have provided a number of key terms to clarify specific concepts.

Asynchronous classroom: An asynchronous or online classroom will be defined as a communication system that makes it possible for a group of individuals to come together to dialogue about a topic they are learning about, look at visuals and text that moves their understanding forward (Hsu, Marques, Hamza, & Alhalabi, 1999).

Initial discussion post (IDP): The initial post that students in the program complete before they have access to other students' posts and prior to their peer posts in the asynchronous forum.

Nursing critical thinking skills: Critical thinking skills in nursing are purposeful, disciplined, and systematic processes of continual questioning, logical reasoning and reflecting through the use of interpretation, inference, analysis, synthesis and evaluation to achieve a desired outcome (British Columbia College of Nursing Professionals, 2017)

Online learning: Online learning is the use of the internet to access learning materials to interact with the content, instructor, and other learners, and to obtain support during the learning process, to acquire knowledge, to construct personal meaning, and to grow from the learning experience (Ally, 2005).

Psychiatric Nursing Entry-Level Program: The entry-level psychiatric nursing program for this study is a 23-month accelerated psychiatric nursing program provided at

Alpha college level that leads to a diploma in psychiatric nursing. Graduates of the program are eligible to write the RPNC national registration exam to become a registered psychiatric nurse (Alpha College, 2018).

Significance of the Study

Previous literature on critical thinking in online nursing education has focused on the effectiveness of online methodologies in basic-entry nursing education (Ali, Hodson-Carlton, & Ryan, 2004; Carter et al., 2006; Carter, et al., 2016; Carter & Rukholm, 2008; McCutcheon et al., 2015; Profetto-McGrath, 2003; Simpson & Courtney, 2002). The continued promotion of traditional face-to-face teaching methods in psychiatric nursing education may not be the best support the future needs of an increasing technologically savvy and geographically diverse student population (McCutcheon et al., 2015). This exploratory study of student perceptions of critical thinking development in online basic-entry nursing education may provide information on how critical thinking can be supported using online learning methods. This may also contribute to the literature that views online learning as critical to the future of higher education in nursing (Beachy, 2017; Carter et al., 2016). Research from this study may also provide additional knowledge for nursing educators to enable them to begin the dialogue of what change can look like for the future of psychiatric nursing education.

Even though online learning in both general nursing education and psychiatric nursing education is not a new concept, nursing researchers have focused primarily on the practicing nurse (Kavanagh & Szweda, 2017; Roth, Wieck, Fountain, & Haas, 2015; Woods et al., 2015), with insufficient research into the effectiveness of online learning

strategies on the development of critical thinking in basic-entry psychiatric nursing education (Carter et al., 2016; Gould, Papadopoulos, & Kelly, 2014; Papp et al., 2014). During the last decade, the use of online learning as a primary learning method in basic-entry nursing education has begun to rise in the United States, Australia, and the United Kingdom (American Association of Colleges of Nursing [AACN], 2017).

The number of Canadian nursing schools that provide fully online or hybrid nursing education is beginning to increase; however, none are listed that provide this education completely at the basic entry-level (Canadian Nurses Association [CNA], 2016). This is in stark contrast to the United States where the AACN indicates that colleges have been moving their nursing programs online for as long as online learning has existed, and the current growth has increased more than a third in the last two years alone (Beachy, 2017).

According to the CNA (2016), Canada's online nursing education has been tailored mostly for degree bridging programs, postgraduate education, and professional development courses that are using distance education tools and infrastructures with increasing frequency. The continued concern has been that little is known about whether online methods of learning facilitate entry-level competence, and critical thinking that supports professional problem solving (Carter et al., 2016; McCutcheon et al., 2015; Salyers, Carter, Carter, Myers, & Barrett, 2014).

Nursing researchers continue to assert that critical thinking is an essential skill for nursing practice; however, there is still a lack of clarity regarding how well critical thinking can be developed using online learning methodologies especially in basic-entry

psychiatric nursing education (Huber & Kuncel, 2016; Papp et al., 2014). Traditional psychiatric nursing education has historically relied on teacher-centered instruction in a face-to-face environment, where faculty are responsible for covering all possible content with the attitude that if it is not seen to be covered, then students have not learned it. (Feller, 2018; McGrath, 2015).

This uncertainty regarding the use of online learning methods has created a gap in practice where traditional methods of teaching and learning relying on teacher-centered instruction continues to be the primary focus of basic-entry psychiatric nursing education (Feller, 2018; McCutcheon et al., 2015). Skepticism regarding the use of online methods to adequately support and develop critical thinking remains, and although technology has surged forward in other areas of education and nursing, the use of online learning strategies in basic-entry psychiatric nursing education remains in its infancy (Carter et al., 2014; Gates & Dauenhauer; 2016; McCutcheon et al., 2015) By exploring the varied experiences of critical thinking development in recently graduated online psychiatric nursing students, academic leaders may gain insights to potential asynchronous elements to enhance online psychiatric nursing curriculum.

Academic leaders in many health science disciplines have begun to incorporate online learning strategies into their curricula, yet some still perceive online strategies as inferior to the more traditional face-to-face education (Allen & Seaman, 2013). Surveys conducted during the last 14 years have continued to present mixed opinions regarding the view that online education is equal to face-to-face education. Gates and Dauenhauer (2016) suggested that this is based more on philosophical or conceptual grounds rather

than empirical outcomes, but the concern remains that online education in helping professions provides little opportunity to foster the interpersonal and professional skills that allow for the immediate application of learned material to complex human issues.

Allen and Seaman (2015) suggested that these barriers contributed to early skepticism regarding the effectiveness of online learning modalities and continue today with evidence that indicates academic leaders and stakeholders are still divided in their opinions (Bates et al., 2017). Dearnley, McClelland, and Irving (2013) also speculated that the effectiveness of innovative online learning strategies had not been proven in higher education and required further exploration. However, Salyers et al. (2014) noted that although e-learning created uncertainty for nursing educators due to its past trendiness, recognizing how meaningful online learning can be developed remains important to raise the level of use of online educational strategies in the field of nursing education.

Any shortcomings in online learning methods, that may not be seen in the more traditional face-to-face methods, are unsupported by the literature and continue to show little substantial difference in learning outcomes between the two modes (Siemens, Gasevic, & Dawson, 2015). In fact, Means, Toyama, Murphy, and Baki (2013) have stated that the commonly used teaching and learning styles, such as lectures and student PowerPoint presentations do not require the application of content, which is absolutely required in practice.

By exploring student perceptions of two online curricula, where one was further enhanced with media, synchronous web-based discussion, reflective exercises, and case

scenario work, critical thinking features can be characterized by recently graduated psychiatric nursing students in recalled interactions and learnings that may have enhanced their abilities to professionally problem solve (Paans et al., 2017). As a practice-based profession, psychiatric nursing has been built on the foundations of authentic presence in the nurse-patient interaction. Educators and stakeholders look for evidence that online modalities adequately foster the critical thinking skills necessary to facilitate complex relationships (Allen & Seaman, 2015; Huber & Kuncel, 2016; McCutcheon et al., 2015; Papp et al., 2014, Woods et al., 2015). Because critical thinking is considered a learned ability, it requires basic thinking skills and a great deal of practice to become adept.

In higher education, students often find the act of critical thinking demanding as guidance is often unspecified and critical thinking itself is vaguely understood. The active process of learning how to analyze, think, behave, and arrive at decisions in increasingly complex situations has traditionally been supported in real time and space instruction (Lukenchuk, 2016; Ricci, 2013). The belief that the actual presence of instructor and student is required to stimulate intellectual curiosity, spontaneity, and excitement has become so habitual in psychiatric nursing education that the absence of digital knowledge and understanding regarding online technology advances has posed significant barriers to creating contemporary curricula that appeals to today's learners (ContactNorth, 2012; Lukenchuk, 2016; Naidu, 2014).

Psychiatric nurse educators must continue to provide informed, effective, and evidence-based education that addresses the need for beginning psychiatric nurses to

possess more sophisticated critical thinking and reflective capabilities (Roberts, 2016). The historical belief that this is accomplished through the traditional face-to-face, synchronous method, where students have the opportunity to interact, connect, and collaborate has been difficult to alter as the concerns regarding authentic presence, and acquisition of complex knowledge continue to remain in the literature. (Garrison & Vaughan, 2008; Lukenchuk, 2016; Naidu, 2014; Picciano, Dziuban, & Graham, 2014).

However, in the last 20 years, research in both nursing and general education literature regarding critical thinking development in online learning has remained progressive, providing evidence that this method of learning is equal to, or better than traditional face-to-face methods (Carter et al., 2015; Gates & Dauenhauer, 2016); Legg et al., 2009; Wingo et al., 2017). Lukenchuk (2016) and Naidu (2014) have suggested that this method of learning requires further explanation in terms of how it is delivered and how specific delivery methods and tools directly affect engagement, presence, and critical thinking for students. The ideal online learning environment provides challenging experiences through engagement in a variety of learning situations that allow the student to go beyond knowledge content to analyze, interpret and apply their knowledge, skills and abilities in effective professional decision making (Ricci, 2013).

Conducting research in a local basic-entry psychiatric nursing program focused on student learning in an online environment may provide important evidence regarding the effectiveness of this method on the application of critical thinking, and clinical and professional judgment development in the beginning psychiatric nurse practitioner (BCCNP, 2014). This research may also contribute to the literature on critical thinking in

online nursing education by providing perspectives from students who have received their basic-entry psychiatric nursing education using the less traditional online method.

Research Questions

More qualitative research is needed to explore the effectiveness of innovative online methodologies on critical thinking development in health care education (Andreou, Papastravrou, & Merkouris, 2014; Dearnley et al., 2013; McCutcheon et al., 2015; Monaghan, 2015; Pitt, Powis, Levett-Jones, & Hunter, 2015; Salyers et al., 2014; Searing & Kooken, 2016; Swart, 2017). In this study I focused on two research questions that allowed me to explore students' perceptions about critical thinking experiences in online nursing courses and how those experiences influenced their entry-level competencies and problem-solving development. Considering that adult online learners come with a certain experiential skill set, the research questions that I used to inform this study were as follows:

RQ1: How do online adult psychiatric nursing students perceive their critical thinking development and readiness for professional problem solving?

RQ2: What do students in an online basic-entry psychiatric nursing education program perceive as contributing to the development of their critical thinking skills?

Review of the Literature

Despite the proliferation of studies on critical thinking in nursing through the years, understanding how critical thinking is developed in nursing education in the online learning environment could have broad applications. Critical thinking in nursing education is not a new concept, and learning the knowledge, judgment, and skill

necessary to be effective in practice is interrelated and interdependent (Agbedia & Ogbe, 2014). Nurse educators have identified distinctive thought processes based in multiple patterns of knowing that are essential to the discipline. These thought processes are required to be a competent nurse and are based in higher-order thinking skills including critical thinking, reasoning and judgement. As psychiatric nurses deal with a vulnerable patient population, enhancing critical thinking skill development has strong positive social change implications for enhancing patient outcomes.

To better understand how critical thinking skills are developed to successfully support entry to practice competencies in a Canadian psychiatric nursing program, I used an exploratory, qualitative study to consider what key behaviors or actions facilitate the development of critical thinking. Underpinning this research will be the concept of the critical stage theory that focuses on the stages of thinking one must reach to show significant gains in higher-order thinking (Elder & Paul, 2010; Kaya, Senyuva, & Bodur, 2017). Engaging students in discussion of critical thinking from an intellectual standpoint where they can reflect on not only their ability to problem solve psychiatric nursing issues, but also on how the concepts taught in their online theory allowed them to build on critical thinking skills, will add clarity to understanding this phenomenon of how their critical thinking developed using online learning methods to prepare them to meet the challenges of entry-level practice.

Although the study of critical thinking in online nursing education continues in the current literature there has been a lack of research that addresses how critical thinking skills develop through current online learning in basic-entry psychiatric nursing education

and how students perceive this development in preparing them to professionally problem solve. This review of the literature contains two major sections. In the first section I have addressed a conceptual framework that supports critical thinking development in online nursing education. In the second section, I have reviewed the broader problem presented in the literature.

Conceptual Framework

Learning theories and conceptual frameworks guide nursing education and help students understand the reasoning behind educational activities, interactions with individuals in the health care system, and complex nursing skills (Aliakbari, Parvin, Heidari, & Haghani, 2015). They foster understanding, and the ability to problem solve, as well as enhance constructive communication and behavioral development, providing complementary strategies and differing viewpoints. The objectivist methods of behaviorism, cognitivism and, to some extent, constructivism, remain foundational to adult vocational and technical education especially as psychiatric nursing is considered a competency-based profession with predetermined tasks and outcomes that are directly linked to clinical practice (Dennick, 2016; Groves, 2008).

The thought that learning is an active process rather than inert, handed down from instructor to learner, is important in nursing education (Thomas, Menon, Boruff, Rodriguez, & Ahmed, 2014). Knowledge gained in nursing is fluid and shaped by the production and use in practice. Nurses must often take new knowledge and transform that information into an understanding based on pre-existing experience by relating it to what they already know, thus creating meaning. They must also be able to monitor and

advance their understanding through the entire process. This is not necessarily achieved in the face-to-face classroom, where traditional lecture formats that continue to pervade nursing education are in fact instructor focused, limiting student engagement, and promoting only short-term recall, and memorization of content, which lacks critical thinking development (Blissitt, 2016; Means et al., 2013; Poon, 2012; Van Horn, Hyde, Tesh, & Kautz, 2014).

In the online environment, knowledge acquisition takes shape outside of the singular synchronous classroom allowing for opportunities to learn information, access additional resources, and engage in further collaboration with peers and educators during the learning process (Broadbent & Poon, 2015). The instructor provides that social environment where learners can create knowledge with others to solve the necessary problems. The use of reflective practice is a pedagogical cornerstone for interactive discussion that replaces traditional lectures in all types of learning environments (Picciano, 2017).

As education and nursing are increasingly driven by technology, it is a crucial time to understand how learning theory and technology intersect. In most respects, nursing educators have used the internet to improve educational efficiencies; however, how the educator perceives and practices their teaching strategies remains in its infancy largely because nursing educators lack strong theoretical frameworks to guide the design and pedagogies of online instruction (Harasim, 2012). Because few theories address the pedagogies of online education, educators have often adopted these new technologies through trial and error and by falling back on adopting traditional didactic practices to the

online learning environment (Harasim, 2012). This lack of direction for how to use online technologies in nursing education was the impetus for me to explore how students might perceive their own learning and critical thinking development to more fully understand what they are experiencing with this learning method. Without this understanding, the gap in practice, where psychiatric nursing educators do not begin to adopt new methods of learning and instruction, may increase as educators continue to use traditional methods in an ever increasing non-traditional learning environment (Maxim, 2015; McCutcheon et al., 2015; Montenery et al., 2013).

Examining learning theory in both nursing and general education is important to further the educators' understanding of how individuals learn (Picciano, 2017). More recently, educators have been challenged to incorporate new theories or models that may not align with what they understand about learning in general and learning in nursing specifically (Harasim, 2012; Picciano, 2017). Historically as a discipline, nursing followed the medical model and the frameworks that adopted logical positivism stressing traditional, orthodox, and experimental methods of practice and research (McEwan & Wills, 2018). More recently, however, nursing researchers have turned to interpretive methods that recognize both the perceptions of the individual and the researcher. This is particularly important in psychiatric nursing practice, which is built on authenticity, and relational practice, as well as psychiatric nursing education, which focuses on the ability to critically analyze and care for those with complex issues that cannot be conceptualized with the senses. The real-life significance of issues in an individual's day-to-day life

provides researchers with an opportunity to understand and contemplate new ways of thinking and doing (McDougall, 2015).

With this growth and change in paradigm, there have been numerous theories and conceptual frameworks used by nursing educators to advance nurse's ability to think (McEwan & Wills, 2018; Shaw, 1993). Meleis (2017) stressed the powerful and dynamic role that theory plays in the professional autonomy and clinical knowledge of nurses however, does not deny that the development of strong nursing theory has been an unconventional and often convoluted process. This has led nursing educators to fall back on the traditional, tried and true theories and conceptual frameworks that once propelled the nursing profession forward but may not be as prevalent in a modern nursing world where technology has become the norm rather than the exception.

For the purpose of this research study, I examined several contemporary learning theories were examined for their appropriateness in underpinning my goals and research questions. I researched specific online and blended learning theories including: (a) the community of inquiry model, (b) connectivism, (c) the online collaborative learning theory, and (d) Anderson's online learning model (Picciano, 2017). These theories were rejected for a number of reasons including (a) lack of completion, (b) focus on the teaching environment, (c) focus on the relationship between the instructor and the student, and (d) focus on knowledge flow and communication networks. Another two blended learning models I examined were: the blending with pedagogical purpose model, and the multimodal model for online education; however, these models addressed

instructional design, faculty, and learning objectives rather than the processes of learning and the impact on higher-order thinking.

The framework that I chose to support my research on critical thinking in online psychiatric nursing education was the critical thinking stage theory. I chose this theory for its deliberate discussion of critical thinking as a process, and its link to the nursing profession. I used this theory to guide the research questions in this study by providing the groundwork for understanding how critical thinking can be developed in psychiatric nursing education using online methodologies to support the learning process.

Critical Thinking Stage Theory

In nursing education, students are surrounded by a world of knowledge and the thoughts that allow this knowledge to be processed (Elder & Paul, 2013). The thoughts that students have may be true, based in evidence, and they may be significant, but they can also be unsound, misleading, and trivial; however, students' thoughts are almost always led by personal agenda, interests, and values. Because critical thinking underpins all aspects of nurses' abilities and performance, deficits in the ability to critically think can lead to cognitive bias, and nursing errors that can have detrimental consequences for the health and well-being of individuals (Papp et al., 2014; Roth et al., 2015).

Early literature on the process of critical thinking in health care demonstrated that there was little understanding of the milestones that a student goes through to achieve higher levels of critical thinking, nor was there an understanding of how critical thinking was improved through the learning process. (Carraccio, Benson, Nixon, & Derstine, 2008; Carraccio & Burke, 2010; Tanner, 2005). Current literature also addresses this

theme but with no clear understanding of how students develop critical thinking, what stage of higher-order thinking they have reached following their psychiatric nursing education, nor how they perceive their ability to think and problem solve in an ever-increasing complex health care system (Naber et al., 2014; Vaismoradi, Jordan, Turunen, & Bondas, 2014).

Papp et al. (2014) suggested that competent critical thinking in nursing is not automatically gained with experience or training or by academic acumen. Even though experience may be the best teacher, experience based in bias, distortion, or self-delusion will not enhance higher-order thinking (Elder & Paul, 2006). One should not assume that the nursing veteran is an accomplished thinker, and the newly graduated student is not able to examine their own actions and cognitive processes. This is important when considering how students experience their development of critical thinking as one cannot assume that critical thinking will develop naturally but instead, comes from how the student is taught and clearly assessed in an educational environment.

The analysis and assessment of thinking. Elder and Paul (2010) have suggested that there are two essential dimensions of thinking that students need to master to become effective and fair-minded critical thinkers. First, they need to be able to identify the parts of thinking, and second, they need to be able to assess how to use these parts of thinking. Students need to understand and be able to articulate that critical thinking has a purpose, is used to solve problems, is often based on assumptions, takes a certain point of view, is based on data, information, and evidence, is shaped by concepts and ideas, contains inferences enabling them to draw conclusions, and has implications to their practice

(Elder & Paul, 2010). These form the elements of reasoning that allow students to move from inert information processing and activated ignorance to actively using information that is true and insightfully understood. Elder and Paul (2013) provided a picture of how students must apply intellectual standards, essential to thinking, in order to reason through concepts and constructs. Without a cultivated command of these intellectual standards, the foundations for reasoning and active problem solving cannot be laid down (see Figure 1).

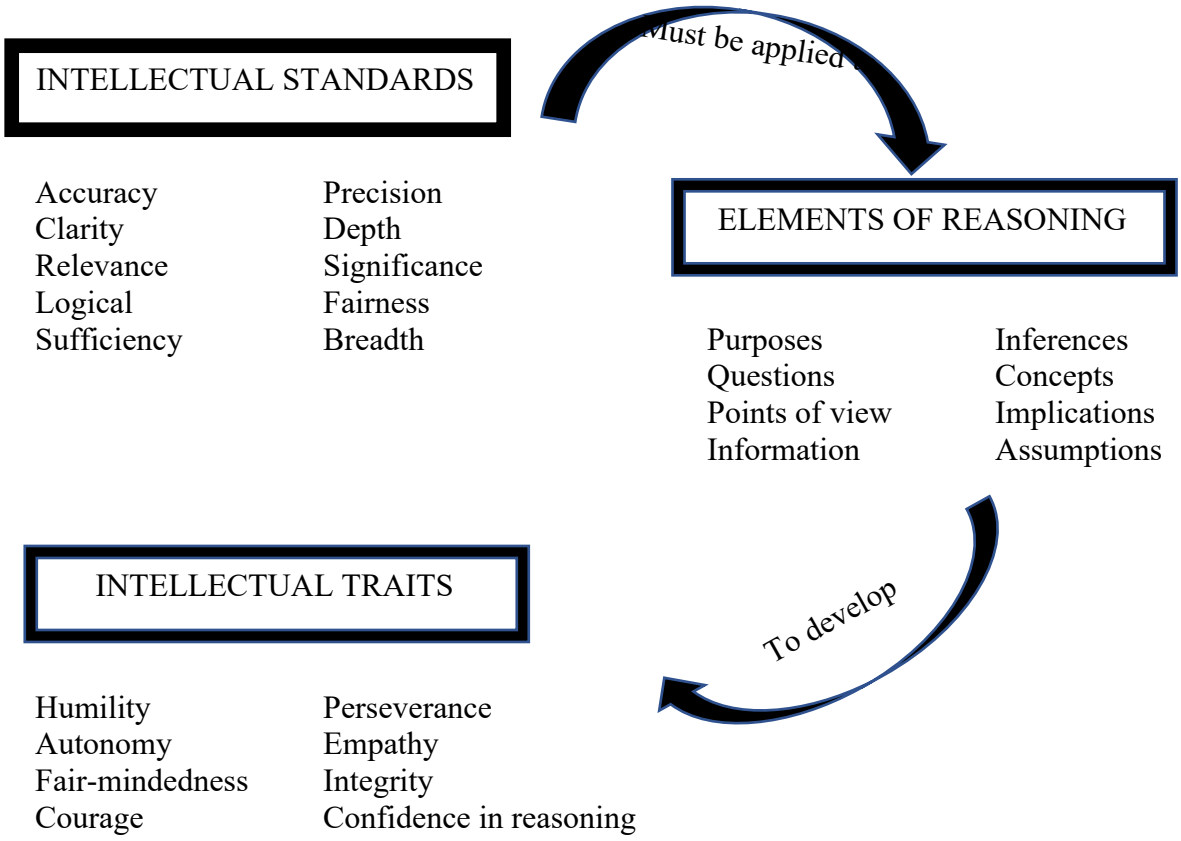

Figure 1. Elder and Paul critical thinking model. (Adapted from Elder & Paul, 2010)

Facione (2015), Elder and Paul (2010, 2013), and Papp et al. (2014) found that for critical thinking to be apparent in the learning process, students require intellectual

standards that assist them to reason within the domain of human thought, and that critical thinking can be developed within a framework of stages to help educators identify critical thinking competency.

