A Case Study Exploration of How Nursing Students Acquire and Apply Information Literacy Skills Through Library Instruction

A doctoral dissertation presented

by

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to

The School of Education

In partial fulfillment of the requirements for the degree of

Doctor of Education

In the field of

Curriculum, Teaching, Learning, and Leadership

College of Professional Studies, Northeastern University Boston, Massachusetts

December 4, 2018
Abstract

To prepare nursing students for the changing landscape in healthcare the incorporation of information literacy skills is necessary. The research suggests that nursing students have difficulty locating and using online resources and that the inability further impede their ability to effectively use online resources in professional practice. Studies further advocate for the early adoption of information literacy skills, and for more collaboration between nursing educators and librarians. Additionally, studies support the notion that more research is needed to build a culture that understands the importance of nursing students effectively using online resources. As nursing education continues to evolve, nurses will become more vital to the delivery of healthcare more than ever. The researcher explored the experiences of nursing students and nursing faculty related to how information literacy skills are acquired and applied through library instructions. The following research questions were examined: (a) How do nursing students in an accelerated program experience the acquisition and application of information literacy skills through library instructions? (b) How do nursing students describe their level of confidence in transferring information literacy skills they obtain during library instructions to research assignments in the curriculum? (c) What aspects of the overall information literacy training in the accelerated nursing curriculum present either helpful or problematic to learning and applying these skills in a professional health care environment? The recommendations of practice include more research on information literacy and learning styles; and the use of case based instructions applying the evidence-based practices such as the PICO model in library instructions.

Keywords: information literacy skills, library instructions, Kolb’s experiential learning theory (ELT), nursing students, nurses, case study
Acknowledgements

I would like to sincerely thank everyone who dreamed with me and I embarked upon this educational journey. A special thanks to the matriarchs of the Parker family, Dr. Bertha Parker Furcron and Mrs. Loretta Parker Brown, thank you for wisdom and your continuous encouragement. A special thanks to my husband Jonathan, my goddaughter Tene, my many cousins and special cousins/sister/brother Kia and Vincent. In addition, thank you to my sisters Cynthia and Roslyn always there to support me. A special thanks to my colleagues, Margaret Alexander, Dr. Roland Welmaker and Dr. Ebere Ume for your continued support. To my adviser, Dr. Sara Ewell thank you for your ability to understand your students’ need, for keeping me focus and for your encouragement. To Dr. Chris Unger my second reader thank you for your keen insights into the field of education and to Dr. Ron Edelstein, my third reader, thank you for your years of mentoring and navigation. Sincere gratitude to Drs. Leslie and Tom Wirpsa, my coaches, who provided a level of understanding on this journey that I needed and respected throughout the process.

I strongly believe I have been given a gift that I can impart on students, faculty, and colleagues who desire to assist others in their quest for reliable and credible information. Last but not least I want to thank my God for continuing to sustain and lead me.
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Chapter 1 Introduction

The changing landscape of healthcare has transformed the field of nursing, creating opportunities and challenges. These changes have meant that nurses are no longer simply assisting physicians, but they work directly with them with greater responsibility including treating patients and prescribing medications for them. Family Nurse Practitioners (FNPs) commonly are the primary provider in clinics, in retail outlets such as Walmart, and CVS (Hunter, Weber, Morreale, & Wall, 2009). These clinics increasingly offer an array of services that were once only available by visiting a physician’s office or a hospital emergency room. Auerbach (2013) argued that several factors have contributed to this transformation of nursing, primarily the shortage of physicians and the Affordable Care Act. Simultaneously, demographic shifts, particularly the aging of the baby boomer generation, are increasing their demand of healthcare (Kahana & Kahana, 2014). Additionally, as Auerbach (2015) observed, hospitals and healthcare facilities are increasingly requiring advance skilled nurses.

Within this context, nursing education is also undergoing a significant transformation which was first outlined in 2011 with the publication of a major report from the Institute of Medicine (IOM), *The Future of Nursing: Leadership, Change and Advancing Health*. This report focused on the shifts in the training of nurses to prepare them to respond effectively to the innovations and changes taking place nationally in the health care field. (National Academy of Sciences, 2011). One of the critical themes emphasized in the report was the mandate to improve educational programs for nurses to include a more sophisticated use of technology and a deeper understanding of information systems. The report further suggested nurses need to demonstrate competencies including “leadership, health policy, and evidence-based practice” (p. 2). The directives also suggested increasing the number of educational programs available to students.
and condensing the time that graduates needed to become entry level nurse leaders. Market demands mean nursing schools have re-aligned their programs to respond to this accelerated need. Thus, the time and resources allotted to the acquisition of fundamental skills like information literacy for research and practice are increasing limited.

This case study explores the level to which nursing students particularly in accelerated programs are effectively integrating information literacy skills learned in their instructional environment into their practical experiences. This study documents the experiences of students pursuing master’s level nursing degrees at a university dedicated to conferring degrees for individuals committed to addressing health care inequities for underserved populations. This is a crucial issue nationally because health care is facing a fundamental shift where nurses are moving from a common subsidiary role into making primary leadership decisions for patient care. This study examines information literacy at the entry level at the master’s degree; however, the implications extend beyond that level of training and experience.

In 2012, the American Association of Colleges of Nursing (AACN) reported a 26% increase in students enrolling in nursing programs at the bachelors of science level and a 57% increase at the masters level (Fang, Li & Bednash (2012). Research suggested that the profession of nursing is becoming an attractive career option for many diverse populations seeking an occupational path into the healthcare. Wink (2005) reported that several nursing educational programs have also adopted an accelerated model of matriculation for students at the bachelors and masters level. While several types of accelerated nursing programs exist, Wink (2005) defined the accelerated Masters in Nursing for “Non-Nursing College Graduates” as a program that “admits students with baccalaureate degrees in other disciplines and with no previous nursing education” (p. 273). The existing literature has not fully documented the
students’ perspectives regarding the quality and applicability of skills offered in the area of information literacy within this rapidly changing landscape of healthcare. Auerbach (2013) suggested nurse education programs must become more creative by offering classes online and face-to-face, simultaneously, whilst retaining a high standard of quality. This study addresses this timely dilemma.

Six years into its publication, the IOM Report (2011) remains a foundational and relevant document for nursing educators and practitioners. The report provides directives to guide nurse education programs in the training and preparation of nurses in the use of information technology and the use of information systems in healthcare. Serious gaps in the implementation and transference of skills exist, particularly in the area of literacy in relation to the acquisition of health information for nursing students. Researchers have asserted that an essential skill required by today’s nurses is the ability to find relevant scholarly information and to determine when and how to effectively use the information (Gilmour, Huntington, Broadbent, Strong, & Hawkins, 2012).

**Statement of the Problem**

Nursing training programs face dual challenges. Students entering them do not necessarily have the background skills or education to rise to the information literacy needs in the areas of specialty high level nursing programs demand. Simultaneously, they are enrolled in an accelerated program that will quickly put them into the workforce where they are expected to perform at high standards of excellence in high pressured situations; mastering quick turnaround of research skills and its application is essential to their success in the field.

As Gilmour et al. (2012) argued, as the role of nurses continue to evolve, information literacy skills become ever more important so nurses may address more complex problem
solving in regards to patient care. Studies have reported, however, that both nursing students and recent graduates find it difficult to locate scholarly articles that apply to the particular problem on hand; many, despite training, are often challenged with pinpointing scholarly journals for analyses and for patient care information they need. In short, they reported that students and recent graduates do not acquire in the training in the context of nursing programs in general, particularly accelerated ones, the fundamental skill sets to incorporate what may be life-saving information into their practice (Bond, 2009; Cader, Campbell, & Watson, 2009; McCully & Jones, 2014; Sharkey 2013).

Librarians supporting nursing programs commonly spend countless hours providing information literacy sessions and one-on-one assistance, only to later observe that when student research independently, they are opting for Wikipedia and other non-scholarly sources that do not provide them with the information expertise they need to adequately address patients’ needs for care, particularly in moments of crisis when a physician might not be available (Snyder, 2013). Students must be taught how to critically appraise the information in scholarly journals and sources, and how to apply it.

One of the primary methods used to address students’ ability—or lack thereof—to find, locate and use materials is introduce students to information literacy skills. Information literacy is defined as the ability to find, locate, and use the appropriate resources (American Library Association, ALA, 1989). Initially established by ALA this set of standard competencies which were subsequently approved by the “Association of College and Research, endorsed by the American Association for Higher Education, and the Council Independent Colleges” (ACRL, 2013). The ACRL defined information literacy as “a set of abilities requiring individuals to recognize when information is needed and to have the ability to locate, evaluate and effectively
use the information” (ACRL, 2013). The ACRL has established information literacy standards and competencies for higher education. Additionally, the ACRL supports the concept that information literacy skills are proficiencies which promote useful decision making (ACRL, 2000). In 2013, the ACRL began the review of the information literacy standards for nursing and to further address issues related to new technologies (ACRL, 2013).

This case study sought to understand how nursing students experience information literacy skills through library instruction in an accelerated nursing program. By using a case study research design the researcher investigated how nursing students interpret and use information literacy skills and the structural and institutional facts that facilitate successful acquisition and apply. A case study allowed the researcher to collect multiple sources of information: interviews with students, library colleagues, and faculty; participant observation of workshops and training; and document analysis of artifacts such as student assignments, training materials, and course curriculum. Librarians are actively involved in library instruction teaching information literacy skills; however, there is a missing link in students’ ability to consistently and independently access scholarly sources and to retain the skill set provided during information literacy workshops. For example, research has indicated that there may be a correlation between the limited time students participate in library instruction and their ability to gain and use information literacy skills (Brettle & Ranor, 2013). Saunders (2012) asserted that it is important for librarians to examine students’ learning styles in preparing information literacy skill instructions. However, little is known about the efficacy of nursing literacy training from the viewpoint of students themselves. This study addresses that deficiency in the literature. The findings of the proposed study contribute to increasing the body of knowledge on information literacy skills by providing a glimpse into select students’ experience using the information
literacy skills gained through library instruction. The investigator used Kolb’s experiential learning theory as a theoretical framework to assess students’ experience.

Moreover, the significance of nursing students’ lack of information literacy skills in locating pertinent information for patient care, research, and treatment is documented. (Bond, 2010; Turnbull, 2011; Gilmour, 2012). Several of the authors have suggested that a missing link in preparing nursing students for the changes in healthcare is attributed to the lack of students understanding how to incorporate information literacy skills in their research process. The research further suggested nursing students and recent graduates have difficulty locating and using online resources. This literacy gap and the inability for students to process constantly changing and more sophisticated resources furthers impedes their ability to effectively use online resources in professional practice (Gilmour, et al 2008).

In 2013, the ACRL revised the information literacy standards for nursing students. The standards were created based on the changing dynamics of nursing related to understanding evidence based resources and patient care (IOM, 2010). The standards were adopted to respond to the traditional information literacy standards for higher education and based on information from at least 13 nursing associations (ACRL, 2013). The approach to the creation of information literacy standards was a collaborative venture which included the expertise of librarians and nurse educators. The goal of the information literacy skills standards in nursing were to: (a) “provide a context of the need for information literacy skills at the various educational levels of nursing; (b) to begin a dialogue with faculty and librarians with guiding principles to support the adoption of information literacy skills and (c) to provide performance indicators which supports professional and continuing education for nursing” (ACRL, 2013). The standards are a set of guidelines which enabled nurse education programs to make adjustments to support the
recommendations of the IOM report. While the guiding principle is apparent, research indicated the lack of collaborations and partnerships between librarians and nurse educators (Beck, Blake-Campbell, & McKay, 2012).

The literature supported the notion that nursing students are using online resources to answer questions related to patient care versus print resources (Sharkey, 2013). During information literacy sessions, students are taught how to use specific subject-related databases and online resources. Many of the students entering the field of nursing are either career changers or are not recent undergraduates, thus the task of identifying and using the most relevant resources can be challenging (Jacobsen & Andernaes, 2011). The researchers described students entering the masters of nursing program with limited information literacy skills. Turnbull, Royal and Purnell (2011) further asserted that “learning may be delayed while students gain competence and confidence in using information technology and resources” (p. 122). The challenge is identifying opportunities for students to improve information literacy skills when the nurse education programs are increasingly accelerated (Auerbach, 2013). If these skills are not acquired there might be life and death consequences. For example, an inability to understand the correct dosage to administer to a patient can directly alter a patient’s outcomes.

In the field of librarianship, online resources are defined as library electronic resources which may include but are not limited to databases, websites, electronic books, electronic journals, and electronic medical health records. For the purpose of this study, the primary emphasis is on the nursing students’ use of databases and point of care resources for patient care and treatment. As students prepare for the rigor of meeting the information needs in patient care, the expectations are that recent graduates will have the skills required to garner from reliable and applicable sources the capacity that can save lives (Gilmour, et al 2012).
One of the key online resources used by nursing students and nurses is the Cumulative Index to Nursing and Allied Health Literature (CINAHL). CINAHL is the gold standard consulted when searching the scholarly and scientific nursing literature. Nurse educators encourage students to use CINAHL as a foremost resource before using other online resources and health databases such as PubMed (Scott, Gilmour, & Fielden, 2008). PubMed is the premier database in biomedicine, and it is used by physicians and other health care professionals to locate scholarly information and patient care directives. Students are aware of the professional resources such as CINAHL and PubMed, and yet research has suggested students return to Google (Kingsley et al, 2011). As result, students become frustrated when they cannot locate scholarly journals and often are not connecting the information literacy skills as life-long learning skills that are necessary for crucial applications in the healthcare field. (Davis, Taylor, & Reyes, 2014). Typically, information literacy sessions are either provided as in-class workshops or as individual sessions. During the sessions, students are introduced to specific resources such as CINAHL, and following the demonstration, students are asked to practice what they have learned. Simultaneously, librarians observed students’ use of resources (Jacobsen & Andenases, 2011). Yet, once the session has ended, there is a significant disconnect in the students’ capability to apply those skills. This study aimed to address why the transference of literacy skills is not occurring from the educational setting to the practical application. Thus, through a rigorous case study, this researcher desired to learn and understand how literacy training programs can better implement experiential learning components into the library instruction which can enable students to learn these skills sets which are critical in their healthcare profession.

Significance of Research Problem
With both the shift in nursing education that resulted from the IOM report (2011) and the rapid growth of accelerated nursing programs, educators are under increasing pressure to disseminate literacy and research skills to their students so they can competently respond to the new challenges of the health care system. Recent studies suggested that if, indeed, the new population of nurse graduates lacks the capacity to acquire information literacy skills, patient care and positive outcomes for patients will be severely compromised (Gilmour, et al 2016). As many of the nurse education programs are graduating new nurses in an accelerated model, understanding how recent graduates acquire and apply information literacy skills—which approaches work and which do not—becomes paramount to the success of these programs and to the health care system in general.

Although information literacy skills are taught by librarians, there is a debate regarding the need for more instruction and inclusion of information literacy skills in the content courses of the nurse education curriculum (Flood, Gasiewicz, & Delpier, 2010). Bond (2010) reported that students are successful when searching for informal information (Wikipedia, etc.); however, they are not as successful when retrieving pertinent information for assignments from more complex and sophisticated sources such as scholarly journals, patient care guidelines in diagnostic handbooks, and research reports. Bond (2010) further argued that there is a correlation between the level of complexity of obtaining information literacy skills and the competence of students’ understanding how to effectively use online resources. Furthermore, Bond (2010) advocated for a greater integration of information literacy throughout the nursing education curriculum. The author purported that one of the key concerns is the lack of a comprehensive approach to ensuring students understand how to use the online resources.
Librarian scholars McCulley and Jones (2014) suggested five strategies to improve efficacy in the teaching of information literacy skills for nursing. These include: “the embedded librarian approach, collaboration with nursing educators, the creation of subject guides on online resources nursing resources that are available through the library, providing tutorials on CINAHL, and the use of Evidence-Based Practice and reflection” (McCulley and Jones, 2014, pp. 24-26). The integration of these strategies could provide an important learning component enabling nursing students to solidify information literacy skills so they can respond effectively to patient care outcomes in preventive and emergency care.

This brings up the important issue of collaboration between nurse educators and librarians teaching information literacy which research has identified as a crucial issue to improve nursing students’ information literacy skills (Barnard, Nash, & O’Brien, 2005; Bond, 2010; McCulley & Jones, 2014). The literature further supported the need for a greater consensus and collaboration between nursing educators and librarians to successfully address nursing students’ information literacy skills (Cacchione & Zurkoski, 2014).

**Context and Background**

The mission of the institution that is the focus of this study vitally includes educating and preparing students to provide healthcare in underserved areas and to underrepresented populations. The university is located in a county of a major urban metropolis in southern California where the population is over one million inhabitants. Additionally, the university is recognized as a beacon of health care education in the community and attracts a number of students from neighboring areas where there is a need to have health care professionals recognize because of socio-economic challenges, and access of general population to health care is limited. The university is designated as a historically Black graduate institution and a Hispanic servicing
institution where approximately 40% of the students are of African or African-American heritage and approximately 50% are described as either Hispanic Americans, Asia Americans, or multi-race. In many instances, students enrolled at the University because of its character as a private institution, its mission, and the small class size which affords more individual attention from instructors to guide them through their educational studies. In addition, the vast majority of students pursing educational degrees are dependent on financial aid.

In 2010, the university opened the School of Nursing with a primary emphasis on educating graduate nursing students to become Entry Level Nurse Managers (ELM) and Family Nurse Practitioners (FNP). In 2017, the School of Nursing added another educational programs known the RN to BSN program. All three programs are based on an accelerated model where students complete the degree within 12-24 months. The RN to BSN program is intended for nurses who have an associate degree and are interested in pursuing a Bachelor’s of Science degree in Nursing. The ELM program is designed for college graduates who do not have a traditional nursing background and may lack nursing experience. Students admitted to this program must have completed at least seven pre-requisites in statistics, sciences, and nutrition. They must obtain at least a GPA of 3.0 in those pre-requisite courses. In addition, the ELM program attracts students who are older or considered non-traditional; the mean age is 35 years. Wink (2005) documented that many nursing programs attract more non-traditional students and emphasized the need for these programs to understand the adult learner. Wink’s analysis applies directly to the program that is the focus of this study where over 40% of the students in the ELM program identify as African heritage and the majority of all students in the School of Nursing are bilingual. Another characteristic of this nursing training school is that the majority of students are female, and many are head of households. Therefore, a number of the students are pursuing
their nursing education while working as the sole economic support for their families (often inter-generational). In addition, students face other obstacles, including becoming technology savvy and understanding basic research skills; however, these students are resilient and dedicated to overcoming multiple barriers. Students at the institution often speak of pursuing an advance nursing degree to acquire a better life for their families. They have a collaborative spirit and bridging cultures to help each other with their educational attainment.

