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Review of a Remediation Program in an Associate Degree Nursing Program

Christopher Thomas Young
Walden University

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Walden University

College of Education

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Christopher Young

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Walden University
2019

Abstract

Review of a Remediation Program in an Associate Degree Nursing Program

by

Christopher Young

MS, University of Oklahoma, 2009

BS, Southwestern Oklahoma State University 2005

Project Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

EdD

Higher Education Leadership and Management

Walden University

December 2019

Abstract

New nurse graduates must pass the National Council Licensure Examination (NCLEX) in order to achieve nursing licensure. In Northern New Mexico associate degree nursing program with a large disadvantaged student population, the average pass rate for the licensure exam often falls below the state board of nursing mandated 80% pass rate. This study's purpose was to evaluate the effect of an NCLEX remediation program on students' ability to pass the NCLEX, using Knowles adult learning theory to guide this work. The research questions investigated the relation between the remedial instruction and the 2 dependent variables KAPLAN predictor scores and NCLEX pass rates. I used a quantitative non-experimental ex post facto design to contrast 2 purposively sampled student cohorts, the cohort from 2017 that did not participate in the remediation program ($N = 14$) and the cohort from 2018 that participated in the remediation program ($N = 27$). A t test for independent samples showed that the KAPLAN exam mean scores were significantly higher ($t = 4.81, p < 0.001$) for the 2018 cohort ($M = 66.49, SD = 8.08$) than for the 2017 cohort ($M = 55.78, SD = 5.94$). The Chi-square test showed that the NCLEX pass rates were independent of the remedial instruction ($\chi^2 = 0.58, p = 0.45$ and $\chi^2 = 0.17, p = 0.68$ after the Yates correction). Based on the findings and guided by theory, a policy recommendation was formulated for the nursing department's management. The inconclusive results will generate social change by challenging nursing program leaders to discuss why the pass rates did not increase while the Kaplan predictor scores did. Based on this discussion and further research, the remediation program could be improved.

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Section 1: The Problem

Introduction

For almost two decades, a nursing shortage has loomed large in the healthcare industry. Stakeholders have pressured registered nursing programs to produce a supply of new nurse graduates to fill the more than 100,000 nursing vacancies across the United States (Buerhaus, 2017). Nursing programs across the country responded and have worked hard to expand programs and increase interest in nursing careers (Buerhaus, 2017). Large companies like Johnson & Johnson have also worked to decrease the nursing shortage by funding awareness campaigns to spawn more interest in the nursing profession and by offering scholarships for nursing students (Johnson & Johnson Services, Inc., 2017). State organizations have supported, and funded initiatives aimed at increasing the number of nursing graduates by offering scholarships, externships, and loan repayment programs for nurses as well as offering grants to nursing programs to help fund the expensive effort to train student nurses (Buerhaus, 2017). The efforts have been effective as there has been a consistent increase in registered nurse (RN) program graduates over the past two decades (Salsberg, 2015).

In November 1999, as management at healthcare facilities began to recognize the nursing shortage, the Institute of Medicine released a landmark report, “To ERR is Human,” that ignited a movement aimed at improving the safety and quality of patient care (Kohn, Corrigan, & Donaldson, 2000). The report highlighted the importance of low patient-to-RN ratios in the effort to achieve safe and effective care (Kohn et al., 2000). Hospital accrediting bodies began to consider nurse staffing ratios more closely, and state

boards of nursing began to set stricter limits on the number of patients that nurses could be asked to care for during a work shift (Buerhaus, 2017). These factors pushed nursing programs into rapid growth to meet the needs of the community (Salsberg, 2015).

However, just as there was a nursing shortage, there was also a nurse faculty shortage.

The American Association of Colleges of Nursing (2015) noted that in 2014 nearly 70,000 qualified students were turned away from nursing programs in the United States.

As a result, every seat in a nursing cohort was coveted, and nursing programs could not simply add sections to expand seats because there was not enough faculty available to teach the additional sections.