Intellectual standards of reasoning. For many students engaged in nursing education, critical thinking is the hallmark of being successful in the profession. Elder and Paul (2006) have suggested that there are several standards appropriate to the assessment of critical thinking as it occurs from one context to the other but that there are seven universal standards applicable to all thinking including; clarity, precision, accuracy, relevance, depth, breadth, and logic. These standards can be used to assess the process that students engage in to come to their conclusions. To articulate these elements in this study, I will pay particular attention to the purpose, questions at hand, assumptions, inferences, implications, points of view, concepts and evidence that constitute the student's thought processes. This will identify how well the student was able to apply these universal paradigms to the elements of thinking to support the stages of critical thinking, with the overall goal being that of an accomplished thinker. The structure of the critical thinking stage theory helps illustrate the predictable stages individuals pass through as they consciously develop their critical thinking and connect learning to problem solving abilities.

Framework of stages for critical thinking. Thinking does not often align with quality. Thinking can be purposeful or aimless, and either of these can change the value of an individuals' thought process. Early on, Elder and Paul (2006) suggested that individuals struggled with purposeful thinking because this type of thinking required

critical and creative rigor in assessing problems and having to reason through the associated intricate details. Having a framework to understand how students reach levels of higher-order thinking is important to understanding how the mind can successfully engage in the formulation and production of intellectual standards (Elder & Paul, 2010). By moving forward slowly, methodically, and meticulously individuals can demonstrate how to be attentive, reflective, accurate, and show depth of thought. For the program under study these are important concepts as students are held accountable for their actions and knowledge in the lab and clinical setting even before they begin their nursing practice.

Elder and Paul (1996) created the critical thinking stage theory that followed two important assumptions. First, that most individuals would pass through predictable stages of critical thinking during knowledge acquisition, and second, that this process was not automatic, requiring commitment, which can be hampered by strongly held beliefs and values causing regression of critical thinking skill (Elder & Paul, 1996). Since the inception of this theory, it has undergone revisions based on 20 years of research into critical thinking by many experts in this field, and now has an additional assumption that underpins the framework suggesting that the intellectual quality of student learning is deeply rooted in successful instruction (Elder & Paul, 2010). Although this framework is based in research, Papp et al. (2014) suggested that it has not been well outlined for nurses and in nursing education but maintained that its importance as an essential meta-competency is paramount to future health care education.

An assumption that must not continue in nursing is that a learner's ability to critically think will develop naturally through the apprenticeship of novice nurses observing expert nurses. Instead, Papp et al. (2014) stated that it must be taught throughout the curriculum and clearly assessed by educators and expert practitioners. Engaging recently graduated students in a discussion that explores their perceptions regarding critical thinking in their basic-entry psychiatric nursing program has implications for understanding the intellectual factors associated with critical thinking development and how those factors are linked to complex problem solving.

Elder and Paul (2010) presented six stages of critical thinking that address the knowledge and skill of that thinking stage, as well as the implications for instruction and learning. These stages include: the unreflective thinker, the challenged thinker, the beginning thinker, the practicing thinker, the advanced thinker and the accomplished thinker and are further defined in Appendix B.

The purpose of these stages is to help educators to discover the essential parts of thinking, to better characterize the competencies involved in critical thinking development, and to identify the learner's stage of developing competency in critical thinking (Elder & Paul, 2010; Papp et. al., 2014). The current literature will help to further identify issues and current trends in critical thinking development supporting the development of this research study.

Literature Search Strategy

A systematic review of the literature was conducted primarily using the Cochrane Database of Systematic Review and the EBSCO research databases through the Walden

University online library. Additional searches were conducting using OVID databases, and ProQuest for both nursing and educational resources. A variety of key search terms were used both in combination and separately to find the most relevant literature, however the key search terms that produced the most reference material included: *critical thinking, critical thinking in nursing education, critical thinking in online education, e-learning, online nursing education, critical thinking stage theory, adult learning theories, online education, virtual classroom,* and *distance learning in education*. Further literature sources were also found in the reference sections from the current articles on critical thinking in nursing and online education. To better understand the foundational concepts of critical thinking and online learning in education, I also researched textbooks and websites dedicated to these concepts. This research included textbook authors from Canadian online universities, textbooks dedicated to critical thinking in higher education and teaching critical thinking, as well as research websites dedicated to the concept of critical thinking development in education and nursing.

Review of the Broader Problem

The literature on critical thinking in nursing education can be found as far back as 1965 but began to increase in the 1980's and throughout the following decades as researchers attempted to advance the understanding of critical thinking in nursing education through both systematic reviews and empirical studies. Research on critical thinking in online nursing education began more intently in the 1990's with the evolution of online modalities such as learning management systems, chat resources, and video capabilities that allowed students and instructors to meet in real time (Lewis & Kaas,

1998; Mallow & Gilje, 1999). The research on critical thinking and online learning continues in current literature however, there remains little consensus on the development of critical thinking skills through current online learning modalities and the future implications for psychiatric nursing education.

Historical Perspectives

One of the first instances that distance learning was discussed in the literature as an innovative method of teaching nursing was by Hinchcliff (1993) who presented information on a part-time diploma program in professional studies in nursing delivered entirely by distance education to first and second level practicing nurses. This was the first of many studies that would address the concepts of online delivery methods in nursing education. As learning technology developed more precipitately during this decade, other nursing schools began to adopt distance education using technological means including audio and video conferencing in order to reach a larger demographic of nurses (Lewis & Kaas, 1998).

These courses were often at the graduate or post-RN level and continued to involve students traveling to local schools to attend the 'virtual' class, and even though they were considered successful, challenges were apparent including connectedness, confidentiality, and communication (Lewis & Kaas, 1998; Reinert & Fryback, 1997). These early innovative methods met with significant resistance by nursing scholars who viewed distance learning as an inferior imitation to face-to-face teaching (Bullen, 1998; Kim & Vetter, 1999; Lewis & Kaas, 1998). They expressed concern regarding the

distance curriculum given that the foundational practice of nursing rested in the face-to-face development of the nurse-client relationship.

The explosion of learning technology with the new millennium transformed nursing education and health care itself, creating a platform where education could reach many and where the concept of online nursing education research became more prevalent in the literature and in practice. Specific authors chose to explore student perceptions of online learning and critical thinking dispositions of students in online nursing education (Ali et al., 2004; Carter, 2008). Other authors focused on how to build and track knowledge development in the online learning environment (Robley, Farnsworth, Flynn, & Horne, 2004; Walsh & Seldomridge, 2006). Some authors examined how to assess and evaluate critical thinking using online methods such as asynchronous discussion and course discussion (Leppa, 2004; VandeVusse, & Hanson, 2000) The only article found that addressed the design and evaluation of an online teaching strategy in undergraduate psychiatric nursing was Mahoney, Marfurt, daCunha and Engebretson, (2005) who sought to challenge nurse educators to prepare psychiatric nursing graduates for practice within an increasingly technological environment. However, Zauszniewski, Bekhet, and Haberlein (2012) and Zauszniewski and Suresky (2004) noted that psychiatric nursing practice continued to be influenced by generational traditional wisdom, published textbooks, and personal experiences shared from one generation of nurse to the next and Mohr (2009) warned that psychiatric nursing may become irrelevant if its' nursing educators and practitioners did not bring it into the 21st century.

The literature on critical thinking in nursing education began to notably increase in the 1980's, and through the following decades as researchers attempted to advance the understanding of critical thinking in nursing and nursing education through both systematic reviews and empirical studies. Web based research sites including Google Scholar and EBSCO Host, presented a doubling of research in the 1980's on critical thinking in nursing education from approximately 8,000 articles in the 1970's to 15,500 articles (Googlescholar.com). This again doubled to 29,000 in the 1990's with the largest spike in the literature in the early 2000's with over 85,000 articles and books on the topic of critical thinking in nursing education. In the last 5 years, research on critical thinking in nursing education has declined with only 10,200 articles found on the Cochrane database, 32,000 from google scholar and less than 1500 from Cinahl Plus. This number reduces further with the addition of search terms including blended, hybrid and online.

Current Perspectives

Nursing sits at a crossroads due to the profound changes that are taking place in science, technology, patient activism, and the nature and setting of nursing practice (Newton & Moore, 2013). Over the last 25 years, nursing curricula reform has focused merely on rearranging curriculum without addressing substance or educational paradigm shifts and to continue in this vein of passive learning could send nursing backwards (Stokowski, 2011). Nurse educators can identify and implement educational changes not only for how critical thinking is acquired, but also focus on innovative and creative methods of instruction in order to move nursing education into the future.

Since 2013, research has been sporadic and unfocused, sometimes addressing critical thinking as a concept in nurse education or as a concept in a particular online course, with little empirical evidence or application that supports the use of fully online or hybrid educational strategies in basic-entry psychiatric nursing education (Carter et al., 2016; Chan, 2013; McCutcheon et al., 2015; Monaghan, 2015; Montenery et al., 2013). The nursing literature provides many systematic reviews and information on critical thinking in nursing, yet few provide both the concepts and strategies for educators to move their understanding of online technology forward (Chan, 2013). There is also limited research regarding the factors that predict critical thinking not only in online nursing education but in nursing education in general, and even though educators have often talked about the importance of critical thinking in education, many have not been able to define the construct nor distinguish between critical thinking and the content being covered (Costello et al., 2014a; Hunter, Pitt, Croce, & Roche, 2014). Researchers have focused on a few key aspects of critical thinking in nursing and nursing education throughout the last five years. Collective themes that emerged included: the quantitative assessment of critical thinking, the e-learning experience for students and faculty, critical thinking and clinical practice issues, and instructive techniques to develop critical thinking.

Quantitative measurement of critical thinking. Researchers have focused on quantitative critical thinking assessment, description, and dispositions in undergraduate nursing education impelled by the Delphi Report on Critical thinking by Facione (1990) aiming to provide empirical and quantifiable data to support the development of critical

thinking in both online and face-to-face nursing programs. Facione (2015) expanded on the initial 1990 report by providing an in-depth article on all aspects of critical thinking, defining it for the reader and providing expert opinion throughout, as well as providing instructors and students alike, with questions to ask during learning and instruction that were derived from the quantitative California Critical Thinking Assessment Test. He also stressed the global importance of a citizenry that is able to critically think, asking provocative questions about how educators and employers could increase the value of critical thinking in today's society.

This international identification of the importance of critical thinking has been addressed by a number of nursing educators using quantitative assessment tools such as the California Critical Thinking Skills Test (Kaya et al., 2017), the Heath Sciences Reasoning Test (Hunter et al., 2014; Nair & Stamler, 2013; Searing & Kooken, 2016) and the Delphi Method (Paul, 2014). Specifically, Kaya et al. (2017) strongly implied that critical thinking skills remain low at both the beginning and the end of the first year in nursing school and stress the importance of studying critical thinking from a longitudinal perspective. Nair and Stamler (2013) noted inconsistencies and disagreements in the literature regarding results of quantitative studies measuring critical thinking in nursing and suggested that the further development of self-assessment tools for students and the use of critical thinking stage theory could be used to motivate students and educators in the use of metacognitive skills and clinical judgment to increase the health of society.

Searing and Kooken (2016) also brought into question the use of quantitative testing measures that are not specific to health care. However, using the Heath Sciences

Reasoning Test assessment, they found statistical significance with the final year of study, student nursing experience, nationality, and being native to the country where the student was studying. The authors considered these to be accurate predictors for critical thinking skill. However, due to the small variances noted, the authors believed that there could be other more important factors attributed to student development of critical thinking skills that could not be quantitatively measured.

E-learning for students and faculty. Other authors have researched the adaptability of students and teachers to online learning in general education and nursing education. A systematic review of the nursing literature by Andreou et al. (2014) brought to light barriers to critical thinking that included a lack of understanding critical thinking complexities, inadequate critical thinking socialization, and students' own reluctance to engage in the critical thinking process. This review presented a significant knowledge gap regarding the relationship between thinking and learning and stressed the importance of further empirical studies to address critical thinking achievements in nursing students.

Studies addressing the e-learning experience in nursing education have been an important part of enhancing knowledge regarding technological advances in nursing. These studies addressed the concept of e-learning as a viable and meaningful method of instruction for general students and nursing students in post-secondary education. These studies addressed the continued barriers of e-learning methods including anxieties with technology (Costello et al., 2014a), lack of digital skills, lack of institutional support (Button, Harrington, & Belan, 2014), the complexity of learning engagement versus social use of technology, lack of community, and most importantly how e-learning is

defined and conceptualized into educational curricula to provide meaningful learning for students (Salyers et al., (2014). These same studies also presented the positive aspects of e-learning including flexibility of time and space, rapid access to faculty and peer responses, deeper learning than face-to-face classrooms, and the technological sophistication of today's university student.

Through regressive analysis, Salyers et al. (2014) concluded that positive e-learning experiences happened when students were well supported by faculty and institution, courses were easy to navigate and use, and students had previous e-learning experience. They also suggested that students have been moving towards e-learning as an exclusive means of education due to the flexibility in how and where they learn, as well as the level of technological savvy they bring to the learning environment. Students are looking for ways to integrate this technological acumen into their learning lives.

In literature reviews by Button et al. (2014) and Costello et al. (2014a), themes included (a) the need for ancillary support: (b) enhancement of teaching and learning through technology: (c) the careful design and preparation of e-learning to maximize knowledge: and (d) critical thinking and clinical reasoning competencies to provide safe, skilled care. Salyers et al. (2014) stressed the need for further research into student perceptions and their experiences with e-learning to better understand how to move educational curricula forward. This need for further research regarding student perceptions of their e-learning experiences and how it impacts their knowledge acquisition to become competent practitioners was addressed in this study on student perceptions of critical thinking in an online learning environment.

Critical thinking and clinical practice issues. Some authors have attempted to increase the understanding of clinical practice issues regarding critical thinking in nursing and nursing education, concerned with the theory to practice gap that continues to pervade the literature. Kavanagh and Szweda (2017) examined the practice readiness of newly graduated nurses based on their research regarding national exam pass rates and the false and incomplete picture of practice readiness that these national exams produce. They stressed that even though current nursing curricula in United States appears to prepare students with the knowledge to pass national exams, when a performance-based assessment was completed less than 30% of students were adequately prepared to practice in a hospital setting. Issues directly related to clinical reasoning, critical thinking, and judgement were seen as top priorities to ensure practice readiness, which were not demonstrated by newly graduated nurses. They stressed the need for curricula that would foster critical thinking skills to facilitate the transfer of theoretical knowledge to clinical practice to produce and encouraged further research into understanding students' readiness to practice.

Monaghan's (2015) systematic review of the literature on the theory to practice gap in the United Kingdom also presented evidence that recently graduated students felt unprepared for practice and lacked confidence in their skillset. The authors suggested that this could be due to the change from apprenticeship model to a more academic focus but indicated that the literature did not provide enough empirical evidence to make a stronger connection and stressed the need for more empirical studies on students' understanding of theory to practice.

Empirical research on the issues of clinical practice were studied by Naber et al. (2014) who specifically examined student reflections on critical thinking during clinical education practice. Kavanagh and Szweda (2017) also examined new graduate nurses' ability to clinically reason following nursing education. Roth et al. (2015) examined the human factors that contribute to nursing errors in practice and why these errors occur, and Woods et al. (2015) explored student perceptions of their preparedness to practice once they had finished nursing school. All four studies noted the concept of self-confidence in abilities, as well as the ability to link the application of skill to theoretical learnings. Particularly Kavanagh and Szweda (2017) suggested that only 23% of newly graduated nurses demonstrated entry-level competencies and practice readiness suggesting that students may be test ready, but not practice ready for a complex health care environment. Although Woods et al. (2015) obtained contradictory results through a quantitative study where a readiness to practice survey was completed, both studies cautioned that student confidence and competence was multi-layered, and even though students may profess a readiness to practice, there are improvements in education that need to be made to strengthen clinical judgment and critical thinking.

Roth et al. (2015) explored the human factors that contribute to nursing errors cited lack of critical thinking as the fourth most likely cause of nursing errors in practice. However, understanding the perceptions of why they were unable to critically think was not addressed in the study. Naber et al. (2014) shed light on this phenomenon in that specific tasks of higher-order thinking require; (a) the ability to transfer knowledge over time, (b) the act of collaboration with experienced nurses, (c) understanding the

consequences of specific actions, and (d) conceptualization of the whole situation. All of these key points require time to master skill, self-confidence, and a willingness of all nurses, new and experienced, to come together to effectively care for patients.

The studies revealed that many newly graduated nurses are not prepared for the fast-paced, complex health care environment, requiring further time to assimilate knowledge into practice. All of these studies also suggested the need for further research into the assessment of student's readiness to practice from both a faculty and a student perspective, as well as curricular changes to facilitate the growth and development of students' critical thinking abilities. The issue that I have chosen to study will help contribute to this body of literature by providing further insight into the experiences of students and their understanding of their critical thinking development as it pertains to their ability to problem solve in practice situations.

Instructive technique to develop critical thinking. Other authors have focused on instructive techniques that can help develop critical thinking in online nursing education. Nold (2017) researched the use of critical thinking teaching methods to promote student success. Based in the dichotomies presented in literature on the supposed use of critical thinking methods in instruction, his literature review found that although instructors believed they were teaching critical thinking methods, they were still using lecture format, student assignments that focused on memorization, and lower level cognitive tasks that did not promote critical thinking development. Nold (2017) proposed using various teaching methods, including written assignments, research, asynchronous discussion forums, and synchronous discussion via the internet to facilitate critical

thinking. His study demonstrated a positive correlation between these ‘active’ methods of teaching and learning to support critical thinking development and the apparent positive impact this had on student learning.

Critical thinking skills were also assessed in terms of performance of nursing school graduates. Pitt et al. (2015) found evidence that nursing graduates with less than one year of experience consistently struggled with critical thinking, problem solving, and judgement suggesting that nursing curricula focused on the accumulation of knowledge rather than the application of it to real situations. The authors found a statistically significant increase in critical thinking between entering and graduating nursing school but found no relationship between entry-level critical thinking and clinical competence. This suggests that further research is needed into the link between critical thinking and professional problem solving in real world situations.

Students must develop competencies and skills to practice safely in the health care environment, and instruction in these skills was the focus of Bloomfield and Jones’s (2013) study. Their results revealed mixed reactions between students regarding the implementation of online learning methods in a traditional face-to-face program. Even though the students did view e-learning as a valuable experience to learn the theory behind specific nursing skills, they did not want to give up the traditional face-to-face methods, preferring a mixture of both. This study contributes to the ongoing discussion of non-traditional learning methods that are effective in nursing education and is an important contribution to my study as it confirms that students do see benefit to the online methods and are able to find meaningful learning, that will support their practice.

As a recognized requirement of 21st century learners, critical thinking is a valuable asset for nursing graduates. Students' understanding of how technology mediated instruction assists them in developing critical thought was a key focus of my current research. Swart's (2017) study on the student perspective of online learning methods supports the use of the technology to develop critical thinking and stresses the importance of student's being taught to develop skills to gather information appropriately. Psychiatric nursing students need to be able to gather knowledge competently, purposefully and efficiently. They need to be able to take that information and critically analyze and reflect on it to develop decision making abilities that provide safe, effective care in intense, and complex patient situations. Because technology is so pervasive in our health care system, educators must begin to integrate it into curricula to properly prepare students for practice. With no specific courses that are directly related to critical thinking in a specific program it is often assumed that it is taught somehow, and somewhere else in the program (Swart, 2017). It will be important to expand on this study to further understand student's perceptions regarding their critical thinking development to determine the gaps in student learning and to further inform psychiatric nursing curricula.

Technology enhanced learning. There is no doubt that the ability of nursing students to think critically continues to be seen as an essential outcome of nursing education that supports authentic and skilled nursing practice (McDougall, 2015; Papp et al., 2014; Paul, 2014). Nursing students have unique needs and their perceptions and experiences with online modalities vary. Research in nursing education continues to

provide evidence to support online learning in the development of the higher-order thinking skills necessary to successfully practice in today's nursing environment (Bloomfield & Jones, 2013). However, the requirement and expectation for technology enhanced learning continues to grow exponentially, making this a fundamental and immediate requisite within nursing curricula at all levels.

Critical thinking is necessary not only in the clinical nursing setting, but as an integral component of online nursing education curricula and nursing research as it has the potential to make learning possible for students outside the traditional classroom (Lee, Kim & Kim, 2014; Salyers et al., 2014). Online nursing education has already been accomplished in other countries, and this new way of leading education through online learning will require a paradigm shift for Canadian psychiatric nursing educators who would need to adopt new ways of knowing to support this transformative change (Levesque, 2012). Salyers et al. (2014) further contends that today's students, being much more technologically sophisticated, are looking for ways to better integrate technology into their education. Guri-Rosenblit (2014) suggested that many of the online technologies used to support the advancement of higher-order thinking in nursing education are used merely to support continued lectures, meetings and tutorials rather than using this technology as their main delivery medium. Kantar (2014) provided strong support for curriculum transformation in nursing due to the lack of preparedness of new graduates in general despite the exhaustive literature that identifies the many reasons for this. She suggested that rather than continue to reorganize nursing curriculum, educators must look at the educational strategies in use to promote the use of higher-order thinking.

Researchers continue to suggest that critical thinking does evolve through the learning process however the association between critical thinking and online learning in nursing has little empirical evidence behind it (Andreou, et al., 2014; Lee et al., 2014; Papp et al., 2014). Even though literature supports the concept that critical thinking can occur in an online environment, there is a need for more current research into the effectiveness of online learning as it relates to the critical thinking process as this presents implications for its use in future nursing education (Boling, Hough, Krinksky, Saleem & Stevens, 2012; Carter et al., 2015; Lee et al., 2014; McCutcheon et al., 2015).

The traditional education system based on rote learning, classroom teaching, and the unequal power relationships between student and teacher hinders the growth of critical thought (Chan, 2013). Gould et al. (2014) suggested that online learning in basic-entry nursing education has positively increased knowledge and acquisition of critical thinking and nursing skills, as well as increased student satisfaction in terms of convenience and the ability to work remotely. This was also supported by Lahti et al., (2014) who proposed that e-learning can help students gain knowledge and skills faster than the traditional face-to-face instructor-led methods.