These demographics, as research has documented, may contribute in general to the level of difficulty students have using information literacy skills effectively to locate, use, and evaluate relevant resources. Flood, Gasiewicz, and Delpier (2010), for example, reported that a number of nursing students are older and may struggle with using online resources. The authors found that providing additional time or more sessions, both group and one-on-one, to assist students in improving information literacy skills was effective. However, Bond (2010) emphasized that many students in these accelerated programs fail to perceive the connection between learning to use information literacy skills in the academic setting and applying these abilities to the practice of nursing once employed. Bond (2010) advocated for reforms in the approaches and methods used in nursing programs to teach students information literacy skills. This dissertation responds then to an urging from Bond (2010) for further research that seeks to understand how students experience information literacy skill training and application in nursing programs. Therefore, this dissertation aimed to enhance current research by providing qualitative data exploring how students perceive their experiences of acquiring information literacy skills in an accelerated nursing program. The results from this research study can be used to improve the teaching of information literacy skills in highly competitive nursing training programs for students, nurse educators, and information literacy librarians.
When this study was conducted, the institution that is its focus was teaching information literacy skills by introducing them primarily during new student orientations. A number of activities took place during the orientation phase, and the information literacy workshop was brief and, due to the sheer number of activities taking place, students were commonly not fully engaged. Accordingly, this orientation also served as the inauguration to students’ tenure at the university, and many were not aware of the importance of obtaining information literacy skills. While the librarians would attempt to contact faculty to provide additional resources and instruction, their scope of influence was limited. Consequently, in the academic process and course work, when students’ conducted and presented research papers in general content courses, they commonly would fail to incorporate the workshop skills; students, faculty and particularly librarians identified a need for remediation. A comprehensive approach might address gaps between those introductory sessions and ongoing learning for more efficacy in information literacy learning and the application of research skills in the classroom, and most essentially, in the workplace.

One of the main characteristics of the ELM program that is the focus of this study is introducing students to research methods. Additionally, each course included a research component. Students were expected to complete research papers from the start; however, information literacy skills were only cursorily introduced during orientation and then explored more in depth in a systematic way only during the Research Methods course, scheduled for the second year during both the fall and spring semesters. Students consistently expressed a need for a more comprehensive, a more consistent, and an earlier program in the arena of information literacy skills.
As the Library Director of the University, I work directly with select nurse educators to identify methods of collaboration to effectively incorporate information literacy within the content courses of the curriculum. More recently, the library director has taught the RN to BSN students in an information literacy class which is required for all undergraduate students. (WSCUC). As Beck (2012) has suggested, starting small with one specific course can lead to broader change. For the purposes of this study, I was particularly interested in the ways the institution was attempting to integrate information literacy into the nursing educational curriculum. The librarians collaborated with the faculty members teaching information literacy sessions both the ELM and FNP programs. Indeed, it was a work on progress. Students commonly would come to the library for one-on-one sessions because they required more instruction on how to research the literature and subsequently use information literacy skills. In following the trends in the literature, information literacy sessions should connect or align with the assignments. Davis, Taylor and Reyes (2014) suggested promoting information literacy skills as a component in lifelong learning. The goal of this study was to provide invaluable information that can be beneficial to the students, the faculty, and the University.

Positionality Statement

I grew up in the South, and I am an African American woman who witnessed firsthand the way people of color were marginalized. I was born in Savannah, Georgia and, shortly after my birth, my parental grandparents became my guardians, and I moved to a little town known as Tillman, South Carolina. I also grew up during the era when the Civil Rights Movement was most active, and my grandparents were very vocal in helping me understand the need to better myself. Therefore, for as long as I can remember, thanks to them, I was told that I would attend
college. Yet, neither of my grandparents had completed high school; they were day laborers working in the agricultural fields, where crops like cotton was King at the time.

After completing high school, I enrolled and graduated from Talladega College, a small Historically Black College obtaining a bachelor’s of science degree in biology. I subsequently attended graduate school at Atlanta University, which is now known as Clark Atlanta University, located in Atlanta, Georgia in pursuit of a master’s degree in biological sciences; however, after several years of pursuing my degree, I transferred to the School of Library and Information Studies. One of the main reasons I transferred to Library Science was the climate of isolation in laboratory research. I needed to move forward. After consulting with family members I decided to continue my research interests by becoming a librarian. Therefore, I too became a career changer; I understand the necessity to pursue a different educational path and it certainly takes perseverance.

As a librarian with over 29 years of experience, my perspective is that information literacy skills are essential as our secondary education institutions in the health sciences prepare the next generation of healthcare professionals respond to a rapidly growing and demographically changing market. The concept of information literacy is used in many undergraduate universities; however, in graduate schools, the term is not as clear, and the demand for acquisition of these skills increases. Thus students become confused. However, a number of professional associations, including nursing, have identified this problem. They recognize the prevailing need to identify additional methods for their students to both learn and retain information literacy skills. (Eldredge, Morley, Hendrix, Carr, & Bengston, 2012).

At some universities, it is only when a pending accreditation site visit is on the horizon that the issue of information literacy becomes important to faculty. One of the library’s main
concerns is the abundance of information on most topics through multiple websites and databases: but, while the information may seem reliable, for nursing students who are being asked to increasingly respond to new research and professional demands, it appears that research into the way pedagogy regarding information resource skills are being transmitted is stringently warranted, particularly and specifically to assess students’ ability to effectively using online resources (Bond, 2004; 2010). Therefore, one of the primary interests in pursuing this study was to understand student experiences surrounding the teaching and application of information literacy skills and the ways in which librarians and faculty can increase collaboration to better assist students in acquiring and using information literacy skills.

**Central Research Question:**

How do nursing students in an accelerated program experience the acquisition and application of information literacy through library instructions?

Sub-questions:

- How do nursing students describe their level of confidence in transferring information literacy skills they obtain during library instructions to research assignments in the curriculum?

- What aspects of the overall information literacy training in the accelerated nursing curriculum are helpful or problematic to learning and applying these skills in a professional health care environment?
Theoretical Framework

The theoretical framework is an essential component of a qualitative research study providing a lens from which to analyze and understand the data (Anfara & Mertz, 2006). The theoretical framework that informs this study is Kolb’s experiential learning theory (ELT). Kolb’s ELT defines learning as “the process whereby knowledge is created through the transformation of experience” (Kolb & Kolb, 2005, p. 194). Experiential learning is further interpreted as a specific method in which an individual learns from ones’ life experiences. Kolb’s ELT “offers a fundamental different view of the learning process” and ELT provides “a holistic model of the learning process and a multilinear model of adult development, consistent with the way in which people learn, grow, and develop” (Kolb, 1984, p. 20). This theoretical framework proposes that an individual learns through the experiences, and this researcher posited that Kolb’s ELT could be used to understand how students gain information literacy skills through library instruction. Current research supports the notion that Kolb’s ELT can provide a critical lens to understand the learning process (Kolb, 1984; 1999; 2005; Lisko & O’Dell, 2010; Sanderson, 2011, Woods 2012; Ha & Verishagen, 2015).

Kolb’s asserted: “ELT provides a different view of the learning process than that of the behavioral theories on learning based on an empirical epistemology or the more implicit theories of learning that underlie traditional educational methods” (Kolb, 1984, p. 20). ELT as defined by Kolb posits that “learning is the major determinant of human development, and how individuals learn and shape the course of their personal development” (Kolb, & Kolb, 2005, p. 195). Kolb further asserted “ELT has the potential to be used throughout the educational environment by institutional development programs that include longitudinal outcome assessment, curriculum development, student development, and faculty development” (p. 195).
Under Kolb’s ELT framework, learning takes place in four stages or cycles: (a) concrete experience (CE); (b) reflective observation (RO); (c) abstract conceptualization (AC), and (d) active experimentation (AE). Kolb’s ELT suggests the following steps to better understand the process. During the initial stage (CE), the learner participates directly in a specific activity or experience. This is generally a type of hands-on activity that requires learning through participation. During the second stage, reflective observation, the learner steps back from concrete involvement, such as the hands-on activity and contemplates what was done in the initial phase. The learner then reviews and reflects on the experience. Next, the learner begins to build upon the first two stages by analyzing the experience and discovering where the new knowledge might be applied. The learner further explores how to use the knowledge gained. The final stage of Kolb’s ELT, which is AE, emphasizes the need to consistently evaluate the experience and, based on the experience, they must continue to transfer the new knowledge into additional practice. Thus a consistent cycle of learning, assessment, and re-application of knowledge is obtained that is highly transferable in practice. In short, the learner now begins to take steps to replicate this experience in other similar learning environments. However, currently it is unclear if this process is truly taken place in learning environment of information literacy skills. As Figure 1 reveals, the stages combined create Kolb’s experiential learning cycle:
To further understand Kolb’s assertion, one must be aware that Kolb’s ELT is coupled with Kolb’s learning styles. Kolb (1984) emphasized:

Learning requires abilities that are polar opposites, and the learner, as a result must continually choose which set of the learning abilities required for the specific learning situation. The initial phase of (CE) is at one end of the spectrum while (AE) is at the other end. In the second dimension (AE) can be found at one end and (RO) is at the other end. (p. 30, 31)

Woods (2012) argued that Kolb’s ELT is one of the most significant learning theories. Woods (2012) further described the two continuums of ELT, framing the theory in the contexts of ways of knowing and ways of understanding. The ways of knowing are described as apprehension and comprehension. Apprehension is characterized by knowing something by experiencing it CE and comprehension is knowing about something in a theoretical manner AC. Thus, there is a connection between CE and AC. The second part of the cycle is also divided into two stages of understanding: intention and extension. “Intention dynamic feedback loop for
continual learning: is making meaning by thinking and reflecting about the knowledge (RO), and extension is making meaning by doing or demonstrating the activity (AE)” (p. 124). Woods (2012) further asserted that ELT is used “in the workplace as well as in education and provides a key to understanding how different people learn and therefore how we can tailor our teaching to support the learning process and facilitate others in their learning journey” (p. 173).

**Historical trajectory and significance of Kolb’s ELT.** Kolb’s (1984) theory was greatly influenced by three scholars Dewey, Lewin and Piaget whose seminal works depict the importance of experiential learning as the key concept in the learning process. Kolb’s ELT is based on adoption of the fundamental experiential learning philosophy of these three scholars. Kolb (1984) described the influence of Dewey’s philosophy on experiential learning in that it involves “integrating experience and concepts, observations and action” (p. 22). Kolb further stated that the impulse of experience gives ideas their moving force and ideas give direction to impulse. He wrote: “Postponement of immediate is essential for observation and judgment to intervene and action is essential for achievement of purpose”. Kolb asserted that Dewey’s theory “describes how learning transforms the impulses, feelings, and desires of concrete experience into higher-order purposeful action” (p. 22). Kolb (1984) described Lewin’s work, meanwhile, as follows:

[It is an integration between] learning, change, and growth begins with here-and-now experience followed by collection of data about that experience. The data are then analyzed and the conclusions of this analysis are fed back to the actors in the experience for their modification of their behavior and choice of new experience. Learning is conceived as a four-stage cycle. Immediate concrete experience is the basis for observation and reflections. These observations are assimilated into a “theory” from
which new implications for action can be deduced. These implications serve as guides in acting to create new experience. (p. 22)

Kolb (1984) emphasized Piaget’s theory of learning as the “dimensions of experience and concept, reflection, and action form the basic continua for the development of adult thought.” (p. 23). Kolb (1984) further elaborated: “Development from infancy to adulthood moves from a concrete phenomenal view of the world to an abstract constructionist view, from an active egocentric view to a reflective internalized mode of knowing” (p. 23).

**Justification for using Kolb’s ELT.** Sanderson (2011) explained that, even though ELT originated in the field of business management, it has been useful as a framework to study information literacy because it addresses diverse types of learners and diverse types of learning platforms. Sanderson (2011) argued that students learn differently and suggested that ELT provides a platform to examine learning styles of students. In Jones’ study (as cited by Sanderson, 2011), the authors reported on the use of ELT as an effective framework in developing information literacy activities. The authors further supported the notion of presenting activities which represent the four stages of the learning cycle. Ha and Verishagen (2015) applied Kolb’s (1984) learning theory in library instruction to a group of students in the baccalaureate nursing program. They stated that Kolb’s (1984) ELT was employed because “it postulates that experience is a critical aspect of the learning process, which aligns well with library instruction” (p. 187). The findings suggest by using Kolb ELT the researcher created library instruction that demonstrated an improvement in students learning. Ha and Verishagen further support the notion that Kolb’s ELT is appropriate to use in nursing instruction, “due to variation in learning styles exhibited in nursing students” (p. 190). Lisko and O’Dell (2010) reported on the use of Kolb’s ELT as approach to prepare nursing students for their professional
roles which involves a higher level of complexity of knowledge related to clinical care and patient outcomes.

In reviewing theoretical frameworks to guide this case study, Kolb’s (1984) ELT correlated well with the central research question: How do graduate nursing students experience acquiring and applying information literacy skills through library instruction? Research has demonstrated a level of confidence in using Kolb’s (1984) ELT in several academic disciplines as a viable framework, including in the field of nursing. The comprehension of the components of Kolb’s (1984) ELT as an integrated approach to the learning process has the potential to modify information literacy sessions and library instruction, and redesign the curriculum as it relates to nursing and other educational fields of study.

**Conclusion**

Kolb’s (1984) ELT provided a critical lens to explore the learning process of nursing students by utilizing the four stages of the learning cycle. This study focused on the experiences of graduate nursing students using information literacy skills taught during library instructional workshops. The findings of the study help to answer questions related to the gap in teaching information literacy skills and students adopting these skills in the practice of nursing. Based on the previous research in nursing education, it is critical that nursing students understand how to transfer information literacy skills into research skills which are effective measures in patient outcomes. The results of the study have the efficacy to transform and impact the current methods of teaching information literacy skills globally.
Chapter 2: Literature Review

The field of nursing is facing profound changes as nurses drastically transform the roles they take on as integral partners of the healthcare teams (Auerbach, 2013). Nurses are becoming leaders nationally in the changing panorama of health care teams; they are providing medical treatment and services that were once administered by physicians. For example, increasingly in the United States, clinics are managed by Family Nurse Practitioners (FNPs). According to the American Association of Nurse Practitioners (AANP, 2016), there were approximately 220,000 nurses licensed as nurse practitioners in the United States and the demand for NP is ever increasing. In addition adding to this increased role of nurses in these outpatient clinic settings, hospitals are putting pressure on nurses to exercise an expanded set of skills (Auerbach, 2015).

The mandate to modify the training and education of nurses was derived from the Institute of Medicine (IOM) report on the Future of Nursing (2011). As of 2017, this landmark report continued to be a standard for shaping nursing education programs. Nurse educators have applied the foundational recommendations of that IOM report to nursing school curriculum to prepare the next generation of nurses. However, deficiencies exist in the ways nurses are being trained to use information literacy skills in their educational settings to that make it difficult for them to apply them to complex healthcare environments.

For the purposes of this study, in reviewing the IOM report (2011), one of the key themes of interest was the proposal to increase the level of technological information literacy training for nurses to help them identify reliable and scholarly information to use in their practice. The vast complexity and abundance of information available through the internet means that, within the context of teaching and applying information literacy skills, nursing students and recent graduates have difficulty in finding and evaluating pertinent health related information (Bond,
2010: Cader, Campbell & Watson, 2009; Gilmour et al 2016; & Gilmour et al 2012). Thus, interns and early practitioners commonly resort to using superficial or highly commercial internet sources, such as Google or Wikipedia, particularly when under pressure. This study sought to understand the experiences of nursing students as they were acquiring information literacy skills to identify the ways in which information literacy specialists can improve training in a university setting. The study examines the proficiency of one program at a college in the Western United States that teaches information literacy skills to a diverse population of individuals seeking degrees in nursing. It makes recommendations so that graduates, particularly in accelerated programs, may have the skills needed to make more appropriate decisions when researching and applying healthcare information in a rapidly changing and highly pressured work environment (Kingsley et al, 2011).

This literature review will consist of the following: (a) the history and definitions of information literacy; (b) theories on information literacy instruction; and (c) implications for the need of information literacy skills in the professional practice of nurses.

**History and Definitions of Information Literacy**

The term information literacy was initially coined by Paul Zurkowski in 1974 to encompass how “people are trained to use information resources and how skills can be used in problem solving” (Behrens, p. 310). The American Library Association (ALA) was one of the first library associations in the world to adopt the terminology; it thus defined information literacy as a set of skills that are needed to find, retrieve, analyze and the use of the information (ALA, 1989, 2000, 2013). A set of standard competencies were established by the ALA in 1989 and subsequently were approved by the “Association of College and Research Libraries (ACRL), endorsed by the American Association for Higher Education, and the Council Independent
Colleges” (ACRL, 2000, 2013). The ACRL defines information literacy as “a set of abilities requiring individuals to recognize when information is needed and to have the ability to locate, evaluate and effectively use the information” (ACRL, 2000). The ACRL has established information literacy standards and competencies for higher education. Additionally, the ACRL supported the belief that information literacy skills are proficiencies which promote useful decision making (ACRL, 2000). In 2013, the ACRL began the review of the information literacy standards to further address issues related to new technologies (ACRL, 2013).

Prior to the adoption of terminology of information literacy, bibliographic instruction (BI) was the jargon used to describe information literacy (Gilton, 2009). For a number of years BI was the term used to describe the collaborative work between librarians and faculty in teaching information literacy skills. Librarians primarily were liaisons to various educational programs thus supporting the students and faculty affiliated with that program. As liaisons, librarians were also responsible for all of the computerized literature searches because, at that time, there were no computers for the user. In addition, the primary research tools that were taught during BI included: (a) how to use the card catalog; (b) how to use the print indexes; and (c) how to locate journal articles or newspaper articles using either microfiche or microfilm. Gilton (2009) reported during the early years that librarians focus on educating the user. Snavely & Cooper (1997) reported that the term of information literacy was adopted by ALA in the 1990s, and, while there was great debate over the change in terminology, the role of the librarian in this process was needed and the skills associated with information literacy were paramount in the learning process. Information literacy skills have consistently continued to be taught in colleges and universities by librarians for decades, however; there is great debate on the need to teach information literacy skills even more, perhaps within the Internet curriculum.
The Internet and changes in information literacy. With the advent of the Internet, the exponential growth of information became apparent. Library patrons and students alike were empowered to search the Internet for information on their own. Snyder (2013) reported on the use of Wikipedia by students and how the use of this resource impacted the information gained. The author recommended students and faculty use resources beyond Wikipedia and to embrace working librarians to facilitate information literacy sessions.

Sharkey (2013) argued that we are headed toward a crisis in that students can operate the varied technologies such as Facebook or texting, yet they are limited in their knowledge of how to effectively research a topic. Prior to the Internet, librarians guided students, faculty and/or community patrons to information using print books, print journals, and indexes. As digital materials became more widespread on the Internet, researchers began to discuss some of the pitfalls of using online resources (McCulley & Jones, 2014). In addition, educators recognized students were plagiarizing scholarly works. Librarians responded by offering classes on information literacy to demonstrate the effective way to locate, retrieve and use information. Unfortunately, librarians found resistance from faculty on the need for information literacy sessions, and the idea of a one hour session for training became the standard (Jacobs, Rosenfeld, & Haber, 2003).

