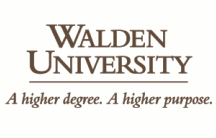

2018

Nursing Students Experiences of Career and Technical Education Health Science Programs

Precious Simmons
Walden University

Walden University

College of Health Sciences

This is to certify that the doctoral dissertation by

Precious Simmons

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Donna Bailey, Committee Chairperson, Nursing Faculty
Dr. Stoerm Anderson, Committee Member, Nursing Faculty
Dr. Mary Martin, University Reviewer, Nursing Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2018

Abstract

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by

Precious Simmons

MSN, Chamberlain College of Nursing, 2015

BSN, North Carolina Agricultural and Technical State University, 2010

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Nursing

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Abstract

The state of education in the United States faces many challenges in preparing students for the workforce and postsecondary education. These challenges are heightened at the postsecondary level for schools of nursing. The current shortage of nurses will continue to rise if recruitment and retention strategies are not employed. The purpose of this qualitative hermeneutic phenomenological study was to understand and explore the experiences of former health science program students enrolled in nursing school. Research questions focused on the experience of career and technical education (CTE), motives and perceived benefits of CTE, nursing experience, career choice, and academic interests. The theoretical framework for this study was based on Lent, Brown, and Hackett's social cognitive career theory. Data were collected through semistructured face-to-face interviews with 6 associate and bachelor degree nursing students in South Carolina that completed CTE health science courses in high school. Data were manually coded and analyzed. The findings of the study indicated that CTE health science program experiences were positive and provided early college preparation and career opportunities. Furthermore, findings indicated that collaborative efforts between secondary, postsecondary, and nursing stakeholders are needed. This study has implications for positive social change by providing information to stakeholders in education about CTE, bridge programs, and secondary-postsecondary partnerships that may lead to a solution for the shortage of nurses.

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Dedication

I would like to dedicate this dissertation to my little sister, Portia Simmons, my rock, who always encourages me to aspire to be great. Whenever I need a listening ear to vent, cry, or celebrate, you are always available. I am forever grateful for your constant support and love and most importantly our bond.

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I want to first acknowledge my Lord and Savior who without him none of this would be possible. His faithful love endures forever. I want to express my sincerest appreciation to the individuals who helped make this dissertation possible: Dr. Donna Bailey, chair, committee member Dr. Eric (Stoerm) Anderson, and URR, Dr. Mary Martin. I thank you for your valuable guidance and feedback.

Special thanks to my parents, Leroy and JoAnn Simmons, for believing in my goals of being the first doctor. To Eric, my love, thank you for your never-ending love and support. To my immediate family and friends thank you for encouraging and pushing me every step of the way. I also want to thank everyone who took the time to share my recruitment post, you all played a very special role in the completion of my dissertation. To my unofficial mentor, Twanda Addison, thank you for being the inspiration for me to pursue my doctoral degree.

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Chapter 1: Introduction to the Study

Introduction

The significant changes occurring in the aging population and evolving healthcare call for a comprehensive review of the current nursing shortage, nursing education, and postsecondary education preparation. Stakeholders must embrace new strategies to prepare qualified future nurse clinicians. The Institute of Medicine (IOM) (2016) emphasized the need to improve outcomes for new graduate nurses to decrease turnover and strengthen academic pathways for nurses toward a baccalaureate degree.

Strengthening academic pathways and improving attrition could be accomplished through sufficient programs at the secondary level to better prepare our new generation of students for higher education and practice. Career and Technical Education (CTE) programs and career clusters proclaim to be an essential element in preparing the workforce to meet the needs of industry and contributing to maintaining a strong economy (Boettcher, 2017). Specifically, the health science cluster could contribute to meeting the needs for nurses in the health care industry.

The health science cluster objectives describe what students will learn and demonstrate to become competent to pursue the full range of career and postsecondary education opportunities in the health science disciplines (Advance CTE, 2008). The objectives align with the implication for strengthening academic pathways. According to Advance CTE (2008), students will "recognize and act upon requirements for career advancement to plan for continuing education and training" (p. 13).

Presently, some researchers have explored the phenomenon of CTE. However, there are none that specify the health science cluster. In this study, I explored the experiences of CTE health science courses from nursing students' perspective. This study has the potential to help bridge the gap between secondary and post-secondary education while fulfilling the demand for more nurses.

The major sections in this chapter are the background, problem statement, purpose, theoretical framework, the definition of terms, research questions, nature of the study, assumptions, limitations, delimitations, and the significance of the study.

Background of the Problem

According to Littlejohn, Campbell, Collins-McNeil, & Khayile (2012), "a nursing shortage is defined and measured in relation to a country's historical staffing levels, resources, and estimates of demand for healthcare services" (p. 24). The Bureau of Labor Statistics (2015) estimated that more than 1 million of nurses will be needed in the United States by 2020. Various factors play a role in this growing need for nurses. The aging population is increasing the demand for more nurses, who play a critical role in the healthcare system (Hussain, Rivers, Glover, & Fottler, 2012). Hussain, Rivers, Glover, & Fottler (2012) found that 12% of the nursing population is under 30 years of age, 33% is over 50 years of age, with a 41% decline in the profession (Hussain, Rivers, Glover, & Fottler, 2012). This decline demonstrates the need for more nurses to be recruited. The estimated age group in nurses signifies the challenges facing retention of nurses. Furthermore, the decline in the number of women choosing traditional female-dominated occupations, such a nursing, contribute to the growing need for nurses (Shelton, 2012).

Also, there is a decline in nursing school enrollment due to the lack of sustainable nurse faculty. Low compensation for nurses is another factor that is seen across the globe. The decline in nursing salaries has caused workers to seek other opportunities with better pay (MacLean et al., 2014). If younger people do not choose the nursing profession, the workforce will continue to age with the population, thus worsening the shortage.

Statement of the Problem

The state of education in the United States faces many challenges in preparing secondary students for the workforce and postsecondary education. Confronted with these challenges, in 2006, legislators signed into law the Carl D. Perkins Career and Technical Education Improvement Act, a reauthorization of the 1998 Act. The reauthorization of this Act's intentions was to strengthen the economy by focusing on the needs of students to become productive citizens in a global society (DeFeo, 2015; Threeton, 2017). A crucial element of the reauthorization was to enhance the function of guidance counselors and CTE instructors to integrate rigorous academics into CTE curriculum to strengthen both the workforce and transitional preparation from secondary to postsecondary education (Threeton, 2017; Kim, 2014).

Dare (2006) emphasized that CTE programs play a significant role in successful student transition from secondary to postsecondary education. CTE program health science provides a pathway for students interested in a career in nursing. The challenges of preparing students with a concrete foundation in literacy, numeracy, critical thinking, and career development faced at the secondary level, transfer to recruitment and retention issues for postsecondary education, in particular schools of nursing (Rose, 2011;

Symonds, Schwartz, & Ferguson, 2011). Emerging trends suggest there is a gap between educational preparation and real-life practice linked to economic productivity (Tilley, 2008).

At the frontline of healthcare are nurses. Despite the growing need a shortage still exists. Researchers have shown that fewer nurses are entering the workforce (Bureau of Labor Statistics, 2017; American Nurses Association, n.d.). Researchers have also indicated the need for an action plan to lessen the nursing shortage. Encouraging partnerships and programs at the secondary level for early recruitment and foundational preparation to prepare students to become college and career-ready is necessary to address the nursing shortage (Kantrov, 2015; Yates et al., 2003). Former President Obama's high school redesign plan challenged schools to incorporate career and college exploration through programs such as career and technical education (CTE) (U.S. Department of Education, 2013). However, researchers have not examined such programs addressing nursing needs. Therefore, the problem is that, while we know strategies are needed to improve the nursing shortage, we do not know the role of CTE in facilitating and preparing students to transition to nursing school.

Purpose of the Study

The purpose of this study was to understand and explore the experiences of former health science program students enrolled in nursing school. The approach used a phenomenological perspective. Semistructured interviews were used to develop an understanding of the nursing students' experiences with how their health science program

facilitated their transition to nursing school, what were the perceived benefits of the program for transition, and how the program motivated their career choices.

Theoretical Framework

The theoretical framework for this study was Lent, Brown, and Hackett (1994) social cognitive career theory (SCCT). The SCCT expands Bandura's social cognitive theory (SCT) with a focus on the processes through which academic and career interests develop, promote career-relevant choices, and how people attain varying levels of performance and persistence in their educational and career pursuits (Lent & Brown, 1996, p.311). The theory is grounded in three constructs, self-efficacy, outcome expectations, and goals (Gibbons & Shoffner, 2004). This theory helped construct the research questions that contributed to understanding the perspectives of nursing students' experiences with CTE, as well as an understanding of career choices. A literature review of the theory reveals that SCCT has been used as a framework for job performance, middle- school and postsecondary career interests, and identification of why students major in STEM.

Research Questions

The research was guided by the following two main questions:

1. What are the experiences of CTE health science program students who are becoming nurses?
2. What role did the CTE health science program play in fostering their success in nursing school?

Nature of the Study

The nature of this study was a qualitative method. The qualitative hermeneutic phenomenological approach is appropriate because it focuses on finding meaning in specific experiences and not outcomes. Constructivist epistemology and ontology proponents argue that knowledge is subjective and individuals construct this knowledge in their own way through their experiences, etc. (Creswell, 2009). Given this notion, the study sought to understand the experiences of nursing students formerly enrolled in a CTE health science course. Utilizing an open-ended approach in a naturalistic setting will foster a descriptive account of their experiences (Rubin & Rubin, 2012).

Definition of Terms

The following terms were used throughout this study.

Associate of science nursing student: A person enrolled in a nursing associate's degree program; awarded on a satisfactory completion of a 2-year course of study (Mosby, 2009).

Bachelor of science nursing student: A person commitment to a four-year nursing program through an accredited university (Colduvell, 2016).

Career and technical education (CTE): Organized educational activities that offer a sequence of courses that provides individuals with coherent and rigorous content aligned with academic standards and technical knowledge (Threeton, 2017).

Certified nursing assistant (CNA): Works under the supervision of a registered nurse, helping patients with activities of daily living and other healthcare needs (Nurse.org, n.d.).

Health science: A career cluster of CTE that represents the skills and knowledge necessary to pursue a full-range of career opportunities in therapeutic services, support services, healthy information, diagnostic services, and biotechnology research and development (ACTE, n.d.).

Nursing shortage: A shortage of nurses that are needed to provide quality services or not enough nurses available to fill open positions (Littlejohn et al., 2012).

Registered nurse: A person who has earned a license to practice in their state administering hands-on patient care in various settings (Nurse.org, n.d.)

Turnover: The movement of employees from being hired to leaving the current position voluntarily and not staying with the organization (Cox, Willis, & Coustasse, 2014).

Assumptions

I assumed that nursing students experience with CTE health science programs were all positive. It was assumed that CTE health science programs provided a beneficial experience that helped students transition to become successful nursing students and nurses. Additionally, it was assumed that CTE health science programs motivated student's career choice in becoming a nurse.