An early study conducted by Contact North/Contact Nord (2012) suggested that a number of barriers continue to affect the increase of online learning technologies in Canada including the lack of digital knowledge not only with students but with the professoriate as well, the continued focus on growth of traditional learning methods, and the changes in design from instructor led courses to ones focusing more on student engagement. Five years later, the study was conducted again and themes that continued to

emerge included the lack of digital pedagogical knowledge and training, resistance by instructors to online learning, the perceived quality of online or hybrid courses, and the inadequate support from organizations and government to support the development and resources required (Bates, et al., 2017).

One of the more prevalent issues in general and psychiatric nursing programs in Canada include the lack of digital knowledge experienced by both students and nursing educators that presents implications for the use of online learning technologies in nursing education as it pertains to the development of critical thinking skills (Boling et al., 2012; Carter et al., 2015; Contact North/Contact Nord, 2012; Lee et al., 2014; McCutcheon et al., 2015; McDougall, 2015). Bates et al. (2017) suggested that the need for better data to track developments in online learning in Canadian universities is essential to determine how digital technologies are impacting the student learning environments.

Nursing educators cannot lose sight of the fact that patient outcomes both define and connect the core of nursing education, and that students must be able to cultivate meaningful learning that demonstrates critical thought and the ability to problem solve to develop safe, competent practice (Kavanagh & Szweda, 2017). This study addressed this gap in local practice by researching the development of critical thinking in a unique program that teaches basic-entry psychiatric nursing theory in an online environment.

Implications

Previous literature on critical thinking in online nursing education has been sporadic and unfocused providing a lack of evidence on the effectiveness of online methodologies in basic-entry nursing education (Ali et al., 2004; Carter et al., 2006;

Carter et al., 2016; Carter & Rukholm, 2008; McCutcheon et al., 2015; Profetto-McGrath, 2003; Simpson & Courtney, 2002). A lack of evidence-based best practices has perpetuated a reliance on traditional face-to-face teaching methods in psychiatric nursing education that may not support the future needs of an increasing technologically savvy and geographically diverse student population (McCutcheon et al., 2015). Possible project directions include the construction of online critical thinking competency modules that could supplement traditional instruction. The project deliverable might also include curricular modular that enhance student skills necessary to support psychiatric patients in clinical settings. Scenario based virtual reality could enhance new nurse skills in critical thinking professional applications without endangering vulnerable patients.

This exploratory study of student perceptions of critical thinking development in online basic-entry nursing education has provided information on how critical thinking can be supported using online learning methods. This could contribute to the literature that supports online learning as critical to the future of higher education in nursing (Beachy, 2017; Carter et al., 2016). Research from this study may provide additional knowledge for nursing educators to begin the dialogue of what change can look like for the future of psychiatric nursing education.

The findings of this study have the potential to create positive social change in basic-entry psychiatric nursing education delivery by offering more depth of understanding regarding the development of critical thinking using innovative online strategies. Providing information that addresses the uncertainty regarding the benefits of online instruction as a learning method will be key to helping psychiatric nurses embrace

this method of teaching more successfully, and to expand access to essential curriculum in the future. More specifically, data generated using multiple steps in analysis may help psychiatric nurse educators become more familiar with the collective factors and experiences that help student develop critical thinking skills in online education for basic-entry-level psychiatric nursing students.

Summary

In section one of this project study I provided a brief introduction to the concepts surrounding critical thinking and online education in psychiatric nursing practice. I explored the local problem regarding the challenges faced by current practicing psychiatric nurses and the need for continued development in critical thinking of nursing students and online methodologies has been explored in the literature. The problem statement addresses the issue of the lack of understanding regarding the effectiveness of online learning methods in developing critical thinking skills. Research both supports and challenges the concepts of developing critical thinking in online education, and through this study I will seek clarity regarding how students perceive their online learning activities contributing to their critical thinking skill development.

The purpose of the study was exploratory in nature and addressed the research problem by investigating the phenomenon of critical thinking in online learning. I used research questions to consider that adult learners come with a certain set of experiential skills and looked at how students develop their critical thinking skills to perform in a professional environment and what students perceived as contributing to their critical thinking development in online learning.

I used the conceptual lens of critical thinking stage theory to provide a framework to guide the research for this study supporting learner-centric methodologies that build on important concepts of critical thinking development. I provided definitions of key concepts that I introduced in the chapter to provide clarity for the reader. I also defined key terms including critical thinking, the asynchronous classroom, and online learning. Finally, I addressed the significance of the study in terms of its relation to positive social change in psychiatric nursing education. In the next chapter, I will provide a detailed review of the methodology including the research design and approach, participants, data collection and analysis plan, and limitations for this research project.

Section 2: The Methodology

Research Design and Approach

Building knowledge for the complex and dynamic discipline of psychiatric nursing requires ideas that come from a variety of perspectives, disciplines, and inquiry approaches (Thorne, 2013). Because psychiatric nursing practice has been built on the foundations of recognizing perspectives and experiences, while engaged in critical reflection, it is among the most fundamental aspects of decision making in psychiatric nursing practice. The predominance of an experiential and theoretical knowledge base continues to be essential in psychiatric nursing education as it guides the understanding of psychiatric nursing practice, re-enforcing it as a unique and distinct professional specialty.

For the scope of this project study, it was important to note that the potential participants in the online portion of the blended program participated in a virtual classroom. Both cohorts studied and engaged in synchronous activities such as interactive webinars, group work and group presentations, and asynchronous activities, such as written discussion forums, academic assignments, and exams. The second cohort had increased access to interactive webinars, videos, enhanced reflective exercises, case study work, and simulation activities throughout the entirety of their program; however, the first cohort had these opportunities only in the latter half of their program. The literature has supported this type of online environment as conducive to active learning that promotes the development of critical thought, presence, communication, and interaction to equip the new nurse with the foundational knowledge and skills for competency-based

practice (Lukenchuk, 2016; McCutcheon et al., 2015; Ricci, 2013; Woods et al., 2015). The purpose of this qualitative study was to explore students' perceptions about critical thinking experiences in online nursing courses and how those experiences influenced their entry-level competencies and problem-solving development. Using an exploratory, phenomenographic method, I investigated how students thought about, and learned, concepts of critical thinking using online methods of learning and how possible variations in their development support current national psychiatric nursing competencies for entry-level practice, and effective professional problem solving.

The essential concept of this research study centered around the misconceptions regarding the development of critical thinking using online learning methodologies in basic-entry psychiatric nursing education. The belief that novice psychiatric nurses develop their expertise through both experience and knowledge acquisition is not a new concept, and these active learning processes help develop critical thinking that allow new graduates to make appropriate clinical decisions (Martin, 2002; Nold, 2017). What has been less understood is how this active learning can happen in the online environment to produce a skilled professional who is able to engage in complex problem solving.

Yilmaz (2013) indicated that researchers need to be cognizant of research traditions to make necessary decisions regarding the appropriateness of their studies. Nursing scholars have been adopting qualitative research methods due to the need to understand not only the theoretical aspects of the discipline, but also the necessity for practical application (Thorne, 2013). Increasingly, the kind of knowledge that is needed in this complex practice environment is not concerned with the mere description of

something but translating what is known into an understanding of why it is important and how to use it in a meaningful way. For this reason, I chose a qualitative research method because I wanted to understand the student's perspective regarding critical thinking development in an online psychiatric nursing program in a province in Canada and use this knowledge to inform future psychiatric nursing education. Because this is the only program of its kind in basic-entry psychiatric nursing education, I did not want to focus on a larger psychiatric nursing population because I wanted to determine whether the nature of this program's unique delivery method supported critical thought development for the beginning psychiatric nursing graduate.

Further research into conducting a quantitative approach to this study determined that despite the increasing importance of critical thinking in nursing, it has remained difficult to assess (Newton & Moore, 2013; Papp et al., 2014; Searing & Kooken, 2016). The common tests used to describe critical thinking, such as the California Critical Thinking Disposition Inventory and the Health Education Systems Incorporated, have not identified strong relationships between nursing graduate success, bringing into question the efficacy of using these methods of assessment in nurse education (Searing & Kooken, 2016). Papp et al. (2014) suggested that the quantitative tools used to assess critical thinking have fallen short in their ability to assess this vital skill in the clinical context. Furthermore, quantitative research requires large samples for adequate data analysis, which may not be attainable due to the geographical distance of students from the program and difficulty connecting with a large number of these students after graduating from the program (Burkholder, Cox, & Crawford, 2016).

Unlike quantitative researchers, who look to identify causal links through the relationships of variables in numeric patterns, qualitative researchers look for a rich descriptive study of phenomenon that addresses the process, context, interpretation and meaning through inductive reasoning (Cresswell, 2013). Reviewing qualitative methods, I initially thought that a case study method of research would help increase the understanding of this complex issue and add strength to what is already known in the research. However, due to a lack of robust data to evaluate outside of interviews, I rejected this method (Burkholder et al., 2016).

I also considered a phenomenological design for this study, yet the descriptive nature of phenomenology does not lend to the initial exploratory nature of this research. Nor does it allow me to research the collective experience that may contribute to a better understanding of the phenomena (Burkholder et al., 2016). Grounded theory design would not apply because I was not looking to develop a theory on the basis of what I was observing, nor would the ethnographic design be relevant because I was not looking to study critical thinking within the context of a cultural system (LoBondo-Wood & Haber, 2013). I also considered that participatory action research, which is often used in qualitative nursing research, was not required due to the exploratory nature of this research, which could in fact define the problem further.

I also contemplated the historical design, looking to review documents from the start of the online psychiatric nursing program; however the program has changed so significantly since its inception, and evaluation of student's critical thinking was not well documented therefore, I believed that the lack of robust documentation and inadequate

data from previous student work would not inform nurse educator's future practice (LoBondo-Wood & Haber, 2013).

From this examination of qualitative methods, I chose a phenomenographic design, aiming to identify the qualitatively different ways in which students experience, conceptualize, perceive, and understand their development of critical thinking in an online psychiatric nursing program (Marton, 1986). Furthermore, a phenomenographic research design allowed me to explore and describe the nuances that existed within the concept of critical thinking in online basic-entry psychiatric nursing education, as well as clarify ways to assess how students understand their development of critical thinking to prepare them for competency-based practice (Richardson, 1999; Zoltowski, Fila, & Dringenberg, 2017). A phenomenographic design also allowed me to summarize the varied experiences of the participants who shared the same online learning methods in a basic-entry psychiatric nursing program. This might help to expose the complexity that students encountered when engaged in learning and how their ways of understanding might differ but still involve higher-order thinking skills (Barry, Ward, & Walter, 2017; Cibangu & Hepworth, 2016; Costello, Koole, & Ramussen, 2014).

This exploratory phenomenographic design was best suited to discover and understand psychiatric student nurses' varied experiences in their development of critical thinking using online methodologies. Most important, the value of using a phenomenographic design helped to uncover understandings and knowledge of this particular phenomenon central and unique to the cohort of participants in this specific area of psychiatric nursing education (Barry et al., 2017).

Participants

Participant recruitment into research studies involving humans can be challenging (Agency for Health Care Research and Quality [AHRQ], 2010). Key activities involved in this process included (a) identifying eligible participants, (b) adequately explaining the concepts of the study to the participants, (c) obtaining an adequate number of participants to reach the study goals and design, (d) obtaining informed consent, (e) maintaining rigorous ethical standards, and (f) keeping participants engaged until the study was completed (AHRQ, 2010).

This study took place in a psychiatric nursing program of a local community college in a Canadian province. The program has been providing psychiatric nursing education to urban and rural students since 2006 graduating over 700 students in the last 10 years (J. Stene-Murphy, personal communication, June, 2017). Approximately 70 students graduate per year and of those students close to 46% work in the rural communities where they live, supporting the growing need for psychiatric nurses in these outlying areas (CIHI, 2017). All students who entered the program had to live in the province where Alpha college was located and meet all admissions criteria prior to being offered a seat. Throughout the program students had to maintain a 70% average in each course to successfully move from semester to semester, as well as pass the national registration exam to practice as a registered psychiatric nurse.

Sampling Approach

For this study, I used purposeful sampling techniques to select individuals based on their first-hand knowledge and experience with critical thinking development using

online learning methodologies (Streubert & Carpenter, 2011). This type of selection method helped me develop context rich, and detailed accounts of critical thinking development in psychiatric nursing students completing their basic-entry education online (Ravitch & Carl, 2016). Students who had successfully completed all theoretical coursework within the last year were selected from the program's cohorts. Alpha College's student and alumni services keep in contact with current and previous students until they have been practicing for five years, and I received written permission from Alpha College's vice president of educational delivery to contact both current students and alumni for this research study.

Once this study was approved by the IRB (04-09-19-0620984), I requested email lists from student and alumni services from the two separate cohorts via email and stored these lists on a password protected computer. From each of the cohort email lists I sent a detailed email requesting their participation and then chose the required selection size of participations for the research. In this email, I detailed my credentials, the purpose of the study, the commitment required by the participants and the confidential nature of the study. Once participants agreed to be in the study, I sent another email with an informed consent letter attached with a signature request within one week. This letter followed the International Review Board criteria for obtaining informed consent.

Although no explicit sample size has been suggested in qualitative research data collection, Bowden (2005) and Trigwell (2000) have suggested between 15-30 participants in phenomenographic research to maximize variations of experiences within the context of the phenomenon. 15 students agreed to participate in this research study,

which allowed for the variation in experience that phenomenographic research requires, as well as effective management of the gathered data (Trigwell, 2000). This sample size contributed to the saturation of data needed with as much variation as possible, not only in experiences, but in students' professional backgrounds, levels of life experience, age, and gender (Akerlind, 2012).

As the researcher of this study, I selected potential participants based on set criteria, informed consent, and ethical guidelines and decreased potential bias through qualitative techniques including journaling, data triangulation, and respondent validation if discrepant data was discovered (Burkholder et al., 2016). I also used a small incentive for this research study supported by Grant and Sugarman (2004) who indicated that when used appropriately, incentives such as gift cards help to reimburse any incidental costs associated with participation in an interview process.

Ethical Procedures

Research ethics and compliance have been important aspects of this research process especially working with human participants. Walden University has a rigorous ethics procedure that I adhered to throughout the proposal and project process. Before I began to recruit for this study, ethical approval was obtained from both Walden University Research Ethics Board and written approval from the compliance office at the college under study. I received permission from the vice president of academics to conduct this research confirmed in a letter of cooperation.

To gain participant consent to ensure my research met ethical regulations, I provided informed consent following the process outlined in section eight of the

International Review Board's application to conduct research titled: Obtaining Informed Consent. A further verbal explanation was provided to the participants prior to the interview including the informed consent, the purpose and nature of the study, and finally providing an explanation for how the data would be collected and used in the research process (Bailey, 2018). Confidentiality was guaranteed throughout the research process and in the study results, and participants were assured that they might ask questions at any time, stop the interview process, and withdraw from the study, just as I might terminate the interview during the research process.

The risks associated with this study were deemed to be minimal in that they did not exceed what may be routinely experienced in daily life, such as the normal stress one may experience during a job interview or performance review (Burkholder et al., 2016). Interviews were audio recorded and transcribed verbatim and identifying information was redacted and kept separate from the records. Data has been securely stored on a password protected computer and I have been the only one with access to the raw data. All data will be kept for five years following the study and will then be destroyed. All notes on this data have been stored on a password protected computer and any written information from these sources, such as printed documents have been stored in a locked drawer. This information will also be kept for five years following the study and will then be destroyed.

Data Collection

This qualitative, phenomenographic research consisted of open, semistructured interviews where the researcher was the primary instrument for data collection (Rubin &

Rubin, 2012). Using a phenomenographic design does not necessarily encompass the entire singular experience but aimed to detect similarities and differences that corresponded to the collective level of experience believed to be critical to meeting entry-level competencies for psychiatric nursing practice (Marton, 1996). Once I made my call for participants, I obtained a representative sample of those willing to engage in the interview process. Data collection and analysis procedures aligned to the phenomenographic best practices described below.

As interviews were the primary instrument for collecting the data for this study, transcribing and coding were the key means of analyzing the data, which is common in phenomenographic studies since the goal is to understand the variations in the experiences of the phenomenon. For this investigation, I used semistructured interviews that followed an interview protocol as well as audio recordings that allowed me to accurately transcribe data. The interview questions created for this study were developed from information provided by Elder and Paul (2010) on intellectual standards, as well as suggestions made by Bowden (2005), Akerlind, Bowden, and Green (2005), and Rubin and Rubin (2012) (Appendix C). Bowden (2005) encouraged semistructured interviews, as well as using an identical opening scenario for each interview to ensure the researcher's relationship with the phenomenon did not influence the participants.

Using responsive interviewing techniques, based on semistructured interview questions helped to emphasize the importance of trust between the participants and researcher and allow for a give and take conversation (Rubin & Rubin, 2012). The open and approachable framework on which phenomenographic interviews are based, also

helped to address the research questions by using a method of questioning that allowed participants to explore their understanding and experiences of critical thinking development as fully as possible (Bowden, 2005). The semistructured questions helped participants to describe their awareness of the phenomenon completely based on the experience and knowledge they brought to the discussion (Bowden, 2005; Rubin & Rubin, 2012).

Interviews are one of the prominent ways of collecting data in phenomenographic research, and researchers follow specific guidelines during the data collections process that include the following:

- Interviews must be conducted in an open, collaborative manner that allows participants to explore their understanding, experiences or ideas regarding the phenomenon as fully as possible (Akerlind et al., 2005).
- Researchers must take special care with follow up questions during the interview (Akerlind et al., 2005). It is suggested that researchers bracket their own experiences, and ideas when using follow-up questions.
- Researchers take a passive role during the interview to create an environment where participants are able to fully reflect on their awareness completely (Akerlind, et al., 2005; Green, 2005).
- Data collected should be done during one interview and if the participants are able to describe their awareness completely, subsequent interviews should not be necessary (Green, 2005).

Furthermore, the researcher must be adept at interpreting what the participant is saying during the interview to decide if further questions or probing are required (Sjostrom & Dahlgren, 2002). Any misunderstanding regarding what the participant is trying to say can jeopardize the quality of the data obtained during the interview. Most commonly, in phenomenographic interviews, participants are questioned regarding their perceptions of a specific phenomenon. Their answers help the researcher develop different descriptive categories, which constitute the outcome of the research. These perceptions and concepts are central to phenomenography and provide a deeper understanding of the various ways that individuals think about their experiences.

For this study, I conducted the initial interviews both face-to-face and on the phone according to participant preference. I traveled to the various communities where the students were living and working, to meet with them for the face-to-face interviews. To encourage participation and remain flexible, I met the participants at a location of their choice and a time and date that worked for them. Phone interviews were conducted when participants could not meet face-to-face due to distance or personal preference, but still wanted to participate in the interview process. Interviews took between 30 and 40 minutes on average. Even though most phenomenographic research is conducted with only one interview, I addressed discrepant data through the process of member checking so that I could make use of and adjust the analysis based on my engagement with the participants. (Burkholder et al., 2016; Green, 2005). All interviews were audiotaped at the time of the interview and then transcribed verbatim.

My overarching role in this phenomenographic research process was that of data collector, which is true for most qualitative research (Burkholder et al., 2016). In this case I was situated in the activity of conducting interviews and observing students throughout the interview process. Throughout this study, I was careful to avoid bias or undue influence on the process or results due to my previous administrator role at Alpha College. To mitigate my influence on relationships, I chose to interview participants who were either alumni, or current students who had completed all coursework and no longer participated in the online environment facilitated by online instructors. This second group of students were managed by a different administrator throughout their final practicum experience. My professional relationship with the potential participants was one of psychiatric nursing researcher with no future supervisory function for any of the students who I interviewed.

Part of my overall data organization and management included a timeline to follow for collecting data that included a presentation of this study, IRB approval, organization of the participant selection process, selecting final participants, and data collection. During the data collection process, I organized my data sources through labeling and precoding. During this precoding process, I created a precoding memo and addressed specific questions to help guide deeper analysis. Systematic interpretation occurred throughout the data collection process, with the use of field notes, a reflective journal, memos, and transcription of all audio taped interviews to maintain rigor and validity during the data collection process.

Data Analysis

Over the past several years phenomenographic research has become more applicable to nursing as qualitative researchers have attempted to study the experience of more than just one individual (Degan, 2010). In most of the early studies, researchers sought to analyze the clinical experience in nursing, quality assurance issues in nursing, and perceptions of how nurses see their role as educator at the bedside (Brammer, 2006; Dahl, Nyberg, & Edéll-Gustafsson, 2003; Lindberg, 2007; Lundqvist & Axelsson, 2007). There have also been gaps of time in the use of this method to further understand areas of nursing practice and education even as earlier studies called for further investigation of student's collective experiences and perceptions to develop and further knowledge, and obtain rich data on student's views of critical thinking in their education (Chan, 2019; Mahoney et al., 2005). Therefore, using a phenomenographic analysis strategy for my study seemed the next logical step in the process of understanding student's collective experiences in an online psychiatric nursing program.

Researchers using phenomenography have shed light on the variations of human meaning and understanding of a shared phenomenon, creating a unique analysis of variations of the experience (Akerlind, 2005; Marton, 1981). This analysis has ultimately provided different descriptive experiences that logically related to each other typically through a categorically inclusive relationship. The goal of my research was, not only to explore different meanings, but find the logical structure that relates these different meanings. Akerlind (2005) suggested that the descriptive categories determined during analysis need to represent the different ways that students experienced the phenomenon

of critical thinking development in online psychiatric nursing education, thus representing a structured set or *outcome space.* The outcomes from the analysis represented all the possible ways in which the students experienced critical thinking development in online psychiatric nursing education as a collective group.

This collective experience is different from other qualitative methods that look to explore the individual experience and therefore, is unique to phenomenographic data collection and analysis. Each transcript was interpreted in the context of the group of transcripts as a whole, looking for similarities and differences that I found within the data (Akerlind, 2005). The meanings derived from the analysis of the data, emerged from the data in relationship to myself as the primary researcher.

In phenomenographic research, data analysis has usually started with a search for the variations of meaning and is followed by a search for the structural relationships between the meanings. Therefore, data analysis is not only one of the most important aspects of the phenomenographic research, but also one of the most challenging tasks (Akerlind et al., 2005). In the early stages of analysis, I demonstrated openness to any possible meanings that could be found followed by more focused study of the meanings as the analysis continued (Akerlind, 2005). Throughout the entire process of analysis, I remained open to new meanings so that I could fully represent the students' perceptions. To do this I continued to focus on different perspectives at different times, while continuing my own process of self-reflection through journaling and memos. To help with this progression of analysis, I followed Sjostrom and Dahlgren's (2002) seven steps to follow when applying phenomenography to nursing research. These steps included: (a)

familiarization of all the empirical data by reading through the material, as well as correcting errors in transcription, (b) *compilation* of all the participants' answers to the semistructured interview questions to identify the most important aspects in each answer given, (c) *condensation* or reduction of participant answers to find the centrals aspects or collective dialogue, (d) preliminary *grouping* or classification of categories to find and classify similar answers, (e) *comparison* of categories where the researcher attempts to find borders between the categories as well as regroup categories if needed, (f) *naming* the categories to emphasize their central meaning, and (g) *contrastive comparison* of the categories to describe their unique character as well as any similarities between categories.