Researchers have documented that when students are asked what resources they consult to answer a question, the answer is usually Google or Wikipedia (Kingsley, Galbraith, Herring, Stowes, Stewart, & Kingsley, 2011). The authors reported on the impact of using these resources and not consulting resources specific to the student’s subject area. Kingsley et al 2011 argued that students are not aware and are often drawn to using these resources and they are not prone to probe more scholarly ones.
In the academic setting, particularly in cases where learning acquisition is accelerated, librarians play a strong role in assisting students in developing these skills. For example, it is during a key orientation session that the librarian has some ability to discuss the different methods to searching the literature; however; these sessions are limited. This leads into a discussion of the significance of enhancing both undergraduate and graduate information literacy course which critically analyze the abundance of information on the Internet to assists students who require individualized instruction. Applied to the instruction nurses, this ability to move between deep sources of information and more immediate ones—and the ability of instructors to train them to discern which are accurate for diagnosis—becomes urgent. As the roles of nurses become more complex, the importance of identifying relevant information resources which can be used in nurse decision making and patient care becomes an utmost priority for nurse trainers (Jacobsen & Andenaes, 2011).

**Information literacy skills standards for nursing.** In 2013, the Association of College and Research Libraries (ACRL) revised information literacy standards for nursing students. The standards were created based on the changing dynamics of nursing and their relation to understanding evidence based resources and patient care (IOM, 2011). The standards were adopted for the traditional information literacy standards for higher education and standards from at least 13 nursing associations (ACRL, 2013). The goal of the information literacy skills standards in nursing were to: (a) provide a context of the need for information literacy skills at the various educational levels of nursing, (b) begin a dialogue with faculty and librarians with guiding principles to support the adoption of information literacy skills, and (c) to establish performance indicators which supports professional and continuing education for nursing (ACRL, 2013). The standards were developed as a guideline which aimed to enable each nursing
program to make contextual adjustments to assure excellence in training in information literacy. However, the IOM report stressed the importance of nurses having further developed skills related to locating, identifying, and assessing resources (IOM, 2011). Research has suggested that, when information literacy standards are tied to accreditation standards, there is a greater adoption of information literacy training (ACRL, 2000).

Theories of Information Literacy Instruction

The literature outlining theories of information literacy instruction is somewhat limited; this section, however, addresses four theoretical or conceptual frameworks directly applicable to this study. They include: (a) the Association of Colleges and Research Framework for Information Literacy for Higher Education; (b) Bruce’s (2000) six frames of information literacy; (c) Elmborg’s (2006) critical theory of information literacy; and (d) Calhoun’s (2012) use of Mayer’s cognitive processing theory using multi-media. The purpose of examining the four theoretical frameworks is to determine the significance of applying theories to understand the pedagogical implications associated with information literacy. The literature on information literacy which incorporates theoretical frameworks is limited; however, key factors are outlined in the next section of this review.

Association of Colleges and Research Libraries (ACRL) framework for information literacy. The ACRL is the largest division of the ALA, and its role is to provide guiding principles for academic libraries throughout the United States. The ARCL created the original the framework for information literacy for higher education (ARCL, 2000) which was revised in 2015. This new framework, the ACRL Framework for Information Literacy in Higher Education is considered the gold standard when constructing and creating information literacy programming at universities. This model is “based on a cluster of interconnected core concepts,
with flexible options for implementation, rather than on a set standards or learning outcomes, or any prescription enumeration of skills” (ACRL, 2015). It consists of:

conceptual understandings that organize many other concepts and ideas about information, research, and scholarship into a coherent whole. The framework is organized into six frames, each consisting of a concept central to information literacy, a set of knowledge practice and a set of dispositions. The six concepts that the frames are:

- authority is constructed and contextual – is recognized by different types of authority and it contextualized based on the level of authority
- information creation as a process – indicating that information is an iterative process
- information has value – and that there are several dimensions of information and legal and socioeconomics influences information
- research as inquiry – and iterative with the need to ask new and complex questions to increase knowledge
- scholarship as conversation – is relevant and is expected in continue and sustain discourse with new insights and discoveries
- searching as a strategic exploration – requires the evaluation of a variety of information sources to identify relevant information, (ACRL, 2015).

The framework encourages discussion on how to better incorporate the components of information literacy into the curriculum and has been widely adopted to be taught in general education programs to undergraduates. Currently, this is the framework that is used at the university that is the focus of this study.
In addition, this model “draws significantly upon the concept of meta-literacy, which offers a renewed vision of information literacy as an overarching set of abilities in which students are consumers and creators of information who can participate successfully in collaborative spaces” (ACRL, 2015). The conceptualization of meta-literacy involves multiple learning processes, including “behavioral, affective, cognitive, and metacognition within the information ecosystem” (ARCL, 2015). The ARCL further asserted: “[T]his framework envisions information literacy as extending the arc of learning throughout students’ academic careers and as converging with other academic and social learning goals” (ACRL, 2015). As a result of the development of this framework, the ACRL has redefined information literacy to include “dynamism, flexibility, individual growth and community learning “(ACRL, 2015). The more focused definition described information literacy as “the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, the use of information in creating new knowledge and participating ethically in communities of learning” (ACRL, 2015).

**Bruce’s six frames of information literacy.** The six frames of information literacy were developed by Bruce (2000) at the University of Queensland in Brisbane, Australia and were derived from “phenomenographic investigation of the variation in the experience of information users” (p. 215). These frames were derived based on research indicating that while IL is perplexing, there is a need to identify theories that can assist with the creation of effective IL for users. Bruce, Edwards and Lupton (2006) asserted that “information literacy (IL) is not a theory of learning, but rather that peoples’ approaches to IL and IL education are informed by the views of teaching, learning and IL which they adopt either implicitly or explicitly in different contexts” (p. 1). Thus, it is paramount to further identify methods that have the potential of meeting the
demands of diverse populations as they navigate the complexity of IL that Bruce (2000) identified. Bruce (2000) asserted that people learn differently, thus it is essential to consider many variations in the teaching of IL. Bruce et al. (2006) developed a framework for teaching IL by bringing together variations in approaches based on a diversity to curriculum design that captured the different ways that nursing students in a complex environment think (Eisner & Vallance, 1974; Kemmis et al, 1983; Pratt et al, 1998; Toohey, 1999) but that simultaneously viewed problems through a mutuality of identifiable frames (see for example, Bolman & Deal, 1997).

Bruce et al. (2006) posited:

[It is] common for individuals to adopt different views of learning and teaching in different contexts. It is also common for different group members to adopt varying views, particularly if these remain unarticulated. Such variation might be expected to influence information literacy politics, curriculum design, relationships between lecturers, librarians or students, and the out workings of curriculum in classrooms. (p. 1)

Bruce et al. (2006) identified six frames that lead to an acquisition of IL: “content, competency, learning to learn, personal relevance, social impact and relational” (p. 3), and the authors stressed that these frames can adapt to the ways in which students learn differently. The following describes each of the frames:

In the content frame, students receive IL lecture on key resources followed by a test.

- During the competency frame, students are provided with a program of instruction followed by acquisition of specific competencies.
- The learning to-learn model assists learners with constructing knowledge appropriately by identifying what it means to become information literate, and
developing learning processes that foster the development of professional thinking patterns.

- The personal relevance frame engages the learner in specific experiences which are related to an explicit subject matter.
- The social impact frame is related to how IL impacts society, in how it may help communities inform significant problems.
- The relational frame is designing experiences that help learners discern more powerful ways of seeing the phenomena in question (Bruce et al., 2006, pp. 4-5).

Within each of the frames, a specific approach can be used to examine how students interact within that particular set of variables. Interestingly many of the aspects associated with the six frames are also active in Kolb’s (1984) experiential learning model (ELT) which also takes into account the different ways in which people learn.

Forster (2013) demonstrated the use of Bruce’s six frames of information literacy using a phenomenographic study to understand information literacy in nursing specifically. Forster (2013) asserted that “there have been no investigations of how nurses, specifically, experience the phenomenon of information literacy, nor one mapping its parameters, especially in the context of evidence-based practice” (p. 1238). The author argued that “without an understanding of nurses’ experience of IL, it can be hypothesized that there is no truly convincing way to verify whether the skills developed in IL education are those actually associated with IL” (p. 1237). Thus, Forster indicated that a specific framework is needed to understand how IL is adopted by nurses and how they apply IL skills. Although Forster’s (2013) publication was based on a pilot study, the findings represented an important step forward on documenting how to effectively create IL sessions that are beneficial to nurses. Forster’s approach informs this study; however,
this research also moves his work forward because his participants were nurse educators. This study has focused on the experiences of nursing students and has grappled with the complexity of the acquisition of IL skills and their application at this level of education, in a highly diverse university setting.

Similarly, Diehm and Lupton (2012) investigated students’ experience with IL in the discipline of education. The researchers used a phenomenographic study to answer the question of “how do students approach learning information literacy?” Their research participants included both undergraduate and graduate students. Diehm and Lupton (2012) proposed that students advanced by using the following collective approaches to demonstrating IL skills: “learning by doing, trial and error, and interaction with other people” (p. 223). In reviewing the strategy of learning by doing, students “form the basis of their experience, but the experience itself is not sufficient to result in learning” (Diehm & Lupton, 2012, p. 223). Students make links from their “existing knowledge and experience and as a result, the information assumes personal meaning” (p. 223). Diehm and Lupton (2012) further asserted that “as students interpret, construct, and learn from the experience, they are able to transfer the experience” (p. 223). This study aligns with Kolb’s (1984) ELT demonstration of the learning experience. In addition, the authored argued that learning by doing is also inherent of the reflective practice, postulated by Bruce’s six frames of IL (Dihem, & Lupton, 2012).

The second common strategy derived from Diehm and Lupton (2012) was trial and error. The authors asserted that this was the “dominant strategy for learning to find information and develop processes to manage and use information” (p. 223). The authors contended that trial and error can be described in two ways:

- haphazard trying to of different processes, keywords, information tools and sources;
Diehm and Lupton (2012) proposed acknowledging the “value of trials and error as a legitimate approach to learning while encouraging a more reflective and deliberate strategy” (p. 223). The authors further suggested that instructors build upon trial and error by developing opportunities for students to reflect on each stage of the trial and error process rather than just at the end, thus allowing a reflection in action approach (Schon as cited by Diehm & Lupton, 2012).

The final approach Diehm and Lupton (2012) advocated was the interaction with other people. The authors postulated the importance of collaboration among the participants, including student to student interactions, contact with faculty, and the librarians to bring about a more comprehensive approach to learning information literacy skills.

**Elmborg’s (2006) critical theory on information literacy.** Elmborg (2006) emphasized the importance of using critical theory when determining how students are taught information literacy skills and how these skills promote learning. (Doherty & Ketchner, 2005; Elmborg, 2006). As Elmborg (2006) asserted, “Critical theory brings new dimensions to academic thinking about education and literacy, and these theories have made teaching and learning more interesting, complex, and, in some ways, problematic processes than past educational models have implied” (p. 193). Elmborg (2006) further claimed that “critical literacy and critical pedagogy have led to different discussions on the means and ends of education.” The author further argued that: critical literacy focuses on the links between the educational process and the politics of literacy. Approaching education in this way accentuates its role in enacting political and cultural agendas. Rather than focusing on schools as tools for transmitting knowledge,
critical theory examines schools as agents of culture and shapers of student consciousness (Elmborg, 2006) p. 193).

The use of critical theory to further explore how information literacy can be taught and can have lasting effects on students was outlined in studies conducted by Elmborg (2006) who proposed that “literacy is in constant flux and embedded in cultural situations, each situation nuanced and different from others” (p. 195). The author further argued that “people produce, read and interpret texts in communities, not in isolation. Communities reach consensus about interpretation, sometimes easily and sometimes contentiously” (p. 195). Elmborg (2006) signified the importance of critical reviewing IL as foundational tool to further introduce students to the educational process. Thus, he advocated “enabling students to learn how information functions in proof or arguments, and why that information is accepted while other information is not” (p. 196).

Doherty and Ketchner (2005) provided an example of the use of critical theory in the creation of a course and how it can empower the initial learner. Their study examined the teaching of a university colloquium class that used critical theory. The authors asserted that the goal from “the library perspective was to embody the characteristics of the empowered intentional learner, and that in the Information Age it also required concepts and skills sets to be able to independently access and use information in all forms” (Doherty & Ketchner, 2005, p. 5). While this course was primarily attended by first year students, the authors found that, with the empowered intentional learner, “the power to learn is not a power remotely under the control of the teachers. It is a student-centered power and one that should be recognized in library practice” (p.7). Doherty and Ketchner (2005) further asserted that “in order to remain facilitators of access to information with the laudable goal of enabling the empowered intentional learner, it is
essential to dispense with the power and privilege implicit as librarians that have made us information gatekeepers” (p. 8).

Jacobs (2008) argued in support of Elmborg’s (2006) work on “developing a critical practice of librarianship and theoretically informed praxis” (p. 256). She said that “information literacy is missing a theory” and that this has accounted for part of the problem with teaching information literacy skills (Jacobs, 2008, p. 257). The author further asserted the need to move beyond just developing a rubric for information literacy sessions to incorporate understanding of the pedagogy of teaching and theories associated with the learning process. Jacobs (2008) further emphasized: “If we do not use theory as a means toward critical –reflection and contextualization, our daily practices will come to naught” (p. 260). Jacobs (2008) defined praxis as an “interchange theory and practice and that praxis is vital to information literacy since it simultaneously strives to ground theoretical ideas into practicable activities and use experiential knowledge to rethink and re-envision theoretical concepts” (p. 260). Jacobs (2008) asserted that information literacy scholars can learn from other disciplines can such as: English, composition and rhetoric on how to identify theories in IL that have a “rich scholarly tradition of discussing critical literacy and critical pedagogy and the connections between theory and practice” (p. 260). Jacobs (2008) argued that one of the best ways to “encourage students in IL pedagogy is to become engaged learners, to delve deeply into one’s problem posing, and embody the kind of engagement we want to see in students’ (as cited by Jacobs, p. 261).

Mayer’s cognitive processing theory with multi-media. Calhoun (2012) suggested the use of cognitive process theory and the use of multi-media presentations as a method to integrate information literacy skills in student learning. Calhoun (2012) posited that “the cognitive
processing theory accounts for the dual processing schemata construction and can assist the instructional designer in building educational materials that optimize long-term and short-term memory” (p. 66). Calhoun (2012) further asserted that “the structures of long-term and short-term memory, coupled with the dual channel nature of cognition appear to be an efficient way for researchers how the human brain processes new information and creates new schemata of enhances existing knowledge” (p. 67).

Calhoun (2012) investigated how the use of multi-media embedded in learning sessions provided a greater understanding of information literacy skills. According to Calhoun (2012), cognitive processing theory takes in “account how human cognition operates and provides a well-researched model that assist instructional designers in the development of multimedia approaches to effective learning” (p. 67). Calhoun (2012) investigated the ‘use of multi-media presentation as an instructional methods to manage the cognitive processing associated with IL instruction at the graduate and undergraduate levels of nursing education” (p. 154). By using cognitive process theory, Calhoun (2012) asserted that students learned information literacy skills and that students indicated a positive impact with the adoption of these skills at both the graduate and undergraduate level of nursing education. For the graduate students, the researcher used multiple-choice questions and ill-defined questions based on an “essay-style question to assess participants’ ability to solve the problem and determine the extent of information needed” (Calhoun, 2012, p. 157). While students’ responses to the use of multimedia presentations were positive, a case study has the potential of expanding these findings to learn more about the students’ actual experiential processing of IL skills.

Implications of Information Literacy Skills on the Nursing Profession
The IOM’s report on the *Future of Nursing* (2011) mandated the urgency in transforming nursing education to promote life-long learning. Davis, Taylor and Reyes (2014) asserted that defining lifelong learning and determining the characteristics of a lifelong learner are necessary to determine how to foster this attribute which is deemed so important to the profession of nursing. The researchers conducted a Delphi study and “identified key competencies as including acquiring evidence-based healthcare knowledge through literature search and retrieval strategies, practice-based learning and self-reflection” (Davis, Taylor, & Reyes, 2014, p. 443). Thus, these skills can be aligned with obtaining information literacy skills and to assist to further understanding regarding how to acquire the specific information when required for the particular healthcare task.

Wahoush and Banfield (2014) conducted a pilot study of student nurses and recent nursing graduate students and found that more training on clinical information systems was essential in preparing students to become professional nurses. The researchers argued:

> Important changes directly relevant to information literacy include changes in information distribution and access and changes in nursing education and practice competencies. Understanding parameters and conditions around access to and use of information sources and resources in the practice environment can inform nursing education toward improving preparation of future RNs for entry to practice.” (Wahoush & Banfield, 2014, p. 213)

Additionally, Gilmour et al (2012) studied how recent graduates in nursing use online resources and found that there were limitations in their ability to do so. The study further demonstrated how the role of nursing has changed and that patients rely on nurses to assist with
locating of health information (Gilmour et al., 2012). This study found recent graduates had limited ability in providing patient assistance with online resources. More recently, Gilmour et al. (2016) conducted a study of the information-seeking behavior of Primary Health Care nurses and interestingly found similar results to that of the 2012 study. The researchers concluded that there is a need for “organizations to identify staff information literacy needs and invest in systematic and targeted education for the small group that have not engaged with online information resources” (Gilmour et al., 2012, p. 59).

The current literature continues to reiterate the transformation taking place in nursing education. Iglehart (2013) discussed the role of nurses and suggested that the nurses’ role will progress with expanded accountabilities within healthcare. Indeed the recent changes in the healthcare system have broaden nurses’ responsibilities as integral members of the healthcare teams. While there is uncertainty to the forthcoming alterations with a new Presidential administration, there is the potential of modifications in the Affordable Care Act (ACA) law, healthcare will continue be a topic of great interest. According to the Pew Research Internet Project (2013), approximately “72 % of persons surveyed used the Internet to look for health information” (Pew, 2013). This report further indicated that patients are very much a part of the process as it relates to seeking health information. The project underscores the importance of healthcare professions in guiding patients to relevant information that has the potential positively impact patient outcomes.

Although a number of studies of have indicated the importance of nurses understanding and using information literacy skills. Barnard et al. (2005) reported on the need for nurses who will require very little assistance from supervisors; indeed, the expectation for the new graduates is to possess skills related to the understanding of how to use online information resources.
However, the literature suggested that a sustainable consensus is lacking. As reported by Flood, Gasiewicz, and Delpier (2010) the field of nursing is the “largest group of health care workforce who will use information technology to improve patient outcomes” (p. 101). Thus, it is vital that a greater understanding of the skills that are required and that are practically must be embraced and adopted in nursing education.

Conclusion

Based on this current literature review, the research consensus is that a more systematic approach is required to teach nursing students information literacy skills and to successfully use them in practice of nursing. The research review has further identified gaps in the literature regarding how nursing students acquire information literacy skills. More importantly, the research demonstrated how changes in technology with the advent of the Internet, and more recently the search engine Google, have impacted students’ behavior in seeking online information. The literature identifies that there are disconnects in how students find and use personal information on the Internet versus how students find and use scholarly information.