Scope and Delimitations

I explored the experience of CTE health science from nursing students that were completing an associates or bachelor's degree. There are several licensed practical nurse (LPN) programs in South Carolina. However, the focus of the nursing shortage has been on registered nurses. Therefore, nursing students pursuing a degree that will lead to

licensure as a registered nurse were chosen. The results of this study could provide the foundation for additional work such as quantitative research to further explore the variables, CTE and nursing.

Limitations

There are some limitations related to this study. First, high school students may take only one course in a health science cluster. The perspectives of CTE on their nursing school motivation and career choice may differ from students who have taken more than one course. Another limitation is the specific, narrow criteria for the target population. This specific criteria will not allow for a broad sample size. In this study, I was the primary tool, and researcher bias could occur. To eliminate bias from the study, I incorporated reflective journaling. Reflective journaling allowed awareness of personal bias and values so that it did not influence my interpretation of the data. Full details of the steps to prevent researcher bias are described in Chapter 3.

Significance of Study

This research has the potential to address the issues with nursing education recruitment and retention; thus, satisfying the nursing supply and demand gap. Snavely (2016) reported that the increase in demand for nurses is expected to rise significantly resulting in a shortage seen unlike before shortages. One million new job openings for nurses is projected by the 2022 (Snavely, 2016). This estimated shortage is, in part, due to the health of the aging population and the decline in women choosing traditional female-dominated careers such as teaching and nursing (Shelton, 2012). Career and Technical Education (CTE) and its program of study, health science, are unique strategies

to support recruitment, retention, and supply/demand in nursing. A plethora of the literature on CTE focuses on science, technology, engineering, and mathematics (STEM) programs.

This study provided insight into an underresearched area of nursing. The understanding obtained from perspectives of the health science students can support further development of programs of study. Additionally, findings may assist future high school students in their journey to nursing school. Insights from this study have the potential to facilitate partnerships and bridge programs with local colleges; thus, providing opportunities for nursing education recruitment and retention. Encouraging partnerships and providing opportunities for early recruitment will promote social change for the nursing profession, health organizations, individuals, and our communities. Early recruitment will positively affect the discipline of nursing by reducing the shortage. This reduction in turns contributes quality care to individuals and the community. Healthcare organizations will have the necessary staff to provide safe working environments for the deliverance of nursing care. Ultimately, the desired goal is to reduce the nursing shortage by fostering social change and transforming communities to use these human resources to improve the health of their citizens.

Researcher Experience

To explore the experiences of CTE from nursing students, it is first essential for readers to understand the position of the researcher. The role of the researcher in qualitative research is unique. The researcher's position can be viewed as an insider or outsider. As a current Registered Nurse and nursing instructor, the issues with nursing

and nursing education struggling to meet the demands of the 21st century have been witnessed first-hand by the researcher. The researcher has experienced direct knowledge of the obstacles to recruiting and retention of nursing students.

The study sought nursing students that enrolled in CTE health science courses during their secondary years. The researcher has over three years of knowledge in teaching CTE health science courses at the secondary level. Historically, the researcher was also a former student in CTE health science courses. The researcher experience in CTE health science courses and nursing school can potentially connect with participants. These inside experiences helped shape and mold the premise of this study.

Summary

The past and current literature highlight the necessity for methods to combat nursing recruitment and retention difficulties, and the nursing shortage. Therefore, I explored the experiences of nursing students' perspectives regarding CTE health science courses. The future of nursing depends on a viable workforce. It is imperative that effective strategies are employed and maintained to meet the needs of our growing society.

The second chapter of this study is a review of the literature, past, and current, related to the problem. The literature review encompasses the theoretical foundation, historical perspectives of CTE, the nursing shortage, issues with nursing education and practice, and issues with secondary education preparation. Chapter 3 examined the research methodology employed in the study to understand the perspectives of CTE from

nursing students. Finally, Chapter 4 and Chapter 5 discussed the results and the interpretation of the results.

Chapter 2: Literature Review

Introduction

The state of education in the United States faces many challenges in preparing students for the workforce and postsecondary education. Confronted with these challenges, in 2006, legislators signed into law the Carl D. Perkins Career and Technical Education Improvement Act, a reauthorization of the 1998 Act. The reauthorization of this Act's intentions was to strengthen the economy by focusing on the needs of students to become productive citizens in a global society (DeFeo, 2015; Threeton, 2017). The challenges of preparing students with a concrete foundation in literacy, numeracy, critical thinking, and career development faced at the secondary level, transfer to recruitment and retention issues for postsecondary education, in particular schools of nursing (Rose, 201; Symonds, Schwartz, & Ferguson, 2011). Emerging trends suggest there is a gap between educational preparation and real-life practice linked to economic productivity (Tilley, 2008).

The growing population of the baby boomers who are presenting with more chronic conditions has impacted the growing need for more qualified nurses. A lack of available resources and faculty for schools of nursing, insufficient staffing, and high new graduate nurse turnover impact this shortage. The research indicates the demand for an action plan and strategies to supply the nursing shortage. Nursing schools will need to encourage partnerships at the secondary level in an effort to strengthen academic pathways.

The purpose of this study was to understand and explore the experiences of former health science program students enrolled in nursing school to understand nursing students' experiences with how their health science program facilitated their transition to nursing school, what were the perceived benefits of the program for transition, and how the program motivated their career choices.

The focal point of this chapter is the literature on the historical perspectives of CTE to include the distinct changes made over the years. The nursing shortage, nursing education and practice issues, and secondary preparation issues were also reviewed. Additionally, I reviewed the literature on the chosen theoretical foundation.

Literature Search Strategy

I conducted this literature review using peer-reviewed studies related to the topic within a five-year timeframe. To provide a solid foundation for the theoretical foundation and CTE, it was necessary to include articles greater than five years. Various databases were utilized including CINAHL Plus, Medline, Google Scholar, Walden University, and ProQuest. The literature search strategy key terms and phrases used were: *career and technical education, vocational education, nursing shortage, nursing education challenges, k-12 challenges, college preparation, and social cognitive career theory.*

Theoretical Foundation

Overview of Social Cognitive Career Theory

Lent et al.'s (1994) social cognitive career theory (SCCT) is a framework that was derived and formulated from Bandura's social cognitive theory. Lent and Brown (1996) posited that their framework was an attempt to build conceptual linkages to existing

career theories. The SCCT framework is a middle-range theory that utilizes multiple constructs to illustrate how individuals make career decisions. The premise of the framework is that there is an interplay amongst social cognitive variables and the aspects of the person that influence career development (Lent & Brown, 1996).

The SCCT framework focuses on the processes through which "academic and career interests develop, interests, in concert with other variables, promote career-relevant choices, and people attain varying levels of performance and persistence in their educational and career pursuits" (Lent & Brown, 1996, p. 311). The framework highlights three variables through which individuals help to regulate their own career behavior: self-efficacy beliefs, outcome expectations, and personal goals (Lent & Brown, 1996). Bandura (1986) argued that self-efficacy beliefs are not concerned with the skills one has but with the judgments that one believes they can accomplish anything with the skills they possess (as cited by Ochs & Roessler, 2004). Whereas, Lent and Brown (1996) proposed that outcome expectations refer to beliefs about the consequences or the outcomes of performing particular behaviors. Lent and Brown (1996) defined personal goals as one's intention to engage in a certain activity or to produce a particular outcome. The linked variables were adapted from Bandura's (1986) triadic reciprocal model of causality which postulates that personal attributes, external environmental factors, and overt behavior each operate as interactive sets of variables that mutually influence one another (Lent & Brown, 1996). The SCCT framework informed this study. Figure 1 shows the key constructs and processes of the SCCT framework.

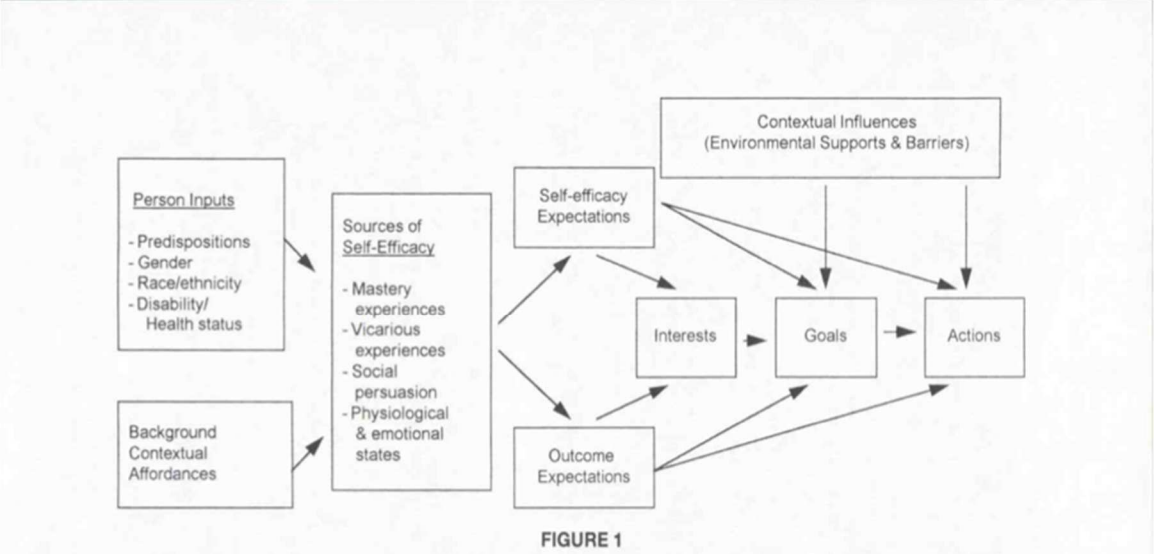

Figure 1. A simplified version of the SCCT framework adapted from Lent et al. (1994). Permission granted to use by owner. (Appendix A).

SCCT Research

The SCCT framework has been used in various aspects of research. Dickinson, Abrams, and Tokar (2017) study purpose was to extend the literature on SCCT by examining its applicability to African Americans with constructs defined in Hollands realistic, investigative, artistic, social, enterprising, and conventional (RIASEC) themes. The findings partially supported the hypothesis that verbal persuasion would be the strongest positive predictor of self-efficacy and outcome expectations. However, overall the SCCT framework determined to be appropriate to understand African American career development.

Ali, Brown, and Loh (2015) conducted two exploratory quasi-experimental studies to evaluate Project HOPE, a SCCT-guided career education program, which was designed to help students in rural middle schools explore health science opportunities. Ali

et al. (2015) posited that SCCT is appropriate for application with diverse populations and can be used to explain sociocognitive mechanisms. The SCCT framework was used to evaluate self-efficacy beliefs, interests, and vocational skills in math/science gained from Project HOPE. Self-efficacy is a major variable of the SCCT framework that is hypothesized to influence career development.