As the first phase of analysis was focused on identifying the possible relevance between the data collected, I focused on the meaning behind what was said, narrowing down selected sections of comments and interpreting them in terms of their relevance to each other (Marton, 1986). Another way to look at this first phase of analysis was to determine the central points in a participant's answer to produce themes. To assess significant elements, I looked for indicators such as frequency of meaningful statements, the position of the answer, as often more important information is provided first, and finally what emphasis was placed on certain parts of the answer (Sjostrom & Dahlgren, 2002). As the first phase of analysis was aimed at identifying the possible relevance between criteria, I focused on the meaning behind what was said, narrowing down selected sections of comments or quotes and interpreting them in terms of their relevance to each other and their connection with the intellectual standards that assist them to

reason within the domain of human thought. It was also important to interpret the comments and quotes in respect to the development of critical thinking within the framework of the stages described in Appendix B. This helped me identify critical thinking by competency type and the ability of online educated psychiatric nurses to professionally problem solve.

As I entered the second phase of the analysis, I took those comments or quotes and examined the pool of meanings discovered in the collective data. This in-depth examination of the collective meaning was a crucial part of the second phase as I moved away from the individual participant answers and explored the contexts of the data in relation to the initial interpretation. In-depth examination of the responses created categories that were differentiated in terms of their similarities and differences. Marton (1986) described it as simply "putting comments into piles, examining the borderline cases, making explicit group of criteria, grouping these criteria, and then arranging, rearranging, further narrowing categories, and finally defining the groups of categories explicitly" (p. 43). An important aspect of the second phase was the ability to examine what characterized the conception, take the time to re-read the transcripts from a differing perspective based on a developing understanding of the participants' experiences.

Multiple readings of transcripts during this phase was also important to explore all the possible perspectives of the participants and focus on any new perspectives that may emerge (Prosser, 1994). For example, participants may make similar comments regarding the phenomenon, but the underlying meaning may be different in the context of the conversation as a whole. Prosser (1994) has suggested that similarities and differences

can only be discovered if the researcher has a grasp of all the ideas at one time, allowing for a full picture of the underlying meaning of the entire transcript.

To manage the interview data collected, I used the NVIVO 12 MAC software which allowed me to store, sort, categorize and visualize the data for more accurate analysis (qsrinternational.com/nvivo/home, 2019). This software also allowed me to transcribe and organize not only my interview data, but also my field notes, memos, and journal notes. Because the entire data analysis process was strongly iterative and based on comparing data multiple times, The NVIVO 12 software helped me with the continual process of sorting the data, developing the various descriptive categories and grouping and re-grouping data based on the perceived similarities and differences I found among the varying criteria (Akerlind, 2005). Marton (1986) suggested that the process of multiple comparisons, where changes are made to the data, will eventually decrease to a point where the whole system of meanings has stabilized, and conclusions can be presented.

Trustworthiness

Phenomenographic research, like other qualitative research, follows similar underlying assumptions regarding the trustworthiness and credibility of the research process, as well as having some differences that necessitate its own set of practices (Akerlind, 2005). In quantitative research, validity is measured by the degree to which the research findings tell the truth (Burkholder et al., 2016). In qualitative studies, the researcher looks to establish trustworthiness through the degree of confidence in sources and methods used to gather those sources. In phenomenographic research, validity is not

measured by how outcomes correlate with the phenomenon as it already exists in reality, but how well the research outcomes connect the human experience of the phenomenon being studied (Uljens, 1996).

Because trustworthiness can be affected by researcher bias, observer effects, independent research, and the nature of outside research, there are general qualitative methods used as well as two specific phenomenographic methods to ensure trustworthiness in this qualitative research method (Akerlind, 2005; Burkholder et al., 2016). It is important to note that in phenomenographic research the focus of research quality is dependent on the research aims appropriately reflecting the research methods used (Akerlind, 2005).

I used a number of qualitative strategies to ensure trustworthiness in this study. First, I used structured reflexivity processes in the form of field notes, journal notes and memos to mitigate the risk of observer influence and researcher bias (Ravitch & Carl, 2016). As a precautionary strategy, I noted all the potential effects that my presence as an instructor and previous administrator of the program had on the participants. I also used dialogic engagement with my chair seeking a second opinion on these notes to strengthen this method (Burkholder et al., 2016). Second, I engaged in triangulation of the data and thick description to understand how my themes and points aligned and diverged as well as, focusing on describing my data with sufficient detail so that readers fully understood my analysis. Lastly, I engaged in member checking for any disconfirming evidence to challenge myself to seek alternate explanations of my interpretations by seeking clarification of student's comments throughout the interview and at the end of the

interview to ensure that I was understanding their perspective. I also summarized answers to questions to ensure I was accurately representing the student's perceptions. Finally, I asked them if they had anything to add at the end of the interview that they may have thought about after the questions were asked to add to or clarify their perceptions and experiences. This helped me adjust my final analysis to better understand biases and preconceived ideas regarding the phenomenon.

In the case of authentic discrepancies found during the initial data analysis phase, my plan was to follow up with respondents in writing, via email to seek clarification. If this was still not sufficient, I would have invited the participant for a second interview to determine whether the outlier responses were the result of a misunderstanding or multilingual translation issue.

I also employed two methods of validity checks used in phenomenographic research: communicative validity checks and pragmatic validity checks. Communicative validity checks allowed me to provide interpretation that was defensible. After multiple interpretations of the same data, I was able to persuasively argue for the particular interpretations and conclusions proposed. This involved ensuring that the final interpretations were considered appropriate by the relevant research committee. In this case, this included my chair, and second chair at Walden University, and the quality assurance provided by the University Research Reviewer (URR). Validity was also strengthened by seeking feedback from other members of the population represented by the interview sample and the intended audience for the findings (Akerlind, 2005).

Pragmatic validity checks are the extent to which the research findings are useful and meaningful to the intended audience. (Sandbergh, 1997). In terms of this study, the research outcomes on student perceptions of critical thinking in online psychiatric nursing education were evaluated in terms of the insight they provide in more effective ways of providing education in the online psychiatric nursing environment that develops critical thinking. Another aspect of trustworthiness in this phenomenographic research was the reliability of the methods used in the research. This concept is more readily applied in quantitative research in term of the consistency, replicability, and quality of the interpreted data. However, reliability has posed a challenge in qualitative research in both data collection and analysis, as interpretations of more than one researcher are unlikely to be identical or replicable (Burkholder et al., 2016). Therefore, it is generally accepted that qualitative researchers seek reliability through the replicability of data collection and analysis.

Phenomenographic research often involves multiple researchers to address the concern of having only one perspective on the data. Phenomenographic researchers use both coder reliability checks, where more than one researcher codes the interview transcripts; and dialogic reliability checks where data is mutually critiqued through discussion (Akerlind, 2005). Due to the nature of this study, I was the only researcher, and therefore used an alternative method of reliability checking where I made my interpretive steps clear to the readers by fully detailing the process and providing illustrative examples (Akerlind, 2005, p. 332). This has been supported by Sandbergh (1997) who argued that coder and dialogic reliability checks take away from researcher

reliability that will demonstrate to the audience the critical attitude the researcher took towards their own interpretation and analysis, and the varying techniques applied to help counter the impact of their particular perspectives on the research outcomes.

Other general strategies for ensuring reliability in this study included reflexivity or transparency regarding my demographics, discipline, training and any other key aspects that might have affected the data collection or analysis. Transferability also contributed to the validity of this research as I provided a significant description of the setting, and the assumptions of the study so that the reader could make informed decisions regarding the application of the findings of the study (Burkholder et al., 2016) Dependability was addressed through the process of purposeful sampling where students were chosen from two different cohorts who had successfully completed all theoretical coursework in the program (Ravitch & Carl, 2016).

To ensure confirmability, I used the following strategies throughout the research process. First, I ensured I had an audit trail to provide a detailed account of how the study was conducted. This information was taken from field notes, my reflective journal, and memos made throughout the analysis process. Secondly, I used theoretical triangulation where I examined the data through the critical thinking stage theory. Lastly, I engaged in progressive subjectivity where I recorded my conceptualizations and expectations prior to the data being collected and regularly throughout the data analysis process (Burkholder et al., 2016).

All researchers bring assumptions and anticipated themes with them into an investigation, and I brought my lived experiences as a nursing instructor and previous

program administrator. Even though some students may have remembered me from their time in the program, I was clear to relay that my position in this study was a researcher. Based on my administrative and instructional work, nurse education professional truths played a part in how I interpreted and analyzed the data. Recognizing my own position of power, I endeavored to be as transparent and as responsible as possible in my representation of the student experiences ensuring that trustworthiness was maintained in my research design.

Data Analysis Results

The purpose of this study was to explore online nursing student perceptions about critical thinking experiences in their courses and how those experiences influenced their entry-level competencies and problem-solving development. I used two research questions to guide this study:

RQ1: How do online adult psychiatric nursing students perceive their critical thinking development and readiness for professional problem solving?

RQ2: What do students in an online basic-entry psychiatric nursing education program perceive as contributing to the development of their critical thinking?

A total of 80 participants were selected from two different cohorts of a local psychiatric nursing program, and 15 individuals agreed to participate in the study, a number that helped with the saturation of data common to phenomenographic research. Each individual participated in a 30 to 40 minute face-to-face interview or phone interview according to participant preference. Semistructured interviews were conducted

that were audio-taped and transcribed verbatim, and then organized through precoding and coding to determine both anticipated and emergent themes.

Participants

Participants involved in this study ranged from 23 years to 50 years of age and came from an array of different ethnic, linguistic, and academic backgrounds. Of the 15 participants, 14 were female and one was male, and they represented most of the geographical areas where this program operates. They had varied education levels with the highest level of education being master prepared, and they all had a range of work experiences from corporate and industry work, to years of involvement in health and mental health care in a variety of roles. Of the 15 participants three were from the first cohort, which had six semesters, less detailed courses, and less technological opportunities, and 12 were from the second cohort, which consisted of eight semesters, increased curriculum focus and direction, and increased use of technology. For this particular study names have been changed to represent each of the participants and these names will be used for all qualitative examples and discussion.

Participant 1 (Olivia), from the second cohort has been an LPN for over 8 years and “always craved more.” She began working with older adults experiencing physical and mental health issues. After working in that area, there was no doubt that psychiatric nursing was what she wanted to do.

Participant 2 (Anne), from the second cohort immigrated to Canada from South Asia over 9 years ago and began work as a care aide both in public institutions and

privately. Anne really believed in the patient and became passionate regarding their mental health and looked into psychiatric nursing as a way to fulfill that passion.

Participant 3 (Elena) from the second cohort, worked in many different areas after graduating with a bachelor's in education. Working for medical companies, Elena was able to see patients getting well, so began volunteering in residential care that had a specialty unit for mental health. She stated "if the brain is clear, you're good but if your brain is sick this is where I think it's so much harder to maintain that level of life, quality of life, so here I am." Elena realized how much support they needed and wanted to help and contribute to the field of psychiatric nursing.

Participant 4 (Evelyn) from the first cohort has been an LPN for over 5 years had a couple of reasons for wanting to be a psychiatric nurse. The first was simply that a friend entered the program, and Evelyn became really interested in what this friend was doing. The second, and more important, was that a childhood friend struggled with substance related schizophrenia, which she found both difficult to understand, and interesting in terms of the disease state. Evelyn looked into the program more and decided it was "exactly what I needed."

Participant 5 (David) from the first cohort, immigrated to Canada over 15 years ago from Africa working in many different industries. When he came into contact with psychiatric and mental health practitioners he stated "I saw what it'd take. So that spawned my interest towards becoming a psychiatric nurse."

Participant 6 (Emily) from the second cohort, came to the program with no background in health care, working various jobs in the community. A colleague's partner

began taking the course, and Emily became very interested stating with excitement “This is perfect, I want to do that, and then that was basically it.”

Participant 7 (Chloe), from the second cohort is a paraprofessional in the mental health field and believed that it was time to “step my game up here, “I knew I was gonna end up in psychiatric nursing anyway”, so she made the decision, and enrolled in the program.

Participant 8 (Lily) from the first cohort was taking a community program at the local college to work in the health care field where her last placement was in mental health. Lily ended up working in the community with older adults with mental health issues and really realized then “that I’ve always been interested in mental health. And so, through that last placement, I realized that I loved the community, and I loved mental health.”

Participant 9 (Victoria) from the second cohort had no intention of becoming a psychiatric nurse at first. As a single parent, working in her local community, she initially believed that the RN program was the best thing to do. When this was not feasible, she looked at the psychiatric nursing program and felt that it could be done more easily as a single parent. Victoria emphatically stated, “Now that I have experienced med-surg, and everything I’ve done through this program, I will never be an RN. I love psych. It’s amazing. It just feels natural. I really, really like it!”

Participant 10 (Hannah) from the second cohort worked in probation and child protection and really thought about the options between social work and psychiatric

nursing. She believed that psychiatric nursing had more exciting opportunities and that social work "was not going to be my calling."

Participant 11 (Leah) from the second cohort has worked in health care for over 10 years as a medical lab assistant and was considering a career change. During that time, she observed the struggle and tragedy of individuals experiencing substance use and mental illness and believed that event "gave me the push to actually go for it."

Participant 12 (Charlotte) from the second cohort worked as a care aide for over 7 years and closely with individuals experiencing severe dementia. Sometimes those individuals would also have a concurrent mental illness such as bipolar disorder or schizophrenia. She believed this was where "I kind of developed my passion through the lock-down dementia unit I worked on."

Participant 13 (Maya) from the second cohort worked as a care aide for a few years and really enjoyed working with older adults and wanted to learn more about their illnesses. Maya was interested in psychiatric nursing and when a colleague had done the program at Alpha College, she thought "well, why not. Might as well try."

Participant 14 (Grace) from the second cohort graduated with a degree in fine arts, Grace really enjoyed the creative side when working with people. Teaching art for many years turned into other jobs and she found herself unhappy in administration. Connecting with people was what she wanted so after considering a number of health care roles, Grace chose psychiatric nursing to have that connection with clients again.

Participant 15 (Zoe) from the second cohort has worked in mental health since the beginning and felt that psychiatric nursing was the "next progression" due to her desire to

help people. As the type of person that felt that the need to “feel like I’m growing” she considered that this was the natural next step.

Anticipated Themes

During the analysis of the data, it was important for me to understand the area of study well, so I could visualize the rich contextual possibilities that student answers could provide in terms of how they experienced critical thinking in an online psychiatric nursing program. As a psychiatric nurse for over 25 years and a psychiatric nurse educator (both online and face-face) for over 10 years, I believe that I have the appropriate basis for recognizing the important concepts under study. Examining the similarities and differences common to phenomenographic analysis and using critical thinking stage theory to understand critical thinking as a conscious act, I was able to explore and discern emerging patterns of thought, specific meaningful dialogue, emotional influences, and how these related to professional problem solving and entry-level competence in psychiatric nursing.

An in-depth analysis of the semistructured interviews about critical thinking experiences in online psychiatric nursing education identified four themes related to the similarities and differences in experience that impacted critical thinking in online learning, the ability to professionally problem solve and meet entry-level competencies: 1) knowledge acquisition as it relates to critical thinking in psychiatric nursing, 2) instruction, feedback, and student engagement, 3) critical thinking as an act of learning, and 4) self-reflection as a link to critical thinking.

The impact that Elder and Paul's (1996) critical thinking stage theory has on these thematic findings is the ability to provide structure to understanding the elusive concept of critical thinking in nursing demonstrated in this study's literature review. The assumption has been made that psychiatric nursing education in a face-face format will positively influence critical thought, and professional problem solving, as well as prepare the novice nurse to master entry-level competencies (Zauszniewski et al., 2012; Zauszniewski & Suresky, 2004). However, continued research in online education in nursing has been slowly paving a new and worthwhile way of bringing psychiatric nursing education into the technologically based 21st century (Nold, 2017; Swart, 2017).

Two broad questions were asked at the beginning of the interview to explore participant's overall view of psychiatric nursing and critical thinking. First "what do you think makes for an effective psychiatric nurse?" and second "why do you think critical thinking is an important skill to have as a psychiatric nurse?" There was a definite difference of experience noted between knowledge and the softer skill of empathy, which is also an important part of the psychiatric nurse skillset. Elena was one of the first to champion knowledge and stated: "obviously knowledge, knowledge of pathophysiology, anatomy, pharmacology, specific with psychotropic pharmacology, that is definitely, it's a must!" Chloe was also another student who felt that knowledge was the first key to effective practice and through her observations of RPNs indicated "their knowledge base and they can put pieces together, in a critical thinking manner", and finally charlotte who really thought about knowledge and the impact it had on her learning and practice stated:

> We're working with people's lives and a lot of times with …. complex diagnoses and a whole picture on what's going on, and you kind of need to know to look at them and think "okay what's going on here? What made them this way? What happened in their past or what's going on with their body? Or anything like that and you have to ask some really important questions in order to figure out what that person needs.

Other participants believed that first and foremost empathy was a key factor in effective psychiatric nursing practice. Emily believed that the soft skills come before knowledge and effectively made her point by stating

> I think for me the biggest part is just being empathic…education is really important. You need to know all the medical things and the terminology, but, you know, if you don't care about what you're doing, then it's not going to really help anyways.

In psychiatric nursing, it cannot be denied that empathy is a critical piece of the therapeutic use of self, and an important facilitator of constructive interpersonal relationships (Reynolds, 2018). It is also a significant component of the first registered psychiatric nurse (RPN) entry-level competency (ELC): therapeutic relationships and therapeutic use of self, where empathy is a significant skill to inform and engage in the nurse-client relationship. Recently, empathy has been described as either cognitive, behavioral or emotional or a mix of some or all (Robieux, Karsenti, Pocard, & Flahault, 2018). In his earlier research Morse and his colleagues went so far as to create

components of empathy including moral empathy, along with cognitive, emotional and behavioral, which have been used in nursing research on a wide scale (Morse et al., 1992)

However, Paul (2014), and Elder and Paul (2010) have discussed at length the creation of intellectual empathy (Fig 1). In order to create the type of empathy essential in the helping relationship, individuals must have a cultivated command of cognitive aspects of thinking known as intellectual standards in order to be able to actively problem solve. In terms of empathy this means that psychiatric nurses must be able to consciously and sometimes imaginatively put themselves in the place of their patients to genuinely understand them. This requires psychiatric nurses to be conscious not only of the egocentric tendencies for themselves as human beings, but also the ability to identify personal long-standing beliefs and bias. If the critical thinking stage theory holds true, this is often not well developed until an individual becomes a practiced thinker (Appendix B).

The first notable difference was that participants either believed knowledge was the first and most important aspect of being a psychiatric nurse, or that the soft skills such as empathy, communication, the therapeutic relationship, and trust were central to psychiatric nursing practice. This difference may be due to the fact that both the therapeutic relationship and evidence-informed knowledge are two significant competencies in the RPN ELCs that are stressed frequently throughout the program in both the online environment and during each clinical rotation (BCCNP, 2014). The differences in participant experiences were not differentiated in either of the two cohorts but spoke to the personal understanding, which participants had of the importance of their

ELCs and the fact that there were distinct groupings of thought among the participants rather than among the cohorts.

Critical thinking as it applies to psychiatric nursing resulted in many different ideas, and there was a general consensus between the cohorts that critical thinking helped to navigate the grey areas of psychiatric nursing practice. The most prominent difference was the understanding of how critical thinking helped with this, both between cohorts and between participants. Elder and Paul (2010) have considered critical thinking to be a personal journey through each stage, which may not necessarily be a group process where all individuals in a group reach each stage simultaneously. Even though it is difficult to determine collective understandings of why critical thinking is important for psychiatric nurses, it provides the foundation of understanding in this study. Many of the participants were able to explain critical thinking as a process of breaking down thinking, analyzing and synthesizing to discern what is at stake and what might be beyond what they are seeing. Others used it as a universal term to describe thinking as an act of doing something to make something else happen.

The notion of deconstructing thinking helps the individual to link new knowledge and organize action, which combats uniformed certainty. Elena grasped this concept well in her discussion by stating:

> So, in my understanding, the critical thinking allows me to not to be told what to do as a nurse. Kind of like do your duty list but critical thinking gives the opportunity to prioritize those duties, decide you know, which one goes first, what do I need right now? If everything is okay here or say if you see that the patient

> doesn't look okay you realized, Oh, he doesn't do well, Well, what do you do about that?...what would work for the person, what wouldn't work for this person? What combinations of things would work?

Other participants such as Victoria looked at it more globally as a need to recognize and understand the hidden part of the interaction and stated:

> Because people with mental health issues aren't necessarily giving you all the information. I think that we need to be able to analyze a situation – and to look at underlying causes or concerns – and be able to pull from different resources. If we're not critically thinking, we just take if for surface level, and we're not doing the full process.

Interestingly, Evelyn looked at it as a mystery to be solved, something that required deeper understanding because the illness itself is not as tangible comparing it to playing a game of clue everyday stating:

> Critical thinking is a big piece in psychiatric nursing because mental health isn't an illness we see, it's very inside. You need to know a lot. You need to know the illnesses, you need to know things that can kinda be where they're [patients] with it, might not be with it, additional pieces, or is it truly like, they're sick right now. You need to know your background of the mental health illnesses because you need to know what things to look for.

Other participants looked at critical thinking in a more quantifiable ways such as Anne's comment regarding critical thinking being an application to everything, or

observations to help solve conflicts and give medications, as well as, Leah's belief that if a nurse is not critically thinking then they are not looking at what's right in front of them and finally, Emily's understanding that it involved looking back to what was learned in school, but also what was witnessed in practice. This last comment is an interesting one considering the extensive literature that covers the theory to practice gap in nursing and deems it a crisis in competency (Kavanagh & Szweda, 2017; McCutcheon et al., 2015; Woods et al., 2015).

Although this more quantifiable view may look different to the deep analysis of thinking it does address the concepts of Kolb's 1984 learning theory including the connection to, and reflection of prior information for application in practice (Bayrak, Aydemir, & Karaman, 2017). As well, it demonstrates the process of moving up Bloom's Taxonomy where participants consider the concepts of remembering, understanding, and applying (Hill, 2017; Schmidt & Brown, 2016). In terms of Elder and Paul's (2010) critical thinking stage theory this could be linked to the stage of the challenged thinker moving into the beginning thinker where there is awareness of thinking and recognition of areas of thought that require active participation (Appendix B).