The goal of this literature review was to examine the following tenets: the definition and history of information literacy, theories used in information literacy instruction, and implications of information literacy on professional practice of nursing. Initially, the definition of information literacy was explored to further understand the specific elements that are encompassed in information literacy. Information literacy is defined as the ability to find, locate, and effectively use content for the intended purpose. The research demonstrated that there are information literacy standards for higher education, and specific standards for healthcare professionals, including nursing. With the creation of the revised ACRL standards for information literacy competency for nursing, an opportunity is available to begin a proactive
dialogue with nurse educators (ACRL, 2013). The ACRL identified a need for more in-depth discussion on how to provide information literacy skills to nurses and suggested that standards must aid in devising “terminology that is familiar to both nurse educators and librarians” (ACRL, 2013).

The second theme addressed included theoretical frameworks used to understand the process of how information literacy skills are learned. Four theories were discussed: (a) the ACRL framework on information literacy; (b) Bruce’s six frame of information literacy; (c) Elmborg’s critical theory of information literacy; and (d) Mayer’s cognitive processing theory using multimedia. One of the foremost tenets emphasized in the abovementioned theories and information literacy is that these skills are more likely adopted when coupled with the learning process. The concept of the one session information literacy instruction is inadequate; furthermore, instruction should include either hands-on practice or tutorials which can reinforce the behavior. The current theories of information literacy instruction further supported the examination of how nursing students acquire information literacy skills.

The third component of the literature review involves the implications of information literacy on the professional practice of nursing. Several studies demonstrated a need for nursing students and newly hired nurses to understand how to locate and use relevant materials. (Bond, 2009; Gilmour et al., 2012; Gilmour, et al., 2017; McCulley & Jones, 2014). Another trend that needs to be addressed is that information literacy skills are taught to nurse students while they are pursuing their degrees but these students have limited time within their studies to improve these skills when they are practicing nursing. The research suggested there is a need to promote information literacy skills in continuing education and life-long learning. Furthermore, the
literature asserted that a consistent updating of information literacy skills is critical to nurses because their responsibilities in the changing world of healthcare constantly expand.

The literature pointed toward continued implications for further research, including: using Evidence Based Practice as tool to teach information literacy skills, providing information literacy workshops to nurse educators through a teaching and learning institute, and working with nurse educators to discuss and document the use of information literacy skills throughout the curriculum. Therefore, this research study focused on a case study to examine how nursing students were acquiring information literacy skills to improve instruction in these areas. The findings indeed address an explicit gap evidenced in the literature and can assist educators and practitioners alike to understand how information literacy can be successfully implemented in the education of nursing students; the findings may also assist in shaping curriculum in other healthcare professions.
Chapter 3: Research Design

Methodology

The focus of this study is to explore how nursing students acquire and apply information literacy skills through library instruction. The problem of practice was explored by using Kolb’s (1984) experiential learning theory as guidance. The approach chosen was a case study research methodology seeking to understand the real-life experiences of students who have taken nursing courses at a California university. Stake (1978) asserted that a case study is a bounded system which indicates:

what is happening and deemed important within those boundaries [which] is considered vital and usually determines what the study is about, as contrasted with the kinds of studies where the hypotheses or issues previously targeted by the investigators (the etic) usually determine the content of the study” (p. 7).

This study seeks to answer the following research questions.

Research Questions

Central Question: How do nursing students acquire and apply information literacy skills acquired through library instruction in accelerated nursing program?

Sub-questions 1: How do nursing students describe their level of confidence in transferring information literacy skills they obtain during library orientation instructions to research assignments in the curriculum?

Sub-question 2: What aspects of the overall information literacy training in the accelerated nursing curriculum are helpful or problematic to learning and applying these skills in a professional health care environment?
Paradigm and the Role of the Researcher.

The researcher used the constructivist interpretivist paradigm to inform this study. Ponterotto (2005) asserted that “the research paradigm sets the context for an investigator’s study” (p. 128). In reviewing the literature on the contrasting paradigms, the constructivist interpretivist paradigm was deemed by the researcher as the most appropriate for this study because it supports multiple interpretations of reality which are constructed by individuals with the context of their world and their lived experiences. As Ponterotto (2005) asserted:

One of the distinguishing characteristics of the constructivism interpretivist paradigm is the centrality of the interaction between the investigator and the object of the investigation. The researcher and her participants jointly create (co-construct) findings from their interactive dialogue and interpretation. (p. 129).

Thus, the major objective of the constructivism approach is to understand the lived experience of participants by adopting a critical process, “which maintains that meaning is hidden and must be brought to the surface through deep reflection” (Ponterotto, p. 129, 2005).

Creswell (2013) further demonstrated the role of philosophical assumptions as they relate to specific paradigms. In the case of the constructivist interpretivist paradigm, Creswell (2013) outlined the following:

- ontological beliefs: what we know-- based on multiple realities are constructed through lived experiences and interactions with others
- epistemological beliefs: how we know-- reality is co-constructed between the researcher and the researched and the shaped individual experiences
• axiological beliefs: these involve the role of values – individual values are honored and are negotiated among individuals

• methodological beliefs – the approach to inquiry – using a literacy style of writing; using an inductive method to identify emerging ideas (through consensus), using data collection techniques such as: interviewing, observations and analysis of texts (Creswell, 2013, p. 36).

Yazam (2015) further proposed that the constructivism approach adheres to the concept that “knowledge is socially constructed and emerges from peoples’ social practices; therefore, social reality is being generated and constructed by people and existing largely within people’s minds” (p. 138). By using the constructivism interpretivist paradigm, the researcher had the opportunity to dialogue with participants and gather valuable insight based on their lived experiences; she correlated these experiences with how the participants understood the acquisition and application of information literacy skills. The constructivism interpretative approach provided the researcher with a holistic framework to investigate the phenomenon by collecting data based on real lived experiences using qualitative research techniques.

Ponterotto (2005) asserted that positivism, in contrast, differs in that the “primary goal of the inquiry consists of an explanation that leads to prediction and control of phenomena” (p. 128). The use of the positivist approach relies on a strict “cause and effect” (Creswell, 2013, p. 23). Researchers who use the positivist approach most often employ surveys and conduct statistical analysis using to determine the significance of the data. In this proposed research study, the positivist approach was not appropriate given that the researcher aimed to understand and document the participants’ experiences; the research goal was not to make predictions associated with cause and effect.
The role of the researcher is very much a part of the lived environment where the study will take place. She is aware of her positionality in light of the problem of practice, and she has made the best attempt to bracket her bias. This researcher upheld the intent and practice of remaining impartial and to the best of her ability throughout the study.

**Research Design**

A qualitative research design was selected as the method of inquiry for this study because of the nature of the proposed research question: How are information literacy skills acquired and applied through library instruction in an accelerated nursing program at the university? This query involved understanding and describing the participants’ lived experiences; it also incorporated contextual factors which either were helping or hindering their success in mastering this skill. Erickson (2011) asserted that “qualitative inquiry seeks to discover and to describe in narrative reporting of what particular people do in their everyday lives and what their actions mean to them” (p. 43). While literature has used quantitative methods to examine information literacy, qualitative research designs had consistently been deemed to have greater potential to address the line of inquiry related to students acquiring and applying information literacy skills. For example, Calhoun (2012) used a mixed method research design, which included quantitative and qualitative techniques, and the author indicated that a greater understanding of the impact of using multi-media presentations to augment information literacy could be gleaned through a qualitative study. The research design applied in this study used the knowledge gained from Calhoun’s study and a more recent study by Ha and Versihagen (2016) as catalysts to further examine the phenomenon associated with how graduate nursing students seek and use information literacy skills.
The researcher, when conducting this study, determined that the current literature was weighted towards quantitative studies measuring outcomes of students’ seeking and using information literacy skills. More importantly, perhaps, these very studies indicated existing gaps in the research, particularly related to how students attain and use information literacy skills which is difficult to discover by using a quantitative research design. McLeod (2008) for example, postulated that the quantitative research design is more attune to using numerical data that can be measured. By employing the qualitative approach, this researcher was able to more deeply understand how the students’ interpretation of information literacy skills was or was not assisting them to persist to acquire and apply reliable healthcare information in the high pressured hospital, emergency, and/or ambulatory environment characterized their training and defined their careers.

**Research Tradition**

The two main philosophical underpinnings used to describe the case study methodology were derived by Robert Stake (1995) and Robert Yin (2003, 2006) as described by Baxter and Jack (2008, p. 545). Stake (1978) argued for the use of the case study research design to understand the “extension of the experience and to increase in conviction that which is known” (p. 6). As reported by Creswell (2013), Stake (1978) further stated that a key component of a case study is that the study takes place “within a bounded system, bounded by time and place” (p. 97). Creswell previously noted that case studies can be a single case or multiple case studies. Yin (2009) described a case study as providing a dual purpose: “to investigate a contemporary phenomenon in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident” (p. 16). The notion of understanding how
information literacy is being taught to nursing students may exhibit other factors that provide further insight.

Boblin, Ireland, Kirkpatrick, and Robertson (2013) compared the perspectives of Stake verses Yin regarding case studies. The researchers indicated that Stake’s assumptions were based on a constructivist paradigm while Yin’s vision was more based on the post-positivist model. The comparison included four philosophical assumptions: (a): ontology, (b): epistemology, (c): axiology, and (d) methodology. Based on the authors’ description, the constructivist model aligned best with the context of the information literacy case study because, first the researcher is an insider in the study; she conducts workshops and teaches an information literacy course to undergraduates at the institution that is the focus of this study. According to Creswell, the type of case study that will be employed was clearly a “single instrumental case study” (p. 99). As reported by Creswell (2013), Stake (1995) asserted that “in a single instrumental case study, the researcher focuses on an issue or concern, and then selects one bounded case to illustrate this issue” (p. 99).

**Participants**

The participants in this case study were nursing students enrolled at the California university in an accelerated program. This study sought to use qualitative methods including interviews, observations, and a review of course syllabi to obtain a greater understanding of how students were acquiring and applying information literacy skills. The researcher interviewed twelve participants. Creswell (2013) asserted that “one general guideline for sample size in qualitative research is not to study a few sites or individuals but also to collect extensive detail about each site or individual studied” (p. 157).
The researcher worked with students from all three educational programs, RN to BSN program, Entry Level Master’s program and Family Nurse Practitioner. At this particular institution that was the site of the study, the students commonly exhibited various characteristics: students represented several minority groups; students ages varied from 18 – 65+; students were often career changers; a considerable number did not have undergraduate degrees in the sciences which presented unique challenges to their information literacy acquisition.

The ELM degree offered by the institution that was the focus of this study is a competitive degree that enables graduates to become Clinical Nurse Leaders (Sherman, Clark & Maloney, 2008). The IOM report on the *Future of Nursing* (2011) has mandated the specific modifications in nursing education programs in preparing students for the next generations of nurses, to the include more practical experiences related to technology and information systems. Research asserted that the expectation of today’s nurses is that they possess the ability find, locate, evaluate and use online resources (Gilmour et al, 2012; Gilmour et al, 2016).

Participants were recruited using a purposeful sampling strategy selected from students enrolled in the nursing program at the university. Creswell (2013) defined purposeful sampling as the technique used by when the “inquirer selects individuals and sites for the study because they can the participants can purposefully inform an understanding of the research problem and the central phenomenon of the study” (p. 156). In this study nine students were identified to become participants in this case study; each participant had attended at least one information literacy sessions taught by the librarians. Each participant was interviewed using a semi-structured protocol, and each participant was observed while demonstrating their transfer of information literacy skills into practice. In addition, three nurse education faculty were interviewed to understand information literacy from the faculty experience.
Recruitment and Access

The participants in the study were recruited from students enrolled in the nursing program. The researcher discussed the basis of the intended research study with the Associate Dean of the School of Nursing and obtained a letter of permission. The researcher and other librarians have taught information literacy skills to the students during library workshops. The researcher distributed a research flyer to students and to faculty to invite them to participate in the research study once IRB approval from Northeastern University and IRB was received from the host institution. A small incentives in the form of a gift card to each participant was proffered, offered, and documented in the IRB application.

One of the critical aspects of conducting research is to avoid bias. Yin (2014) asserted that this can be achieved to the extent to which the researcher is capable of “testing the degree to which you are open to contrary evidence and report the preliminary findings to two or three critical colleagues.” Yin (2014) asserted that colleagues should offer alternative explanations and suggestions for data collection” (p. 76). Another crucial component of all research studies is the ethical considerations for human subjects. Yin (2014) asserted that nearly all of case studies involve human subjects and that there are strict protocols that must be adhered to including:

- gaining informed consent involves obtaining written permission from each participant and informing them of the nature of the case study; each participant signed a consent form agreeing to participate in the study
- protecting those who participate, ensuring there is not any deception in the study; the researcher will explain the objective of the study and the steps she will use to protect the participates
• protecting privacy and confidentiality safeguarding that the participants will remain anonymous; the researcher will inform each of the method used to maintain anonymity

• taking special precautions for vulnerable groups confirming participants are not placed in a harmful situation; participants will be advised that participation in the study is on a volunteer basis and they can decide not to participate in the study

• and selecting participants equitably, so that no groups of people are unfairly included or excluded from the research; the participants will be recruited from a purposeful sample and the researcher will take precaution to include a diverse group of participants” (p. 78). This researcher is fully aware of and committed to the proposed research protocol and will fully comply.

Protection of human subjects: The researcher observed the required steps as outlined in the training course “Protecting Human Research Participants” that was certified by the National Institutes of Health (NIH) Office of Extramural Research. The researcher guaranteed that each participant understood and signed the informed consent form. In addition, the confidentiality of each participant has and will remain anonymous throughout the research study and unidentifiable in any future publications.

Informed consent. Each participant, including faculty and students received a copy of the informed consent form (Appendix A) that included the following:

• Name and the purpose of the research project

• Information about the investigator and contact information

• The location of the study, the amount of time required for the interviews and the number of questions
- Protection in the form of confidentiality of each participant, ensuring each participant will remain anonymous

- Participants can withdraw from the study at any time or have the right to decline answering a question

Additionally, each participant received a small incentive in the amount of a $15.00 Starbucks gift card at the completion of the research study. The researcher disclosed the incentive to both the IRB at Northeastern University (NEU) and Charles R. Drew University for approval (CDU).

**Institutional review board (IRB).** The researcher was required to obtain IRB approval for both Universities, NEU and CDU. Initially, the researcher contacted the IRB at CDU and upon request submitted the Doctoral Thesis Proposal and the proposed research questions. The Director of IRB provided positive feedback. Based on the feedback, the researcher revised select questions and submitted the IRB application seeking written permission to the Director of IRB at CDU.

The second IRB was located at Northeastern University (NEU), College of Professional Studies. The NEU IRB application provided the guidelines in which the research study must follow, including: (a) the application must be approve and research cannot begin without IRB approval; (b) ensures the confidentiality of the participants; and (c) reviews flyers, interview questions, participants letters to safeguard the participants, the researcher, the principal investigator, and NEU.

**Data Collection**

In the case study design, multiple sources of data are warranted, including semi-structured interviews which consisted of a 15- question questionnaire for student participants;
and a 6-question questionnaire for faculty participants and a critical review of the assignments within the course that demonstrates the use of information literacy skills. According to Stake (1995) (as cited in Boblin et al. (2013), “several sources of data are necessary to obtain multiple perspective and points of view to gain a holistic understanding of the phenomenon being researched” (p. 1270).

Creswell (2013) asserted that the data collection circle consists of seven components, they include the following: (a) locating site/individual – the participants in the study consisted of interviews with nursing students enrolled in the nursing program at the university; (b) gaining access – begin a discussion with faculty members who teach the course to describe the objective of the study; (c) purposefully sampling – identifying students who will participate and (d) collecting data – identifying data sources. The researcher conducted semi-constructed interviews, participant observations with permission to take field notes, and reviewed assignments available using library databases/resources and demonstrating the use of information literacy skills; e) she record information – seeking written permission to videotape and record participants during interviews, and observations; (f) resolved field issues – sought written permission to observe students, including email updates on date/s of observations; and (g) stored data – obtained external storage disk for interviews, and recordings. Additionally, the researcher hired an external company to assist with the transcription of interviews.

Once the interviews and recordings were transcribed the participants were provided a copy and/or met with the researcher to review the recordings. From the transcriptions select codes and themes were derived. Baxter and Jack (2008) reported on the importance of arranging and organizing the data for the case study. The authors suggested the use of a database to harvest and retrieve the raw data, for example one resource mentioned was the “Computer Aided
Qualitative Data Analysis Software (CAQDAS)” which enabled the researcher to query the software and provides adequate storage space (p. 554). In the case that CAQDAS was not available, the researcher developed an organic coding system to “describe, classify, and interpret the data” (Creswell, 2013, p. 184). Once the data was organized classified, and analyzed, themes or categories specific to the research emerged, as evidenced.

**Data Storage**

For the purpose of this study, the researcher needed a clear understanding of the components of data storage. The methods used for data storage are paramount in protecting the confidentiality of the participants. Creswell (2013) proposed at least five elements related to data storage when conducting qualitative research, the following approach will be used by the research:

- backup of copies of computer files, the researcher will backup files using an external hard drive
- use high-quality tapes for audio-recording interviews; the researcher will use Camtasia software to record all interviews
- develop a master list of types of information gathered will be protected in a secured locked cabinet
- protect participants by masking their names and assigning each participant a pseudonym used in the data, store all interviews in a secure location
- develop a data collection matrix as a visual means of locating and identifying information for a study (p. 175). The researcher will employ the suggested criteria to ensure reliability of the data storage.
Data Analysis

Creswell (2013) outlined six steps in data analysis, including: “data organization, reading, memoing, describing the codes and themes, classifying the data into codes and themes, interpreting the data and representing visualizing the data” (pp.190-191). Yin (2014) described five strategies which can be used in the case study data analysis including: “pattern matching, explanation building, time-series analysis, logic models and cross-case study is only used in multiple case study” (pp. 143-163). Baxter and Jack (2008) reported on the types of analysis described by Stake (1995) including categorical aggregation and direct interpretation. The data analysis that was employed consisted of data analysis components described by Creswell (2013), however; a broader discussion about triangulation was be infused in the analysis process to ensure validity. The data analysis steps that were used included: (a) data organization – organizing data using software to ensure retrieval; (b) reading the notes which were taken during the interviews and observations; (c) creating a coding system and identify themes from the data; (d) categorizing the codes and themes, identify patterns; (e) interpreting the data based on the content from the participants, and (f) creating a table or diagram to display the data. Baxter and Jack (2008) emphasized that one of the concerns that can arise from a case study is viewing the data sources independently; they recommended all data sources should be cross-analyzed to identity themes. The authors further suggested “the inclusion of fellow research member during the analysis phase and to seek the team member’s feedback in an attempt to answer the research questions” (Baxter & Jack, 2008, p. 555). The researcher worked closely with her advisor who is the primary investigator (PI) for this project to ensure a systematic method is employed during the data analysis phase.