Zhao-Ping and Zhang-Ran (2012) supported the use of the SCCT framework with their study to predict the academic interests and goals of Chinese middle vocational-technical school students. To test the SCCT framework, Zhao-Ping and Zhang-Ran measured the cognitive (self-efficacy and outcome expectation), environmental (social supports and barriers), and outcome (academic interest and goal) variables. The variables of the SCCT framework similarly informed this study to understand how CTE health science courses (environmental) motivated career choice (academic interest and goal) and transition to nursing school for nursing students.

Relation to CTE

CTE has become a popular strategy at the forefront of secondary and postsecondary education to succeed in fast-growing, high-paid jobs in high-growth industries around the country (ACTE, n.d.). CTE also focuses on preparing the youth for postsecondary education. The SCCT framework has been used in numerous studies about career selection and career choices among college students and secondary students (Bond, 2017). Ali and Menke (2014) corroborated Lent and Brown (1996) position that environmental variables influence career development. Children environments expose them to various activities such as sports and music that aid in career development. The

CTE program is an environment variable that could potentially influence individuals to choose a career in nursing. Lent and Brown (1996) presumed that with "continued activity practice and feedback, children and adolescents refine their skills, develop personal performance standards, form a sense of their efficacy for particular tasks, and acquire certain expectations about the outcomes of their performance" (p. 313).

Relation to Nursing

It is assumed by Lent et al. (1994) that occupational choice can be governed by supportive environmental conditions. Under supportive environmental conditions, Lent and Brown (1996) suggested that people's career interests tend to orient them toward a particular field. The SCCT framework concepts and variables align with how young people tend to choose a career. McGregor (2007) discussed how career aspirations are chosen by what individuals like (career interests) and what they think they can do well (self-efficacy). Prior studies have examined that individuals' choice in nursing transpired from prior learning experiences and environmental influences (Beck, 2000; McGregor, 2007). Utilizing the SCCT framework variables can help explore the perspectives of nursing students experience with CTE to aid in recruitment and retention efforts.

Historical Perspective of Career and Technical Education

Career and Technical Education (CTE), formerly known as vocational education, is an evolution of the traditional vocational-technical education system. The history of vocational-technical education has roots steaming from 1917. Vocational-technical education was posited to prepare individuals for the education and training they need to for an occupation or career requiring less than a baccalaureate degree (Hayward &

Benson, 1993). A review of the progress and revitalization of CTE will be discussed. Additionally, previous studies related to CTE are discussed.

Smith-Hughes Act of 1917

Federal funding and aid were allocated for public secondary schools with the Smith-Hughes Act in 1917 (Hayward & Benson, 1993; Threeton, 2017). Many vocational-technical programs were incorporated into traditional secondary schools. However, the act did not advocate for a comprehensive approach. The act cultivated an isolation between the vocational-technical education and the high school curriculum (Hayward & Benson, 1993). Particular provisions in the act contributed to this isolation such as the requirement to establish a Board of Vocational Education in states. Implementing a Board of Vocational Education separated vocational education from the State Board of Education. Hayward and Benson (1993) argued that this created the notion that vocational education was separate from traditional academic education.

Throughout the years, the Smith-Hughes Act experienced growth with raised federal allocations under the George-Barden Act of 1946 and the National Defense Education Act of 1958. Hayward and Benson (1993) stated:

> In 1917, just before implementation of Smith-Hughes, there were 200,000 vocational students in the United States and something less than $3 million dollars was spent annually on their training. Forty years later, enrollment had increased to 3.4 million students and expenditures stood at $176 million (p. 10).

Vocational Education Act of 1963

The continued support of vocational-technical education is noted with the Vocational Education Act of 1963. This legislation was intended to provide access to everyone by meeting the needs of youth in economically depressed communities (Heyward & Benson, 1993; Threeton, 2017). Amendments of the Vocational Education Act occurred in 1968 and 1976. Under these new amendments, federal funding could be used for:

1. High school and postsecondary students
2. Students that had completed or left high school
3. Individuals in the labor market in need of retraining
4. Individuals with academic, socioeconomic, or other obstacles
5. Individuals that were considered mentally retarded, deaf, or otherwise disabled
6. Construction of area vocational school's facilities
7. Vocational guidance
8. Training and ancillary services such as program evaluations and teacher education (Threeton, 2017, p. 67-68).

Carl D. Perkins Vocational Education Act of 1984

Named after a former chair of the House subcommittee on vocational education, the Carl D. Perkins Vocational Education Act of 1984 was established. This act would go through various changes and amendments throughout the years. There were two main goals of this act: improve vocational education to meet the needs of the workforce and to

ensure that inadequately served individuals are assured access to quality vocational programs (Hayward & Benson, 1993). In 1990, a reenactment was established with Perkins II. Perkins II intended to continue workforce preparation with an integration of academics and vocational education (Threeton, 2017). Another major objective of Perkins II was an emphasis on linking secondary to postsecondary, which became known as Tech Prep.

Carl D. Perkins CTE Improvement Act of 2006

President Bush signed into law, the Carl D. Perkins CTE Improvement Act of 2006, also known as Perkins IV. Authorization for this act over six years would allocate approximately 1.3 billion dollars of federal money to CTE programs in the US. From this authorization, greater accountability and emphasis was placed on academic integration into CTE courses. In addition to this accountability, a name change, from the frowned upon vocational education, occurred with a switch to career and technical education.

CTE Research

DeFeo (2015) conducted a study to understand why students take CTE classes, what their career aspirations were, if they knew about career opportunities in CTE fields, and if their career aspirations aligned with their CTE coursework. Data were collected from 1,134 students encompassing both comprehensive high schools and technical high school. DeFeo utilized a qualitative method with structured questions and analyzed the data with Super's theory of vocational choice. The findings of this study indicated students enrolled in CTE courses with career objectives in mind. However, there was incongruence between the career and steps needed to reach it. The data suggested that the

students did not understand how their coursework aligned with their intended career. DeFeo concluded that further research is needed to explore how students engage in career exploration and how these influences are applied to the real world.

Mobley, Sharp, Hammond, Withington, and Stipanovic (2017) studied whether career and technical education and non-CTE students differed in interactions with guidance counselors, level of participation in career planning and development, and beliefs about the relevance of having a career major to their educational and career goals. Mobley et al. employed a longitudinal quasi-experimental designed to compare CTE and non-CTE students. A survey was developed and implemented with 1,077 high school students in South Carolina. The findings indicated that there are significant differences amongst CTE and non-CTE students in regard to the level of involvement in career planning and career-related activities. CTE students indicated a higher level of involvement in career readiness. This research informed this study as it focuses on CTE and draws on the SCCT framework to better understand the phenomenon.

Prior research demonstrated how CTE increased college and career readiness. Contrarily, Fletcher, Gordon, Asunda, and Zirkle (2015) conducted a descriptive study to examine the status of CTE programs that indicated a decline of CTE programs. However, this study did not implicate K-12 schools, but undergraduate and graduate CTE programs. Based on Fletcher et al. examination, it is suggested to assemble with K-12 teachers, administrators, and faculty to strategize how to improve CTE in higher education.

Nursing Shortage

Nurses play a critical role in the delivery of patient care and comprise the greatest component of hospital staff (Siela, Twibell, & Keller, 2008). It is estimated that there are 2.8 million nurses employed in the United States with the highest employment in the general medical and surgical hospital sector (Bureau of Labor Statistics, 2017). Despite this large number of employed nurses, a widespread nursing shortage exists. Today's nursing shortage is very different from the previous nursing shortage. The statement from the Tri-council members of the American Association of Colleges of Nursing (AACN), The American Nurses Association (ANA), The American Organization of Nurse Executives (AONE), and The National League for Nursing (NLN) described the nursing shortage as being evidenced by fewer nurses entering the nursing workforce. In addition to the demand for nurses outgrowing the supply (American Nurses Association, n.d.).

The Bureau of Labor Statistics (2015) reported that the expected need for Registered Nurses (RN) would grow to 3.1 million by 2024 a 16% change. Snavely (2016) and Cox, Willis, and Coustasse (2014) both agree that there are various factors that play a role in the nursing shortage and turnover. The aging workforce, aging population, economy, and nursing school enrollment are attributed to the nursing shortage. Cox et al. (2014) define nursing turnover as "the movement of employees from being hired to leaving the current position voluntarily and not staying with the organization" (p. 56). Cox et al. (2014) asserted that the contributing factors for nursing turnover are job dissatisfaction, insufficient staffing, RN age, and supervisory control. All the nursing turnover causatives mentioned above lead to our growing nursing shortage.

Aging Workforce

Sherman, Chiang-Hanisko, and Koszalinski (2013) explained that the average RN age was 47. Due to economic issues, some postponed retirement leaves more than one-third of RNs between the age of 50 and 64 (Sherman et al., 2013). Cox et al. (2014) posed that the stressors of the job demand and pressures, exhaustion, and chronic pain may increase the retirement of qualified nurses. Of the millions of working nurses, it is projected that one-third will likely retire within the next decade despite the economic downturn (Anderson, 2014).

Aging Population

While the baby boomer's generation are reaching 60 years and older, the ratio of nurses to this population is declining. The changing demographics indicate the need for more working nurses. In addition, healthcare reform, the Affordable Care Act, was projected to provide more individuals access to healthcare (Anderson, 2014). More access to healthcare for this population will require more nurses to provide treatment and services such as dementia care (Cox et al., 2014). As this demographic age, there will be more patients who suffer from chronic conditions and comorbidities who will need sufficient nurses to ensure quality of care is delivered (Anderson, 2014).

Economy

There is a relationship between the nursing shortage and the economy. Roberts (2009) posited that persistent nurse vacancies contribute to higher healthcare cost. It was also argued that these shortages translate to business and other consumers with higher premiums. Nursing turnover and shortage affects local, regional, and national levels.

Hospitals suffer when there is an increase in nurse turnover. The average cost for nurse turnover ranges from $36,000 to $57,000 (Snavely, 2016). This cost per nurse could result in hospitals losing millions of dollars. The amount that nurses are compensated has an indirect role in the economic impact of the nursing shortage. Nurses salaries average $60,700 and lowest at $44,000 (Cox et al., 2014). Low pay has been associated with job dissatisfaction which in turn leads to higher turnover thus adding to the nursing shortage.

Nursing School Enrollment

The enrollment in nursing schools is projected not to meet the demands for nurses in the next decade (Siela et al., 2008). There was a 14.1% increase in baccalaureate nursing programs in 2004 (Siela et al., 2008). However, nursing faculty shortages are inhibiting schools of nursing to accept qualified candidates. It was reported that over 78,000 applicants were denied admission into nursing school in 2013 citing insufficient nursing faculty and budget constraints (Cox et al., 2014; Feldman et al., 2015).