The extreme need for additional nurses coupled with the difficulty of expanding programs because of the nursing faculty shortage magnified the importance of every student accepted to a nursing program becoming a licensed nurse. Becoming licensed was important not only for the student who put in the work required to graduate nursing school and wanted to begin work as a registered nurse, it was also important for the greater community in need of registered nurses for optimal medical care. The Institute of Medicine's research showed that lower nurse-to-patient ratios improved patient outcomes, so accruing more licensed registered nurses in a community with a nursing shortage could improve medical care by allowing healthcare facilities to hire more nurses to fill vacant nursing positions (Kohn et al., 2000). To gain licensure, nursing students must not only complete a nursing program, they must also pass the licensure exam. The licensure exam for registered nurses is called the National Council of State Boards of Nursing Licensure Exam (NCLEX; Mager, Beauvais & Wallace, 2017).

The local setting for this study was an associate degree of nursing (ADN) program in rural Northern New Mexico, at a small college (NMC). NMC's mission is to provide educational resources for all citizens in the community, and the college works with all students to help those who might not qualify for other colleges begin their college education at NMC. The local setting for this study has a strong New Mexican heritage and deep Hispanic roots. Reflecting the state of New Mexico, NMC is a minority majority school. New Mexico boasts a diverse population breakdown of 24.6% African American, 5.3% Asian American, 23.0% Latino, 33.8% Native American, and 17.3% Caucasian (Annie E. Casey Foundation, 2018). In the local setting for this study, gaining licensure after completing a nursing program is of great importance. The community has long been a poverty-stricken area and the potential salary a registered nurse commands can have a dramatic effect on the nurse's family. New Mexico as a state ranks 49th in the country for the number people living below the poverty line, and 50th for the number of children living below the poverty line (Annie E. Casey Foundation, 2018). The community also has a shortage of registered nurses, so every registered nurse who obtains licensure is an asset to the healthcare community (Ditzler, 2018).

The Local Problem

The problem addressed in this study is that, at NMC, the average NCLEX pass rate for the ADN program often falls below the 80% pass rate mandated by the New Mexico Board of Nursing (2017a). The nursing program at NMC educates students from disadvantaged backgrounds, with more than 80% of students coming from homes with household incomes below the national poverty level (Northern New Mexico College,

2018). Because the age of the students admitted to the NMC nursing program in 2016 and 2017 ranged from 21 to 64, some of the students were nontraditional students who were raising a family with an income below the poverty level while attending school (Northern New Mexico College, 2017). Furthermore, many of these students were required to take several remedial-level classes before they could take college-level courses.

The student body at NMC is mainly comprised of Native American and Hispanic students; NMC aims to be a Hispanic and Native American serving institution focused on cultural sustainability (Northern New Mexico College, 2018). True to this vision, the student body at NMC is comprised of a majority minority students, mostly Native American and Hispanic students, and some who list English as a second language (Northern New Mexico College, 2018). De Lima, London, and Manieri (2011) found that racial and ethnic minorities are at increased risk for failing the NCLEX. The Dean of the College of Health Sciences at NMC stated, “We have no choice but to implement a program to increase our pass rates” (personal communication, August 15, 2017).

Concern regarding low NCLEX pass rates has been more than a local problem; it is also a problem nationally. To address this situation, all state boards of nursing use a state-developed nurse practice act to regulate nursing programs (Libner & Kubala, 2017). Among the criteria considered for a nursing program to remain in good standing is the program’s NCLEX pass rates (Libner & Kubala, 2017). The focus on NCLEX pass rates as an evaluation tool has led many nursing programs to develop remediation programs for students who might be at risk of failing the exam (Pennington & Spurlock, 2010; Salvucci, 2015). After its low NCLEX pass rates, the ADN program at NMC instituted an

NCLEX preparation program. In this study, I compared the scores on the NCLEX predictor exam for the 2018 cohort that completed the preparation program with the NCLEX predictor scores for the 2017 cohort that did not complete the preparation program.