These two questions provided the foundation of student's understanding for this study's research questions. First was the depth of understanding of critical thinking in terms of a development process and second, providing the groundwork for how they may perceive critical thinking as an active practice in their online education.

Knowledge Acquisition as It Relates to Critical Thinking in Psychiatric Nursing

Elder and Paul (2010) have posited that one of the more important aspects in the stages of critical thinking is the knowledge of thinking. Simply, as one goes through each stage, the learner will go from unreflective thinking to the effective practice of taking thinking apart through the elements of assessing it and taking an active role in improving it. To really think involves examining concepts, making assumptions and inferences, deciding on the implication and even providing a point of view. In essence, the ability to critically think has always required knowledge, not just of the subject at hand, but also a conscious understanding of critical thinking concepts and principles (Elder & Paul, 2010). It is the process that one applies to the knowledge learned and RPN entry-level competencies stress the importance of having evidence informed knowledge. This is done through general nursing knowledge, the sciences, humanities, research, and specialized knowledge specific to mental health nursing practice. Critical thinking, and critical inquiry are important competencies to master in relation to specific psychiatric nursing care (BCCNP, 2014).

Overall, knowledge was a widely discussed topic among the participants from both cohorts. The emphasis regarding knowledge in this study was not to understand each student's perception but to relate the similarities and differences that came together as a group of students in different cohorts. As the interviews progressed it became clear that the second cohort had more opportunities to advance knowledge through additional educational activities while the first cohort had more limited means to engage in these. The latter cohort had also just finished their coursework therefore their online experience

was closer to the time of the interview. The first cohort had been nursing for six months and often provided perspectives of their education reflective of the program as a whole, whereas, the second cohort referred to their educational courses specifically when asked.

The questions that led to the creation of this theme helped students reflect on their critical thinking development in online learning addressing RQ1, which asked how students perceived their critical thinking development and readiness for professional problem solving. These questions included:

1. How did you know what to do with the information you learned in your online theory and apply it to your clinical practice? Was there anything special that you did or needed to do to come to this understanding?
2. So how do you believe that your online education has enhanced your ability to critically think? What are some examples or stories you have about this?
3. How do you think your practice is related at all to your online educational experience?

Chloe, from the second cohort described a critical thinking moment in her ethics and law in Canadian health care class, which addressed her ability to understand her ethical and legal responsibilities in terms of her ELCs. Initially, she had little knowledge of the ethics and laws that govern psychiatric nursing practice and stated:

> When I learned about it, I was like oh! I get why the nurses…were doing this and that and I'm thinking, o.k. There's a lot of underpinnings that I wasn't even aware of and I think that brought it to light for me and helped me make more decisions

> … based on autonomy and the right to live at risk. Normally I would wanna fix everything for them and I'm like no. I gotta step back.

Even though Maya talked about her courses, she also thought about other things that affected her critical thinking and referred to her ethics class as one that really opened her eyes and stated:

> Everything we learned in school, if we haven't used already, we will learn like pharmacology, we will use ethics, that's another one that really sticks with you. Yeah some of the case studies you can tell were written by nurses who had seen those types of cases and you're like wow, this sounds like something we learned in school and then we'd see this so many times in practice.

Hannah from the same cohort discussed critical thinking and knowledge acquisition in terms of her experience with clinical practice and meeting the evidence-based knowledge required in her ELCs and to close that theory to practice gap and stated:

> I had to critically think, So why do I disagree? Am I disagreeing because of my intuition … or am I disagreeing based on theory, [and] what is that theory? And can I really justify stopping you from doing something or stopping myself from the thing you're asking me to do because I need to feel confident in the theory that I have in order to put it into practice?

Leah, also from the second cohort had a different take on how she acquired the knowledge she needed and looked to the virtual elements of the program such as live classrooms introduced in her cohort as very valuable to solidifying her knowledge stating; :sometimes, I'd look at the question and be like, "Uh, I have no idea what they

actually want. But then I'm like oh, there's an adobe on Tuesday, I'll just go to that and then … I got the clarification that I was seeking."

Along that same line of looking at the other aspects of the program that addressed their knowledge both Maya and Zoe felt that the collaboration of the face-to-face contact during the extended lab days and during group work in their communities for assignments really helped solidify the necessary evidence informed knowledge.

Zoe stated: "just having some background knowledge in some of the psychiatric illnesses … and then going and being able to discuss it while we were in lab helped" and Maya added:

> Some of us got together, especially in pharmacology and made our cards together and talked about different kinds of things. I don't know, with me when you're with a group of people, when you bounce off ideas or ask each other questions, that might help you learn the material a little bit better rather than sitting by yourself going, I don't get this.

Another really important aspect of gaining knowledge in the online environment was simply that certain students thrived in this mode and face-to-face learning was not an option for them because things did not stick for them. Victoria stated:

> Again, for myself, I just feel like ... 'cause that's just the way I learn, I'm a visual learner. So it was there, it was in front of me. I was able to grasp it. Sitting there and having a teacher talk to me, I don't, I don't pull that in. That doesn't do anything for me. Someone can come out and talk my ear off, and I'm like, Uh,

> what'd you say? I really think it was the implementation of it, being able to go and implement that, and then see that, okay. I retained that. I learned that.

Hannah said another very interesting comment when discussing the part of her online learning that impacted her professional problem solving. She reflected on the scenarios (case studies) that were so important to linking theory to practice and stated:

> I would say my scenarios helped a lot. So, we have these fictional scenarios in theory where we have to create a care plan for someone, or we have to then talk about the intervention we would give to that person but then also reflecting on the actual practicum experience and then what theories did I apply to that and doing my IDP's (Initial discussion post – prior to seeing peers IDPs) on what was my experience that I just had last week

The first cohort who did a great deal of work throughout their online education in discussion forums or via instructor marked assignments really focused on the program as contributing to both their online and their practical learning.

David said:

> I'll give online, learning credit there too, it doesn't quite allow questions in the sense that if you were to sit down in a classroom, for example, and the teacher, they're teaching, well that is great, but we are listening to the teacher. So we are being shaped by the teacher's perspective, which is professional, which is okay, but the praise that I give online is, one, there is a teacher, which is the text that you have. Everybody has that, and that text. But now when you see different

reflections of that text, it brings different dynamics and perspectives into the same content.

Charlotte from the first cohort reflected on her ability to engage in professional problem solving in the online learning environment and stated:

> I mean, that's where I learned all my theory, so-if I wouldn't have had that, I wouldn't have been able to have a lot of the knowledge that I need to know to be a nurse. Yeah, I think that my online educational practice has a huge connection to how I am now professionally. Everything that I learnt in all my courses, everything I learned from my instructors and my peers and then in clinical working with other nurses who have tons of experience and being able to work alongside of them. they all kind of contributed to how I am now, and all of that was in the program.

David echoed a comment that was very common in discussion with many of the participants regarding the freedom and flexibility that online learning had on his knowledge acquisitions and stated:

> To a great extent, it gave me the opportunity to do things at my own convenience, and when I did things at my own convenience, I became very effective at it. So my learning at my own pace, when I was ready to learn, was very effective for me. And so when I go into the field, I have equipped myself with this knowledge that I was able to ascertain when I was in the best frame of mind.

Shannon from the first cohort really believed that all the courses impacted her eventual practice, again looking at the whole program as contributing to her knowledge acquisition and stated:

> Every single class I took in some way or another, developed my critical thinking. even the first nations piece was a big thing because - I have a lot of First Nation clients, you know, just knowing that and knowing a lot of that basis around what their culture is …. all these classes were huge in developing it (critical thinking). You don't realize it until the end.

In spite of different experiential learning each cohort had throughout their education it did not appear to affect how they determined critical thinking development in their online education but rather brought to light another important theme: the act of engagement and feedback and how these affected the learning experience. In terms of Elder and Paul's (2010) critical thinking stage theory, this may be due to a vital assumption of this theory where passing through each stage is dependent upon the level of commitment the individual is prepared to dedicate to developing as a critical thinker, that critical thinking is not automatic, and that it is also not a subconscious act.

The next two thematic findings addressed the second research question, which asked what students perceived as contributing to their critical thinking development and their readiness for professional problem solving and meeting their ELCs. Many students described instruction, feedback, and engagement as vitally important to these, as well as learning the process of critical thinking itself.

Instruction, Feedback, and Student Engagement

No matter what questions were asked during the interview process participants from both cohorts often returned to the concept of instruction, feedback and the importance of engagement to facilitate their learning. Elder and Paul (2010) provided a number of examples of how instructors could build critical thinking skills to help students move from one level of thinking to the next. Questions specifically asked in the interview process that addressed concepts of instruction, feedback and student engagement included: "So before you started this program, I'm curious to know what you expected to learn from the online portion of the program," "What did you think would happen in each course to develop your critical thinking further"?, and finally "How did your instructor teach course content so as to encourage critical thinking"?

In terms of each cohort's expectations of the online experience the participants from the first cohort were fairly unanimous in their thoughts. They expected to learn theory and expected it to be self-directed. Evelyn stated: "The big piece was that it was structured, and I had deadlines …. it was just the ease of it. Being able to go into an online program that fit around my family, which was a big piece." Charlotte believed that it might be more challenging than a face-to-face classroom where one could ask questions and get immediate answers but she did expect to learn "the knowledge that comes with being a nurse, the theory behind it and the theoretical work that came with each course." David expected that the theory would be "things that you can read from a book, things that may not be hands on" but expressed confusion with the application of skills until he saw that both lab and clinical "complemented the theory."

The second cohort was divided in their expectations. Some participants had absolutely no expectation or thought towards learning in the online environment and others had done their research and felt prepared for the experience. Victoria was one of the students who went into online learning with little preconceived knowledge and stated:

> I definitely learned for sure. I think I kind of went in not really knowing what to expect. I was just like, just roll with it. Just go. Just get it done. So it was more of that determination and drive just to be successful and do what needed to be done. As an online learner I guess you have to be self-motivated. You got to be a self-starter, and get it done. There's no time to play around. You've got your due dates. Just follow along.

Grace did not say one way or the other whether she prepared for the online experience and stated:

> I just feel I was actually very happy with the whole course selection and the way it went …. the online experience has been a really great foundation and a really great time, but two and half years, is an introduction to something. Even though it was a good introduction … it's just something I need to continue to build on.

Elena like Victoria started her online learning journey with a vague understanding of what it might look like and stated:

> I had no idea what to expect from online. First, I honestly, I was questioning it. I was very adamant, look ok, how can you become a nurse studying online? ... I thought you completely need that visual and visual connection with the teacher. It

> was a brand-new thing for me … then once we started, I realized like, 'Wow, this is actually possible.'

Chloe was very pragmatic in her response but also had similar thoughts stating:

> I wasn't really sure what I was getting into initially and when I looked at it and I'm like, okay, this is just something I would just do anyway in a classroom. I would take it home, read it, and learn it.

Olivia's comment was quite profound as she reflected on what one needs to succeed in online learning and stated:

> I loved the online. People don't understand. They're, 'How are you not just sitting in a classroom?' Because you actually have to apply yourselves. You don't show up and sit there like a zombie and shut down when you get there, just text on your phone or do whatever. I actually have to propel myself, to sit there and be engaged. That's when you know you want it.

In terms of instruction and feedback, minimal differences between cohorts were observed but it was highly evident that instructional feedback and peer feedback were extremely important to the development of critical thinking and professional problem solving. This has been supported by Richardson, Besser, Koehler, Lim, and Strait (2016a) who suggested that students needed instructors to be available, provide feedback in a timely manner, listen to concerns, and offer guidance when students are struggling with concepts.

What stood out between cohorts was the type of feedback and tools used for engagement. The first cohort was a very discussion board (forum) heavy experience until

the latter half of the program when adobe connect was introduced as an online video conferencing face-to-face tool. This was used sporadically by instructors who were used to specifically laid out forum work. This has been supported in the literature review as a number of research studies found that both students and instructors lacked digital skills, had anxiety regarding the use of academic technology, there was a lack of community, and little active learning engagement (Costello et al., 2014a; Button et al., 2014).

Charlotte from the first cohort described an instructor who she considered very creative, using gaming and games to help master concepts. She was one of the first instructors to use case studies and Charlotte stated:

> In our older adult learning course she would always do really interactive things to help. She would make us do case studies and then we would present them online. So maybe case studies would be the best way of doing … helping with our critical thinking.

David also described similar experiences with forum work and in the latter half of the program, online video teaching. He felt that the program "imbued the ability to mix it and think outside the box." He also stated that, "They want to see your full reflection of understanding the content … you were always conscious of the fact that you want to reflect this information in a way that showed that it was original to you."

And finally, Evelyn provided specific information on forum feedback indicating that one instructor was really good at encouraging them to think differently.

> She would ask you a question about your post or encourage you, or ask another question, or talk about something that encouraged you to go back and look for more information on it. To really kind of be able to give a better conversation.

The second cohort experienced feedback differently. Whereas the first cohort embraced the challenge of facilitated feedback, the second cohort described both negative and positive experiences with feedback. There were a few factors that may have contributed to the negative aspects. First, this was the first implementation of a brand new eight semester program with new courses and many glitches to the added technology. Second, courses were being developed often as the course was running creating some chaos in delivery, which negatively affected the teaching-learning process. Both positive and negative circumstances were experienced by students, which at times may have affected their learning and ability to problem solve larger contexts.

Negative reactions are always hard to talk about and therefore can be hard to address as often they are not known in the moment. Negative feedback or unhelpful feedback can be detrimental to students' ability to work past that negativity and continue to grow throughout the learning experience. Zoe experienced on of these situations where adult learning was used to answer questions and stated:

> A comment that was always made was 'You guys are adult learners.' To me it doesn't matter if you're an adult learner or not, when you have a questions and you're an instructor, you should be able to come back with an answer to help a student … you know especially for the students who aren't already in health care, or haven't done long-term nursing. Cause I found I had to help students who

> weren't more so, 'cause I have an LPN background. And you know it also makes it like, Kay I'm trying to learn too, but I gotta help you …. in one of the courses, care plans were being done at the beginning but we weren't taught how to do them. And so, when you're given a care plan to do but nobody taught you how to do it, everybody was like, I don't understand. Nobody can actually clarify for me…and they you get criticized that you're not doing it properly but being told that its wrong, but not given feedback as to how to do it right.

In the educators' pursuit of facilitated learning with the adult learning an important aspect to keep in mind is that research on teaching and learning in nursing education still speaks to the need to deliberately teach students especially as they can find critical thinking hard to maneuver in complex health care situations especially as they start out in nursing education (Hattie, 2015). Leah also experienced this negative feedback stating:

> It's just that when we asked for help, it was like we ended up with a lot of passive-aggressive responses or like, "what do you think?"…. [There was] lack of clarity and just like, beating around the bush when it takes four days to get an answer, the lack of cohesiveness I guess … across the instructors was really poor. Basically, we had to learn what each instructor wanted and what they expected, and cater the way that we answered questions to that. We just basically have to fake it in the way they wanted us to write it. I learned early on … just don't ask questions, just go with it and that's that.

There were also a number of students in the second cohort that described feedback that made them look deeper, and really think about the concept over and over. Elena stated that instructor feedback, both positive and negative for her essays was exceptionally important, although she did not feel this way when it happened. However, instructors challenged her with questions about how things made her feel and questioned of her, “Why did you say that? And I thought why did I say that? Because it was an assumption. There’s no assumptions in nursing.”

Chloe felt very differently regarding feedback where she was not given the answer to her questions and stated:

> What I liked, even though it was kind of frustrating in the moment, was okay, you guys you have the information here. You need to figure it out. And they’re right because if I’m always given the answer or if it’s always explained to me and my hand is held, I’m not gonna develop those critical thinking skills.

Lily described the importance of instructor feedback in terms of the feedback and engagement of instructors in the asynchronous forum where she felt that the feedback and significant presence of the instructor in the forum enhanced her learning development and ability to critically think:

> [My instructor] was good at that, she replied to almost every IDP that people wrote. And she gave her perspective. And I think that allows people to critically think. I learned a lot by watching her, observing her, and listening. Seeing people who have more experience-and how they do it. And then I think about it, like,

> well how am I doing it? And how does that all fit in? She definitely would like, write back to people, and then ask questions.

Cloe, Grace, and Hannah also talked about the importance of peer feedback and discussion. Chloe indicated that she really enjoyed creating discussion, creating knowledge and asking peers questions. She felt that is was important to:

> ask those harder questions and not be afraid to say, what if … and challenge the other person … even the instructor I would question … .not challenge them but just to like expand on that. I really wanna know further than the boundaries that we've been given in class.

Grace elaborated further regarding feedback and engagement with peers and stated: "[Many] instructors would encourage us to break apart someone else's argument and say I disagree with this and have evidence based as to why you disagreed with that point was really useful."

Hannah focused on the feedback that challenged her to think deeper and outside of the box and to look at problems from different perspective stating:

> Like always asking, but why is that important? ... you can answer a question by why is the answer that you're giving important at all? .... having to justify why is something a priority or why did I answer it this way or what am I actually giving to the world when I say these things out loud …. challenged me to think, ok but what else, there's more to it …. how is this a healing thing for my patient as opposed to just how is this getting them better. How are they actually healing and growing? What are you actually giving to them in your intervention?

Critical Thinking as an act of Learning

One of the most prevalent words in any nursing program is ‘critical’. Students are asked to critically think, critically evaluate, critically explore, and critically discuss various topics related to problem solving and practice (Price & Harrington, 2016). Even the RPN ELCs stress that entry-level psychiatric nurses apply “critical thinking, problem solving, clinical reasoning and judgement into their professional practice” (BCCNP, 2014, p. 7).

In their initial work on critical thinking Elder and Paul (1996) reflected on the critical mind as a questioning mind relating powerful thinking to powerful questions. Asking the right questions facilitates one’s success as a thinker and defines one’s thinking agenda. Elder and Paul (2013) have provided a number of resources to assist both instructor and student to increase their critical thinking ability (Appendix B). It has recently been suggested by Mortellaro (2015) that critical thinking as an act of learning has more to do with student’s comfort level rather than learning style and suggested that a main goal of teaching should include fostering comfort and confidence in all activities to develop the skills needed to practice in the fast-paced and challenging field of nursing.

Over the years Benjamin Bloom’s six level taxonomy has been the hallmark of critical thought, defined as either low or high ordered thinking depending on the demonstration of increasingly sophisticated thought processes (Hill, 2017; Schmidt & Brown, 2016). It has also been the trademark in creating learning outcomes, which are the building blocks of course curricula in psychiatric nursing. Elder and Paul (1996, 2010, 2013) have indicated that this is a more complicated process that can in fact, move

between levels and is dependent on many factors that not only include conscious application of critical thinking by students and instructors alike, but also involves intellectual habits of mind and use of intellectual standards to achieve higher levels of critical thought (Appendix B).

This concept of critical thinking as an act of learning did not provide a cohort consensus or differences among the two cohorts, and answers were often broad and variable among participants. The understanding of critical thinking and the process of using clarity, accuracy, and precision, the first three intellectual standards, coincided with the participants foundational awareness of what critical thinking meant in psychiatric nursing. Differences were found in groups of students in terms of how they described the process of critical thinking to come to conclusions. The differences noted among all participants was either, the ability to break down their thought process and describe the concepts of intellectual standards or, simply using them in a sentence to describe an application or enhance a personal experience.

Hannah from the second cohort found learnings from her Perspectives on Aboriginal Health and Culture in Canada, and Psychosocial Rehabilitation theory to profoundly test her belief system in terms of challenging her thinking and her ability to act with more depth and breadth of thought stating:

> So, there's a couple courses that, when I think back, really stand out to me. I know when I took Perspectives on Aboriginal Health and Culture, I think it caused me to challenge a lot of the biases that I just didn't even recognize that I had. Even though I had worked at an Aboriginal services office ... for a year, I still had such

> a small understanding of what multi-generational trauma was ... and how, there is reconciliation, but that doesn't make up for cultural genocide. And what do I know that people are experiencing beyond what I can see? [The] psychosocial rehab course really changed a lot for me as far as critically thinking care planning a lot more … to take it to a different level. And so just thinking, like, 'How is my patient gonna get better, and how are they gonna be treated meaningfully in the community?' So it's not just about, like, how do they become well, it's about, how do they become … So, I think it made my understanding of, like, what our goal should be a little bit wider. Then my essentials, like critical thinking about, objectives ... I think changed a lot. Yeah, just my understanding of recovery changed ... I wish I had taken that course ... ten years ago 'cause it completely would have changed my understanding of probation even.

Evelyn from the first cohort also experienced this clarity of critical thinking when she shared her experience with a patient and how she had to think deeper to make a conclusion rather than an assumption:

> So as the things that were coming to me, as I was grasping, and having conversations with someone, I had a schizophrenia patient, so learning about, schizophrenia and doing the pharmacology piece with the medications and everything that I had just learned prior to this. I was sitting there ... so I had the same person for the time I was there, happened to be long-term. And one day I came in and he was, different. So then I was trying to think, why are you so different? You seem so much more paranoid today than you have been on my last

> set. So, I went up to the nurse and asked her if she could just check his Clozapine levels. Because I knew they sometimes will cheek Clozapine. There's no other way to give it to them other than orally. And so I was like, 'Can you just check the Clozapine levels. I think he might be cheeking.' It was something that was given at nighttime. So, she checked and it was zero.

Chloe from the second cohort explained her thoughts on building her critical thinking skills regarding the mental health act that was discussed in her acute psychiatry theory class and stated:

> Talking about the mental health act explains it to a point. There's a lot of grey areas and one of the questions that [my instructor] had posed to us was kind of along the grey areas. And so, I read through that thing and I dissected it to try to come up with a correct answer and there was a lot of debate back and forth on that one question. So by doing that, by carefully dissecting it and by really trying to again point it to past experiences that I have had and seeing how my new knowledge fit that. And kind of going back and forth on that I think was very accurate. I was clear and precise about the information, which I then took to my preceptorship and asked further about the forms.

She also elaborated on how she personally uses the skills of seeking clarity by asking questions of peers and instructors that stretched her understanding and took her current thinking to new levels:

> I really liked to create discussions and to create knowledge, and ask people questions. And ask those harder questions and not be afraid to say, 'Well, if '...

> and challenge that other person. And sometimes I got some really good dialogue and you kind of continued on with it. And sometimes, even if the instructor ... I would question the instructor too. Not to challenge them. But just to like, let's expand on that. I really wanna know further than the boundaries that we've just been given in class.

Grace from the second cohort made some critical thinking connections through seeking clarity from more than one source and stated:

> You have to look at different sources, and then, kind of synthesize something. there's an importance in the therapeutic communication of being in the moment. And I think that's really key, is you have to be in the moment to gather all that information. 'Cause if you're not in the moment, you might be jumping ahead to make an assumption based on one piece of the puzzle, when there's a lot more going on, if you don't scan and look at the situation, then you can just, you can miss what's going on.