A survey of 741 nursing schools identified over 1,000 nurse faculty vacancies (Bittner & Bechtel, 2017). The root of the nursing faculty shortage is credited to difficulty recruiting faculty that is doctorally prepared, noncompetitive salaries, faculty workload and nearing retirement (Bittner & Bechtel, 2017). Whereas, Siela et al. (2008) indicated that one major factor to the nursing shortage was that clinical and private sector provide higher compensation consequently luring potential educators away from teaching. Contrarily, Rich and Nugent (2010) emphasized that the high cost of obtaining graduate education for academia positions contributes largely to the nursing faculty shortage. Aiken, Cheung, and Olds (2009) noted that schools should consider mentoring

programs to improve faculty success, programs to attract students to faculty positions earlier, and doctoral programs that train faculty more quickly and younger. Siela et al. reported that "in 2004, the average age of all nursing faculty was 46.8 years, the average age of faculty with doctorates is 55.7 years, in addition, only 12% of nursing faculty are younger than 34 years" (p. 19). As the climbing age of nurse faculty increases the likelihood of more faculty members retiring rises. Inevitably, heightening the enrollment issues for schools of nursing.

Job Dissatisfaction

The shortage of nurses has a linkage to job dissatisfaction amongst nurses. In a position, as critical and stressful as nursing, job satisfaction is important for nurses. Previous research has examined the relationship amongst job satisfaction and adequate staffing. Aiken, Clarke, and Sloane (2002) conducted a study using 10,319 nurses working on medical-surgical units and found that the more patients' nurses have, due to inadequate staffing, the higher the dissatisfaction. Parallel to Aiken et al. results, Kalisch and Lee (2014) argued that job dissatisfaction is linked to turnover, quality of care, patient outcomes, and patient satisfaction. Snavely (2016) reported that an estimated 30-50% of new nurses leave the profession or change jobs within nursing within three years of clinical practice. If job dissatisfaction continues, more nurses may leave the profession, worsening the nursing shortage.

Issues with Nursing Education and Practice

The importance of quality education is not only evident in K-12 schools but also for nursing. Rich and Nugent (2010) asserted that although nursing education is currently

at a crossroads, the profession has made significant changes and impact. Nursing education has evolved from the apprenticeship style to research and practice application. The American Association of Colleges of Nursing (AACN) has been committed to creating a qualified workforce. Producing competent nurse clinicians can begin with pertinent preparation at the secondary level. Cook, Gilmer, and Bess (2003) study identified that the preparation of nurses for a diverse society might require a variety of educational experiences.

Yates et al. (2003) described a community partnership, "*Start Out,*" to create educational opportunities for young teenagers interested in nursing. This partnership provided nursing assistant training, mentorship, college application assistance, and scholarships. Twenty-four students in the program passed the certified nursing assistant examination, thus providing them the foundation to continue forward with nursing school. The creation of community partnerships can provide the required assistance to address the nursing shortage. *Start Out* provided similar strategies as CTE health science courses. This section of the literature review will disclose common challenges faced by nursing education and practice that CTE health science courses could alleviate.

Nursing Education

As the healthcare needs of our population shift, nursing education must match this change. Young, Bakewell-Sachs, and Sarna (2017) argued that beyond clinical competencies, nursing education will need to include skills and expertise in leadership, cultural inclusiveness, health disparities, effective communication, collaboration and teamwork, health economics, and use of technology in care, to meet the current demands

of healthcare. Rich and Nugent (2010) suggested that educational redesign must take place encompassing collaborative partnerships between nursing service and education.

Organizations have encouraged nursing schools to provide more preceptorship experiences prior to graduation so that novice nurses can enter the workforce with more clinical skills. However, because of nursing shortages, organizations are understaffed and unable to support the traditional teaching model. A common problem in nursing education addressed by Rich and Nugent is that providing the time and resources to successfully balance students' classroom learning and their development of clinical skills can be difficult to navigate.

To help aid in providing nursing students with the clinical skills needed for practice, simulation has been adopted by many schools of nursing. Simulation-based learning is not a new concept, with the first life-size manikin produced for nursing education in 1911 (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014). Simulation may be used to provide students with comparable clinical experiences to demonstrate procedures, use critical thinking skills, clinical decision making, and team communication in a safe, non-threatening environment (Breymier et al., 2015). Both Hayden et al. (2014) and Norman (2012) asserted that simulation is warranted because of the challenges for finding clinical placements due to shorter hospital stays, limited clinical spots, and facilities not granting students access to electronic health records.

Another common challenge for nursing education is the rapid growth of technology. Bassendoviski and Petrucka (2016) suggested that nurse faculty must reset nursing education by incorporating technology into teaching and learning. New

technological advancements are a major factor that influences the changes in healthcare. Risling (2017) also encouraged nursing education to offer ongoing educational opportunities to enhance informatics skills for nursing students. The skills that Young et al. (2017) discussed are needed for nursing school can be achieved through CTE health science which also focuses on teamwork, effective communication skills, etc.

Nursing Practice

The theory-practice gap has been arguably cited as the most common issue facing nursing practice. Rolfe (1993) described the theory-practice gap as "the gap is between what research and theory says should ideally be happening, and what actually happens in the imperfect clinical area" (p. 173). Widespread literature has been conducted on the theory-practice gap. However, many authors such as Rolfe (1993) and Gallagher (2004) agree that the term is not fully understood. A qualitative study conducted by Corlett (2000) of student nurses, nurse educators, and preceptors revealed that participants believed the theory-practice gap could be reduced by improving communication and collaboration between service and education sectors; preceptors teaching theoretical elements relating to their specialty within the educational institution, and better sequencing of theory and practice. Whereas, de Swardt, du Toit, and Botha (2012) argued that the theory-practice gap problem lies within two factors: role models and the curriculum.

Ousey and Gallagher (2007) asserted that in nursing education, theory and practice are viewed as separate entities. The gap that occurs is either due to the educational or the clinical setting where students learn. Baldwin, Mills, Birks, and

Budden (2014) argued that nurse educators remain abreast of current clinical practices to ensure that the content being taught is relevant to help reduce the theory-practice gap. A common theme in the literature is that students are not prepared for practice. Providing students with an insight into clinical practice with the CTE health science courses may alleviate the challenges of how students learn in the clinical setting.

Issues with Secondary Education Preparation

The Achievement Gap

The phrase "the achievement gap" is widely known in education as it has been discussed for many years. Bainbridge and Lasley (2002) argued that the achievement gap is considered one of the greatest challenges that educators face today. The achievement gap phrase refers to the disparities in academic achievement that separates economically disadvantaged and students of color from less disadvantaged students (David & Marchant, 2015; Ladson-Billings, 2006). David and Marchant (2015) study demonstrated that the increasing financial inequalities have led to increasing achievement inequality based on poverty. Millions of students are denied access to high-quality educational programs due to lack of available resources or because of low-test scores.

LaCour et al. (2017) hypothesized that there is no single best practice that will close the achievement gap. However, the implementation of a combination of research-based practices will meet the needs of our students. These findings support the need for more opportunities to better prepare students.

College Readiness

Kirst and Venezia (2001) argued that the lack of coordination between K-12 schools and postsecondary education hinder successful transition between the two. Efforts to communicate college-level expectations to K-12 stakeholders are continuously needed to tie policies and the data together. Some states, in an effort to improve alignment, have implemented policies that inform high school students that they are not ready for college-level courses well before they graduate, in order to give both notice and time to prepare (Jackson, 2015). However, learning this information may discourage or motivate students to attend college. Jackson (2015) conducted a study to determine if this early assessment may change students' trajectory regarding college. The results indicated that students were no less likely to apply to, or enroll in, college based on this early information.

The high school redesign proposed by the Obama administration included incorporating career and college exploration and allowing students to earn postsecondary credit while in high school (Kantrov, 2015). High schools that incorporate CTE are preparing students to become college and career-ready. Research indicates that students involved in CTE are more engaged, perform better, and have higher graduation rates than their counterparts (Demarest & Gehrt, 2015). Both Kantrov (2015) and Demarest and Gehrt (2015) agreed that CTE programs prepare students for a successful transition to postsecondary education. Saeger (2017) corroborates these findings by positing that CTE is positioned to be the solution to preparing all students for college- and career-readiness through further development of comprehensive curriculum aligned with core academics,

employability skills, and technical, job-specific skills. These findings inform my study to explore the experience of CTE health science.

Summary

Recent changes in healthcare and nursing demands have encouraged the need for strategies to recruit and retain nurses. The literature has documented the challenges faced by the nursing profession, secondary, and postsecondary education. In lieu of the nursing shortage, the literature supports that more data is needed to recruit and retain nurses.

Such data could facilitate discussion amongst stakeholders at the secondary and postsecondary level to foster new strategies. This study has the potential to provide insights to facilitate partnerships and bridge programs with local colleges; thus, providing opportunities and ultimately reduce the nursing shortage by fostering social change and transforming communities to use these human resources to improve the health of their citizens.

Chapter 3 explained and reviewed the method for exploring nursing students' experiences of CTE health science courses. Included in Chapter 3 are the research design and approach, methodology, role of the researcher, participant and recruitment procedures, instrumentation, data collection, and the analysis plan.

Chapter 3: Research Method

Introduction

The state of education in the United States faces many challenges in preparing students for the workforce and postsecondary education. Confronted with these challenges, in 2006, legislators signed into law the Carl D. Perkins Career and Technical Education Improvement Act, a reauthorization of the 1998 Act. The reauthorization of this Act's intentions was to strengthen the economy by focusing on the needs of students to become productive citizens in a global society (DeFeo, 2015; Threeton, 2017). The challenges of preparing students with a concrete foundation in literacy, numeracy, critical thinking, and career development faced at the secondary level, transfer to recruitment and retention issues for postsecondary education, in particular schools of nursing (Rose, 2011; Symonds, Schwartz, & Ferguson, 2011). Emerging trends suggest there is a gap between educational preparation and real-life practice linked to economic productivity (Tilley, 2008).

The purpose of this study was to understand and explore the experiences of former health science program students enrolled in nursing school. The approach used a hermeneutic phenomenology perspective. Semi-structured interviews were used to develop an understanding of the nursing students' experiences with how their health science program facilitated their transition to nursing school, what were the perceived benefits of the program for transition, and how the program motivated their career choices. To answer each research question, face-to-face interviews were conducted with current nursing students who completed CTE health science courses in high school.

Chapter 3 includes an explanation of the research method that was employed to conduct this study. In this chapter, I discussed the hermeneutic phenomenology design. Also, highlighted in this chapter is the role of the researcher, instrumentation for recruitment, data collection, and the data analysis plan.

Research Design and Rationale

A qualitative method, phenomenology, was chosen to address the research questions. The phenomenological approach is appropriate because it focuses on finding meaning in specific experiences and not outcomes. Constructivist epistemology and ontology proponents argue that knowledge is subjective and individuals construct this knowledge in their own way through their experiences, etc. (Creswell, 2009). Selection of the appropriate research design also depends on the research problem. The research problem of this study is searching for an understanding which calls for a qualitative approach (Creswell, 2009). Grove, Burns, and Gray (2013) noted that qualitative research is suitable when the research is to describe life experiences from the participant perspective and give significance to the subjective of human experience.

Research Questions

The research design employed aligned to help answer two central research questions:

1. What are the experiences of CTE health science program students who are becoming nurses?
2. What role did the CTE health science program play in fostering their success in nursing school?