Presentation of Findings
Yin (2014) reported that presenting the findings can include several sections including “textual and non-textual materials” (p.178). The author further suggested that the non-textual materials may include: “charts, graphs, and audiovisual materials” (p. 178). Yin (2014) also recommended identifying the audience one will address through the case study. In the study, the audience included the Dean of the School of Nursing and other administrative persons at the university, including the Provost.

Creswell (2013) suggested a researcher should use “vignettes in the case study writings, identifying the type of case study, the purpose of the study and the methods used. The next steps include a detail description of the case, the key issues found in the study, a discussion on the issues, a summary of the findings, followed by a closing vignette” (p.237). The findings and discussions are important to begin the dialog on how to proceed with teaching information literacy skills in a graduate nursing research course. Additionally, the study represented partial fulfillment of my dissertation and I will pursue the submission of a manuscript based on findings and/or observations of the study. Lastly, the case study will be submitted to a national library annual meeting, and once accepted this information can be disseminated to peers and colleagues who are also involved in the information literacy arena. Furthermore, it is important to recognize that, while the case study is specific to the university, it has the potential to inform other nursing programs and libraries nationally and globally.

**Trustworthiness**

Creswell (2013) discussed the use of eight validation strategies employed by qualitative researchers:
The researcher employed the following strategies for the case study: (a) observations; (b) triangulation; (c) peer review; (d) clarifying researcher bias and (e) member checking.

**Limitations**

This study provides insight into how nursing students acquire and apply information literacy skills, however; there are limitations to this study. The first limitation is that the study is based on the case study of nine students currently enrolled in the nursing program at the university, and three faculty who are currently teaching in the nursing education program. The
participants in courses are based on a cohort model and each cohort differs from the next. For example, cohort 12 is a cohort that is comprised of 20 students who are younger; demographics may differ from that of previous or future cohort models. Nationally, students pursuing nursing degrees are older students; however, within the field of nursing education more and more students are attracted to the profession, especially the accelerated model of matriculation. Hence, the student age and diversity varies from cohort to cohort.

**Conclusion**

The intent of this study was to understand how students obtain and use information literacy skills. The methodology employed in this study sought to better understand the learning processes that these students experience. Findings from this study can: (a) provide insight into how students perceive the instructional components related to teaching information literacy skills; (b) enhance the current library instruction program at the university for future nursing students and to facilitate discussions for closer collaborations with nurse educators; and (c) provide evidence through the case study research design that support the gaps that exists in the current literature on teaching information literacy skills to nursing students.
Chapter 4 Report of Research Findings

The purpose of this research study was to understand how a multi-level group of nursing students acquire and apply information literacy skills gained through library workshops. The research participants in this study included students from the following educational programs; the Family Nurse Practitioner, the Entry Level Masters, and the RN to BSN program. The research methodology used was the case study approach. The rationale for using the case study methodology was to enable the researcher to investigate the experiences of the participants in using information literacy skills to support their research assignments while enrolled in an accelerated nursing program by collecting and analyzing data from various sources, focused on in-depth interviews. According to Creswell (2013), the case study methodology provides strong insights into the experiences of participants from a bounded system. The data for this study was collected from a small health-science university located in Southern California. Several forms of data were observed in this study, including: (a) the student participants’ interview transcripts; (b) faculty participants’ interview transcripts; (c) faculty participants syllabi related to research assignments; and (d) random student evaluations from March 2018 – June 2018.

The primary research question guiding this study was:

How do nursing students in an accelerated program experience the acquisition and application of information literacy skills through library instructions?

Sub questions included:

- How do nursing students describe their level of confidence in transferring information literacy skills they obtain during library instructions to research assignments in the curriculum?
• What aspects of the overall information literacy training in the accelerated nursing curriculum present either helpful or problematic to learning and applying these skills in a professional health care environment?

Participants

The participants included three faculty members and nine students, the latter who were all enrolled at the time in one of the following programs: Family Nurse Practitioner (FNP) program, the Entry Level Master (ELM) program, and the RN to BSN program. Due to the institution IRB restrictions, the researcher was limited in identifying specific demographics related to faculty and student participants. The three administrators collectively have over 45 years of experience as nurses, and at least one of the faculty members had taught in all of the nursing educational programs. The students who participated included two males and seven females. The majority of the students were full-time students, and approximately 88% of the students either worked full-time or part-time. Approximately 88% of the students were enrolled in one of the three programs for at least 1.5 years. In addition, all of the students were at least 25 years of age or older. The students indicated the reason for obtaining a nursing degree were: the desire to support others, to take care of family members, or to assist people in need. One student participant asserted: “Actually, I liked nursing right from start just because of the care they give to people. So I like to give care people that need my help.” Another student expressed the following:

With myself, my interest came when I had sick cousin. She was in the hospital, experiencing a life threatening situation with her liver. She needed a liver transplant. And I saw how great the team was at UCLA and how good the nurses was to my family and helping us cope with such an illness. And I decided to pursue my nursing career.

Yet another student participant indicated the following:
But I didn't like science so much, as far as anatomy and physiology and stuff like that. So I went into psychology, which then I realized is kind of science. And so after my Mom got diagnosed with multiple sclerosis, I was like I should go back to my passion and really . . . Since I'm her caregiver so to speak, I need to learn how to care for her. And then in doing that I decided that I wanted to care for other people.

After obtaining their degrees, three of the nine students indicated they planned to pursue the FNP program, while several other participants indicated they planned to either begin their career by working in the field of nursing or continue to work in the field of nursing. Three of the nine participants stated they would be pursuing their first nursing career employment and/or pursuing the doctor of nursing degree. Two of the students graduated from ELM program and were enrolled in the FNP program. All of the RN to BSN student participants indicated that they were interested in furthering their education by matriculating in the FNP program.

Findings

The researcher identified three major themes to answer the research questions based on the data analysis of the responses from the student and faculty participants. The first major theme that emerged was: Nursing students’ information literacy strategies used in seeking health information. The sub-themes were:

(a) Steps used to find health information

(b) Information resources used by students

(c) Types of information tools used by students

(d) Methods of evaluation used by students
The second major theme that emerged was: *The Interpretation of information literacy (IL) definition and the confidence in using IL skills*. The sub-themes were:

(a) How students interpret the definition of information literacy (IL)

(b) Students confidence in using IL skills to identify reliable and credible information

(c) Student and faculty perspective on Evidence-Based practice

The third major theme that emerged was: *Library instructions for today’s nursing students*. The subthemes that emerged were:

(a) Students describe their learning styles

(b) The number of workshops attended and the usefulness of instructions

(c) Challenges students faced when using IL skills

The major themes and subthemes are exhibited in Table 1.

Table 1

*Themes and Subthemes*

<table>
<thead>
<tr>
<th>Major Theme</th>
<th>Subtheme</th>
<th>Subtheme</th>
<th>Subtheme</th>
</tr>
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<tbody>
<tr>
<td><strong>Theme One:</strong> Nursing students’ information literacy strategies used in seeking health information</td>
<td>Steps used to find health information</td>
<td>Information resources used by student</td>
<td>Methods of evaluation used by students</td>
</tr>
<tr>
<td><strong>Theme Two:</strong> Interpretation of information literacy</td>
<td>How students interpret the definition of IL and</td>
<td>Students confidence in using IL skills</td>
<td>Student and faculty perspective on</td>
</tr>
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</table>

Theme One: Nursing students’ information literacy strategies used in seeking health information. Theme one described techniques that students used to find, locate, evaluate and use health information. The researcher sought to gain insights into the students’ experience on learn more about how students use information literacy skills to find, locate, evaluate, and use health information resources. The sub-themes derived were based on the most frequently cited phrases during the interviews, they include:

(a) Steps used to find health information
(b) Information resources used by students
(c) Types of information tools used by students
(d) Methods of evaluation used by students

The subthemes enabled the researcher to further understand how students seek health information.

Theme 1 described the information seeking techniques used by nursing students to find, locate, use, and evaluate health information. This process is known as information literacy and the researcher sought to better understand how students use IL skills in research assignments. The student interviews provided detailed insights into how students gain and applied IL concepts to their research assignments. Eight out of the nine student participants indicated they
implemented their information seeking techniques by using the library’s website as the main source when locating and finding health information. One student reported “I actually like using Charles Drew University's library databases because there is a lot of different websites that you guys give us, a lot of different scientific websites.” The student further mentioned that she had previous conducted research and from the previous research experience she had come to depend upon the library’s resources. Another student participant indicated the following:

I primarily use the library resources. Alternatively, we have an assignment for a clinical and sometimes I may use my textbooks, I make it a point to buy all the textbooks so I've got my own personal library. And I have a lot of kids too so I'll be able to say, oh don't worry about that, I've got a book right over there with ... So if I don't use the library resources I'm using resources I have readily available to me or if there's just something that I need that's really, really quick I might Google it. I'm guilty of that but not often.

A third student indicated the following regarding the use of the library’s resources:

Here at [university], I've utilized the online, the research online, from the library. I've utilized it here in the library. I've utilized it outside of the library, so I've utilized it remotely. I've also asked for assistance here in the library when I ran into some difficulty.

A fourth student expressed the following scenario:

I was at UCLA, at URL University research library, and I had to learn how to navigate the system, but this time around it's a whole new ball game, and I was so far behind in the game that when I came in, the learning curve was steep, and I had to learn to access information on the computer and I was not computer literate, but in the last years though, I have made enormous strides is using the computer and accessing information. We had classes that taught us how to access information, how to use the computer to seek out that
information and see what was good and see what wasn't. It's an exciting process and I know that I have grown enormously since I've been here, in that respect.

The researcher observed students as they described the steps that led them to successfully locate materials relevant to their research assignments. Several participants provided in-depth examples related to seeking health information. The majority of the students demonstrated their knowledge of using the library’s website to begin their research assignments.

Faculty participants commented on the use of the library’s website as the initial step in finding reliable health information; however, in reviewing the faculty syllabi, there was no mention of reminding students to use the library’s resources. One faculty participant expressed the following relating to research assignments:

When I give the students an assignment I tell them, to go to the library. Use the library’s website," because it's not everything that is online is authentic. Online is where you get things that are not authentic, anybody can write anything.

Another faculty participant stated the following:

Information literacy is very, very important in the field of education, both in teaching and in practice of nursing because every organization have a guideline. If we don't have enough information we can't make appropriate decision or decisive decision.

The third faculty participant expressed:

So, that's where I think we at [university] are going along with teaching at the baccalaureate level now, we start to ingrain that to say, well what are these indicators, why are you doing this? Where are we getting the information for doing this? Once upon a time, people used to treat a wound or a bedsore with a heat lamp. And so, you're
thinking how have we come across these ways and how are we using our information literacy skills in order to really build up knowledge.

All faculty participants responded to the importance of students using the library’s resources and understanding how to use information literacy skills to complete research assignments.

**Steps used to find health information.** The majority of the student participants indicated that they initiated their pursuit to find health information by starting with the library’s website. The students reported they started their search for information using the library’s website demonstrated their understanding of the need to locate reliable sources of health information. One student reported his insights into steps he used to find health information by stating that he learned this process in the information literacy class that he was enrolled. He stated: “The way we were taught to use the school's library website, it greatly advanced the speed and the completeness of the literature searches.” The statement suggested that students pay attention to the demonstrations related to using the library’s website during orientation, library workshops, and in the information literacy class. Increasingly, researchers have asserted that students in higher education generally begin their search for health information by going directly to Google (Kingsley, et al 2011; Rowley, Johnson, & Sbaffi, 2014). Interestingly, only one of the nine student participants indicated that they would begin their steps to locate health information by using Google, which was stated earlier, as the student expressed using Google for quick information. One student participant further described the steps used to find health information as:

The first step is you have to know what it is you plan to do, you have to have some kind of idea of where you want to go. Then you have to be open to, once you start that journey, being willing to go where the information takes you, so we go in and we start
saying "Okay, this is what I'm looking at." Certain keywords that fit into that, and we access our search engines.

Another student stated the following: “Before I entered the nursing program, a lot of my methods used to locate health information [were] obsolete. The student further stated the following:

I used PubMed prior to this program and I did not have the knowledge that we were taught in this program several sources, we were giving accesses and the way we were taught to use the school's library website, it greatly advanced the speed and I guess the completeness of the literacy searches.

While yet a third student expressed:

Yes. Finding health information entails using the library resources, going on the health section, especially the section where we have for example when I was looking for information on women's health. There are sections you go to looking at the number, there's a library number that you will use to search for those books in the sections where these books are located. Actually we have our library section where we can locate some of the resources that can help us.

This particular student was referring to the library’s LibGuides which the library created for each educational program including Nursing. The library was providing health information for each educational program including: the FNP program, the ELM program, and the RN to BSN program. A fourth student participant expressed how she learned about the library’s websites:

Well, once I have the topic, I typically go through the CDU library site, and one of the librarian showed me how to do the search through the library site. So that's where I start. And then I like that you can put in the date range, because here they're really specific about, "Oh, it has to be within the last five years." That's pretty much how I start.
Based on the student participants responses, the researcher gained insight into the information seeking behavior of students and how the majority of the participants indicated the use of the library’s website as an important step to start their health information seeking journey. Since students indicated the use of the library’s website, the researcher sought to further examine the types of information resources and types of information tools used by students in their research assignments. Several resources and types of informational tools were gleamed from the data analysis.

**Information resources used by students.** This subtheme depicted the types of informational resources students use from the library’s website. Student participants indicated that the top three databases or resources used includes PubMed, CINAHL, and Google Scholar. PubMed is the premier database from the National Library of Medicine and it is used by most healthcare professionals. CINAHL is the acronym for the Current Index to Nursing and Allied Health Literature and is the primary database for nursing research and allied health literature. Google Scholar is the website interface that enable users to search primarily scholarly and academic materials from the Internet. One student participant outlined steps used in locating the information for research assignments:

First I want to find out exactly what it is that I want to know, because I think sometimes a lot of students get the question confused. Then, I try to write the question out in a couple of different ways, because as a student, I've noticed that sometimes when you're searching for the information, it helps to be able to ask the question in a couple of different ways.

Another student reported:
If it's something that I'm actually trying to put into a research paper then I'd need to make sure that I have a viable source. Maybe it's a nursing research paper, maybe it's a medical condition so that would have me choose between maybe PubMed or CINAHL based upon what it is that I'm looking for.

A third student indicated the following regarding using specific resources:

I go for my favorite two, but most of the time I do go to PubMed first because they seem like they have more information, more articles to choose from. I love the pdf versions of the articles. And the Google Scholar is always on hand, like very easy to navigate.

The student participants’ responses demonstrated a cohesive and/or an interlinking of students’ experience related to information literacy and subsequently how they used these skills in research assignments.

The data revealed, as represented in Table 2, shows the frequencies of databases used by participants. The students unanimously tended to prioritize the solid and reliable health science databases that were introduced to them during library orientation and/or library workshops. Google Scholar was actually less frequently used by the participants.

Table 2

*Information Sources Used by Students*

<table>
<thead>
<tr>
<th>Information Source</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>PubMed</td>
<td>9</td>
</tr>
<tr>
<td>CINAHL</td>
<td>9</td>
</tr>
<tr>
<td>Google Scholar</td>
<td>6</td>
</tr>
</tbody>
</table>
The faculty participants indicated the significance of students learning how to use the premier databases such as PubMed, CINAHL, and Google Scholar, stating the acquiring this skill is critical. In addition, they discussed the importance of students understanding information literacy and information resources that are evidence-based. One of the faculty participants asserted the following:

I believe the role of information literacy is very critical, especially in teaching. When teaching nursing, first at a graduate level because they're doing a lot of papers, literature reviews, preparing for research, it's critical for them to know good evidence. It is imperative that students know and are able to identify the right type of health information resources.

Another faculty participant expressed:

So, in the role of teaching students and the practice of nursing, information literacy serves as a guide to guide the students. If there is for lack of knowledge. So, knowledge is very, very powerful. And if you want a student to do something you have to give them a guideline. Tell them, "Go to this place."

The third faculty participant indicated the following:

I think definitely, after they've taken your class they start to know their resources, or where to find health information. By the time they come to my class they have some knowledge of where to find reliable information. They start to know all of the different journals they can use, other than just Google Scholar.

The subtheme provided greater insight into how students determine the resources they should use for research assignments and also how faculty envision a potential collaboration with the library
by providing either workshops or the students actually enrolled in a course on information literacy.

**Types of information tools used by students.** This subtheme represented student participants’ description of the types of required assignments where IL skills are necessary including: completing research papers, online discussions, posters, presentations, and projects. The tools students referred to primarily were: peer-reviewed articles, scholarly websites, and Endnote. One student expressed the following comment related to peer-reviewed articles:

> It's what gets me through because what's required of us, as students, we have to write a lot of papers and the papers have to have references, the papers have to be supported, we have to have peer reviewed articles, we have to have certain kinds of information, we can't use Wikipedia. We have to have good, solid information supported. It's academia. It's not just in here, talking and not having supported information, we have to have things, we have to have documentable information.

Another student participant indicated the following related to scholarly websites:

> Since I am in an entry level Master's program, we write a lot of papers. With papers, you need a lot of citations and a lot of information to back up what you say in your papers to not plagiarize. I actually do go on scholarly websites and find different articles to back up what I'm saying in papers.

A third student stated following related to research papers and online discussions:

> The information that we obtained through doing the research, doing papers, having online discussions, they all have to be based in research. So, I said initially that not in the exam taking, but that's not necessarily true because in nursing in particular, just like in any
medical field, the information that we use to take care of patients and treat patients is evidence based.

A fourth student participant expressed the following statement related to health information resources:

A practitioner needs information just for them to look up, I now have the ability to either use PubMed, Google Scholar, CINAHL, or one of the other resources that we've been introduce to through this program, so that I can produce information that they can either give to clients on their understanding. And so whether it's a patient or a nurse practitioner or even the doctor.

In addition, two of the nine student participants mentioned clinical diagnosis, medications, and contraindications resources. One of the two student participants indicated the following:

Within a clinical setting, I'm still again doing research on different topics that I may not be aware of that my patient has. Say the diagnosis is something that is new to me, I actually research that diagnosis or the medications that they're taking to try to figure out, okay, what is this person taking, what are the contraindications, what can I not give for medication.

The second participant further described how, in a clinical setting, reliable resources are needed and hence online resources in the form of medical apps are quite vital. This student stated the following related to clinical apps:

And then as far as in the clinical setting, it's more of being able to access information really quickly. That's why we have a lot of apps for pharmacology, or applications for basic 5-0 symptoms, or vaccinations that makes things readily available, rapidly.
The information tools the students identified using included textbooks, peer reviewed scholarly journals, scientific websites, medical apps, and Endnote. Students indicated that the use of textbooks primarily served to help them to locate background information and also to assist in preparation for the NCLEX examination, which is compulsory for all students who are enrolled in the ELM program. One student participant stated the following: “Before I knew how to locate reliable health information, I basically relied on my nursing textbooks.” This student further indicated that she was a nurse with over 20 years of experience; however, she relied on the resources such as textbooks because, prior to this program, she was not comfortable using resources such as PubMed and Google Scholar.