She further elaborated on the need for clarity and accuracy stating:

> Also, just to say, when you're reading, not to just regurgitate what you read. But to look at it ... critically. Even what you're reading. So you don't just assume that everything you're reading is correct, but to use a critical eye with that as well, which I think, that came through the courses as well.

Elena also looked at clarity, accuracy, and precision by the simple act of asking questions that would impact the direct care of her patients:

> Why are you doing, what you doing, what's your ... you know, what's the data that you're working with, why are you working with that ... is there anything else that you could do differently or again, what is going to be you know, the legal and ethical outcomes of your activities

Maya had a very interesting perspective on the act of critical thinking. She observed that through the program her ability to critically think and to learn improved with her ability to accept that sometimes the most important thing is to go look for information that will expand knowledge:

> You have to be willing to know where to look and to look for the answer and that's something I never really had before I went into this program. I was just really quick to ask without thinking much of it. I think I slowed down a bit in my thinking process and not like really quick to be like, let's do this, let's do that. I take my time more and think about it a little bit more than I probably would have in the beginning. . I don't know, we just have more knowledge base that we're thinking off of too.

Further examination of the discussions identified participants that concentrated on the application of skills to describe their critical thinking.

Emily described the application of critical thinking indirectly through activities done in class even though she admits that she had taken a class on critical thinking in the program:

> So I remember being very overwhelmed and stressed at that idea at the beginning. So I remember I think it would have been the first semester and we talked about

> what critical thinking is, and it was kind of, I think, just a week of, 'This is what it is. These are gonna be the steps that people take, and then that was kind of all we talked about it specifically and I just went, Oh my god, like, I don't feel like I know enough.' but I think as we went on, it was kind of addressed indirectly through case studies and stuff like that, which is where I didn't realize that I was learning how to do it but I technically was.

Maya also looked at the application of critical thinking as something that happened when one paused and took the time to really think it through but also stressed the importance of being vigilant in one's learning:

> I didn't really think about what would develop our critical thinking but just being online you can't put your hand up and be like, hey, what's the answer? And you don't really wanna post a stupid question in front of everybody so you kind of sit on it and really thinking about it, think it over and I think over time it really improved your critical thinking skills. And you're forced to 'cause there's somebody there who's gonna, you know, keep feeding you information to figure it out, you kind of have to pull that information from different sources. Re-read stuff, and not be so lazy.

Leah looked at critical thinking from the perspective of the program elements as a whole and how her thinking changed and was one of the closest comments that directly related to Elder and Paul's (2010) definition of critical thinking that indicated that critical thinking development was not singular but happened in all aspects of one's life:

> I do think that I, that the program has helped me critically think better. I don't know if I can pull any specific differences between before and now, but I just feel like the program in ... as whole changed a lot of the way that I think about everything in my life, to be quite honest. just from the level of TR that we learned and the ... there was just so much about it that I just think about a lot of things, a lot differently then I used to.

She also went onto explain that her past experience impacted her ability to problem solve rather than the online learning:

> I guess as somebody who's already been graduated for, uh, what's this going on? Fourteen, fifteen years, and I've already been to college, and I've worked in multiple jobs, I don't know that my problem solving came or changed or came from this online program. I feel like the general concept of problem solving is the same and you can apply it to different situations.

Self-Reflection as a Link to Critical Thinking

Ghanizadeh (2017) posited that the two most important thinking skills in higher education are critical thinking and reflective thinking. Critical thinking improves the quality of thinking, and reflective thinking allows for the contemplation of what is being done during an activity or after accomplishing it. Both incorporate the analysis and evaluation of abilities, however, critical thinking concerns the dynamic act of thinking and reflective thinking concentrates on the learning processes allowing individuals to monitor their development during learning. Henderson-Hurley and Hurley (2013) suggested that authentic classroom activities and real-life practice that links to classroom

learning allows the student to draw from a number of forms of contextualized knowledge, which can help students think reflectively in many situations. Ghanizadeh (2017) also indicated that reflection has the most impact on academic success, followed by understanding content and the act of critical reflection. Elder and Paul (2010) have suggested that the process of reflection is done by the practicing thinker (Appendix B). Here the individual is able to monitor their thoughts and articulate their strengths and weaknesses in learning and practice and are becoming more knowledgeable regarding how their assumptions, inferences and points of view affecting their professional practice.

In psychiatric nursing practice, reflective thinking or reflective practice has significant value in helping students grow and identify with the psychiatric nursing profession (Reljic, Pajinkihar, & Fekonja, 2019). It is one of the most effective methods for learning skills such as self-awareness, reflective ways of thinking to make appropriate judgements using evidence based knowledge and learning about one's own personal growth.

Although there were no real differences observed in student's ideas of self-reflection in relation to their ability to critically think, there was an overall consensus that self-reflection helped them improve their thinking and ability to practice professionally. Some students did provide examples and more depth in terms of their answers to the questions: How do you think your practice is related at all to your online educational experience?; What stories can you tell me that reflect how your ability to critically think is influencing your professional problem solving, and your ability to meet your competencies?, and finally, What difference do you see in your ability to critically think

from when you started the online program until now, and how has that developed for you? Other students described reflection as something they felt was very important to their professional practice or an unconscious act and application for practice.

Emily from the second cohort described a personal experience with journaling that showed her personal growth and ability to improve her problem solving through the act of reflective practice:

> I think a big thing is recently I wrote my last journal entry, I guess a couple weeks ago now, and I was looking at it and reading over it and thinking back to the first few that I wrote and it, the difference was just so shocking. I just had no idea what was going on in the beginning, I felt so lost I was very sure that there was no way I would even be able to get to a point where I thought I could complete the program. My journal entries went from, 'oh my god, what am I doing, how am I going to do this?' to, 'okay I can do this, I'm still- I'm learning to do but I can do this-and I chose the right thing to do.'

She also described her practice and the need to reflect to ensure her practice is evidence-based, which aligns directly with Ghanizadeh's (2017) suggestion that critical thinking improves thinking but reflective thinking allows for further contemplation.

> Yeah I find, I guess some of it, it's a lot easier to apply and then others like counseling and-MI [motivational interviewing] techniques are a little bit more involved and kind of identifying, planning what might be helpful-reflecting before I even meet with a patient sometimes- learning what they're going through and

> thinking how different my life would be with this change or something like that, recognizing it before and then reflecting on it, and then going and using it.

Both David and Hannah had similar experiences to their idea of reflection and the importance of reflective thinking Both felt that they entailed a conscious act. Elder and Paul (2010) have theorized that critical thinking is not something done unawares or subconsciously but is a direct conscious act to improve one's thinking self. David was able to describe the process of reflection as it relates to his critical thinking skills in practice:

> I like to practice self-consciousness. I'm always self-conscious, self-aware, of who I am, of where I am, and of who I'm dealing with. So, I find that, you know, I don't, I don't want to stretch it too much, but I can't overemphasize it. Self-consciousness helps me to always think critically. Because I don't take things for granted, I don't just presume, 'Okay, it was like this all the time so we're going to keep just doing – No!'

Hannah describes her reflection as an overall sense of awareness not only of herself but of others around her and the affect her actions have on others:

> I honestly feel like I'm a different person, which is a weird thing to say, 'cause I don't really believe in 'I'm a different person!' I've grown a ton, just because I'm more reflective of myself and my actions and how I affect other people ... and my awareness.

Lily also provided an unique example of reflection through practice in her online therapeutic communications course. The instructor had asked them to reflect on how they present to patients to understand how their nonverbal communication may affect others:

> They had us look in the mirror, and I found this very helpful. So, they're like, give yourself your empathic face. And then, give yourself your sympathy face, or give yourself your concerned face. And just see, like what you actually look like, and you don't realize, how you're coming across.

Victoria provided a poignant story of the effect of one's verbal and non-verbal behavior being detrimental to therapeutic communication, which really demonstrated her critical reflection of her practice and the practice of others.

> The nurse asked him, 'Have you been drinking?' kind of scolding him. And he's like, 'What's it to you?' But, you know, for me, I would be like, 'Hey, you know. I just want you to know, a friendly reminder, your medications, you know, if you take them with alcohol, they can sometimes react.' So, 'just want to know, have you had any alcohol recently?' You know, cause, in that sense, they may say yes or no, but then you have the answer, as opposed to scolding.

She also described a situation where she felt that critical thinking was still an unconscious act. However, in her elaboration she provided further explanation that it is not necessarily unconscious but rather, it's a new concept to actively think about thinking:

> I think it's still a very unconscious piece. So, when I get told to actually think about critically thinking, I'm like, huh? it kind of throws me off a little. But, you

know, I think I see it more now. Like, I'm able to reflect and be like, ‘hey you know what? I did that.’ ‘Oh. hey, I learned this.’ So, this is what's coming out. being able to recognize it, I guess. Being able to reflect and recognize.

Both Evelyn and Chloe described the act of reflection as an important aspect of psychiatric nursing practice as a profession. Evelyn stated: “really self-reflecting on yourself through the program as well. That was a big piece. Yeah. So, a lot of self-reflection I had- and I still do.’ Chloe stated, “I think self-reflection is huge. You cannot move forward in your profession unless you do that regularly.”

This data analysis provided a great deal of insight into the experiences of psychiatric nursing students in an online program. All four themes provided further insight into how students perceived their development of critical thinking in an online psychiatric nursing program. The acquisition of knowledge, the conscious act of critical thinking and reflection on critical thinking, and practice, has shown that students in an online psychiatric nursing program are able to professionally problem solve and meet entry-level competencies. The findings have also intimated that there are very specific practices that enhance critical thinking development to foster professional problem solving and readiness for entry-level practice. One of the most prominent themes that students felt strongly about was instruction, feedback, and student engagement. This theme revealed significant differences in the experiences of students with instruction, feedback, and engagement both between the two cohorts and between groups of students.

Limitations

There were a number of limitations in this project study, however it is important to note that in phenomenographic research and most qualitative research, consistency, replicability, and quality of the data analysis can be challenging as interpretations from one researcher to another is unlikely to be identical or easily replicated (Burkholder et al., 2016). Four limitations were noted in this study. First, the sample size of 15 participants, although within the recommended number for variation of experience in phenomenographic research, was the minimum suggested and may have affected full saturation of data. Second, there was not equal distribution of participants between the cohorts as only three participants from the first cohort accepted the invitation, whereas there were 12 from the second cohort. This may have affected saturation of data from the perspective of each cohort as not all the data collected from the first cohort may represent the entire cohort's experience. Third, the program under study is unique to psychiatric nursing education in Western Canada therefore another study could not be duplicated in another program in Canada, therefore limits the generalizability of the study. Finally, because some of the questions were specific to psychiatric nursing education in online learning it may also be difficult to duplicate the study in general nursing education where online and blended learning programs are more prevalent also affecting the generalizability of the study (Beachy, 2017).

The data analysis and the underpinnings of Elder and Paul's (1996) critical stage theory clearly shows that critical thinking is a deliberate process that cannot be developed through simple mastery of skills or abstract knowledge (Elder & Paul, 2010; Degan,

2010). This study has shown that there are significant aspects of instruction, feedback and engagement that affect the critical thinking and authentic learning of students. The project I have created to address this important theme is an academic psychiatric nursing faculty blog where critical thinking teaching skills and ideas can be addressed, shared, and built upon to help students engage and develop their critical thinking skills to enhance professional problem solving in the online educational setting.

Summary

In section two, I provided an overview of the methods I used for this research study, procedures for recruitment, participation, data collection, and data analysis. Important aspects of the research method included the research design, which was described as a qualitative phenomenographic study that focused on two research questions to help explore misconceptions regarding critical thinking development in online basic-entry psychiatric nurse education. I explained my role as both observer and participant during the research process, and discussed the bias that may occur due to the role I played as an instructor, and previous administrator for the program under study. I described my research method and explored methodologies that were not selected.

My methodological approach included participant selection via purposeful sampling and out of 80 students, 15 agreed to participate. The criteria I used to contact participants and gain informed consent were explained both prior to the interview via email, and before the interview started. I also described how I used myself as the main instrument for data collection while also utilizing tools such as audio recording devices, field notes and memos to direct the research. I provided detailed descriptions of the

recruiting process for participant selection with associated appendices, and discussed how I used data collection tools through the study. Data collection was completed during a three month period, and students were interviewed either face-to-face or via telephone as per their preference. All interviews were audio recorded and transcribed verbatim, and then coded and recoded via the NVIVO 12 Mac software to categorize data per question.

My data analysis followed the seven steps of phenomenography in nursing research suggested by Sjostrom and Dahlgren's (2002) and I examined student perceptions of critical thinking in an online psychiatric nursing program that addressed the students' ability to professionally problem solve and meet entry-level competencies. I also discussed the limitations of this study to provide complete transparency of this research. I used the following research questions to guide the analysis:

RQ1: How do online adult psychiatric nursing students perceive their critical thinking development and readiness for professional problem solving?

RQ2: What do students in an online basic-entry psychiatric nursing education program perceive as contributing to the development of their critical thinking skills?

Four themes (conceptions) emerged that addressed both research questions:

- Knowledge acquisition as it relates to critical thinking in psychiatric nursing.
- Instruction, feedback, and student engagement.
- Critical thinking as an act of learning.
- Self-reflection as a link to critical thinking.

From these themes, the one that stood out the most in terms of student's comments, and emotional expression during the interviews was: instruction, feedback, and student engagement. From student comments it became clear that how instructors taught content, and how they provided feedback made a significant impact on their critical thinking. From this, I decided to build a faculty blog for my project that would address this issue of instruction and feedback to facilitate critical thinking development in online psychiatric nursing education.

Section 3: The Project

Introduction

A recent survey by the National League of Nurses [NLN] (2017) showed that more than 50% of full-time nursing educators fall between the ages of 46 and 60 years, whereas only 9.5% are between the ages of 30 and 45 years. Of those educators approximately 50% have their doctoral degree and 40% have their master's degree. Although this may seem like sufficient numbers, indicating most nurse educators are well educated, and come with years of experience, it really speaks to the significant generational gap that exists between educator and student when it comes to teaching and learning. This presents a significant problem when nurse educators are attempting to build modern curricula that will meet today's student needs (Patterson-Stevens & Nies, 2017).

The data analysis in my project study and Cargas, Williams, and Rosenberg (2017) have suggested that some students and educators alike engage in cognitive laziness and take thinking shortcuts for the sake of fast decision making. Furthermore slowing down and taking the time to work through issues helped students engage in deliberate thinking, thus decreasing the act of relying on emotion rather than evidence, or engaging in both emotional and cognitive bias (Cargas et al., 2017).

Cargas et al. (2017) have also indicated that although students most certainly have a difficult time learning and applying critical thinking, educators for the most part do not know what it means, have difficulty defining the concept, and are not using it in their curricula or courses on any consistent basis. The urgent need to improve the pedagogy of

critical thinking for educators in terms of their instructional practices and what works and does not work was the premise for my project.

Rationale

Earlier in this project study, researchers suggested that students find the act of critical thinking very taxing due to the fact that educators are not guiding them in the process of directive thinking, that is, the ability to analyze, synthesize, and behave when addressing a problem or arriving at a decision in a complex situation (Lukenchuk, 2016; Ricci, 2013). Digital teaching knowledge has not moved forward due to the continued belief that critical thinking can only happen in the face-to-face classroom where instructors can stimulate intellectual curiosity, creativity and excitement, as well as interact, connect, and collaborate (Lukenchuk, 2016; Naidu, 2014). However, as Nold (2017) has pointed out, the face-to-face classroom often does not allow for students to reflect or engage in research, which are both positively correlated with critical thinking.

In general, psychiatric nursing programs and their educators have been slow to adopt innovative online courses into their curricula. However, these programs are beginning to acclimate to the changing educational milieu required by modern and technologically savvy psychiatric nursing students including online delivery of some of their theory courses (Frazer, Sullivan, Weatherspoon, & Hussey, 2017). Even though this trend is growing, faculty are often uninformed regarding how to teach these courses online, often choosing the old methods of lectures, lengthy papers, and multiple-choice testing resorting again to memorization, and lower level cognitive tasks. (Ahuna, Tinnestz, & Kiener, 2014; McGarry, Theobald, Lewis, & Coyer, 2015; Nold, 2017).

Psychiatric nurse educators face a new generation of nursing student who are self-assured but easily distracted, often impatient, and very technologically centric (Kendall, 2016). Hattie (2015) has also suggested that they come with variable learning strategies and often need to be deliberately taught. The task for psychiatric nurse educators then is to come up with strategies and activities that the student will engage with and respond to, but also produce, effective beginning graduates in the challenging profession of psychiatric nursing. If faculty are to be competent in the online learning environment, they must be proficient in teaching methods specific to online learning to create student satisfaction, active and engaging learning opportunities, and achieve the outcomes set out by regulatory bodies (Frazer et al., 2017).

There is also a need for psychiatric nurse educators to begin using social media more effectively to cross the geographical boundaries and to engage in both important and challenging topics related to teaching in this new technological age (Richardson, Grose, Nelmes, Parra, & Linares, 2016b). Because psychiatric nurses care for such a vulnerable population, it is important that they are well prepared to practice in this area. Using teaching strategies exercised 25 year ago will not engage the new learner, nor does minimal engagement in the online environment or basic feedback stimulate critical thinking (Hussin, Harum, & Shukor, 2019; Razzak, 2016).

Review of the Literature

Frazer et al. (2017) have suggested that there is a continued gap in the literature regarding teaching effectiveness using the online platform and how faculty use innovative methods to engage students from Generation Z or the ‘Net’ Generation.

Hussin et al. (2019) also indicated that there was limited research on social learning environments and how these address critical thinking in students. What was found in the literature was important in terms of how psychiatric nurse educators could lead innovative online curricula into the future. In relation to student learning, Hussin et al. (2019) commented that the way that students in the Net Generation have learned to study, interact, and think has shifted significantly during the online experience due to technology. As the technologically savvy student continues to use methods such as online learning to pursue diploma or degree completion, ongoing challenges of managing this platform via teaching strategies, content contribution, meaningful assessment, and the interactive experience will continue to evolve and will require creativity and innovation (Osborne, Byrne, Massey & Johnston, 2018).

Literature Search Strategy

I conducted this literature search primarily through the EBSCO research databases through the Walden University online library. I also conducted additional searches using ProQuest and Google Scholar, as well as the general world wide web for both nursing and educational resources that addressed teaching and social media. I used a variety of key search terms both in combination and separately to find the most relevant and current literature; however, the key search terms that produced the most current literature included *faculty education, online education, online nursing education, teaching strategies in online learning, online course design, and innovative teaching strategies in nursing.* Then I searched for *blogging, blogging in nursing, blogging between nursing faculty, and nurse educator blogs* to address the project. I only used the reference section

of articles from 2018 to 2019 for the most up-to-date research on the topic, as well as researching textbooks and websites dedicated to engaging and teaching the online learner, and nursing education. I did attempt to search for: *psychiatric nursing, online psychiatric nursing education, and psychiatric nursing education* as well as using the terms *United Kingdom, Canada, and Australia* (where psychiatric nursing is prominent); however, I discovered that there was little current research on these topics.

Nurse Educator Engagement With the Online Learner

A review of the current literature suggests that nursing programs are beginning to adopt online strategies to teach courses along with face-to-face interaction (Posey & Pintz, 2017). Comparing these with traditional methods there has been positive outcomes where in some cases online learning has been more effective at improving student learning and their practice at the bedside. This may be due to the assumption that the need to deliver 'expert' knowledge down to students to inform practice is beginning to fade and faculty are becoming more comfortable with the online learning environment (vanOostveen, Childs, Gerbrandt, & Awwadah, 2018). However, this blended environment has been met with mixed reviews by both students and faculty with the focus on learning motivation and actual participation, the role of the instructor, digital literacy, and the difference between asynchronous and synchronous online engagement (Ng, Bridges, Law, & White, 2014; Posey & Pintz, 2017).

Osborne et al. (2018) provided research updates and their own research on the use of online learning in relation to engagement and considered that the lack of quality engagement in the online environment was mostly due to time poverty. Maxim (2015)

has already stressed that continuing to use content-heavy driven models of learning in nursing programs will lead to further negative learning circumstances. Today, quality of life of nursing students is still a significant research topic in terms of quality engagement in student learning, and the effects on mental and physical health, as well as academic performance. In the data analysis of participants many chose this program because of its digital delivery of theory and their ability to stay in their home community, continue to work, and to manage family lives.

Phenomenographic differences in data presented in this study were expressed in terms of the realities of online engagement with the first cohort believing that they were going to learn theory online and it was going to be self-directed. Being self-motivated was something that this cohort stressed as very important to engagement especially in the online asynchronous forum. They spent the majority of their theoretical learning in these asynchronous forums with a large reliance on peers' and instructors' co-discussion contributing to their professional problem solving and entry-level competencies. This has been supported by Vega, and Bouchet (2019) who have suggested that online methods enhance self-regulated skill especially the cognitive skills so important to problem solving including acquiring, organizing and using the knowledge gained to effectively problem solve. Engaging in online learning may also build the important skills of goal setting, using prior knowledge to enhance current learning, and defining task strategies (Vega, & Bouchet, 2019). Swart (2017) has also indicated that online asynchronous learning provides an avenue for students to reflect and take time to make connections and more deeply understand content through online discussion.

Because the forum was used in both cohorts, participants particularly appreciated the ability to go back and review conversations or look for better ideas to build their knowledge. In the words of one participant, they didn't just attend a three hour in-class lecture and then forget about the whole class once they left, they actually took time to authentically engage using this format. This was supported by Osborne et al. (2018) who completed research on the importance of the asynchronous discussion board in the online environment because it was a setting when used successfully by the student and instructor, could create community, collaboration, and promote critical thinking.

The second cohort was much more specific and discussed particular situations that improved their engagement in both the asynchronous and synchronous environment. Francescucci and Rhani (2019) strongly supported the synchronous environment in online learning, which is often done through Blackboard Collaborate, Adobe, Google Hangouts, or other platforms that can create a live classroom. They have challenged that it is as effective as the face-to-face environment. In discussion with one of my colleagues who has used this platform (Blackboard Collaborate) regularly in her online classroom, she indicated that it creates the opportunity for instructors to manage student groups and groupwork in separate 'classrooms' or group rooms, as well as provide an opportunity to give lectures and use the white board to explain challenging ideas. She also indicated that she provides one to three separate collaborate sessions in a week to meet as many student time needs as possible. Because she uses these sessions for student collaboration and groupwork, rather than a one or two hour power point lecture, and has a number of short one-hour sessions in a week, it provides a great opportunity to see where students are at

in terms of their critical thinking and learning as she accesses the different student working groups (D. McCreedy, personal communication, October 1, 2019). As Leah put it, I'd look at the question and be like, "Uh, I have no idea what they actually want. But then I'm like oh, there's an adobe on Tuesday, I'll just go to that and then … I got the clarification that I was seeking." Olivia summed up online engagement very well when she stated:

> I loved the online. People don't understand. They're, 'how are you not just sitting in a classroom?' Because you actually have to apply yourselves. You don't show up and sit there like a zombie and shut down when you get there, just text on your phone or do whatever. I actually have to propel myself, to sit there and be engaged. That's when you know you want it.