Rationale

Evidence of the Problem at the Local Level

NMC has an open enrollment policy and will accept students who might not meet traditional higher education standards but who are willing to take additional courses offered by the college to become college ready (Northern New Mexico College, 2015). Many NMC students graduate high school in the area and need to take remedial courses to perform at the college level. In 2015, the latest year the data was reported, 45% of first-year students at NMC had to take remedial courses (Northern New Mexico College, 2018). Because minority students have lower NCLEX pass rates and because NMC strives to provide an opportunity to earn a college degree for students who might need remediation to become college eligible, there is legitimate concern regarding NMC's nursing program graduates' ability to pass the standardized test (De Lima et al., 2011).

NCLEX licensure exam pass rates at NMC are below the national and state average, and the low NCLEX pass rates put the program at risk of punitive actions by accrediting bodies. The NCLEX licensure exam pass rate at NMC for 2017 was 50%, the lowest of all programs listed on the New Mexico Board of Nursing summary report (2017b). The National Council of State Boards of Nursing (2017) reports that the national average NCLEX pass rate in 2017 for nursing programs was over 84%.

Although there are many NCLEX preparation programs available to nursing students on an individual basis, with such low NCLEX pass rates, it was evident that NMC needed an aggressive NCLEX preparation program for the entire cohort. However, there are limits to how many credit hours an associate degree program can require of students, so discretion was needed in adding in credit hours to a program that already was at the credit-hour limit for an associate degree. To increase college graduation rates in the state of New Mexico, Governor Martinez urged the Department of Higher Education to develop guidelines to lower the number of credit hours required for graduation by associate degree programs (Martinez, 2018). Also, like most nursing programs, the ADN curriculum at NMC was substantial, and adding material to any program requires careful consideration. Therefore, any NCLEX preparation program must have merit that can be demonstrated in increased NCLEX licensure exam pass rates and increased KAPLAN NCLEX predictor scores.

Evidence of the Problem From the Professional Literature

Passing the NCLEX is essential to nursing students and nursing programs throughout the country. Because passing the NCLEX is so important to students who have spent substantial time and effort becoming eligible to take it by successfully completing nursing school, McGahee, Gramling, and Reid (2010) analyzed the predictors for success on NCLEX. McGahee et al. (2010) also pointed out that many students consider a program's NCLEX pass rates when they decide where they want to attend school.

Because of the ethnic and racial diversity of the U.S. population, it is important for nursing programs to graduate nurses from a broad swath of ethnic and racial backgrounds and to ensure that these graduates pass their licensure exam. A complicating factor in increasing the number of minority nurses is that minority nursing students have lower NCLEX pass rates than other nursing students (Sutherland, Hamilton, & Goodman, 2007). In an effort to identify interventions to help minority students who are at greater risk of not passing the NCLEX, Sutherland et al. (2007) investigated whether minority students benefited from increased strategies to improve NCLEX pass rates. The U.S. Department of Health and Human Services funded the study, which showed that innovative strategies did increase the NCLEX pass rates of minority students (Sutherland et al., 2007).

The purpose of this study was to investigate whether an NCLEX preparation program increased the Kaplan NCLEX predictor exam pass rates and NCLEX pass rates for students in a minority majority ADN program. In a local college in New Mexico, the first-time NCLEX pass rates for the ADN program were below 50% for the 2017 graduating class, according to the pass rates report from the New Mexico Board of Nursing (2017b). After the low NCLEX pass rate for this cohort, the ADN program at NMC instituted an NCLEX preparation program (Northern New Mexico College, 2018f). In this study, I compared the pass rate on the NCLEX predictor exam scores and NCLEX pass rates for the 2017 cohort students, who did not complete the preparation program, with the NCLEX predictor exam scores and NCLEX pass rates for the 2018 cohort students, who completed the preparation program.

Definition of Terms

The following definitions are offered to clarify special terms used throughout the study.

Adult learners: A subset of nontraditional students, specifically those who are 25 years of age or older, enrolled in higher education (Bergman, Gross, Berry, & Shuck, 2014).