The majority of the students expressed that they used Endnote as key tool that enabled them to collect and store references, using the feature available in Endnote known as “Cite While You Write” which enables the user to insert references as necessary and allows the student to compile the bibliography simultaneously. Regarding the use of Endnote, one student explained:

And so I was happy to learn about Endnote because I think that is a wonderful resource in that the library has that available and it's to make those transitions easier. And then have a place where you can store the articles that have looked at previously and have them ready available if I were to need them in the future is awesome.

A second student expressed the following regarding Endnote:

Well the one the resource that I learned to use was Endnote. That was something that I hadn't used before, so that one was very helpful in the fact that it takes out that extra step when you do your references and citations. I think most students really like this resource because it helps us with our reference page of our research papers.
The researcher reviewed the randomly selected library workshops evaluations, and at least two of the seven workshop participants indicated the usefulness of Endnote. As a result, Endnote is demonstrated in all library workshops and students immediately become interested. One of the two participants elaborated on the workshop evaluation form by suggesting the following: “There should be an advertised drop-in for Endnote or a sign-in sheets to assist students.”

Interestingly, faculty participants also commented on the value of students learning how to use Endnote to support their research assignments. One of the faculty participants indicated the following:

What I've found out is they don't know that we have the storage applications like, Endnote and they don't know how important the use of Endnote. They think, Oh, for each assignment I have to start all over. They don't know that, "Okay, if I set up an Endnote account, I can save my previous searches and be able to use it like that.

Another faculty stated the following regarding observing students in the library workshops:

In the library workshop I saw the students . . . A lot of students have . . . They find it difficult to do the reference page, put it in chronological order and how to format it. But I know in this college we have Endnote. So, they learned Endnote and they were happy that they learned how to use it and students were informed that library would install Endnote on their laptops for further use.

Faculty also mentioned the use of scaffolding as a technique so that one assignment built on another. A faculty participant suggested the following example using this technique for the students in the RN to BSN program:

Students will have a paper, but the presentation is similar on the same topic with just additional information to be added. If students knew that, they should understand that,
then you don’t have to choose a different topic for the presentation if you already just do the research for the paper.

In addition, faculty reported that library resources are valuable to student success. One faculty participant asserted the following, “when I give the students and assignment I would tell them, "Go to the library. Use the school website,” because it's not everything that is online that is authentic.”

Methods of evaluation of resources used by students. This subtheme demonstrated how students’ evaluated the usefulness of the health information compiled to support their research assignment. Student participants discussed a variety of evaluation methods which include: locating peer review articles, performing a critical analysis and reviewing papers by skimming. The data revealed, as illustrated in Table 3, shows the types of evaluation methods used by students, indicating the majority of the participants identifying peer-reviewed articles which is often introduced to during library orientation and further reinforced by faculty.

Table 3

Methods of Evaluation of Resources Used by Students

<table>
<thead>
<tr>
<th>Evaluation Methods Used:</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer reviewed</td>
<td>7</td>
</tr>
<tr>
<td>Critical Analysis</td>
<td>5</td>
</tr>
<tr>
<td>Skimming papers</td>
<td>4</td>
</tr>
</tbody>
</table>

Seven of student participants described locating peer reviewed articles. One participant asserted
“I always make sure that I'm searching articles that are peer reviewed. Then, I screen them based on the abstract.” The student further suggested the following:

There's all kinds of information that's out there and that's available, so students have to be able to first have a concept and an idea of what exactly it is they are looking for. They need to know how to access information and they also need to be able to differentiate between what's accurate, what's peer reviewed, and what is valid information to support their concepts and their ideas.

Five of the nine participants indicated they consistently performed critical analysis of the information compiled seeking an unbiased opinion. One participant stated the following:

What I do I read most of the article so I feel that apply to the topic that I'm writing about. And I determine if it's useful and appropriate if I find that the points of view and research, especially if it's a data type, it's a quantitative style paper, I look for the data and I analyze whether they had a sufficient sample size.

That participant provided the following example “I value New England Journal of Medicine on the same level as the Journal of the American Medical Association. Whereas I see these journals as higher than say WebMD.”

A third student expressed the following method of evaluation:

So, a lot of times, I determine whether or not it's useful for me, if its conclusions are congruent with the ideas of the paper that I'm writing or if they line up with the whole topic itself. Because you know, you can be misled by maybe a title or an abstract and then you get into the article and you find, oh you know, they weren't looking at what I thought they were looking at or what I needed them to be looking at so their conclusions
are not about what my focal point was. So that would determine to me whether or not I can use it.

Another participant, meanwhile, indicated that they would look to see how many times an article is cited using Google Scholar. The concept related to citation analysis demonstrated in the information literacy class that was being taught in the RN to BSN program.

Four of the nine participants indicated they reviewed each paper by skimming papers for relevance, often reading the introduction and background information. One participant described the standards applied when critiquing an article:

The article is supposed to have an introduction, it's supposed to have background information, it's supposed to have when they started and when they're going to finish and it's supposed to map out what they're looking for and then how they approach the research phenomena.”

The researcher noted the steps in the critical analysis process were taught in the IL class to students in the RN to BSN program.

The faculty participants commented on the need for peer reviewed articles and for the students employing critical analysis processes. One faculty member indicated that, coupled with the IL class for the RN to BSN program, students were required to submit a peer reviewed article that they had to critique; however, the faculty approved the article submission prior to the critique. This faculty member also provided examples of different types of research articles, including quantitative and qualitative approaches. Another faculty participant indicated the following related to nursing students:

It's still the information and the education that the students got while they were in school that they will put in practice. Life for in the nursing school right now we use a lot of
simulations, which gives the students that opportunity for them to practice in safe environment and face a lot of scenarios. And those scenarios, they will remember it and understanding how to research the current literature is important for students as they prepare for the real world.

The third faculty participant expressed the following as it relates to students:

It is critical for all nurses, even in the hospital, to know how to go to their libraries or even online and search for recent research studies or recent articles that support the practice that they're doing on the floor or that the skill sets to say, Okay. We've always used needles this way, and we no longer can recap needles or we have to wash our hands with soap or use sanitizer, things like that. It's through information literacy that we can provide evidence related to best practice.

From theme one the researcher gained further knowledge on how students retrieve health information and how faculty are reinforcing information literacy skill sets and/or their demonstration of the importance of information literacy skills in nursing education.

**Theme Two: Interpretation of information literacy (IL) definition and the confidence in using IL skills.** The second major theme that materialized was students’ interpretation of the definition of information literacy and their confidence in using IL skills. The researcher further identified the following subthemes:

(a) Students interpretation the definition of information literacy (IL)

(b) Students confidence in using IL skills to identify reliable and credible information

(c) Student and faculty perspectives on Evidence-Based practice

This theme presented students’ perceptions of the definition of IL, where they discussed not only their perception of IL, but also their confidence in using IL skills. Lastly, students and
faculty discussed the importance of using being able to identify Evidence-based practice (EBP) and use EBP in the practice of nursing.

**Students’ interpretation of the definition of information literacy.** The researcher provided the definition of information literacy seeking to learn how students’ comprehend the principles associated with the definition. Student participants shared their interpretation of the term information literacy. When the students’ described their definition of information literacy, key concepts were documented, including phrases such as: finding peer reviewed articles, identifying valid and/or accurate information, and the ability to understand concepts to determine what is needed. Table 4 represented data that demonstrated the number of participants that used the key phrases to describe the definition of information literacy.

Table 4

*Key Phrases Used to Define Information Literacy*

<table>
<thead>
<tr>
<th>Key Phrases</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer reviewed</td>
<td>7</td>
</tr>
<tr>
<td>Valid Information</td>
<td>6</td>
</tr>
<tr>
<td>Accuracy</td>
<td>5</td>
</tr>
</tbody>
</table>

The students’ response asserted they had conceptualized the definition for IL. One student responded by stating:

There's all kinds of information that's out there and that's available, so students have to be able to first have a concept and an idea of what exactly it is they are looking for. They
need to know how to access information and they also need to be able to differentiate between what's accurate, what's peer reviewed, and what is valid information to support their concepts and their ideas.

Another student defined IL as having the ability to find whatever it is that you need and to be able to identify if the information that you have found answers the question and comes from a reliable place. I think it's just having knowledge of how to obtain valid information, be it research for assignments or other information that it needed. A third student expressed the following related to being an information literate individual:

When think of an information literate individual I think of somebody who knows where to find whatever it is that they need. And so I think of, in this time and this culture, where information is fluid but in some areas it's not as fluid as it could be, based upon the user. And so that's when it comes down to the individual and how and whether or not they're capable of even accessing that information, being able to identify whether or not something is reliable.

One of the student participants shared his ideology on the definition of IL to include aspects related to a clinical setting. This participant specified the following:

Information literacy for me is the combination of using technology and various resources in order to support evidence based practices. Whether you're composing a paper for an academic assignment or even if you just trying to look up and get information for clinical situations that you might be in. Information literacy helps to accomplish better information gathering.

Yet another student expressed the following as her understanding of IL:
Well, information literacy based on my own understanding is like knowing say a particular subject in an appropriate way, because we have different ways of understanding and we have the level of understanding based on academic. When it comes to information literacy, is a way of elaborating a word or a phenomena so that it makes sense.

The students’ interpretations, while similar in nature, provided the researcher with a glimpse into how each student processed the definition of IL and how each understood its meaning and the students’ interpretation of why it is important to learn these skills. Hence, the researcher sought to investigate the confidence level of the student participants.

**Students’ confidence of IL skills to identify reliable and credible information.** Three of the nine student participants indicated they had prior knowledge of IL skills because they previously worked on a thesis or research project. The majority of the students reported they did not have any IL skills before they entered the nursing program. At least two students used the term “green” to describe their level of confidence, which further demonstrated the lack of IL skills prior to enrolling in the nursing program. One student further described the term “green” as:

Green in the sense that we didn’t know where to locate any particular information or where to go for research. Most times we spent hours and hours trying to do something that would have taken us just over thirty minutes or an hour.

Several students who were working as nurses indicated that information was given to them on the job; as one described, “things” were just handed to them in the hospital and/or clinical setting. In other words, because of their position or rank in the hospital or clinical setting they were not asked for their opinion related to clinical and/or patient decision making.
Another student suggested his IL skills were not consistently up to date and even obsolete, because he or she relied on books. The participant further indicated that searching the online literature a totally new concept. Subtheme two is further supported by one of the student’s comments regarding their level of confidence based on when they entered the program and their skills level at the time they were interviewed. The student participant expressed the following statement regarding her level of confidence in using IL skills:

My information literacy skill levels were probably at a 4 prior to entering the program and now I believe I am at 8. But now I have learned that you have to base everything that you say upon a structured and systematic acquisition of information.

Another student responded by stating the following regarding their confidence in their IL skills:

Okay well before entering the program, I did not have any IL skills. My first go to before even Internet, I've been a nurse for 20 years, it was just to get a book. But now I can say how I perceive my ability to use information now ... entering this program compared to before . . . I feel like I'm well equipped with the skills that I need to do any type of research now.

At least eight of the nine student participants demonstrated that their confidence in using IL skills had increased since enrolling and the University and attending library workshops.

Table 5 represents data derived from students’ perceived level of confidence in using IL skills, and illustrated the majority students’ level of confidence has increased due to library workshops.

Table 5

*Students’ Confidence Levels in Using IL Skills*
<table>
<thead>
<tr>
<th>Level of Confidence</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased</td>
<td>8</td>
</tr>
<tr>
<td>Prior Knowledge</td>
<td>3</td>
</tr>
<tr>
<td>No experience/obsolete</td>
<td>4</td>
</tr>
</tbody>
</table>

The researcher further examined the number of library workshops the student participants attended to identify if there were any observable connections between the level of students’ confidence and the number of library workshops attended. The majority of the students had attended at least one library workshop, while only one FNP did not attend a formal library workshop. The one FNP student indicated they simply came to the library for assistance with their research assignments or projects. It should be noted that three participants indicated that they had attended at least three or more library workshops. The RN to BSN participants asserted that having a course on IL in the RN to BSN program had been beneficial to their success in the program. In addition, several of the participants commented on the willingness of the librarians to host group and/or individual consultations to support their research endeavors.

*Student and faculty perspectives on evidence-based practice (EBP).* The third subtheme consists of student and faculty perception of the need to used resources and materials that are evidence-based. At least three of the nine participants discussed the importance of identifying and using EBP resources. One student expressed the following related to EBP, “EBP is critical
and it can be used when I need to complete a research assignment or when I am locating materials for patients in a clinical setting.” Another student commented by stating:

The information that we obtained through doing the research, doing papers, having online discussions, and they all have to be based in evidence. In nursing in particular, just like in any medical field, the information that we use to take care of patients and treat patients must be evidence based.

A third student participant described how EBP can be used as a filter used in the steps to locate reliable health information. The student provided a statement in form of a query related to EBP:

What specifically am I looking for? Am I looking for African Americans between a certain population and so then I would filter it from there. Do I want really old articles or do I want something within the last 10 years? Do I want talk about the history or historical stand point or do I want talk about what’s going on right now and what the evidence based practice is right now.

The faculty participants discussed students’ confidence to use IL skills, particularly noting a lack of knowledge of where students can find reliable information, especially if the student did not have a nursing background. Faculty participants mentioned that a core part of the nursing program included having students conduct research, write and submit research papers, and prepare presentations and/or projects. All of the faculty participants suggested that students were not knowledgeable on how to conduct literature reviews, even though IL skills were critical to identifying where to obtain valid information. The faculty asserted that nursing is changing; they stressed the importance of increasing IL skills to gain knowledge, to understand evidence based practice, and to know how to research studies, but also how to critique articles objectively.

One faculty participant expressed the following:
It is important that nurses on the floor be able to know where to get information to support the work they are doing. It is critical for all nurses, even in the hospital, to know how to go to their libraries or even online and search for recent research studies or recent articles that support the practice that they're doing on the floor.

Another faculty participant further stated:

We teach about evidence-based practice so students have to know what information is considered good evidence, what information is good literature, what information is just that on the web and something that has not been tested or reviewed by experts.

This faculty participant described how many of the hospitals are involved in the Magnet Recognition Program. These hospitals are expect nurses to have the ability to use evidence-based practice. The Magnet Recognition Program “designates organizations worldwide where nursing leaders successfully align their nursing strategic goals to improve the organization’s patient outcomes” (American Nurses Association, 2018). One faculty member asserted that “if the information is not justified or if it's not verified within the clinical literature or setting, it's kind of like why are we doing this?” The student and faculty participants provided their perspective on the use of EBP and its correlation between EBP and the interpretation of IL skills in research and clinical decision making.

**Theme Three: Library Instruction for today’s nursing students.** Theme three provided greater insights into how library instructions or library workshops can be effective for today’s nursing students. This theme emerged with three subthemes: (a) description of students’ learning styles (b) the number of workshops attended and the usefulness of the instruction, and (c) challenges students face when using IL skills.
Students’ described their learning styles. The student participants provided perceptions into their learning with students describing their most effective learning style. Three of the nine student participants indicated they were visual learners, one participant indicated auditory learning and three participants indicated they are kinesthetic learners. At least, three of the nine participants reported having an additional learning styles.

The data revealed, as represented in Table 6, depicted the type of learning styles based on the student’s educational program, and how there may be a correlation between learning styles and the types of program.

Table 6

Student Learning Styles by Educational Program

<table>
<thead>
<tr>
<th>Learning Styles</th>
<th>Educational Program</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auditory &amp; Visual</td>
<td>FNP</td>
<td>2</td>
</tr>
<tr>
<td>Auditory and Kinesthetic</td>
<td>ELM</td>
<td>1</td>
</tr>
<tr>
<td>Kinesthetic</td>
<td>FNP, ELM, &amp; RN to BSN</td>
<td>3</td>
</tr>
<tr>
<td>Visual</td>
<td>FNP, ELM &amp; RN to BSN</td>
<td>3</td>
</tr>
</tbody>
</table>

As Table 6 demonstrates, nursing students indicated they possess learning using a variety of learning styles. Two of the nine student participants identified two learning styles. The first participant expressed “It's a combination of visual and then kinesthetic. Auditory does not
typically work for me because my mind just drifts.” Another participant with a combination of auditory and visual learning styles stated:

I think if I hear it and see it, then I have a chance to remember it. For me, it kind of like conceptualizes it in my mind. It gets more tangible for me, and I tend to retain it then.

A third student commented on kinesthetic learning style using a metaphor:

Okay, let me share an old Chinese proverb with you because the old Chinese proverb says: “If you tell me, I'll forget. If you show me, I'll remember. If I experienced it, I'll understand.”

A fourth participant described her learning style as being adaptable, yet a combination:

Yes, sometimes it depends on what is being taught. Sometimes I prefer to be a visual learner, sometimes especially if it things that need hands on, that you need to go over and over for you to master, I'd rather be visual. But most times I'm okay just listening in class, paying attention.

The participants also described some of the techniques used to further solidify their learning. Some of the techniques included: repetition, lots of note cards, and colorfully highlighting select passages. One student described repetition as methods use to learn materials:

If I keep writing something over and over again just so it will be instilled in my brain, that's one of the things I do. I use a lot of note cards, just again to reinforce the information that I know. That's usually how I learn.

Another student participant expressed the following related to being a structured learner:

I am a structured learner, I still need deadlines and I still need assignments, I need that because that helps keep me on it, it helps keep me going in the direction I feel like I need
to go in and so being in this program I realized that I have to kind of create the structure for myself.

The student further stated the following regarding the use of highlighters in the reading content:

You're in these books and you're reading these black words on white paper, and it gets boring. I need color so I get all the colored pencils, I get all the colored pens and that way I can rethink whatever concepts that I've written down and they'll come back to my mind that way.

The student participants described the various ways in which they learned and techniques that further enhanced their ability to conceptualize the materials. The researcher was able to immediately use this information in preparing subsequent information literacy sessions.

*The number of workshops attended and the usefulness of the instruction.* Student participants indicated the number of library workshops they have attended, the types of library workshops, and the usefulness of the instruction. For example some students reported that they have in class workshops, individualized workshops, group workshops outside of the classroom, and the instruction is part of the IL class which is taught in the RN to BSN curriculum. In addition, students discussed some of the challenges they face when locating library materials.

The data represented in Table 7 demonstrates the number of classes attended by student participants including in-class sessions, individual sessions, and an actual for credit course taught in the curriculum.

Table 7

*Number of Workshops Attended.*

<table>
<thead>
<tr>
<th>Number of workshops attended</th>
<th>Number of Participants</th>
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In-class workshops 3
Individual consultations 4
Class in Curriculum 3

Interestingly, at least 3 of the nine participants attended at least two types of workshops and/or instructional sessions indicating a need for repetition and/or more instructional time.