The Importance of Feedback

The ability to provide clear, effective, and meaningful feedback that propels student's critical thinking and problem-solving ability is one of the most important skills for psychiatric nurse educators to develop (Leibold & Schwarz, 2015). Students frequently articulate that instructors are often too harsh in their feedback, do not provide enough feedback or do not provide positive feedback and Vaughan, and Uribe (2018) have suggested that feedback strategies are actually the most crucial part of student learning. Leibold and Schwarz (2015) discussed four types of feedback: corrective, epistemic, suggestive, and epistemic plus suggestive. Corrective feedback is related to direct feedback on areas of the assigned content, Epistemic feedback offers prompts and questions to engage clarification and critical thinking, and finally, suggestive feedback

expands on ideas, or offers advice to improve ideas. Of these four, a mixture of suggestive and epistemic are most valuable.

Data analysis in this study revealed just how important feedback was for both the emotional growth, and academic growth of the psychiatric nursing students and how damaging it can be to the learning process when not provided at all. Two of the most profound comments made by the participants indicated that not only was feedback not given, nor questions answered, but the fact that they were 'adult learners' meant that they needed to find it for themselves whether it was right or wrong.

However, many of the students described situations where instructors led them through content, encouraged them to think differently, and ask questions to provide better dialogue. A common feedback comment from instructors was "why did you say that?" and a couple of participants indicated that at first they were taken aback by this and it made them stop and think, and then look up the answer more thoroughly because as Elena stated, "there are no assumptions in nursing". McGarry et al. (2015) and Swart (2017) have indicated that instructor questioning, feedback, and engagement significantly enhanced the critical thinking of the students. Another important aspect of feedback from instructors was the quantity. Having an instructor reply frequently to an initial post gave students an experienced perspective where often all the pieces would come into place for the student.

Questioning peers and instructors was also helpful allowing students to say the wrong thing or present only a portion of the information in a safe environment, which allowed them to enhance knowledge as the weeks progressed. Questions that addressed

why concepts were important challenged students to think outside the box and question what they were saying out loud in the world. Encouraging the student to look for more, or look at what else may be important, allowed them to gather more information to think deeper. This has been a key aspect of Elder and Paul's (2010) critical thinking stage theory where instructors engage in the process of teaching the skill of thinking by asking powerful questions.

Teaching in the Online Environment

Due to the growth of online learning in many educational settings researchers have attempted to improve both the teaching and learning experiences for faculty and students. (Ertmer & Koehler, 2015; Richardson, Koehler, Besser, Caskurlu, Lim, & Mueller, 2015; Richardson et al., 2016b). Part of this is continually enhancing and improving instructor presence and instructional methods. Richardson et. al. (2015) have posited that instructor presence is crucial to student engagement, interpersonal connections, and relational practice in online learning, however, there is little guidance provided on how they should do this. In the face-to-face classroom this has often been enacted via lecture, classroom discussion, class group work, and simulation led by the physical presence of the instructor.

On the other hand, online instructors must learn the skill of facilitated discourse, meaning the ability to facilitate interaction that builds knowledge and meets course and program outcomes in a virtual classroom (Richardson et al., 2015). Frazer et al., (2017) also recommended that faculty come to these environments with a specific skillset, and effective teaching strategies to foster the authentic development of knowledge acquisition

and critical thinking. My own experience with online teaching has followed a rocky path of trial and error, spur of the moment teaching from my practical experience, and use of new untrialed technology in an effort to use myself as facilitator, and virtual classroom innovator. There has been little opportunity to improve my knowledge on online teaching strategies, or have a mentor provide me with the skillset that Frazer et al. (2017) have suggested the online nurse educator must be familiar with. In discussion with psychiatric nurse educator colleagues, they echoed this reality of trial and error despite the fact that they devote time to acquiring new knowledge through texts, conferences, the use of publishers that support digital learning, and the many research articles reviewed as part of their professional, continuing competence (D. McCreedy; M. Jenkins; M. Jordan; M. Malloy; & T. Kroeker, personal communication, October 3-7, 2019). There are a number of factors that may cause this: first and foremost, this could simply be due to the fact that the benefits of online learning are still not understood in psychiatric nursing education. Another factor could be the cost to educate instructors in a new method of teaching when historically face-to-face has been so successful in providing psychiatric nurses who are able to practice successfully in this specialty. And finally, it may just be due to exposure. If it is not being used, then the structure and function of it are not being considered on a daily basis. Whatever it is that is keeping this teaching method at bay, change needs to occur as we begin to teach students who are more technologically astute than many of the experienced educators teaching them.

Through the data analysis process there were a number of participants who indicated that some of their instructors went above and beyond in terms of creative online

teaching. Participants mentioned the creation of real time case studies in their theory classes, using gaming and art to relay concepts, and synchronous tools such as classroom group work through Blackboard Collaborate. Some instructors even innovated the asynchronous discussion to inform student practice and encourage problem solving abilities. One of the participants talked about being challenged to think deeper when one of her instructors had the students complete their peer posts as a disagreement to other peers throughout their course (Elena, personal communication, July, 2019).

These creative elements seemed to make a significant difference in the emotional engagement during theoretical work as each participant who discussed these various methods became more animated during the interview. Hussin et al. (2019) and Alabdulkareem (2015) have suggested that there are numerous creative opportunities in the online environment to bring critical thinking into the classroom and increase problem solving abilities for nursing students including discussion, case work, virtual simulation, and virtual classroom time. The first and most widely used is the asynchronous forum that includes online interaction with instructors and peers where both can express opinions, challenge the ideas of their peers, and even instructors, as well as collaborate and discuss solutions for challenging problems (Hussin et al. 2019). A number of participants in the second cohort brought these ideas to light. One participant felt that fictional scenarios and case studies in theory where students had to build care plans and then discuss various interventions was very helpful in building her professional problem solving (Hannah, personal communication, July, 2019). Another student enjoyed the gaming that one of her instructors brought to the online environment and other students

enjoyed synchronous learning through Blackboard Collaborate or publisher websites that enhanced textbook learning with videos and adaptive quizzing.

Throughout the literature there is the suggestion that nursing is beginning to adapt their educational environment to online platforms in an effort to support the new generation of learners (Frazer et al., 2017; Hussin et al., 2019; Oostveen et al., 2018; Osborne et al., 2018; Posey & Pintz, 2017). Critical thinking has been effectively shown to occur in both face-to-face and online nursing environments, and this study has supported the view that critical thinking development occurs in online psychiatric nursing education to strengthen professional problem solving and entry-level competencies.

Using Elder and Paul's critical thinking stage theory some students demonstrated beginning thinking with a number of students who demonstrated elements of the practicing thinker (Appendix B). From the data analysis, I was able to determine areas that students found very important to their critical thinking and knowledge development such as instruction, feedback, and engagement. With this in mind, I decided that supporting faculty in their ability to facilitate and innovate in the online environment is extremely important for the future growth of critical thinking, and professional problem solving for faculty and students alike. Due to the nature of the current online environment at Alpha College with some instructors spread across Canada, I decided that the best way to collaborate with everyone was to create a blog where ideas could be shared and developed.

Using a Blog To Support Psychiatric Nurse Educators

It has already been determined that traditional teaching paradigms are difficult to adapt to the online learning environment, as well as not supporting the needs of the new technologically savvy psychiatric nursing student (Papastavrou, Hamari, Fuster, Istomina, & Salminen, 2016). Blogs and other social media platforms have been sporadically used in recent years to narrow the gap between nursing academia, technology, and the Net Generation. Larsson (2017) has added that the theoretical concepts of critical thinking have not been strongly developed and therefore continue to elude many educators on what it truly means, and how to teach it. However, as technology is not slackening its pace and educators must keep up with development of online content and innovative teaching strategies, blogs are an avenue to collaborate and share ideas that may not get discussed in the usual online faculty environment (Jones, VanderZwan, & Burla del la Rocha, 2016). These authors go so far as to say that blogging can be used as a powerful tool to provide the nurse educator with a means to publish current research, communicate with co-faculty and actually connect with a larger scholarly community. It has even been noted to increase critical thinking and the act of critical reflection (Jones et al., 2016).

Although blogging in health education has mostly been used by faculty to communicate with students, even in this social media environment, faculty have taken advantage of the theoretical possibilities such as critical thinking, acquiring knowledge, answering questions, and presenting new tools to develop skills that must be acquired to practice (Conde-Caballero, Castillo, Ballesteros-Yáñez, & Mariano-Juárez, 2019, p. 1). Silverio and Forsythe (2018) have researched the educational and psychological impact

that blogging has on student development and have concluded that it enriches self-reflection, helps with stress-management, teamwork, and leadership. This is essentially exactly what psychiatric nurse educators need right now, to learn new forms of technological literacy that could possibly open up new pedagogical horizons and support collegiality and strong collaboration as psychiatric nursing education moves into the future. Reed and Edmunds (2015) have also suggested that blogging ideas could be used between multi-institutional faculty, to share evidence-based knowledge regarding nursing course content thus decreasing the gap between what multi-institutional students are taught and know as entry-level practitioners.

In my lengthy search of the internet I found that the World Wide Web is brimming with nursing websites and YouTube videos, as well as twitter links and blogs that effectively help practicing nurses and students remain or become competent. Most of these websites have links to learning, opportunities for practice, case studies, and even blogs but they generally deal with aspects of current nursing practice, informal education, student education, and development in nursing and specialty nursing practice. Links often direct the user to the NLN, and the American Nursing Association (ANA) for further information.

Some websites do address nursing education or nurse educators but most deal with nurse educators in practice rather than nurse educators in the academic environment. Only one site that I found addressed nursing education for both, but at a cost. Another site that I use frequently for my own teaching needs provides nurse educators with great clinical tools to use to link theory to practice and addresses critical thinking in the

classroom, but again at a per purchase or yearly cost. None of these sites were Canadian based and I could find no website, blog or twitter link that addressed education in psychiatric nursing either in the clinical or academic environment.

I also did an extensive search of textbooks and nursing books for techniques to teach the online learner. Many were vague and addressed the theoretical underpinnings of online learning, or what online learners need, or great platforms to use to increase social media use, but only a few provided tangible ideas and methods that were laid out in such a way that educators could use the ideas immediately in their teaching strategies as well as how to use them effectively.

Project Description

The premise for this project comes from the data analysis in this study. One of the themes that stood out during analysis was instruction, feedback, and engagement in the context of the development of critical thinking and professional problem solving for students. This current literature review I conducted brought to light the lack of support found in the literature and on the internet to support psychiatric nurse educators in innovative teaching strategies that support critical thinking, and problem solving in psychiatric nursing students.

The goal of this project is to create a psychiatric nurse faculty communication space to provide more collaborative interaction between faculty to share and disseminate knowledge for improved student and instructor engagement, meaningful feedback and learning in the online environment. This communication strategy has been chosen due to the fact that distance and geography limit the number of methods I can use to collaborate

with faculty frequently and authentically. This will also provide the opportunity to create that technical and digital literacy required for successful online instruction, and innovative, appealing, and exciting learning opportunities for students. The title of the blog, *Can't it be Open Book: Reinventing Nurse Education* will address four primary discussion areas. Thinking about Thinking, Innovate to Create, Technology…is for Real, and finally, Link to Think (Appendix A).

The resources required for this project include a fully designed blog space that is interactive, and informative as well as, resources that can easily be taken from the internet such as links to educational sites, peer-reviewed articles, Learning Management Systems (LMS) technology and other tools to support teaching critical thinking and innovating the online classroom. Existing supports include WordPress, which is a popular blog building site, easy to navigate and develop. I have created the draft version of this blog, which will be released with the approval of this doctoral study however, I have sent the blog privately to peers for feedback on design and content. Implementation is simple with regard to blogging, and social media, such as Facebook and twitter, and is one of the most important tools to introduce to the internet masses.

However, as this is a faculty blog for the college under study, I will initially invite faculty via email to join the blog. If successful I plan to widen my reach to other psychiatric nurse faculty at other institutions in the province. Even though this is a blog that I have created and plan to run, the objective is for others to collaborate and share ideas to decrease the gap of skills and concepts that various faculty use to successfully teach in the online environment.

The most obvious potential barrier is getting psychiatric nurse educators to use the blog consistently as well as finding it useful in their teaching practice. The internet is full of advice on how to keep a blog active however Strella (2012) was the most informative on this topic. In order to maintain and keep my blog informative and in real-time, I must make an active commitment to blog at least twice a week. One of the most important points is to treat the blog as a service to a client, I am essentially serving the readers with valuable content. Creating blogging calendars, using guest bloggers, repurposing content, and integrating similar content over a time period are also strategies to mitigate these two barriers. The four primary areas that I have developed can be found in Appendix A and include:

Thinking about Thinking, which provides information on critical thinking and provides a section for participants to add their own thoughts and ask questions. This page will continue with information from Elder and Paul's critical thinking stage theory especially focusing on building intellectual standards through powerful questions and teaching strategies. I have started this blog off with a definition of critical thinking by Elder and Paul (2010), as well as a link to the critical thinking stages.

Innovate to Create links to a page where instructors can share their innovative ideas for creating engaging and appealing online learning classes. This page will be dedicated to sharing successes in online teaching and learning. I have started off this page with links to two textbooks by Conrad and Donaldson that provide innovative ways to engage the online learner.

Technology … is for Real, which also links to another page within the site that provides information on technology that instructors can use in their online instruction to enhance their teaching. This page starts off with a challenge to psychiatric nursing educators to use a new technology in their classroom in the next year. In this section I have provided a link to virtual simulation in mental health produced by Laerdal and a video is provided that demonstrates how to use this new technology.

Link to Think will send bloggers to a page of links to important aspects of teaching in the online environment including conferences, Academic papers, other internet resources that provide tools that can be used immediately in the online classroom. In this page I have created a link to the website criticalthinking.org, which provides excellent information on strategies to bring critical thinking into the nursing classroom as well as some helpful rubrics that address critical thinking.

Project Evaluation Plan

I intend to evaluate this project through two methods. The first will be a blogging rubric to determine the performance of the blog including metrics, goals and questions. Some important items that will demonstrate the blogs' success are the amount of people that are using the blog, who actually subscribes, comment length, numbers, and quality and participation from readers (problogger.com). Secondly, as feedback from participants is also a very important indicator of how well the blog is received, I will send a doodle poll via email to the faculty I invited to get their personal feedback on the use, content, and functionality of the blog following a four week period (Appendix A).

Project Implications

The goal of this study was to understand student perceptions of critical thinking development in online basic-entry psychiatric nursing education to create a project that would provide the chance for psychiatric nursing educators to share and collaborate on effective online strategies to improve instruction, feedback, and engagement. This project has met social change objectives by providing an opportunity to improve the dialogue of what change needs to look like for the future of psychiatric nursing education and how online learning can be expanded successfully to help students develop critical thinking skills in online education that supports professional problem solving in a specialty that often cares for the most vulnerable of society.

Conclusion

In Section three of this project study I introduced the project I created to enhance faculty preparedness to teach critical thinking successfully through a blog built to encourage sharing, and collaboration on ideas and skills used to effectively teach in the online psychiatric nursing environment. By introducing the generational gap that exists in nursing education between faculty and students, and using data from the study, I was able to provide a strong rationale regarding the need for change in teaching strategies, and the use of online learning methods more successfully. I provided a detailed literature review to address a significant theme found through data analysis that included instruction, feedback, and engagement in relation to its importance in the development of critical thinking. I described the project in detail and provided visual snapshots of the blog in Appendix A. I also created two methods of evaluation for my project including one that

addressed the blog itself, and the other that reached out to the faculty invited to participate (Appendix A). Finally, I addressed the project implications and its relation to the social change that can be created in psychiatric nurse education.

Section 4: Reflections and Conclusions

The purpose of this qualitative study was to explore students' perceptions about critical thinking experiences in online nursing courses and how those experiences influenced their entry-level competencies and problem-solving development. The essential concept of this research study centered around the misconceptions regarding the development of critical thinking using online learning methodologies in basic-entry psychiatric nursing education, and how active learning can be achieved to support professional problem solving in the challenging specialty of psychiatric nursing.

Using a phenomenographic method, I conducted data collection through individualized, semistructured interviews of 15 students from two different cohorts of Alpha College. Findings of this study revealed four specific themes of both similarities and differences regarding critical thinking perceptions among participant groups. The most important of these was instruction, feedback, and student engagement, where the differing experiences significantly affected student learning both positively and negatively. These differing experiences influenced the potential for deeper learning and engagement in critical thinking and have implications for psychiatric nurse educators, the profession of psychiatric nursing, and stakeholders as critical thinking is considered a hallmark of the psychiatric nursing profession. In this study I have suggested that the instruction and feedback from nurse educators is paramount to critical thinking development and student success and, if executed poorly in the online environment, considerably affects the learning experience. From this, I decided to build an education blog to start sharing ideas between psychiatric nursing educators on how they are

successfully engaging students in learning and what strategies they are using to help develop critical thinking in online psychiatric nursing education.

Project Strengths

Literature reviews from this study have shown that students find the act of critical thinking difficult if educators are not guiding them in the process of directive thinking (Lukenchuk, 2016; Ricci, 2013). Data analysis from this study has supported the literature and revealed that instructor feedback and how they deliver course content is essential to the development of critical thinking. Student perceptions of how they engaged in critical thinking varied between instructor as evidenced by the stories they shared during their interviews where they shared that some instructors were more successful at this than others. This is also supported in the literature with research that has indicated a lack of knowledge in online teaching strategies that leaves faculty resorting to old methods of teaching that only engage lower cognitive levels (Ahuna et al., 2014; McGarry, et al., 2015; Nold, 2017).

It has been established that it is difficult to adapt traditional teaching to the online environment (Papastavrou et al., 2016). Instructors who teach online do not necessarily attend face-to-face classes or meetings and therefore do not engage in collaborative discussion as frequently. An educational blog allows for a virtual space to connect and collaborate on ideas to enhance critical thinking development with students (Jones et al., 2016). As Conde-Caballero et al., (2019) suggested, it creates an environment for theoretical possibilities such as critical thinking, acquiring new knowledge, having questions answered, and developing new skills. Another strength of this educational blog

is that it covers areas specific to critical thinking, innovation, and technology, which are critical to modern nursing curricula and current psychiatric nursing practice. Instructors who have taught or are beginning to teach in an online environment have a place to go to gather new skills and tools for their classroom especially as critical thinking, and professional problem solving continue to be a hallmark of psychiatric nursing practice. Finally an online educational blog can enrich self-reflection, increase teamwork, and promote leadership and this blog is no exception as it will be used by faculty who have been visionaries in using new ideas to teach online learning for the last 10 years (Silverio & Forsythe, 2018).

Project Limitations

I based this project on one of the themes found during data analysis that was apparent throughout the entire interview process with many of the participants. This theme addressed a significant difference in experience that posed the question whether students were experiencing the same level of critical thinking during their various courses. My goal for this educational blog was to provide a virtual venue to collaborate on teaching strategies; however, the most obvious limitation to this is its relevancy. If the blog is not relevant or interesting to educators, it will not be used; engagement will be key to the success of this blog. Another limitation is moving this blog to a public domain because currently it is specifically related to psychiatric nursing education and the educators of the program in this study. It may be more difficult to engage other psychiatric nurse educators as institutional programs vary in content and requirements. To overcome these limitations, I created meaningful, interchangeable content that can

easily be taken to the online classroom. I also considered different possibilities in terms of supporting face-to-face psychiatric nursing education when the blog goes public.

Recommendations for Alternative Approaches

I created this educational blog to inspire educators to collaborate and share new, and innovative teaching strategies in online psychiatric nursing education with the plan to expand to a larger community of psychiatric nurse educators following the pilot of this blog. However, there are other ways to successfully share new ideas and teaching strategies and one way could be through a monthly faculty newsletter with a special feature each month on teaching strategies in the classroom. Establishing a newsletter for faculty may enhance communication and provide educators with a forum to write and publish. This could become even more collaborative if more than one faculty contributed to the newsletter including the dean's office.

More formally, online modules could be designed for faculty to complete as continuing education, or for new faculty orientation. These modules could take educators through the steps of Elder and Paul's (1996) critical stage theory and focus on adapting the skills that have been created by these authors to teach students how to develop critical thinking. These modules could include the concepts of Socratic questioning, critical thinking development using intellectual standards and building elements of reasoning that contribute to the intellectual traits observed in seasoned critical thinkers.

Scholarship, Project Development, and Leadership and Change

The impetus for this study began with my own personal experiences with online education. Even though it provided the necessary information and assignments to

complete and hand in, it was devoid of community and definitely something that needed a self-starting mind, along with the ability to keep on track and not procrastinate. Until my doctoral work, I did not realize the world of technology that was out there to support online learning. Furthermore, I began teaching online courses at Alpha College and realized that it was challenging to engage students with just an asynchronous forum and students found it boring. Also, there was a lack of clarity regarding how students could learn in this environment to create authentic, workable, and relational environments to foster critical thinking and the reflective skills needed for the discerning psychiatric nurse (Huber & Kuncel, 2016; Papp et al., 2014). This uncertainty has created a gap in practice where traditional methods that focus on teacher-centered instruction continues to be the primary method for disseminating knowledge to psychiatric nursing students.

Scholarship

Researchers from around the globe continue to study the importance of critical thinking in nursing both in practice, and in education, mostly with quantitative studies; however, there has been an increase in qualitative studies with recommendations that the concepts of how students experience critical thinking be more widely studied (Andreou et al., 2014; Dearnley et al., 2013; McCutcheon et al., 2015; Monaghan, 2015; Pitt, Powis, Levett-Jones, & Hunter, 2015; Salyers et al., 2014; Searing & Kooken, 2016; Swart, 2017). Feller's (2018) study revealed the necessity to understand who our students are, what they need to be taught, and how to teach them. Delaying implementation of innovative online methods to meet the needs of today's students could create a widening gap in practice, especially if 25-year-old strategies that are outdated and do not support

evidence–based educational approaches continue. (Logofatu, 2017; Maxim, 2015; Stephens & Gunther, 2016; Stevens & Nies, 2018). Educators need to recognize that traditional methods of teaching may not be best to support the future needs of the technologically centric, and geographically diverse psychiatric student nurse populations. The concerns raised that authentic presence, acquisition of complex knowledge, and development of critical thinking cannot happen in online psychiatric nursing education has been proved untenable by the literature.