Associate degree in nursing (ADM) program: A 2-year college degree program where students earn an associate degree in nursing and that allows graduates to achieve RN licensure after passing the NCLEX-RN (NNMC, 2018).

Cohort: A group of individuals having a statistical factor—in this study, a class—common in a demographic study (Merriam-Webster, 2018).

Kaplan NCLEX predictor exam: 180 question tests designed to predict NCLEX readiness (Kaplan, 2018).

Minority: For purposes of this study, African American, Asian or Pacific Islander, American Indian or Alaskan Native, Hispanic, and other non-Caucasian people (Metcalfe & Neubrandner, 2016).

National Council of State Boards of Nursing Licensure Exam (NCLEX): The licensure exam for registered nurses (Mager, Beauvais & Wallace, 2017).

Socioeconomic status: For purposes of this study, the social standing or class of an individual or group; based on the American Psychological Association definition, it is a measure of a combination of education, income, and occupation (American Psychological Association, 2018).

Significance of the Study

This project is unique because I investigated an underresearched topic—namely, an NCLEX preparation program for students in a minority majority ADN program (Loftin, Newman, Dumas, Gilden, & Bond, 2012). The project aims to measure whether the NCLEX preparation program increases the number of students who meet the benchmark score recommended by Kaplan on the NCLEX predictor exam. The project compared the number of students whose scores on the NCLEX predictor met the benchmark in the 2017 graduating cohort with number of students whose scores on the NCLEX predictor met the benchmark in the 2018 graduating cohort.

Nursing programs are assessed in part by their NCLEX exam scores. If a nursing program's NCLEX pass rates fall below the percentage set by accrediting bodies, the program could be asked to demonstrate how they are working to improve student's NCLEX scores. The accrediting bodies could even suspend or remove a nursing program's accreditation status based on low NCLEX scores. The information gained from this study is needed for NMC to evaluate the effectiveness of its new NCLEX remediation program. Furthermore, as other nursing programs work to improve their NCLEX pass rates, a remediation program that has been shown to be effective at improving NCLEX pass rates would serve as a guide. Conversely, if the research shows that the NCLEX remediation program does not improve NCLEX pass rates, other nursing programs would know that the remediation program might not be exemplar. The information will be especially beneficial to nursing programs working with lower performing students, programs working with students whose primary language is not

English, and programs that work with minority students or students who come from a disadvantaged background (Loftin et al., 2012).

Research Questions

The research problem in the local setting was the historically low NCLEX pass rates for the ADN program. In an effort to raise the number of graduates who pass the NCLEX on their first attempt, NMC implemented a remediation program for its students. The remediation program was added to the curriculum with the intent of raising the NCLEX pass rates. Students have historically taken an NCLEX predictor exam from Kaplan prior to graduation. It is important for the ADN program to know whether the remediation program is beneficial to the students, so I compared the predictor exam scores of the 2017 cohort with the scores of the 2018 cohort.

RQ1: What is the relation between Kaplan NCLEX predictor exam's scores and remedial instruction?

H₀₁: There is no difference between the 2017 group that did have remedial instruction and the 2018 group that had remedial instruction with respect to KAPLAN predictor exam's mean scores.

H_{A1}: There is a significant difference between the 2017 group that did have remedial instruction and the 2018 group that had remedial instruction with respect to KAPLAN predictor exam's mean scores.

RQ2: What is the relation between the remedial instruction and the NCLEX pass rates?

H₀₂: There is no difference between the 2017 group that did have remedial instruction and the 2018 group that had remedial instruction with respect to the NCLEX pass rates.

H_{A2}: There is a significant difference between the 2017 group that did have remedial instruction and the 2018 group that had remedial instruction with respect to the NCLEX pass rates.