At least one of nine participants indicated not having attended any formal library workshops, asserting the following:

I know that when I asked for help, it was readily available and I was able to get the answer that I needed, and the assistance that I needed. It's always been truth in the library. No matter what it is.

Three of the nine participants indicated they had attended at least three or more library workshops, while three of the nine participants reported taking a for credit course at the university entitled “Information Literacy and Research Methods.” One participant who reported attending library workshops indicated the following: “They're very beneficial in the sense that you guys have taught me basically how to use my endnote abilities and how to research articles, so very beneficial.” Another participant asserted the following:

I learned how to use Endnote and this was something that I hadn't used before, so that was very helpful in the fact that it takes out that extra step when you're doing your references and your citations for your research assignments.

One student who had taken the course on information literacy and research methods stated:
And in the information literacy class, we're able to have our own computers there and to do more touching and feeling and also the projector works fantastic for me too because I like to do and see. So when I was able to look on my computer in front of me and able to look up and see if I was doing it right and follow along okay.

And another participant shared:

So, I think that once the library came into my classroom, it was just 20 of us, and we were able to ask questions and we had the amount of time that we needed to get our questions answered and to really absorb the information that was given to us. It was far more effective. And so I saw the need for it because there was a number of people in my class who needed to ask questions. They had those questions even though this was semester 3 and they still had those questions but these same resources were available semester 1.

Another student commented on the vast resources available through the library that students are not aware. She affirmed the need for the workshops, stating:

A lot of students do not know how much resources the library has, so it's just like going to classes or organizing more workshops to expose them to what they could get online to help them with their studies.

All of the faculty participants commented the usefulness of library workshops, and the consensus was that library workshops are instrumental in introducing students to reliable health information resources. One faculty participant indicated the following: “All students need to understand how to do a basic search to be able to find the appropriate literature to support the work that they need to do.” The faculty participant further stated:
ELMs have to have the library workshops in their first semester. They come to me for nursing theory, not knowing how to do the search, and they've just completed one semester and now they're in the second, so the students feel frustrated, and I feel like I have to double back to bring them up.

Another faculty member expressed the following related to students and workshops:

Most of them went on straight to online and started Googling from Google. So, I was like, "No. Whatever thing you're getting there, you have to get something that has been research." So, the library workshops gave them an opportunity to learn the difference between what is a credible information and information that are not credible.

The third faculty member stated the following regarding students in the RN to BSN becoming prepared for subsequent classes by initially taking the Information Literacy and Research Methods which constituted part of their curriculum. She stated:

After they've taken your class they start to know their resources, or where, and by the time they come out they already know EndNote, they know how to use it, they know Microsoft Word, they start to learn their Office and they start to know all of the different journals they can use, other than just Google.

The faculty participant further indicated that the Information Literacy and Research Methods class was a precursor to the other classes that students were required to take in the program.

Faculty participants further commented on the need to have library workshops in all of the nursing programs; this was in the context of them describing the success of students who participated in either formal or informal library workshops, or who had obtained such skills within a curriculum similar to the RN to BSN program. One faculty member suggested:
Having the library workshop connect directly to actual assignments and projects that they have is very critical, so I think putting them in a computer lab to have them do the search, and to have them learn how to use Endnote would actually be beneficial to student success.

**Challenges students’ faced when using IL skills.** The student participants described some of the challenges they face while making every attempt to locate the actual articles for their assignments. The main obstacles were: (a) finding the articles, (b) incorporating the ideas of others, and (c) time lapse/understanding research. At least six of the nine participants described hurdles which included students not remembering how to find the articles once they search for them in the databases, time lapse of the articles, or not having access to the articles without paying. One student expressed the following:

The most challenging part that I do encounter sometimes are for us to be accurate with papers, most times we are asked to get papers that not available and its’ hard sometimes to get a paper or an article that is within reach time frame. And then there are some area that you go for them to release the papers they will like you to make some payment.

Another student responded similarly indicating:

For me, one of the challenging things is sometime the articles you find online that might be related to your topic, might not be the entire article. Some of them are restricted and sometimes it wants you to pay some certain amount of money for you to have access to that, so I think that is an area where the school should do more in giving students access to some of those articles.

A third student discussed the time lapse of materials by stating:
Say a paper has the information I want and it's spot-on, I just can't use it because of the time lapse of the paper. That, to me, is very frustrating especially when, say my topic is very small or something that is not really researched a lot on, it takes longer to find articles I need to address the situation I'm talking about within my paper.

At least two student participants discussed the challenge of incorporating the ideas of others into their research assignments. One student discussed the following:

I think the most challenging is being able to incorporate the ideals of others into your writing. That whole process, just the whole mechanism of being able to derive individual work from other works and not let it sound like an opinion but argue your point using the findings.

The other student participant expressed the following related to challenges:

I think the challenge was not in finding in them. The challenge is in interpreting and understanding them, which is not easy. Yeah. Because it's one of the more complex subjects that we have here and it's hard to understand what is required.

The researcher subsequently reviewed the randomly selected workshops evaluation from formal library workshops and the consensus of the evaluations was that more workshops should be available on a variety of research elements including: types of research studies, databases search strategies, and writing skills. Combined, these responses indicated a need for additional library instruction.

The evidence from theme three provided the researcher with supplemental insight which the researcher can use in the implementation of library workshops for today’s nursing students. The theme further suggested the need to understand students’ learning styles when preparing
library workshops, which was demonstrated by student participants. In addition, the researcher expressed the importance of having a timely method of evaluation. The researcher posits that the evaluations are critical to enabling nimble modifications in the library workshops which can further benefit students in their acquisition and use of information literacy skills.

**Conclusion**

The researcher’s primary objective in this case study was to understand and obtain greater insight into how nursing students acquire and apply information literacy skills through library workshops. The researcher used the qualitative research design that has been adopted by Creswell, Merriam, Stake, and Yin as a viable methodology to test research hypothesis and/or research questions in the social sciences, as it relates to the lived experiences of individuals. Within this study, the researcher used data collection and data analysis techniques proposed by Creswell (2013).

The outcomes of this study demonstrated that nursing students and nurse educators understand the importance of acquiring and using information literacy skills. The participants provided their own experiences which proffered an enhanced view of how information literacy skills can be applied. The participants holistically expressed their positionalities as they related to acquiring and applying information literacy skills. Hence, the researcher asserts that this study makes a significant contribution to further understanding how students gain and use these skills. Other librarians working in the field of information literacy can benefit from this analysis.
Chapter 5: Discussion of Research Findings

The purpose of this qualitative research case study was to further understand how nursing students acquire and apply information literacy skills (IL) in theory as it relates to multi-level nursing accelerate nursing educational program. The multi-level nursing educational program include: (a) students in the RN to BSN program; (b) students in the Entry Level Master’s program (ELM); and (c) nurses becoming certified as Family Nurse Practitioners (FNPs). The researcher used Kolb’s experiential learning theory (ELT) as a critical lens to understand the lived experiences of the nursing students as it relates to the adoption and use of IL skills. The literature further supported the use of Kolb’s ELT in that this is one of the learning theories that is used in studies of nursing students (Lisko and O’Dell, 2010). These authors posited that Kolb’s ELT can provide a gateway to critical thinking, and these skills are integral in acquiring and applying IL skills.

The researcher used a qualitative research case study research methodology. The case study approach was selected because of the study participants. Stake (1978) asserted that a case study is a bounded system that indicates “what is happening and deemed important within those boundaries is considered vital and usually determines what the study is about, as contrasted with the kinds of studies where the hypotheses or issues previously targeted by the investigators (the etic) usually determine the content of the study” (p, 7). Yin (2014), meanwhile, posited that a case study enables the researcher to answer questions of how and why when (b) you cannot manipulate the behavior of those involved in the study; and (c) the researcher aims to cover contextual conditions because they are believed to be relevant to the phenomenon under study. Creswell (2013) further described one of the key characteristic of a case study is the “researcher
collecting several forms of data, including: interviews, observations, documents and audiovisual materials” (p. 98). Hence, the researcher explored the use of a case study to understand a particular phenomenon which was nursing students acquiring and applying information literacy skills.

The researcher explored three research questions which were derived from the review of the literature. The research literature indicated a need to further understand how nursing students acquired and applied IL skills. Previously, investigators reported in the gap in the literature as it relates to nursing students’ ability to obtain and use IL skills. The prior literature also documented IL skills as important skills needed crucially by today’s nurses. This need was supported by the IOM (2010) mandate documenting how nursing educational programs have wrestled with this phenomenon. The literature has further documented a disconnection between nursing students using these skills beyond assignments and subsequently in hospitals and clinical settings. The researcher used three research question to guide this study to further examine the phenomena.

The three research questions that guided this study were:

Main question: How do nursing students in an accelerated program experience the acquisition and application of information literacy skills through library instructions?

Sub questions:

• How do nursing students describe their level of confidence in transferring information literacy skills they obtain during library instructions to research assignments in the curriculum?
What aspects of the overall information literacy training in the accelerated nursing curriculum present either helpful or problematic to learning and applying these skills in a professional health care environment?

The three research questions provided the initial context which enabled the researcher to devise case study methodology to further study the phenomena.

The analysis of the case study resulted into three major themes and subthemes which were gleamed from the various forms of data was identified in Chapter 4. In this chapter, the researcher provides a summary and a discussion of significant findings related to the themes and subthemes, the literature review, and the theoretical framework. In addition, the researcher has provided implications for practice, suggestions for future research, and limitations to the study.

**Discussion of Significant of the Findings Related to the Research Questions and Themes.**

The research participants provided significant insight into how nursing students use information literacy strategies when seeking health information. This study focused on the experiences of nursing students from several levels and degree stipulations in their acquisition of information literacy skills. Information literacy skills as defined by the American Library Association (ALA) to encompass the “ability to find, locate, use and evaluate appropriate resources” (ALA, 2018). Research has indicated that nursing students have demonstrated difficulty in acquiring and using information literacy skills and there are several schools of thoughts as to why this is a challenge. Several research studies have reported that the challenge is due to explosion of information available through the Internet (Gilmour 2016, Bond 2010, & Turnbull 2011).

**Nursing students’ information literacy strategies used in seeking health information.**

The researcher identified three major themes based on the three research questions. The first
major them investigated the information literacy strategies used by nursing seeking health information either for research assignments or clinical decision making. Student participants revealed the following subthemes: (a) steps used to find health information; (b) information resources used by students; (c) the types of information tools used by students; and (d) the evaluations methods used by students to determine the credible of health information. The major findings suggested that student participants primarily used the library website when seeking health information.

Steps used to find health information. The majority of the student respondents indicated going directly to library’s website and that they learned about the library website through library orientations, library workshops, and, when applicable, the library course taught in the Bachelors of Science in nursing program. The majority of student participants expressed that they used the library’s website as an initial step to finding reliable health information. The faculty participants indicated that they consistently reminded students of the importance of information literacy skills and prompted students to use the library’s websites as initial steps in locating reliable health information. The researcher affirmed that one of initial steps in building information literacy skills is identifying the resources, and in this study, students demonstrated that they had acquired the initial skill of learning why it was necessary to go to find reliable health information.

Information resources used by students. Another significant finding student participants revealed was the nature of the information resources they used. The student participants indicated that they primarily used PubMed and CINAHL to locate reliable health information; this finding rendered forth the curiosity of the researcher. In reviewing the experiences of the student participants, the majority reported learning primarily about these resources through library workshops and library instruction. In addition, participants indicated that, by using
resources such as PubMed and CINAHL, they were assured to be using viable sources. Several student participants indicated that, while they had used PubMed previously, they had since learned how to navigate this resource more effectively. Participants also mentioned that they had not used CINAHL to its full capacity and that they learned through the library workshops/instructions that CINAHL is considered the gold standard for seeking reliable health information in the field of nursing. This finding suggested that students are indeed following the instructions that are demonstrated by the librarians and they are incorporating the IL skills of locating reliable health information resources. The researcher asserts that the student experiences are indicators of them understanding the difference between reliable resources as opposed to using Google. In addition, this finding is in contrast to prior literature which indicated students’ prefer to use Google when searching for health information (Kingsley, et al, 2011; Rowley, Johnson, & Sbaffi, 2014).

**The types of information tools used by students.** The third finding suggested Endnote as a key type of information tools used by students and faculty. The majority of the student participants and faculty participants commented on how Endnote revolutionized their work flow as it related to research papers. The majority of the participants indicated that they learned Endnote from the library workshops and that they understood how using this resource made it easier to the collect, store, and use articles for several assignments. Another student participant commented on using Endnote to make the research process easier; she also said that the “Cite While You Write” feature enabled her to format their research assignment using the APA style, which was required. In addition, all faculty participants were embracing the use of Endnote in their classes, and one faculty participant indicated that she encouraged students to use Endnote because several of the courses within the educational curriculum build upon the next, thus
creating a scaffolding event. Based on the participants’ responses, the researcher obtained a better understanding of how Endnote can be used to leverage information literacy skills and to create additional faculty collaborations. In reviewing the random library workshop evaluations, students repeatedly requested additional workshops on the use of Endnote. The researcher asserted the library’s licensing of Endnote has increased students’ willingness to attend library workshops, even in their spare time. It should also be noted that the library provides a copy of Endnote for each student and faculty member at the university.

**Methods of evaluation of resources used by students.** The fourth finding is related to how students evaluated the efficacy of health information. The student participants consistently discussed methods which included identifying peer reviewed articles and performing a critical analysis to determine the usefulness of information; the researcher was able to observe the evaluation skills demonstrated during library workshops and/or during the library course. Several student participants provided detailed examples regarding how they valued the journal articles from select highly cited clinical journals as opposed to using the information found on a commercial health website. In addition, several students discussed how they critically analyzed a journal article based the number of times that article had been cited. Also, several students described how they skimmed the articles reading the introduction, abstract, and background information. Hence, evidenced was scaffolding, where students were introduced to health information resources during library orientations, library workshops, and/or a library course; they continuously built upon these skills as they matriculated through the nursing programs. Through the dialogue with the student participants, the researcher learned the students that attend library workshops were more likely to critically evaluate the articles that they used in research assignments and in clinical settings than was documented in the literature.
Information literacy (IL) definition and the confidence in using IL skills. The second major theme is related to how students defined information literacy and their confidence in using IL skills. A notable finding indicated the overall consensus by the student participants in defining IL to include terminology related to finding peer-reviewed articles, identifying valid and/or accurate information, and the ability to understand concepts to determine what is needed. The student participants adequately defined IL using their words, phrases, and more importantly examples. One example that impressed the researcher was a student who expressed: “When I think of an information literate individual, I think of somebody who knows where to find whatever it is that they need.” From this example, the researcher was able to further understand that this student saw information literacy as a key element in the decision making process in an individual’s life; hence it was a skill needed in life-long learning.

Another significant finding was related to students’ confidence of IL skills in identifying reliable and credible information. A full 44% of the student participants described their level of IL skills as very basic: a couple of participants actually used the term “green” prior to their enrollment in the nursing program. One of the two participants further described the process of looking for materials and simply not knowing where to go; thus, they spent countless hours trying to find information that could have been found in a relatively short period of time. However, the very process of struggling to locate this information enhance the students IL skills. Several students who were registered nurses described how information was handed to them as opposed to the registered nurses at the master’s level education having input in a patient’s treatment and/or care. The registered nurses further indicated this was one of the reasons that they sought additional educational opportunities so that they could become more involved in patient treatment and patient care. Eighty-eight percent of student participants indicated that their
level of confidence of their IL skills had increased as they learned how to more effectively use IL skills through library instructions.

A fourth finding suggested that students and faculty understood the need for health information grounded in Evidenced-based Practice (EBP). The researcher found that students were engaged in the process of identifying EBP materials for research assignments and as a filter used in the steps to locate reliable health information. Faculty asserted the importance of students gaining skills in how to locate health information considered good evidence, further indicating the use of EBP is an expectation for nurses in hospitals and clinical settings. A student participant actually used a segment of the PICO model described as patient, intervention, comparison and outcome which is the cornerstone of EBP, in constructing a clinical question, to describe how she filtered articles; for example, using the P which stands for population or patient, to identify the specific population or group that she is studying. A faculty participant discussed the importance of EBP in enhancing the students’ ability to locate good evidence and to understand information that is reliable and has been vetted through a peer review process. Another faculty participant commented on how it is critical for students to learn how to identify EBP resources and that hospitals are expecting newly hired graduate to have the ability to locate EBP studies to support the practice that is taking place on the nursing ward. The researcher gleaned the EBP is integral to the success of nursing students as they prepare for their nursing professional exam and practice, and that library workshops should include aspects of the PICO model. The PICO model is discussed in the RN to BSN educational program; however, the researcher asserts that more emphasis should be placed on EBP. The recent literature also supports the importance of nursing students learning EBP skills to identify reliable health information (Courtney, et al, 2006; McCulley, & Jones, 2014).
Discussion on the Significant Findings Related to the Theoretical Framework

The researcher employed Kolb’s ELT as the framework to support this case study. Kolb’s ELT provides a holistic approach as to how individuals learn from their own life experiences. The current literature suggested the Kolb’s ETL can be used to further understand how students gain and apply information literacy skills (Ha & Verishagen 2015; Sanderson, 2011; Woods, 2012). Kolb’s ELT is comprised of four stages or cycles: (a) concrete experience (CE); (b) reflective observation (RO); (c) abstract conceptualization (AC), and (d) active experimentation (AE). Lisko and O’Dell (2010) described the use of Kolb’s ELT as developing critical thinking skills in nursing students. The authors posited “Kolb’s theory addresses the provision of learning experiences and offers different intervention to meet the needs of all types of learners” (Lisko & O’Dell, 2010, p. 106). Thus the researcher used Kolb’s ELT to examine nursing students’ comprehension of information literacy skills through library workshops and/or instructions.

The first stage of Kolb’s ELT is concrete experience (CE) which relates to doing or taking part in the experience. In the context of information literacy skills, the researcher posited that the concrete experience would be demonstrated as student participants described their experience-related strategies they used in seeking health information. The majority of the student participants indicated they attended library workshops and/or library instructions, noting that the library workshops were useful and beneficial to their overall experience of understanding how to gain and apply information literacy skills. Several student participants further suggested that, after attending the library workshops, they gained confidence in using information literacy skills because they learned how to apply these skills in their quest to locate reliable health information.
The second stage of Kolb’s ELT is reflective observation (RO) which involves making sense of the concrete experience by reviewing and reflecting on the experience. The student participants described how they used the information literacy skills gained and applied them to selecting peer reviewed resources such as PubMed, and CINAHL as opposed to Google or Google Scholar. Several student participants reported that they had not used these resources prior to being introduced to them through library workshops and/or library instructions. In addition, the majority of the student participants indicated their level of using peer reviewed materials had increased. One student commented on how, prior to attending the information literacy classes, their skills associated with information literacy were obsolete, indicating he was not computer literate. This student radically improved his skills related to how to access health information. Another student remarked that he had previously almost exclusively used PubMed; however, the library workshops and the concrete experience they entailed enabled him to conduct more thorough literature searches.