Role of the Researcher

The role of the researcher in qualitative research is a very critical element. In qualitative research, the researcher is the primary data collection tool (Fusch & Ness, 2015). The researcher is typically involved in an in-depth experience with participants. In this study, I conducted face-to-face interviews and collected secondary data sources from the school of nursing curriculum, CTE curriculum, and student unofficial college transcripts. An interview protocol was used to document findings and observations during the interview. Due to the in-depth experience, Creswell (2009) noted that "this introduces a range of strategic, ethical, and personal issues into the qualitative research process" (p. 177). As the researcher, it is central to understand positionality at every stage of the research process to alleviate bias. Ravitch and Carl (2016) posited that positionality is "the researcher's role and social location/identity in relationship to the context and setting of the research" (p. 6). One strategy that can be used is reflexivity, which reflects on personal bias and values that can influence the researcher's interpretation. During the research, I incorporated reflective journaling to facilitate reflexivity (Ortlipp, 2008). This process will also allow me to make my presumptions, experiences, and beliefs visible. However, in hermeneutic phenomenology setting aside beliefs, values, and experiences or bracketing is not consistent with this inquiry (Chan, Fung, & Chien, 2013). Reflective journaling will be done to increase self-awareness of my influences (Whitehead, 2004). Additionally, to manage bias, no participants was selected that have a personal or professional relationship with the researcher. The selected school of nursing will not be the researcher's workplace.

A self-awareness of my influences is that historically I was once a student in CTE health science courses. The researcher also transitioned from CTE courses to a school nursing and became a registered nurse. Additionally, the researcher was a former CTE health science instructor. Given the researcher's former experience with CTE and nursing school, the ability to understand participant's language and meaningful interact will be enhanced.

Methodology

Hermeneutic Phenomenology

Phenomenology is both a research method and philosophy that is often employed by qualitative researchers. It has become common for knowledge development in nursing research (Dowling, 2007). To obtain the subjective experience of nursing students regarding CTE health science, the hermeneutic approach was used. The intention of hermeneutic phenomenology is to illuminate the human experience going beyond describing phenomenon but interpreting it (Crowther, Ironside, Spence, & Smythe, 2017; Ranse & Arbon, 2008). The purpose of this study was to understand and explore the experiences of former health science program students enrolled in nursing school. The purpose of this study aligns with hermeneutics because the subjective experience of CTE is sought out. Thus, the hermeneutic phenomenology is consistent with the study purpose.

Other qualitative methods were considered such as the narrative approach. However, it was felt that the narrative approach was not suitable for this study. This approach was initially considered because it allows the researcher to describe individuals' storied lives and write about the experience (Ravitch & Carl, 2016). However, typically

in narrative inquiry, the life of a single individual is selected to provide stories about their lives. Whereas, for this study, a small group of participants is warranted to identify the essence of their experiences.

Participant Selection

The target population for this study were current nursing students within South Carolina. The sampling strategy that was employed is purposeful sampling, a nonprobability sampling method. Nonprobability sampling is often used in qualitative research because the intent is to gain an in-depth understanding about a particular experience and not a generalization from a randomly selected sample (Grove, Burns, & Gray, 2013). For the purposeful sampling method, the researcher consciously selects participants that are information-rich to provide them detailed accounts about the purpose of the study (Grove et al., 2013; Ravitch & Carl, 2016). This technique is beneficial for qualitative research to gain a better understanding into a new area of study. This method allowed participants to be deliberately chosen based on the criteria.

Participants for this study had to be a current nursing student enrolled in a bachelors or associates degree program and have taken at least two CTE health science courses in high school. The criteria were selected so that participants have experienced the topic to provide an in-depth account. Saturation occurs when no new information is revealed. Grove et al. (2013) discussed that these factors should be considered when determining the sample size: (a) scope of the study, (b) nature of the topic, (c) quality of the data, and (d) study design. The sample size becomes less important in qualitative research versus quantitative research. Ravitch and Carl (2016) posited that the goal is to

make sure you thoroughly answer your research questions to achieve a complex and multi-perspective understanding. The goal of this study was to obtain 10 participants who meet the criteria, however only six participants were achieved. Mason (2010) suggested a sample size of five to 25 for phenomenology studies.

Procedures for Recruitment, Participation, and Data Collection

The plan for participant recruitment included using passive social media recruiting. Social media is defined as "Internet-based applications that permit users to construct a public or semipublic profile and create and maintain a list of other users with whom they share content and participate in social interactions and networking" (Gelinas et al., 2017, p.3). Social media recruiting is a cost-efficient strategy to recruit diverse samples, reduce recruitment times, and provide greater accessibility in today's technological society (Akard, Wray, & Gilmer, 2015; Andrews, 2012). This method of recruiting has been used effectively for smoking cessation clinical trials, HIV vaccine clinical trials, and pediatric cancer research (Gelinas et al., 2017).

Participants were recruited via Facebook by sharing an informational flyer. The informational flyer included the name of the university, brief description of study purpose, eligibility criteria, and contact information. A privacy statement was also included notifying potential participants do not send any private or confidential information through social media but by the email provided. The privacy statement was provided because it is important to take into consideration that social media is not a secure means of communication (University of Pennsylvania, n.d.). An invitation email was sent with more details pertaining to the study that reviewed the interview procedures,

voluntary nature of the study, risks and benefits, and privacy. The participants who agreed to participate were to sign a consent form.

Creswell (2009) recommended data collection procedures to include setting the boundaries for the study, collecting information through unstructured or semi-structured observations and interviews, as well as establishing the protocol for recording the information. Face-to-face interviews and documents are the types of data that was collected for the study. Initially, the goal was to obtain ten participants for the study. However, due to the specific target population, only six participants were obtained. Also, data collection began during summer break for colleges in South Carolina which could have played a role in only receiving 12 study inquiries.

Six interviews were recorded via a digital hand recorder with consent from participants. An interview protocol (see Appendix B) was used to conduct semi-structured interviews. A digital voice recorder was used to record all interviews. All digital recordings were hand-transcribed and analyzed. A copy of the nursing curriculum was accessed via the school's website. Current CTE health science curriculum and standards were also collected from the South Carolina department of education website. Unofficial college transcripts were also collected from participants for an additional means of understanding of CTE and the nursing student's experience, as well as to validate any findings. I utilized a journal to document field notes and my preconceived notions. Compensation for study participation was a $10 VISA gift card. Each individual were interviewed at a neutral location in the researcher's private office. Participants were informed to reserve at least 90 minutes for the interview. An interview protocol was used

for a semistructured interview. All data collected will be stored in a locked file cabinet and destroyed after five years. After each interview was completed and transcribed, each participant received a copy to verify that the transcription was accurate.

Instrumentation

In qualitative research, many researchers utilize multiple forms of data, to include observations, interviews, document reviews, and audio-visual materials (Creswell, 2009). The hermeneutic inquiry goal is to help identify participant's meanings through a blend of the researcher's understanding, participant generated information, and data obtained (Wojnar & Swanson, 2007). Therefore, data was collected using face-to-face interviews and document review of student transcripts, CTE curriculum and standards, and nursing school curriculum. These data collection types assisted in gathering pertinent data to understand nursing student's experience of CTE health science courses.

Interviews

Creswell (2009) proposed various ways to approach data collection with interviews. For example, conduct unstructured interviews or focus groups. However, for this study, the approach of "semi-structured interview, audiotape the interview, and transcribe the interview" was used (Creswell, 2009, p 182). An interview protocol was created for asking questions and recording answers. Ravitch and Carl (2016) recommended an interview protocol that includes questions that are not worded in ways that are leading; include mostly open-ended questions; and include follow-up questions that probe for specifics. In addition to the interview protocol, the interview was also

audio recorded. The recorded information was hand transcribed and analyzed. It is also recommended to take hand notes in addition to recording.

Document Reviews

The review of student unofficial college transcripts, CTE curriculum and standards, and nursing school curriculum was gathered from the student, school of nursing, and state department of education website. Creswell (2009) posit that document review facilitates the researcher to obtain the language of participants. For this study, the document reviews provided an additional mean of understanding of CTE and the nursing student's experience, as well as validated any findings.

Data Analysis Plan

Data analysis in qualitative research is a systematic review of data at various stages. A challenge seen with analyzing data is engaging and making sense of a large mass of data (Ravitch and Carl, 2016). The data analysis was interpreted by applying the hermeneutic cycle which incorporates reading, reflective writing, and interpretation (Kafle, 2011). To ensure proper examination and interpretation of the data, van Manen six steps of data analysis was used.

Van Manen six steps of data analysis constitutes (a) turning to the nature of the lived experience; (b) investigating the experience as we live it; (c) reflecting on the essential themes which characterize the phenomenon; (d) describe phenomena in the art of writing and rewriting; (e) maintain a strong and oriented relation to the phenomenon; and (f) balance the research context by considering all the parts and whole (Miller, 2003).

Immersion in the data was achieved through listening attentively to participants and their language. Transcription of the data to create codes and themes was used. Also, NVivo 12 software was used to assist the researcher in analyzing the data by enhancing the visualization of the text and managing the data.

Issues of Trustworthiness

Trustworthiness refers to ensuring the quality and rigor of a study. Creating trustworthiness of the data through explicit detailing of predispositions and bias is the first step (Whitehead, 2004). Assessment of the study's rigor included credibility, transferability, dependability, and confirmability (Ravitch & Carl, 2016).

Credibility

Ravitch and Carl (2016) posit that credibility is an important part of the research design that takes into account all of the complexities that present in the study. Credibility can be attempted by member checking, triangulation, discussing negative cases, and presenting thick descriptions. Questions that were considered to seek credibility are: how do my methods align with my research questions and how will I interpret the data? To achieve credibility specific details are provided on how participants were recruited, how data will be collected and analyzed.

Transferability

The goal of qualitative research is not to produce results that can be generalized but to develop relevant data that can be transferred to broader contexts. To achieve transferability, it was important to consider how descriptive I was for describing participants, the setting, data collection methods, and analysis. Also, providing enough

contextual data for the audience to transfer aspects of the study design and findings (Ravitch & Carl, 2016).

Dependability

Similar to reliability in quantitative research, dependability is concerned with being consistent. Providing rationales for the appropriateness of methods utilized is the strategy that was used to achieve dependability.

Confirmability

It is a goal of confirmability to recognize and explore how the researcher's predispositions and bias intertwine into the interpretations. As discussed previously, incorporating detail descriptions through reflexivity to reflect on personal experiences will be utilized. Additionally, consistent review and feedback from the dissertation committee was done to help ensure trustworthiness of findings.

Ethical Procedures

Informed Consent

Prior to conducting data collection, approval was obtained first from the Walden University Institutional Review Board (IRB), approval number 06-06-18-0609858. Email invitations were sent to interested participants. Once accepted to participate, participants were given an informed consent. It explained that participation is voluntary and that they may withdraw from the study at any time. Participants were also informed that participation or withdrawal in this study will not impact their position in their nursing program.