Review of the Literature

Theoretical Foundation

The theoretical framework guiding this project study is based on constructivism and andragogical educational theories. Glance, Rhinehart, and Brown (2018) explained a shift in higher education learning theory from an objectivist approach, in which the teacher transmits knowledge to the learner, to a constructivist approach that uses the life experiences that give the learner perspective and builds on the learner's existing knowledge. *Constructivism* as a learning theory is a broad umbrella that includes andragogical learning theory (Decelle, 2016). Constructivism fits well with this project because the remediation program at NMC is for students who have completed all but the last semester of the ADN program. At the culmination of the nursing program, students have amassed a large amount of knowledge from textbook readings, lectures, simulations, and clinical experiences. By drawing from the students' experiences in life and prior learning to build on the nursing course material and clinical experiences, an NCLEX remediation program might increase an ADN program's NCLEX pass rates.

Because instructors are teaching adults when they are teaching nursing students, instructors often use andragogical learning theory, as developed by Knowles (Aliakbari, Parvin, Heidari, & Haghani, 2015). Knowles described andragogy as a combination of art and science aimed at helping adult students learn (Blozen, 2017). In developing andragogical education theory, Knowles (1980) challenged traditional pedagogy by stating that techniques used to teach children might be ineffective for teaching adult learners. Knowles (1980) posited that traditional pedagogy techniques, like lecture, memorization, assigned reading, might not fit the way an adult student learns best. Knowles (1980) also posited that adults are self-motivated learners with different experiences and appreciate various learning strategies. This line of thinking is applicable to nursing students as they are adults striving to gain licensure to work in the nursing profession. An earnest attempt to help nursing students pass the NCLEX should include andragogical educational theory.

As a result of Knowles' work, educators and researchers have expanded the theory and worked to develop best practices for teaching adult learners. Giannoukos, Besas, Galiropoulos, and Hioctour (2015) considered andragogy in terms of struggles that adult learners can face during their education. The team identified struggles for adult learners that can impact learning can include, among others, family changes, social changes, and social struggles as well as financial issues and changing responsibilities (Giannoukos et al., 2015). With the high rate of addiction, divorce, incarceration, and violent crime in the area that is the focus of this study, the students in the ADN program at NMC personify these struggles. In 2014, the rural county in which NMC is located

reported an overdose rate that was 614% higher than the rest of the state of New Mexico and 3,655% higher than the national average (Cowperthwaite, 2015). Consequently, many citizens in the area and students at the college were likely impacted by the social problems associated with addiction and death from overdose. Giannoukos et al. (2015) explained that educators should endeavor to improve the self-esteem on the psychosocial level for these students. The team explained that students who have significant life stressors underperform in an educational setting, and the educator must help the student understand the difficulties they face and begin to move past insecurities and fear of failure to achieve success (Giannoukos et al., 2015).

Giannoukos et al. (2015) added to andragogical theory to posit that in the modern higher education system, the educator must serve as a counselor, motivator, and guide. The educator must not only provide knowledge to the learner but inspire the learner to seek knowledge on their own (Giannoukos et al., 2015). Because nursing education has the potential to directly affect an adult learner's daily life and career prospects in general, the motivation for the student to learn is present. According to Giannoukos et al.'s (2015) take on andragogical learning theory, the teacher's role is simple; by using the six admissions of andragogy, written about by Knowles, the teacher should provide encouragement, refrain from intense teaching, and guide the students so they can share their experiences with others for the purpose of learning. Essentially, teachers serving adult learners must be coordinators of the educational and training process.

Andragogical educational theory fits this study because the students and graduates of the NMC ADN program are adults of various ages and with various life experiences.

Cangelosi (2007) pointed out that nursing professors should build on the life experiences of their students because these adult learners have experiences in the healthcare setting that can impact their comprehension as students. Nursing education is most effective when it is based on the principles of andragogical theory, like experience, readiness to learn, motivation, and self-concept, all which increase student learning (Aliakbari et al., 2015). Andragogical educational theory grounded the study because I sought to analyze the effectiveness of a new NCLEX preparatory program.