The third stage of Kolb’s ELT is abstract conceptualization (AC) where the learner uses “logic and ideas to understand situations and problems” (Lisko & O’Dell, 2010, p. 107). In the context of information literacy skills, the researcher observed the student participants as they described methodology used to not only select specific library resources, but also to evaluate resources and improve their comprehension of the terminology related to information literacy. Student participants remarked on how they used logic to determine the best resource to use in seeking health information or determining the best model to access the information needed. For example, one student commented on the need to have specific medical apps to assist in clinical settings and remarked regarding how these tools are necessary to access information very quickly. The researcher observed the use abstract conceptualization as student participants
described methods that they use to determine the usefulness of information that they found. The majority of the student participants expressed employing AC during their discussion on their critical analysis of information obtained through the CE or AE. Students indicated that they used several evaluation methods, including locating peer reviewed articles, and, once located, they used techniques such as skimming the articles, reading the introductions, and/or abstract to further determine the usefulness of the articles. In addition, AC was demonstrated as student participants redefined in the term “information literacy” in their own words. A common theme noted in the majority of students’ definitions were phrases related to finding peer reviewed articles, identifying valid and/or accurate resources, and understanding what was being requested or needed. The researcher observed that students were engaged in the AC stage as they described these phenomena.

The fourth and final stage of Kolb’s ELT is active experimentation (AE) where the learner test, plans or demonstrate what they have learned. The researcher found that AE was demonstrated as student participants discussed their learning styles and the usefulness of library workshops. Kolb’s ELT learning cycle is coupled with the individuals learning styles. Hence, the researcher investigated the learning styles of the student participants. Based on the findings, students were segmented into three different types of learning styles, and at least six student participants indicated they possessed at least two types of the learning styles. Also respected was the evaluation that the predominant learning styles was kinesthetic. The researcher noted several students emphasized using a particular learning style based on approaches to the instruction. The researcher observed a relationship between student age or nursing experience as it related to the learning style. Based on the experiences shared by the student participants the researcher
acknowledged the need for multi-faceted library workshops to include: lecture, demonstration, practice and time for reflection, which represent the major components of Kolb’s ELT.

In reviewing student participants’ response to the usefulness of library workshops and/or library instruction, the researcher noted that the majority of the participants had attended at least three library workshops. Students reported on their confidence to seek additional assistance from the librarians once they attended a preliminary library workshop or class. The researcher found that students became more comfortable with the librarians as they attended additional workshops; one student noticed the existence of many library resources and remarked that students are not commonly aware of these resources and tools.

The researcher asserts that Kolb’s ELT effectively provided additional insight into how students learn and how they process concepts, and/or idea. The use of Kolb’s ELT in this study has supported the notion learning can take place in a cyclic motion; however, the researcher has identified that considering different learning styles of participants has been paramount in designing comprehensive and effective library workshops and/or library instructions for the nursing student population.

Discussion of Findings Related to the Literature Review

The research literature on information literacy skills in nursing students has previously and continues to focus on how students demonstrate information literacy skills, through studies that use quantitative methods. Therefore, the researcher sought to engage the nursing students through their individual experiences which required a qualitative research approach to provide important insight into how nursing students acquire and apply information literacy skills. The findings related to the literature review include: (a) the definition of information literacy; (b)
theories of information literacy instruction; and (c) implications of IL skills on the nursing profession.

**Definition of information literacy.** The definition for information literacy was initially created by Paul Zurkowski in 1974 and the majority of the leading library associations, the ALA and the Association of College and Research Libraries (ACRL) have adopted the terminology and its definition. Libraries throughout the world have adopted the definition to include the following: “Information literacy is defined as a set of skills that are needed to find, retrieve, analyze and use the information” (ALA, 2018, and ACRL, 2018). The competencies associated with information literacy have been endorsed by several educational associations including those that support education in grades K-12 and associations related to higher education. Information literacy skills are depicted as one of the core competencies by the Western Association of Senior College and University Commission (WSCUC, 2013). In addition, the information literacy competencies have been adopted by several health professional organizations, including the American Association of Colleges of Nursing (AACN) (Eldredge, et al, 2012). The IL competency standards for nursing were created for students at all educational levels of nursing and nurses working in healthcare environments. Phelps, Hyde, and Wolf (2015) reported the IL standards in nursing were developed to guide discussions related to nursing student and nurses acquiring and using IL skills. The researcher suggested more research should be explored to assist in identifying how these skills are taught and the type of collaboration that is most effectiveness in ensuring student nurses and professional nurses obtain IL skills.

The researcher examined nursing students’ perceptions of the definition of information literacy in their own words. The student participants responded by providing compelling perspectives related to their interpretation of the definition of information literacy. The majority
of the students not only provided a definition, but they also provided examples of how they might use information literacy in their research assignments. Some of the key phrases used were: (a) having the ability to find information; (b) identifying how to obtain valid information; (c) the need to be able to differentiate between accurate information and peer reviewed information provided a closer glimpse into how the students processed the definition of IL. Based on their responses, the student participants demonstrated an understanding of the definition of IL. The researcher proposed that, by asking student participants to provide their interpretation of IL and its definition, the student participants began to understand the meaning of IL, forming a connection between IL skills and why it is important to learn these skills for application. Hence, the interview process, reflexively, appears to have led participants to have a greater appreciation for the theoretical and practical structure informing IL. The researcher further asserts that students’ perception of this connection may be paramount in nursing students redefining IL terminology in their own words and subsequently creating the linkage between IL acquisition and application.

The majority of the faculty participants echoed the importance of students learning how to effective use IL skills, indicating a correlation between students obtaining these skills as they prepare to work in clinical and/or hospital settings. One faculty participant remarked on the importance of students learning how to use IL skills as these skills are critical in the decision making process under pressure. A second faculty participant stated IL skills are needed in order to build knowledge. The researcher posits that the faculty participants demonstrated a reflective stance of the correlation between IL skills and students’ comprehension of the nursing literature.

**Theories related to information literacy instruction.** Another finding in this research study is related to theories on information literacy instruction. The research reviewed in Chapter
reported that there are several theories that are associated in information literacy skills (ACRL, 2018; Bruce, 2006; Calhoun, 2012; Elmborg, 2006). The literature has reiterated the need to further understand how nursing students acquire and apply information literacy skills. Therefore, the researcher examined the use of information literacy through the critical lens of Kolb’s ELT. By using Kolb’s ELT, the researcher sought to understand the learning styles of the student participants. At least half of the student participants indicated that they identified with having two at least two learning styles and that it is often the subject matter which can determine the best method of learning. The importance of this finding suggests librarians must take student learning styles into consideration when planning library workshops and library instruction. The learning style of students should be first and foremost considered to ensure that pedagogy appropriately matches the students’ learning process. By using Kolb’s ELT as a critical lens, the researcher was able to fully document the four stages of development as student participants described their acquisition and application of IL skills. The researcher posits that Kolb’s ELT provides a critical analysis of how nursing students develop IL skills. The researcher further noted that IL workshops must not be a one-time session and that librarians must identify other methods of creating a greater adoption of IL skills. Hence the researcher suggested this approach, given that several student participants commented in the study on the use of tutorials and online instructions to promote the adoption of IL skills. Calhoun (2012) reported on the effectiveness of using multi-media to increasing nursing students’ adoption of IL skills; however, the researcher asserts that multi-media must be combined with additional face to face instruction which should include demonstrations. The researcher posits that Kolb’s ELT has provided significant insight into how to structure information literacy workshops for future evaluation and research.
Implications of information literacy on the nursing profession. The third finding is related to the implications of information literacy skills on the nursing profession. The student respondents demonstrated a clear understanding of the importance of information literacy skills in clinical settings and patient care. The current literature postulated that nursing students and newly graduate nursing students lack IL skills in clinical and hospital settings (Gilmour 2016, Gilmour et al 2012, & Bond 2010). The researcher posits that examining nursing students’ experience through qualitative measures provided additional insight as opposed to using a more distant survey instrument. The researcher is uncertain if the rich content that was derived could be collected and analyzed using a survey instrument. The researcher further postulated that another integral part of this research study was hearing the voices of the faculty participants. The faculty participants were implicit with the need of nursing students to learn IL skills. One faculty member asserted that, with every research assignment, she reminded students to go the library and seek assistance. The faculty participant demonstrated her resolve related to IL skills by requesting IL workshops every semester during class period and, in some cases, having the librarian return for a second IL session. The researcher randomly reviewed IL workshop evaluations to further examine nursing students’ experience. The evaluations consistently rated the workshops in the higher percentile and, over time, the librarian revised the evaluation instrument in order to generate additional feedback. After a review of evaluations, student comments were included in subsequent library workshops. In addition, the faculty member further supported the library workshop by insisting that student use APA formatting guidelines and Endnote. With these interactions, the researcher observed students becoming more confident in the use of IL skills.
Another important finding supported by the literature is that information literacy skills involved life-long learning (Davis, Taylor, & Reyes, 2014). Several of the student participants described how they were not familiar with how to acquire and apply IL skills prior to attending library workshops, library classes, and/or seeking assistance from the librarian in the library. The majority of the student participants reported that, once they attended a library workshop or class, they were more inclined to attend additional group or individual IL sessions, encouraging them to seek ongoing professional training in the area. Participants reported telling other classmates about the library workshops and how they could request an individual IL session if they were not comfortable being taught in a group. This finding suggested that students often need more than one library workshop to learn the concepts associated with IL skills; this finding is supported by research conducted by Wahoush and Banfield (2014). Several research studies conducted by (Gilmour 2016, Gilmour et al, 2012) also reported that nursing students and recent graduates had limited ability in seeking reliable health information for patient care. The researcher hypothesized the importance of IL skills in the field of nursing would continue to increase and that more collaboration between the nursing faculty and librarians would become essential.

**Recommendations for Practice**

The IOM Report (2011), the *Future of Nursing*, set in motion changes that have impacted the field of nursing education. The report noted that the growing complexity of care requires that nurses be able to use advanced technology and to analyze and synthesize information in order to make critical decisions, and posits that a more educated workforce would be better equipped to meet these demands.

Since the IOM report (2011), a newer report, *Assessing Progress on the Institute of Medicine Report, The Future of Nursing* (Zangaro, 2015), suggested that there still is work to be
accomplished to prepare nurses for the continued changes in health care; it emphasizes the advancement of technology and nurses’ ability to scrutinize and synthesize (of Sciences, Zangaro, 2015).

This segment of the chapter provides recommendations that can facilitate the acquisition and application of information literacy for nursing students. The literature and the researcher have found evidence that suggests that nursing students need a more thorough way of discovering, demonstrating, and using IL skills. The recommendations are centered around the notion that information skills are foundational skills that are required in all decision-making processes, and acquiring them is essential as part of the education of the next generation of nurses; better mechanisms to support nursing in adopting and honing these skills are needed.

The recommendations include: (a) strategies to align information literacy skills and learning styles; b) the adoption of case-base instruction; and (c) the integration of information literacy into the nursing curriculum.

**Information literacy skills and learning styles.** One of the important findings from this study is an association between the acquisition of information literacy skills and students’ learning styles. By using Kolb’s ELT as a critical lens, the researcher obtained significant insight into how students acquire and use information literacy skills. The researcher asserts that, when creating IL skills, the learning styles of students must be considered. For example, there should adequate time to allow the students to not only observe the demonstration and participate in the activity, but also student time for reflective observation, allowing students to indicate how they may use the information gained. Previous researchers have also used Kolb’s ELT to further
understand how students experience the learning process. (Ha & Versihagen, 2015; Saunders, 2012; Woods, 2012).

The researcher firmly supports the notion that a one-hour workshop or IL session is not sufficient. Therefore, additional strategies must be employed and emphasized to students at the time of the initial IL session. These strategies may include: adding a second IL session, having a prepared scheduled of forthcoming IL workshops, or providing a specific time that the librarian is available online, enabling virtual support for students having difficulty. The researcher noted that the level of confidence in using IL skills seem to improve with additional IL sessions. Based on the researcher’s observations the student participants understood the importance of IL skills, providing concrete examples of how gaining these skills have improved their knowledge base. The researcher further postulates that it is essential to link theory to practice, and that, while students are learning the theories related to nursing, they need to have the opportunity to obtain a better understanding of how to apply theory to practice, by using IL skills to examine the research literature in support of theory to practice.

**Case-based instruction.** The researcher endorses the use of case-base instruction in IL sessions. One of the methods that can be employed case-base instruction is the use of evidence-based practice strategies. The current research supported the assertion that evidence-base practice is essential in the profession of nursing (Courey, et al, 2006; Jacobs, Rosefeld, & Haber, 2003; Williamson et, al, 2011). The researcher posits that library workshops must continue to align with research assignments. The researcher noted that at least two of the student participants mentioned the idea of increased case studies in the practice of nursing. Hence, the researcher postulates that the combining of information literacy and case-based studies and/instruction has the potential of creating a more thorough adoption of information literacy skills for nursing
students. The researcher noted that EBP strategies are often used in teaching information literacy skills to medical students.

In addition, the researcher reported that, in the RN to BSN program, EBP is introduced to this segment of students. The current literature asserted that EBP strategies has been used in teaching RN to BSN students (McCulley & Jones, 2014). McCulley and Jones (2014) suggested that understanding EBP is an essential skill expected of nurses as their role responsibilities increase and as technology is enhanced in hospital and clinical settings. Hence, the researcher posits that including the case-based instruction has the potential to enrich a variety of components of library instruction using literacy skills; it provides another highly effective mechanism for the acquisition of these skills.

The researcher found the comments from faculty participants that further documented how, specifically hospitals, have expectations that newly hired nurses be familiar with EBP and possess the knowledge of how to acquire and apply information literacy skills. Hence, the researcher recommends the widespread adoption of case-based instruction to bolster the quality and effectiveness of library instruction for nursing students. Indeed, in this context, further collaboration with nurse educators is essential.

**Integration of information literacy in the nursing curriculum.** The researcher recommends that information literacy be taught throughout the nursing curriculum. This recommendation is based on the current research, the core competencies of WSCUC, and the research findings from this study. The current literature reported on methods used to incorporate information literacy skills in the curriculum (Janke, Pesut, & Erbacker, 2012; Stombaugh, et al 2013). The researcher reported on the insights gained from the student and faculty participants related to the adoption of information literacy in the
curriculum. Both participant groups suggested that having more information literacy sessions is essential and beneficial to student gaining these skills. The faculty participants discussed strategies for adoption of information literacy skills, and several demonstrated that they were already participating in this type of adoption.

Additionally, the researcher has emphasized the use of the accreditation commission’s adoption of information literacy skills as core competencies which enabled the creation of the current information literacy course for the RN to BSN program. Since this is the undergraduate program accreditation standards must be employed from theWSCUC. The researcher recommends further collaboration with nurse educators to discuss how information literacy skills can be integrated in the master’s-level curriculum. This recommendation is supported by current research in the literature that has examined the adoption of information literacy in graduate nursing educational programs (Robertson, et al, 2015; Turnbull, Royal, & Purnell, 2011). The researcher further noted that several faculty participants commented on the information literacy course taught in the RN to BSN program as a foundational course for nursing students, which supports scaffolding to enable students to align their information literacy skills.

The researcher suggests that the findings from this research study can be useful beyond the study site, as many nursing education programs are wrestling with similar concerns as they relate to nursing students acquiring and using information literacy skills. The researcher endorses the collaboration of nursing educators and librarians to create opportunities for partnership in tackling the issue of the lack of information literacy skills of nursing students. The current research literature supports collaboration and partnership in pedagogy between nurse educators and librarians. (Lindstrom & Shonrock, 2006; Beck, Blake-Campbell, & McKay, 2012). Surprisingly, the researcher found that nurse educator/librarian partnerships were being
employed at the research site. Thus, she gained insight into the ways in which this collaboration was considered effective in teaching information literacy skills; these insights came both from student participants who had taken the IL course and also from faculty participants.

**Limitations**

The researcher acknowledges that there were limitations to this study. Select limitations included: (a) single case study; (b) small sample size; (c) purposive sample; and (d) researcher bias. The single case study that was employed consisted of the collection of data and analysis from a small university. While the results of this study are similar in nature to the current literature, the researcher suggests further comparison research may be warranted.

The total number of participants in this study were 12: nine were student participants and three were faculty participants. While the participants consisted of a diverse group, the researcher suggests that a larger sample size is needed for further research. For example, only two males were recruited for the study, and, because of the university’s IRB restriction for the protection of confidentiality, the researcher was careful to not disclose any characteristics that may have identified participants. In addition, the research participants were a purposive sample of current student and faculty participants. The researcher posits that perhaps further diversifying the sample through the recruitment of recent graduates and former nurse educational faculty would provide additional insights.

Finally, the researcher is a librarian who has worked in the field of librarianship for close to 30 years. The researcher’s positionality may lend itself to personal bias; however, the researcher made every attempt to be aware of and remove her personal bias by using the reflexive journaling technique. Creswell (2013) suggested that an important element in the design of qualitative research design is the keen interest of the researcher.
Recommendations for Future Research

The overall objective of this qualitative research study was to provide exploratory insight into how nursing students acquire and apply information literacy skills through library workshops. Based on the findings from this study, the researcher suggests two major directions for future research: (a) a multi-case study to include at least one additional School of Nursing and its library collaborations; and/or (b) a comparative case study of current students in multi-level nursing program and recent graduates from multi-level nursing program. The researcher asserts that by implementing a multi-case study of student participants and of faculty, greater significance in the findings may be obtained. This would support broader generalization regarding the adoption of information literacy skills. In addition, the researcher suggests using the in-depth interview process used in qualitative research study which allows for clearer comprehensive of how students acquire and apply information literacy skills. And finally, the researcher posits that librarians should continue to implement enhanced technologies that will be used by future nurses and in research studies.

Conclusion

This research study focused on an exploration of the experiences of nursing students’ acquisition and use of information literacy skills in accelerated nursing educational program. The researcher conducted a qualitative research study to understand how nursing students obtain these skills through library workshops. The researcher postulated that this study could provide insight into how students acquire IL skills, because of the holistic approach used. The participants in this study related their experiences regarding how they obtained and used IL skills. In addition, Kolb’s ELT was used as a critical lens to further understand the learning process that takes place with nursing students as they acquire IL skills.
Based on the current literature on nursing students and information literacy skills, a gap exists in the understanding of how students acquire IL skills. Hence the researcher sought to explore this phenomenon and contribute to filling that gap. The results of this study have the potential to significantly append the current literature. The findings from this study were similar to findings from previous studies; however, the findings also demonstrated that nursing students deemed that IL skills were extremely important as they learned how to navigate the abundance of health information available to them. As the literature has posited and the faculty participants stated, today’s nurses are embarking on nursing careers with a greater focus on the integration of technology to save lives. Hence, newly graduated nurses must be prepared to immerse themselves in the use of advanced technologies. The researcher suggests that the acquisition of nursing students gaining IL skills is a foundational step in the retrieval of health information and in saving lives.
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