Confidentiality

To ensure privacy of all participants, pseudonyms and the abbreviation SN for student nurse were assigned. All documents pertaining to the study will be kept in a locked filed cabinet. All written and audio data will be destroyed after five years per school policies.

Risks

It is important to acknowledge potential risks to the participant, not only including physical but emotional, psychological, and economic risks (Rudestam & Newton, 2014). A review of the red flag issues for Walden University IRB revealed that there were no potential risks involved for participants. There were no anticipated risks beyond those of typical daily life. Being in this study did not pose risk to participant's safety or wellbeing. The only burden was the time spent for interviewing and driving to the interview location. Students from the researcher's place of employment were not used. Thus, presenting no pressure for participants to partake in the study and no emotional/psychological harm.

Summary

This chapter consisted of a detailed review of the research design and approach, methodology, trustworthiness, participant and recruitment, data collection and analysis plan, instrumentation, and ethical procedures. Further exploration in Chapter 4 and 5 will discuss the results, conclusions, and recommendations of the study.

Chapter 4: Results

Introduction

The purpose of this study was to understand and explore the experiences of former health science program students enrolled in nursing school to understand nursing students' experiences with how their health science program facilitated their transition to nursing school, what were the perceived benefits of the program for transition, and how the program motivated their career choices. To address the purpose of this study, two primary research questions were used to guide the study:

Research Question 1: What are the experiences of CTE health science program students who are becoming nurses?

Research Question 2: What role did the CTE health science program play in fostering their success in nursing school?

The study revealed nursing students experience with CTE health science programs, perceived benefits of the program, career motivation, and how the program facilitated the transition to nursing school. Participants experience with CTE health science programs were positive and prepared them for nursing school and their careers. These experiences led to information that may be used to assist with recruitment and retention in nursing schools and the nursing shortage.

This chapter includes the demographics of the participants. The data collection process is discussed. A thorough description of the data analysis process is presented. The evidence of the study's trustworthiness is discussed. Finally, the results of the study and conclusion are explained.

Setting

For this study, I interviewed six nursing students from two universities and four technical schools. Participants represented nursing schools located in the Midlands and Upstate regions of South Carolina. Face-to-face interviews were conducted in the researchers' office in the Midlands region of South Carolina.

Demographics

A total of six individuals agreed to participate in the study. All six participants are current nursing students studying at a technical college or university in South Carolina. Associate degree and bachelor degree students were invited to participate. To qualify, students had to take a minimum of two CTE health science courses in high school. Participants had between three and five CTE health science courses taken in high school. All participants were sophomores (bachelors program) and in their second year (associates program) of nursing school. Four participants were in an associate's degree program, while the other two participants were in a bachelor's degree program. Pseudonyms were assigned with the abbreviation SN indicating student nurses for all participants. Table 1 presents the demographic information of the six participants.

Table 1

Participants Demographics

Participants	Degree Level	# of CTE Courses	Nursing Level
Amy SN01	Bachelors	4	Sophomore
Brittany SN02	Associates	5	2nd year
Carol SN03	Associates	3	2nd year
Denise SN04	Associates	4	2nd year
Evelyn SN05	Associates	3	2nd year
Faye SN06	Bachelors	5	Sophomore

Data Collection

The data collection process began once approval was obtained from Walden University IRB on June 6, 2018. To start the data collection process, I posted an informational flyer detailing the study purpose and target population to Facebook. Interested persons were instructed to respond to the flyer by email. Once interested persons sent an email they received a screening questionnaire (See Appendix C) to verify they met the target population criteria. The potential participants who met the criteria were sent an invitation email that explained the purpose of the study and interview procedures. Consent forms was also provided that described privacy, confidentiality, and the voluntary nature of the study participation. The initial goal was to obtain 10 participants. However, of the 12 qualified potential participants, six agreed to participate, four sent regrets, and two were no response. Face-to-face interviews were scheduled and conducted with the six participants. Each interview was held in the researcher's private work office. Each interview took between 25-35 minutes. Interviews were conducted between June 2018 and August 2018. The data collection plan, interviews, and document reviews were carried out as outlined in Chapter 3.

Data Analysis

The interview transcripts were uploaded to NVivo 12 to organize and manage the data. After all six interviews were hand-transcribed, I read through the transcripts as a whole. Utilizing the van Manan 6-step data analysis process to analyze all data (van Manen, 1997). As I read the transcripts, as a whole, I made notes. I reread each transcript

line by line twice. As I read each transcript, I constantly referred to the research questions. During the first cycle coding, a line-by-line analysis was conducted of each transcript (Saldana, 2016). I stayed close to the data while coding relevant sentences and phrases that were repeated in several places. Second-level coding was then initiated to refine codes further. This process led to identifying the emerging themes. The tasks completed for data analysis are described in Table 2. The data analysis process was a continuous process of reading, reflective writing, and interpretation, also known as the hermeneutic cycle (Kafle, 2011).

Table 2

van Manen Data Analysis Process (van Manen, 1997)

Stages	Tasks Completed
Turning to the phenomenon of the interest.	Construct research questions. Continue to refer to the research questions while analyzing data.
Investigate the experience as we live it.	Conduct semi structured interviews. Review nursing school(s) curriculum. Review state health science standards.
Reflecting on the essential themes which characterizes the phenomenon.	Select statements and words characterizing with codes. Forming codes into themes.
Describing the phenomenon (the art of writing and rewriting).	Reflective writing. Discuss how themes are developed. Discuss how themes relate and recommendations for the future.
Maintain a strong and oriented relation to the phenomenon.	Maintain a strong orientation by being aware of one's own preconceived notions. Utilizing a journal to document these conceptions. Constant flow between all steps.
Balancing the research context by considering the parts and the whole.	Asking: "what does this mean in relation to the phenomenon". Themes and concepts developed from individual parts, reviewed and questioned in light of the whole perspective.

Codes

All codes were identified from the data through first-level and second-level coding. The following codes emerged from the data: hands-on, shadowing, certified, active learning, self-directed, future preparation, family support, teacher support, previous knowledge, engaging, and helping people. These codes occurred commonly throughout participant interviews that connected to the research questions. Table 3 presents the codes identified during data analysis and their occurrence.

Table 3

Codes and their Occurrence by Participants

Code Name	# of participant(s)	# of times coded
Hands-on	5	12
Shadowing	4	4
Certified	6	7
Active learning	5	9
Self-directed	5	7
Future preparation	4	7
Family support	4	6
Teacher support	3	4
Previous knowledge	3	9
Engaging	3	4
Helping people	3	3

Hands-on. The hands-on code referred to the participants stating that the CTE health science courses provided opportunities to do hands-on work in the classroom and at clinical sites. This code was discussed 12 times among five participants**.**

Shadowing. Participants discussed that they were given the opportunity to complete shadowing experiences. These shadowing experiences varied amongst the four participants. Two participants declared that they were able to shadow at local hospitals. Whereas, two other participants discussed that their shadowing experiences included both hospital and nursing home sites.

Certified. The code certified was mentioned by all six participants. All participants were certified in cardiopulmonary resuscitation (CPR) and as a certified nursing assistant (CNA) before graduating high school. All participants discussed that their CTE health science program afforded them the opportunity to become certified as a result of the learning.

Active learning. Active learning included all comments from participants regarding course set-up, course activities, and course resources. The participants believed that the lecture and simulation combination for CTE health science allowed them to participate and be active in their learning experience.

Self-directed. Self-directed is a code that indicated how participants show initiative for their learning based on what was needed and taught in the CTE health science courses.

Future preparation. Participants declared that the CTE health science course prepared them for their future careers and nursing school. Participants also concluded that the purpose of CTE health science courses is to prepare students for a career in the healthcare field.

Family support. The family support code included statements discussing how participants maintained success in the CTE health science program and for their motivation to pursue a degree in nursing.

Teacher support. Participants credited their success through the CTE health science program to the support from their teachers. These participants believe that their teachers challenged them to do well.

Previous knowledge. Previous knowledge referred to the comments made by participants regarding information that transferred from their CTE health science courses to their nursing courses. Three participants believed that basic content such as vital signs and some disease processes discussed in their nursing program was previous knowledge gained from CTE health science.

Engaging. Three participants indicated that their CTE health science courses were engaging. One participant believed that the course was engaging from the moment you enter the class until you depart.

Helping people. The code helping people refers to the participants who described their motivation for pursuing a degree in nursing. Three participants discussed they wanted to become nurses because they want to help people.

Document Reviews

During each interview, participants provided an unofficial college transcript. Each participant school of nursing curriculum was reviewed and compared to the CTE health science curriculum and standards. All participants obtained their CTE health science

education in South Carolina. Reviewing all documents provided an additional means of understanding CTE health science education and support any findings.

Based on the documents, some similarities amongst nursing curriculum and CTE health science standards were found. For example, Amy SN01 university requires a basic Anatomy and Physiology course. The CTE health science standards provide a course called health science 3 which is a human structure and function basic anatomy and physiology course (South Carolina Department of Education, 2017). Brittany SN02 technical college requires a basic pharmacology course which is also available as an option in the CTE health science standards for senior level students (South Carolina Department of Education, 2017). Other college courses reviewed that showed some similarities to CTE health science which were physical assessment courses and basic nursing concepts. Those courses are comparable to content taught in the health science work-based learning class (South Carolina Department of Education, 2017).

A review of each participant's unofficial college transcript corroborates participant's beliefs that CTE health science courses prepared them for their nursing school education. All participants have a 2.8 or higher GPA from their respective nursing schools. Participant Carol SN03 is maintaining a 4.0 in her nursing program.

Themes

Five themes emerged from the study: personal abilities and responsibilities, positive influences, teacher involvement, and career preparation. The fifth theme, making a difference, does not directly relate to the two primary research questions but emerged

from codes and deemed relevant to understanding nursing students experience with CTE health science programs.

Personal abilities and responsibilities. Personal abilities and responsibilities were coded as self-directed and previous knowledge. The dictionary describes self-directed as directed or being guided by oneself (American Heritage Dictionary, 2016). Five participants concluded that due to their CTE experience they now have the ability to guide themselves in learning through studying more, etc.

Positive influences. Participants specified that support from both teachers and family were positive influences during the CTE experience that played a role in their current success in nursing school.

Teacher involvement. The majority of the participants reported that their experience in CTE health science courses included excellent teacher involvement. Three of the participants similarly agreed that their teacher(s) were engaging, prepared them for the future, and made learning active.

Career preparation. The overall experience of CTE health science program by nursing students is that it provided career preparation for the healthcare field. Career preparation included students becoming certified as CNA's and in CPR, hands-on classroom experiences, and shadowing at hospitals and nursing homes.

Making a difference. Making a difference was coded as helping people. The theme making a difference did not apply to the primary research questions but is thought to be relevant in knowing students reasoning for pursuing nursing. The rationale for pursuing nursing is a direct correlation to students' purpose for enrolling into CTE health

science program and thus succeeding in nursing school. Three participants indicated that their motivation for enrolling into CTE health science courses were to help people. Amy SN01 stated that,

> I was interested in pursuing a nursing degree being that I like to help people and being a nurse you have a lot of input as far as helping people, knowing what they need, you can make or break them.