In this study, I have added to the literature evidence continuing to support that students find the online environment stimulating, with the ability to challenging their preconceived notions, and build a strong understanding of the ELC's and professional problem-solving. The fear that there would be no authentic presence in online learning is not an issue due to the increasing virtual classroom technology that exists to bring students face-to-face to interact and learn. I have learned through this study that even though curriculum is important to future nursing practice, the work lies with the instructor to know how to engage, instruct, and provide positive feedback that will challenge the student to move forward in their thinking. Ultimately, my focus in this project was to provide a virtual space that would transcend geographical boundaries to bring faculty together to share ideas and collaborate on new and innovative ways to educate today's online psychiatric nursing student.

Project Development, and Leadership and Change

I believe that psychiatric nursing education has its roots in innovation. It was not so long ago that institutions in Western Canada were pioneering the concept of a

psychiatric nursing diploma program, and later a degree in this field, fully separate of the only accepted norm of general nursing. In fact, it was so innovative and progressive that some stakeholders refused to hire these newly trained nurses in their hospitals.

This project was developed with this innovation in mind. If our predecessors in psychiatric nursing education could bring new programs so successfully to the nursing world, I believe that today's educators can move this education forward into the future. Psychiatric nurse educators today are highly educated and want to lead, and in this study, I showed that some also have the ability to create new and exciting curricula for the future of psychiatric nursing education. I believe the development of this project will provide an avenue for the needed collaboration on what change can look like in psychiatric nursing education and begin a dialogue of how we might be able to do this. Until the community comes together, it will continue to teach in separate ways. The opportunity exists to stand on the shoulders of giants and continue the growth of psychiatric nurse education and the practice of psychiatric nursing.

Reflection on the Importance of the Work

Through this entire project study development, I have been able to reflect on what is going well in psychiatric nurse education at Alpha College and what is not, and what embracing change may need to look like. Researchers through the last decade have made substantial contributions to understanding critical thinking development in general nursing education and yet there still appears to be a lack of understanding regarding this concept, even simply in its definition as it applies to the health profession.

Conducting this study has allowed me to broadly explore student's perceptions and ideas surrounding the development of their critical thinking at Alpha College and analyze what this might mean to the future of psychiatric nursing education. Traditional ways of teaching psychiatric nursing continue to thrive in current psychiatric nursing education and as past and current research indicates this is slow to lose its grip on educational strategies. Alpha College is unique in its delivery of online learning and it has been successfully demonstrated through this study that students are reaching levels of critical thinking that would be consistent with their ability to meet ELC's and begin professionally problem solving as a new graduate.

Implications, Applications, and Directions for Future Research

Because this study was the first of its kind in a unique pocket of psychiatric nursing education, and the fact that there remains little consensus on the development of critical thinking in online learning, there is a need for more current research into online learning and its effectiveness as it relates to the development of critical thinking skills using online modalities.

This has far-reaching implications for psychiatric nurse educators as the lack of evidence-based best practices for online learning has perpetuated the continued reliance on traditional methods of teaching psychiatric nursing that may not support the future needs of the technological savvy psychiatric nursing student. Findings from this study and the creation of a communication tool for faculty has the potential to create positive social change in basic-entry psychiatric nursing education delivery by increasing the depth of understanding regarding how to use online learning strategies to support critical

thinking development. This study has also provided further evidence that the uncertainty regarding the use of innovative online learning modalities is unwarranted and could impede the necessity for change in psychiatric nurse curricula. Helping psychiatric nurse educators embrace new technology to teach and expand access to innovative curriculum in the future is essential.

Because this was an initial exploratory study of student perceptions, there is a need for further research into both student and faculty perceptions of online learning experiences and how this affects the development of higher-order thinking for psychiatric nursing students. Understanding how online learning impacts their knowledge acquisition to become competent professionals was addressed in this study however, this could be enhanced with further research into assessment of student readiness to practice from both the student and faculty perspective in a longitudinal study. Furthermore, additional research into the links between critical thinking and professional problem solving could generate new curricular changes that may be needed to further enhance students' critical thinking abilities.

Conclusion

In this exploratory study, I increased the understanding of how a collective group of students could have differing experiences of critical thinking development in an online psychiatric nursing program. Without understanding their perspectives, it could be difficult to move forward with accurate ways to address their learning needs. Feedback from learners is critical to the success of innovative methods such as online psychiatric nursing education due to the lens through which adult students view this mode of

education. Respecting their perspectives and working within their ideas and suggestions will help Alpha College continue to prepare psychiatric nursing students for a profession that requires the ability to critical think through complex situations, and professionally problem solving to the benefit of the vulnerable individuals they care for.

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Appendix A: The Project

Reinvent nursing education (reinventnursingeducation.com) blog snapshots

Home page

Home About Blog Link to Think

About page

ABOUT
Edit

This blog was created from the desire to bring nursing educators together to share their ideas about how they teach. I have been educating nursing students for 11 years now and the one thing I always wished I had was someone to help me! Back then, I had no idea how to build a course, teach clinical, teach theory face-to-face or in the highly controversial online platform. I was completely unprepared and unaware of how to teach!

Blog Pages

Thinking about Thinking:

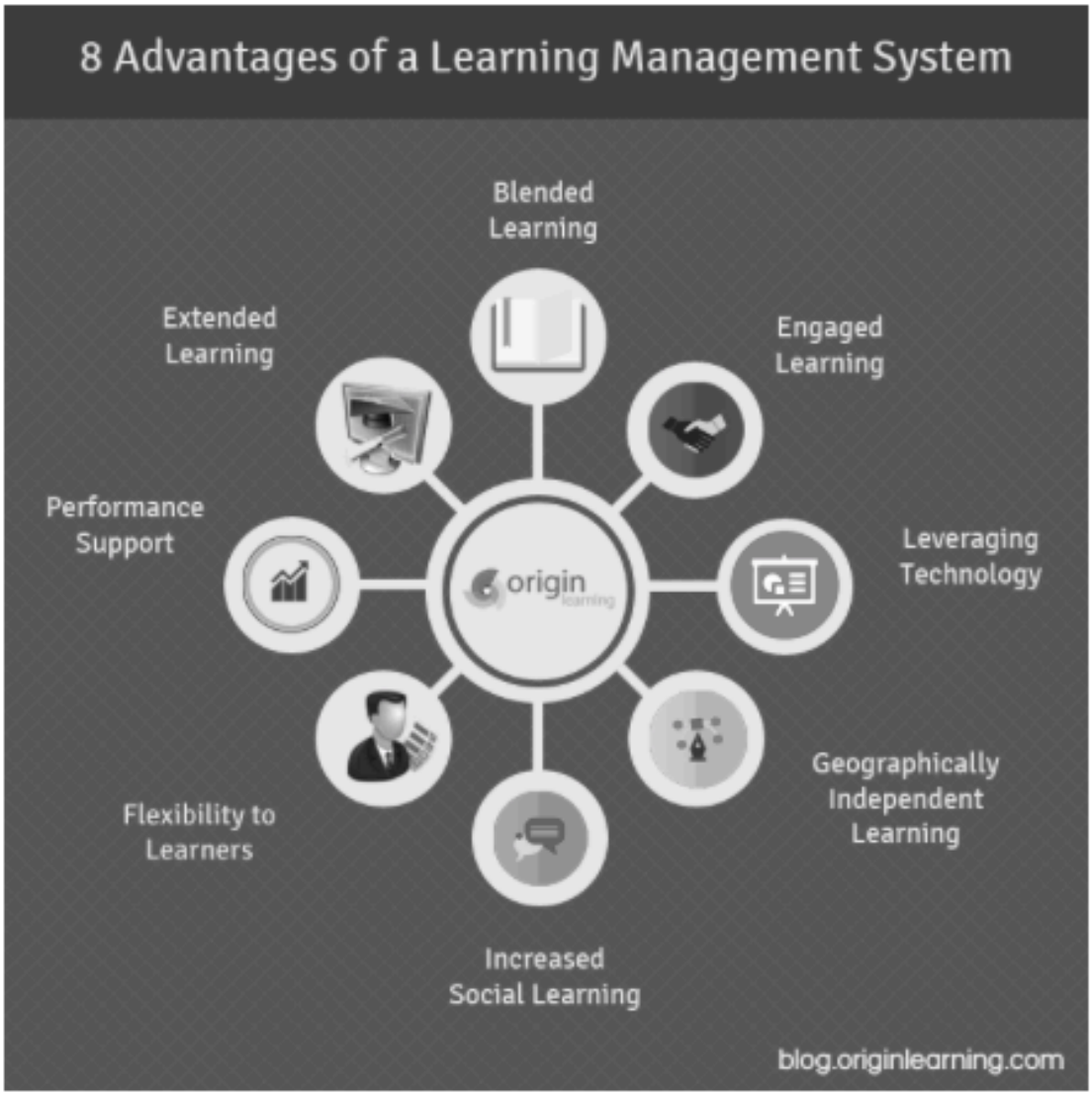
2019-10-27 **EDIT**

Thinking about Thinking

"Critical thinking is thinking about your thinking while you're thinking in order to make your thinking better." — Richard Paul I'm going to share a secret - I had no idea what the definition of critical thinking was 5 years ago. As a matter of fact, I would have likely said, the ability to get the

Innovate to Create:

Innovate to Create



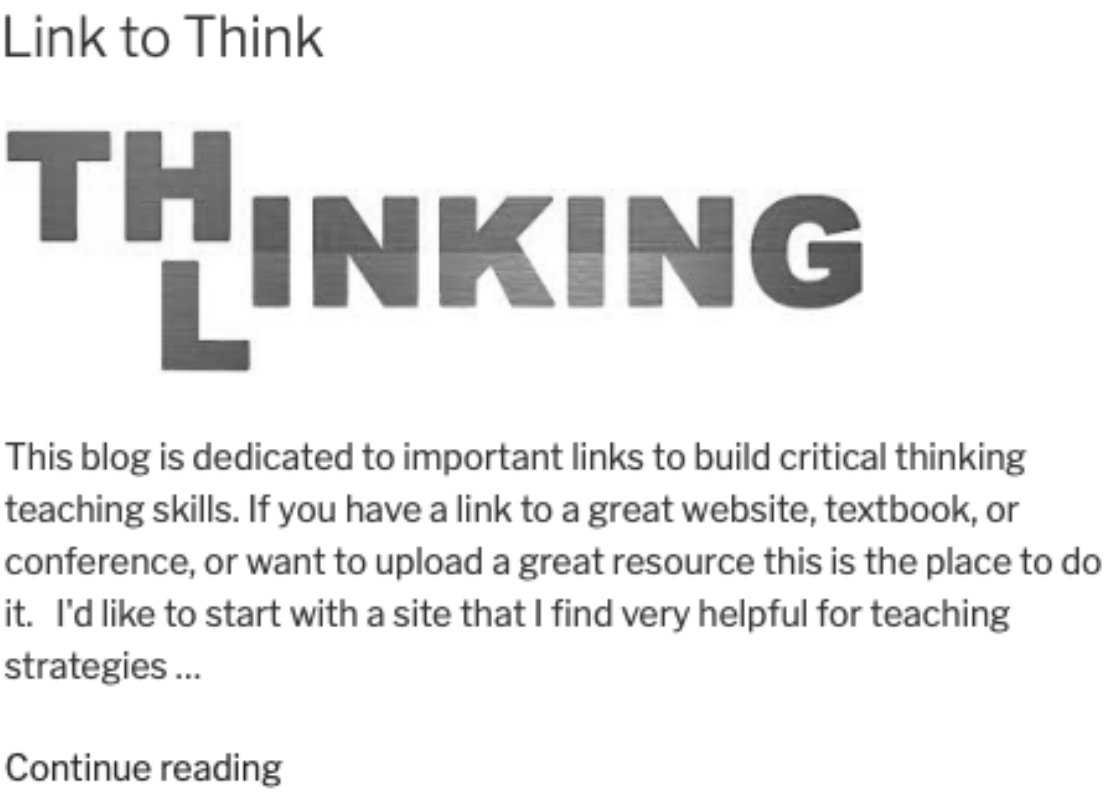
I love love love online teaching. It is truly the most challenging thing I have ever done .... but hey who doesn't like a challenge! But how does one go about it effectively? I mean students should be in a classroom to learn about nursing - said no Millenial ever! Sure, we will likely always ...

Technology…is for Real:

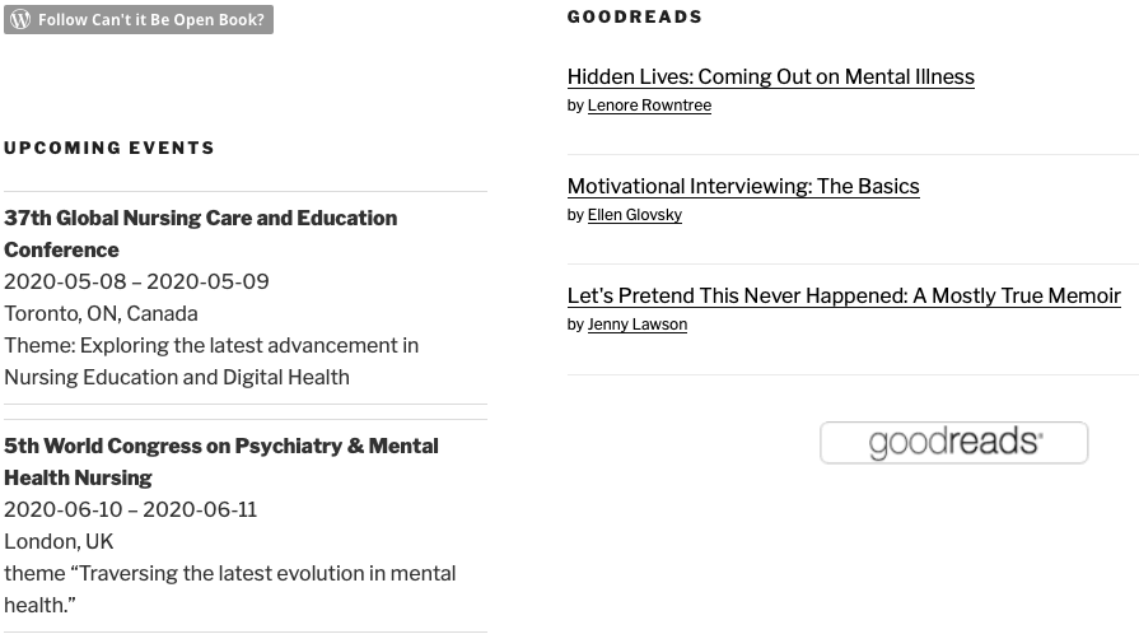
Technology....is for Real

I challenge you to use a new technology you have not used before in your classroom next year! Technology should no longer be estranged to nursing education essentially because it is really the only way students think these days. Nursing publishers are pumping out new technology as fast as they can think it up to ...

Link to Think:



Footer containing two widgets that link to upcoming education conferences and to Goodreads to share books that improve understanding of mental health and wellbeing.



Evaluation Tools for Blog

Reinvent Nursing Education Faculty Survey

1. How often do you visit this blog?
    a. Rarely
    b. Once a month or less
    c. A few times per month
    d. A few times per week
    e. Every day

2. How do you most often access the blog?
    a. On my phone
    b. On my tablet
    c. On my laptop/desktop

3. How did you find this blog?
    a. Other blogger
    b. Blog ring
    c. While searching for blogs with this content
    d. Advertisement
    e. Invited

4. Of the following, pick the top three words that come to mind when you think of this blog.
    a. Advise
    b. Community
    c. Expert
    d. Humorous
    e. Informative
    f. Practical

g. Professional

h. Shareable

i. Thoughtful

5. On a scale of 1(very poor) to 5 (very good) how would you rate the following aspects of this blog?

a. Content Quality 1 2 3 4 5

b. Consistency of new posts 1 2 3 4 5

c. Creator responsiveness 1 2 3 4 5

d. Discussion/community 1 2 3 4 5

e. Site design 1 2 3 4 5

f. Photos/images 1 2 3 4 5

g. Video 1 2 3 4 5

6. Is this blog something you'd recommend to a friend with similar interests

a. Definitely not

b. Probably not

c. Not sure

d. Probably yes

e. Definitely yes

7. Have you ever left a comment on a post at this blog?

a. Yes

b. No

8. In a few words, what keeps you coming back to the blog?

(Adapted from SoGoSurvey.com: Free blog survey)

Reinvent Nursing Education: Measuring Blog Success

Blog Goals, Questions and Metrics	Yes	No	N/A	Comments
Goals				
Is the blog driving awareness of teaching strategies				
Are participants engaged				
Is the site being shared with others				
Questions				
Is my blog post reaching my target audience				
Is my blog post interesting and relevant				
Is my blog post driving conversation				
Is my blog content valued enough to share				
Metrics				
Page views				
RSS feeds and email sign-ups				
Fans/followers/readers				
Media links				
Time on site				
Page views				
Blog, discussion, document views				
Content rating				
Comments				
Questions asked				
Downloads				
Registrations				
Shares/Retweets				
Repeat visits				
Inbound links				
Outbound links				

Revised from marketingthink.com (2013)

Appendix B: Critical Thinking Stages and Intellectual Standards

Critical Thinking Stages				
Stage	***Defining Features***	***Main Challenge***	***Knowledge Process***	***Intellectual Trait***
One: The unreflective thinker	Largely unaware of the thinking process and its impact in their lives.	Unable to assess thinking therefore unable to improve their thinking	Lack the knowledge of high quality thinking and are unaware of necessary intellectual standards	Inconsistent thinking. May have developed some thinking skill but this is inconsistent. Misconceptions often undermine thought quality
Two: The challenged thinker	Become aware of the role that thinking plays in their lives and that this poor thinking is causing issues.	To become aware of the important role of thinking and the problems that come with poor thinking	Becoming aware that high quality thinking requires deliberate reflective thinking about how they are thinking. Beginning to develop reflective aware of how thinking works both god and bad	Intellectual humility. Becoming aware of problems inherent in their thinking.
Three: The beginning thinker	Beginning to actively take up the challenge of thinking: both that they are thinkers and that thinking is not always right	To really see the importance of developing thinking. To begin to find ways to develop as a thinker	Becoming aware of the role of thinking about concepts, assumptions, inferences and implications. Beginning to recognize standards of thinking.	Awareness of problems inherent in thinking. Increasing intellectual confidence in reason despite the limited understanding of what it means to begin

				the process of critical thinking.
Four: The practicing thinker	Beginning to have an awareness of the habits they need to create to take control of their thinking. They recognize problems in their thinking and the need to address them systematically	To begin to develop the awareness of practicing systematic thinking.	Increasingly aware of what it will take to monitor and assess their thinking of concepts, assumptions, inferences and implications	Intellectual perseverance. This provides the motivation for developing systematic practices in evaluating thinking.
Five: The advanced thinker	Have established good habits of thought. They actively analyze their thinking. They are more keenly aware of the egocentrism and the role this plays in their thinking.	They must now not only understand their need for systematic practice in their thinking but also have deeper insight into the levels of problems in thinking.	Actively and very successfully engaged in monitoring their thinking and what it takes to regularity assess their thinking. They are also aware of the relationship between thoughts, feelings and desires.	High degree of intellectual humility in recognizing the egocentric and sociocentric thinking in one's life but also the prejudices and ignorance that still affect thinking practice.
Six: The accomplished thinker	Take systematic charge of their thinking and are continually monitoring, revising and reviewing strategies that will improve	Making this high level of thinking intuitive and internalized to be effective in a multitude of disciplines and practice.	Actively and successfully engaged in the monitoring thinking in a systematic way with a high degree of practical	All intellectual traits are deeply integrated into the thinker's lives.

	thinking.		insight. Deeply understand the complex relationship between thoughts, emotions, and behaviors.	

Intellectual Standards & Question Examples, Elder and Paul (2013). p. 35

Clarity	Understandable, the meaning is grasped *IE. Could you illustrate what you mean?*
Accuracy	Free from errors or distortions, true *IE. How could we check on that?*
Precision	Exact to the necessary level of detail *IE. Could you give me more details?*
Relevance	Relating to the hatter at hand I*E. How does that help us with the issues?*
Depth	Containing complexities and multiple relationships *IE. What factors make this a difficult problem?*
Breadth	Encompassing multiple viewpoints *IE. Do we need to consider another point of view?*
Logic	The part that make sense together, no contradictions *IE. Does your first paragraph fit in with the last?*

Significance	Focusing on the important, not trivial *IE. Is this the central idea to focus on?*
Fairness	Justifiable, not self-servicing or one-sided *IE. Do I have any vested interest in this issue?*

Appendix C: Semistructured Interview Guide

Title of Research

Student Perceptions About Critical Thinking in Online Psychiatric Nurse Education

Overarching Research Questions

RQ1: How do online adult psychiatric nursing students perceive their critical thinking development and readiness for professional problem solving?

RQ2: What do students in an online basic-entry psychiatric nursing education program perceive as contributing to the development of their critical thinking skills?

Interview Questions

1. Tell me about your background. How did you decide to become educated as a psychiatric nurse?
2. What do you think makes for an effective psychiatric nurse?
3. Why do you think critical thinking is an important skill to have has a psychiatric nurse?
4. Before you started this program, I am curious about what you expected to learn from the online portion of the program.
5. What did you think would happen in each course to develop your critical thinking?
6. How did you know what to do with the information you learned in your online theory and apply it to your clinical practice? Was there anything special that you did or needed to do to come to this understanding
7. How did your instructor teach course content so as to encourage critical thinking?
8. Describe an experience where you had to deal with a situation that required accuracy, clarity and precision to make decisions where you felt you were confident in your reasoning. What information did you use to come to your decision?
9. What types of learning situations did you engage in during your coursework that helped you think more clearly and accurately?
10. How do you understand concepts of psychiatric nursing practice such as therapeutic communication and how do you apply the theory you have learned when you care for patients?
11. What do you believe is the connection between how you were educated online in psychiatric nursing and your ability to professionally problem solve in your practice?

12. How do you believe that your online education has enhanced your ability to critically think? What are some examples or stories you have about this?
13. How do think your practice is related at all to your online educational experience?
14. What stories can you tell me that reflect how your ability to critically think is influencing your professional problem solving and your ability to meet your competencies in practice.
15. What differences do you see in your ability to critically think from when you started the online program and now? How?

Follow up Interviews (if required) for discrepant data:

1. Respondent validation will initially be sough via writing to ensure that data obtained reflects what the participant said and meant, and any additions that the participant might want to add. This will also provide the opportunity for any overview or connections that the participant might want to bring out.
2. A second interview may be required if written clarification is not sufficient and possibly the result of a misunderstanding or multilingual translation issue.

Copy of finished report given to all participants. Thanks, and Closure.