Like Amy SN01, Carol SN03 also indicated she wanted to make a difference in other people's lives by stating,

> My abilities to take care of people providing them support. I want to be the reason people go home being thankful for another chance at life and the satisfaction of a patient being safe makes my day as well. It gives me the confidence to help more people and make a difference in their lives.

Results

The following section includes the findings of the data obtained from this study. Each finding will be supported by direct quotes from participants. All findings collectively answer the two research questions that guided the study.

Positive Experience

Participants discussed their years spent in the CTE health science program and from the responses it was interpreted as a positive experience that incorporated positive influences that allowed family to be involved. The majority of the participants reported that their experience in CTE health science courses included excellent teacher involvement. Three of the participants similarly agreed that their teacher(s) were

engaging, prepared them for the future, and made learning active. Participants specified that support from both teachers and family were positive influences during the CTE experience that played a role in their current success in nursing school. Brittany SN02 mentioned that, “I would ask my mother to help me”, regarding studying and practicing for skills in CTE and nursing school. Faye SN06 stated that,

> My family has pushed me with continuing going into nursing school because they always knew that I had a passion for helping people so they just continue to give me the support that I will need in order to be successful as a nursing student.

Three participants believe that the support from their teacher in CTE helps foster their success in nursing school. Evelyn SN05 mentioned that,

> I feel like I had a great teacher that was there to motivate me and teach me a lot. Especially learning about real hospital stuff and different skills we’ll have to know with patient care.

Although the overall experience of CTE health science was positive, some participants also suggested some changes to improve the program. Brittany SN02 mentioned that,

> Maybe trying to make the high school nursing program a little more equivalent to what we would encounter in college.

Faye SN06 suggested that these courses should be an opportunity for more people and stated that,

> It’s not as many spaces as the school would like to have because of the amount of resources that it takes.

Preparation

From interviews with participants, it can be found that they believed the CTE health science program prepared them for nursing school and a career in health care. I interpreted preparation as gaining knowledge and experiences prior to transitioning from the CTE health science program to a nursing school. Participants felt prepared for a career in health care because they are currently working in hospitals as CNA's. Faye SN06 stated that, "in my health science courses, I feel like they basically gave me the little bit of experience of what to expect in a nursing school". Amy SN01 stated,

> Well it taught me how to study more than just reading but reading for understanding. It was a lot of information that you couldn't just memorize but you had to learn how to study it right and apply it.

Three participants believe that the courses gave them the ability of previous knowledge to succeed in nursing school. Faye SN06 indicated this by saying,

> I know that with learning the different skills whether it was the CNA skills that we needed or just other skills that we will need to apply with being a nursing student. I feel like I already know a little bit more about the skills and it will put me in a position to where I could be more successful.

Carol SN03 also mentioned that in class, "I learned about many different careers, skills, and abilities that helped me in the future".

Benefits

The overall experience of CTE health science program by nursing students was interpreted that it provided multiple benefits. As mentioned prior, career preparation was

described by participants as well as other opportunities. Carol SN03 stated that, “health science provided me with many opportunities including hands on evaluations, job shadowing, field trips, CPR and CNA certification, and much more”.

Evidence of Trustworthiness

As indicated in Chapter three, trustworthiness refers to ensuring the quality and rigor of a study. Assessment of the study’s rigor includes credibility, transferability, dependability, and confirmability (Ravitch & Carl, 2016).

Credibility

Credibility is an important part of the research design. It is directly related to the research design, the data, and from the instruments used (Ravitch & Carl, 2016). To confirm credibility, I included triangulation relying on interviews and using CTE health science standards and unofficial transcripts. To achieve credibility specific details are provided on how participants were recruited, how data was collected and analyzed.

Transferability

Qualitative research does not aim to produce generalizations. However, qualitative research does develop descriptive, relevant statements (Ravitch & Carl, 2016). Transferability was achieved by providing detailed descriptions of the data so that readers can make comparisons to other contexts.

Dependability

Dependability is achieved by maintaining consistency. To assure dependability, I maintained consistent data collection and analysis methods that were described in chapter three. Triangulation was also used to maintain dependability.

Confirmability

To assure confirmability of this study, I recognized my personal biases by utilizing reflective journaling during data collection and analysis. A description of the researcher's experience is also described to acknowledge any prejudices or bias in chapter three.

Summary

The purpose of this study was to understand and explore the experiences of former health science program students enrolled in nursing school. To address this purpose, two primary questions guided the research. Those questions were:

Research Question 1: What are the experiences of CTE health science program students who are becoming nurses?

Research Question2: What role did the CTE health science program play in fostering their success in nursing school?

This chapter discussed and highlighted the data collected and findings from the six interviews. Also presented are in-depth responses discussing the experiences of CTE health science.

The findings indicated that participants had a positive experience with their CTE health science program and that the course prepared them for nursing school and their careers. Benefits of the program included career opportunities, certifications, and future preparation for nursing school. Although participants concluded that their experience played a significant role in their nursing school success, some participants suggested

more time, additional resources, and college equivalence for these programs in the high school.

The following chapter, Chapter five will further discuss the results of this study. Chapter five will discuss the researcher's interpretation of the findings, limitations of the study, recommendations for future research, and the implications of the research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to understand and explore the experiences of former health science program students enrolled in nursing school. The approach used was a hermeneutic phenomenological perspective to develop an understanding of the nursing students' experiences with how their health science program facilitated their transition to nursing school, what were the perceived benefits of the program for transition, and how the program motivated their career choices. The study was guided by these two questions:

Research Question 1: What are the experiences of CTE health science program students who are becoming nurses?

Research Question 2: What role did the CTE health science program play in fostering their success in nursing school?

The SCCT was used as the theoretical framework to guide the study. As noted in Chapter 1, the framework focuses on the processes through which academic and career interests develop, promote career-relevant choices, and how people attain varying levels of performance and persistence in their educational and career pursuits (Lent & Brown, 1996, p.311).

The results of this study revealed that participants experience with CTE health science was positive. It also revealed that participants felt the CTE health science program prepared them for their careers, with benefits of career opportunities and certifications. It was also discovered that CTE provided an improvement in personal

abilities and responsibilities. The teacher support and hands-on experience received from CTE health science program played a positive role in their idea of success and succeeding in nursing school. Lastly, the study revealed that more time, more resources, and college equivalence for CTE health science programs are needed in the high schools.

This chapter includes an overview and interpretation of the findings outlined in Chapter 4 that are relevant to the research questions and the theoretical framework. The limitations of the study are discussed. Recommendations and implications for further research are provided, following the conclusion.

Interpretation of Findings

All participants discussed positive experiences with their CTE health science program. Five participants indicated that their experience included hands-on opportunities and four indicated that they were provided with shadowing experience at clinical sites. All participants concluded that they became certified in both CPR and as a CNA. Based on these findings, I found that the participants perceived their health science experience as positive that prepared them for their careers and postsecondary education in nursing. Career and college readiness is also seen in the literature review which discussed that CTE students indicate a higher level of involvement in career readiness (Mobley et al., 2017).

I also conclude that based on the discussion of more resources, time, and college equivalence by one participant that not all CTE health science programs are created equal. Proper federal funding and allocation to these programs will be beneficial to continuing these positive experiences and potentially supplying the steadily growing

nursing shortage. Currently, the Senate has proposed to increase the Perkins basic state grant for the 2018 fiscal year, with plans of going to the House in September 2018 (Coppes, 2018). Increasing the Perkins basic state grant for the 2018 fiscal year can be beneficial for both CTE health science programs and the profession of nursing. There will be more funds to support high school CTE programs properly. Based on the study findings, investing in CTE health science programs have the potential to supply the need for more nurses. The proposed grant is an opportunity for practicing nurses to support the legislation and advocate for CTE education with a possibility of decreasing retention issues in nursing programs.

Participants indicated that they believed the program has helped them remain successful in their current nursing programs. Three participants reported that they had gained previous knowledge from their CTE courses that help them currently in nursing school. These participants imply that the foundation such as learning vital signs and disease processes were previous knowledge. After reviewing the documents collected, I conclude that course descriptions from the CTE health science curriculum show similarities to the nursing curriculum. Also, based on the unofficial transcripts obtained, students are maintaining C averages or better in their nursing programs. These findings corroborate a study that created a partnership to provide nursing assistant training, mentorship, college application assistance, etc. to teenagers interested in nursing, which showed that students passed the program and was equipped with the foundation to continue to nursing school (Yates et al., 2003).

Theoretical Framework

The SCCT, which illustrates how career interests develop and how individuals make their career decisions, supports the findings from this study. The framework suggests that when an individual has self-efficacy beliefs and contextual influences it leads to interests, goals, and actions to produce an outcome (Lent, Brown, & Hackett, 1994). Based on the framework, self-efficacy beliefs can include vicarious experiences and mastery experiences. The findings from the study revealed that the mastery experiences from CTE health science lead to their interest and goals of becoming a nurse. Vicarious experiences by some participants were explained that observing family members' experiences in the field peaked their interest in nursing.

The contextual influences can include environmental support (Lent, Brown, & Hackett, 1994). The environmental support discovered in this study were family and teacher involvement that helped the participants in obtaining their goals of attending nursing school and becoming a nurse. This study supports the framework in that CTE health science courses (environmental influence) motivated the career choice in nursing (academic interest and goal).

Limitations of the Study

In Chapter 1, limitations were identified including the challenge of participation and target population criteria and researcher bias. The small target population obtained for this study were due to the specific, narrow criteria of participants having to have taken a minimum of two CTE health science courses. Also, participants had to reside in Columbia, SC or surrounding areas due to the location of the researcher and to limit

unnecessary travel for participants. However, saturation was achieved as no new emerging themes were discovered. In this study, the researcher was the primary tool, to address bias, full steps are explained in Chapter 3.

Before beginning data collection, it was assumed that CTE health science programs facilitated a career choice in nursing. Also, I assumed that these courses provided students with positive experiences. The interpretations from the data validate prior assumptions.

Recommendations

The primary focus of this study was to explore experiences of CTE health science from nursing students to understand perceived benefits, motivation, and facilitation to nursing school. Future research should be performed to identify more strategies to recruit and retain nursing students. Additionally, research on current working nurses that took CTE health science courses should be done to establish if it helped to recruit them for nursing and did the knowledge assist them through nursing school. I recommend a quantitative approach to measure and track the graduation and success rates of nursing students who received CTE health science education to validate findings from this qualitative study. This study did not take into consideration licensed practical nursing students or nursing students in various states. For future research, I recommend investigating on a larger scale and including all types of nursing students. Lastly, research should be conducted at the secondary level strictly for CTE health science students interested in nursing school to determine their motivation, interests, and perceived benefits for the field of nursing in efforts to recruit more nurses. Conducting research at

the secondary level for students wanting to pursue a career in nursing can help identify and understand their interest and provide more student support for transitioning to nursing school.

Implications

Implications for this study are multifaceted that adds to the body of knowledge for the profession of nursing, nursing education, and secondary education. The study was intended to research an area that is under-researched in the focus of nursing and CTE health science programs. This study produces new knowledge as CTE health science programs have not been researched from a nursing standpoint.

The nursing profession has been faced with nursing shortage issues for years and is estimated to continue to grow if efforts are not implemented and maintained. The findings from this study reveal that students are currently maintaining passing grades and feel successful in their nursing program due to CTE health science program. This is an optimistic sign that students will remain in their programs and eventually become professional nurses. The early preparation and successful transition will be beneficial to retain nursing students to supply the need for more nurses eventually. Based on the study results, community stakeholders and organizations partnerships with nursing schools and secondary institutions are needed to provide the aid these areas need to help with recruitment and retention endeavors.

Findings in this study can potentially guide stakeholders in the sector of nursing education by implementing strategies and improving recruitment and retention of nursing students. This potential guidance can in turn supply the demand for nurses. Awareness

from this study regarding nursing student's perceptions of the positive impact of CTE health science programs can help in creating partnerships between secondary and postsecondary institutions. These partnerships can be established to provide a system for recruiting interested high school students into nursing programs. Based on the study findings, CTE health science programs have prepared students for nursing school. This early preparation at the secondary level can potentially help retention of students once they transition to postsecondary education. Saeger (2017) noted that CTE is positioned to be the solution to preparing all students for college- and career-readiness through further development of comprehensive curriculum aligned with core academics, employability skills, and technical, job-specific skills.

Additionally, findings from this study have implications for secondary education, particularly high schools. Successful transition for students from high school into college is crucial and should have collaborative efforts from both high school and college domains. Based on the findings, participants were able to feel successful in their nursing program due to their high school CTE health science education. Based on the participant's responses, more time, resources, and college equivalence are needed for high school CTE health science programs. This study has the potential to bring awareness to stakeholders for continuous support, coordination, and funding with secondary and postsecondary education which is needed to prepare students for a successful transition better.

Social Change Implications

As mentioned in Chapter 1, this study has implications for social change by addressing encouraging partnerships and providing opportunities for early recruitment to promote positive social change for the nursing profession, health organizations, individuals, and our communities. Early recruitment will positively affect the discipline of nursing by reducing the shortage. This reduction in turns contributes quality care to individuals and the society. Healthcare organizations will have the necessary staff to provide safe working environments for the deliverance of nursing care. Ultimately, the desired goal is to reduce the nursing shortage by fostering social change and transforming communities to use these human resources to improve the health of their citizens.

Conclusion

The purpose of this qualitative study was to understand and explore the experiences of former health science program students enrolled in nursing school. Additionally, to understand how their health science program facilitated their transition to nursing school, what were the perceived benefits of the program for transition, and how the program motivated their career choices. The research indicated that overall the CTE health science program for the participants was a positive experience.

The data analysis also revealed that perceived benefits of the CTE health science programs benefits were career opportunities, certifications, and future preparation for nursing school. The findings contributed to the understanding of CTE health science programs and their role in nursing student's success thus fulfilling a gap in the literature.

As previously mentioned, findings from this study can impact social change in multiple ways.

In summary, the past and current literature highlight the necessity for methods to combat nursing recruitment and retention difficulties, and the nursing shortage. The future of nursing depends on a viable workforce. It is imperative that effective strategies are employed and maintained to meet the needs of our growing society which may be achieved through CTE health science programs.

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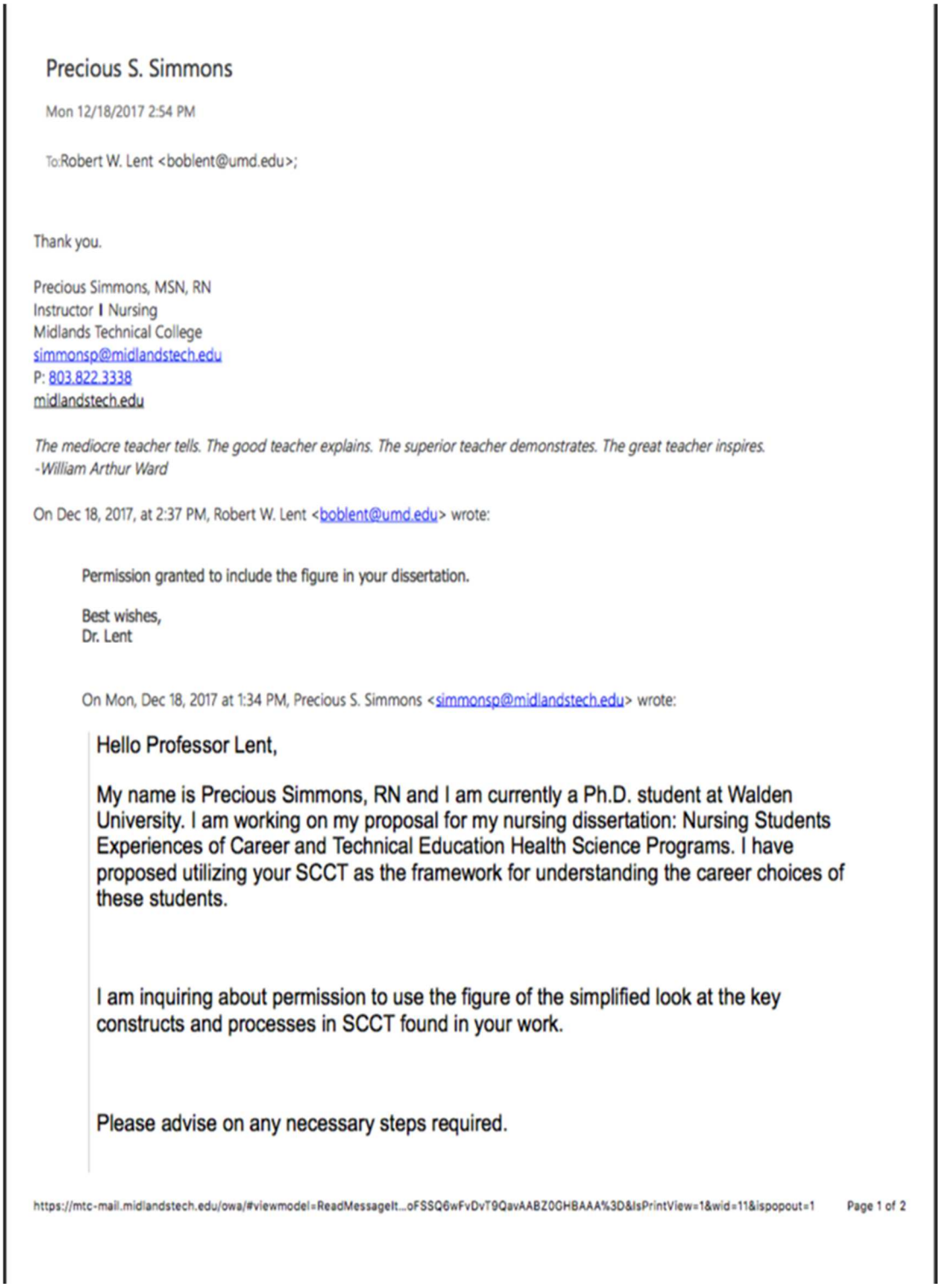
Appendix A: Permission to use SCCT Conceptual Model



Precious S. Simmons

Mon 12/18/2017 2:54 PM

To:Robert W. Lent <boblent@umd.edu>;

Thank you.

Precious Simmons, MSN, RN
Instructor I Nursing
Midlands Technical College
simmonsp@midlandstech.edu
P: 803.822.3338
midlandstech.edu

The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires.
-William Arthur Ward

On Dec 18, 2017, at 2:37 PM, Robert W. Lent <boblent@umd.edu> wrote:

> Permission granted to include the figure in your dissertation.
>
> Best wishes,
> Dr. Lent
>
> On Mon, Dec 18, 2017 at 1:34 PM, Precious S. Simmons <simmonsp@midlandstech.edu> wrote:
>
> > Hello Professor Lent,
> >
> > My name is Precious Simmons, RN and I am currently a Ph.D. student at Walden University. I am working on my proposal for my nursing dissertation: Nursing Students Experiences of Career and Technical Education Health Science Programs. I have proposed utilizing your SCCT as the framework for understanding the career choices of these students.
> >
> > I am inquiring about permission to use the figure of the simplified look at the key constructs and processes in SCCT found in your work.
> >
> > Please advise on any necessary steps required.

Appendix B: Interview Protocol

General Questions

1. How many health science courses did you receive credit for?
2. What year did you complete the CTE health science program?
3. Did you take health science courses at your local high school or at a career center for high school students? Was it in SC or out of state?
4. What nursing school do you attend?

CTE Health Science Experience/Perceptions

5. Can you describe what you believe is the purpose of the CTE health science program?
    a. Why do people enroll?
6. Can you describe your experiences with CTE health science in high school?
    a. Was it interactive?
    b. Was work-based or job shadowing provided?
    c. How was the class designed?
    d. Clinical experience provided?
    e. Did you obtain your CNA? CPR?
7. If I were in high school and interested in CTE health science, how would you describe your typical day of class?
8. Can you describe why you chose the CTE health science program?
    a. Did friends tell you about the class?
    b. Did the program have recruitment strategies i.e. flyers?

c. Did guidance counselors make you aware?

9. How did you feel about your CTE health science instructor?
    a. Do you feel he/she challenged you academically?
    b. How/why?
10. Do you feel the CTE health science program was rigorous?
    a. How?
    b. Were test difficult?
    c. How did you proceed through it?
11. Do you feel the CTE health science program has impacted your academic and career choices?
    a. How?
    b. Specific events/opportunities?

Nursing School Experiences/Perceptions

12. Can you describe your motive(s) for pursuing a degree in nursing?
    a. Friends? Family?
    b. Job stability?
13. What did you learn from your CTE health science program that is applicable to your current nursing program?
    a. Technical skills?
14. Do you think your CTE health science program prepared you for nursing school?
    a. Why or why not?
    b. What does success mean to you?

c. Do you feel “successful” currently in your nursing program?

Future

15. Do you believe you will continue in the nursing program? Why or why not?

Concluding

16. If you could change anything about your CTE health science experience, what would it be?
    a. Coursework?
17. Is there any other information about your CTE health science and nursing school experience that you think I should know?

Concluding/Closing Statement

Thank you for taking the time to participate in this interview. Your responses have proved beneficial for the study. As discussed, your privacy will be protected. Once again thank you for completing this interview.

Appendix C: Screening Questionnaire

Question	**Answer**
Are you 18 years or older?	Yes _____ No _____
Are you a current ADN or BSN nursing student?	Yes _____ No _____
Did you take at least two (2) CTE health science courses in high school?	Yes _____ No _____
Do you reside in Columbia or surrounding nearby areas?	Yes _____ No _____