Review of the Broader Problem

For this project, the literature review is focused on minority nursing students, nursing students from lower socioeconomic backgrounds, and NCLEX remediation programs or projects. I tried to focus on articles published from 2013 to 2018. Databases I searched included the Education Research Information Center, Dissertations & Theses at Walden University, ProQuest Nursing & Allied Health Source, Google Scholar, and ScienceDirect as well as UMI ProQuest Digital Dissertation. The keywords used to search the database included *NCLEX*, *ADN*, *associate degree nursing*, *standardized test minority*, *standardized test low socioeconomic status*, *NCLEX minority*, *NCLEX low socioeconomic status*, *adult learner*, *Kaplan diagnostic examination*, and *NCLEX remediation program*.

National Council of State Boards of Nursing Licensure Exam

The review of literature showed that NCLEX success is an important issue for nursing programs throughout the United States. First-time pass rates on the NCLEX are an integral reference point for accrediting bodies for RN licensure programs (Banks,

McCullough, Ketner, & Darby, 2018). Accreditation is a voluntary process during which an accrediting organization assesses and appraises a nursing program based on a predetermined set of standards regarding the program's structure, process, and outcomes (American Nurses Credentialing Center's Commission on Accreditation, 2012). By obtaining accreditation status, a program demonstrates that it meets the accrediting body's quality standards. By retaining accreditation status, a nursing program demonstrates continual self-assessment, growth, and improvement. Nursing programs must meet specific NCLEX pass-rate percentages to gain and keep accreditation from state boards of nursing (Foreman, 2017). All 50 states require a minimum pass rate percentage on the NCLEX for nursing programs to remain in good standing with their boards of nursing (Foreman, 2017). The Accreditation Commission for Education in Nursing (ACEN), a national accrediting body, also uses NCLEX pass rates to evaluate whether a program meets the standards required for accreditation (Taylor, Loftin, & Reyes, 2014). When considering initial accreditation of a program, ACEN requires programs show that their NCLEX exam passes for first-time test-takers are at or above the 3-year national mean for NCLEX pass rates for first-time takers (Taylor et al., 2014). ACEN is the only accrediting body that has Title IV gatekeeper status that allows students in ACEN-accredited programs to apply for federal student aid, making it a coveted accreditation (National Council State Boards of Nursing, 2017).

In addition to accrediting bodies using NCLEX exam pass rates as an evaluation tool, nursing programs use NCLEX pass rates as a tool for self-evaluation and program evaluation (Pennington & Spurlock, 2010; Salvucci, 2015). Nurse educators use first-

time NCLEX pass rates as an indicator of a nursing program's effectiveness and direction (Taylor et al., 2014). Nursing programs even make important program decisions like curriculum changes based on first time NCLEX pass rates (Taylor et al., 2014).

As NCLEX pass rates have become more accepted as a measure of the quality of a nursing program, stakeholders have also begun to look at NCLEX pass rates. A nursing program's NCLEX pass rates are published and are viewable for potential students, healthcare facilities, and the community (Salvucci, 2015). Lower NCLEX pass rates can negatively impact a program's reputation and can ultimately affect the number of students who apply to a nursing program (Crow & Bailey, 2015). As a student evaluating different programs of nursing there are many potential qualities to consider. Because a graduate of a nursing program cannot gain licensure until they pass the NCLEX exam, a nursing program's NCLEX pass rates are one criterion that students are apt to consider. Because healthcare facilities are impacted when a new graduate is hired and does not pass the NCLEX, the facilities also consider the NCLEX pass rates for the nursing program that the applicant attended (Taylor et al., 2014).

Because the NCLEX exam is of such high importance for both nursing programs and nursing students, identifying potential factors that influence NCLEX success is a worthy endeavor. Researchers have identified significant academic factors that influence the likelihood that a student will pass the NCLEX, like grade point average, science grade point average, and ACT scores, but researchers are also interested in nonacademic factors (Johnson, Sanderson, Chih-hsuan, & Parker, 2017). Meyers and Karpinski (2018) discovered a relationship between socioeconomic status and NCLEX success.

Acknowledging that the ACT is a good predictor of NCLEX success and noting that there is a relationship between ACT scores and socioeconomic status, Meyers and Karpinski (2018) began looking into whether socioeconomic status has any correlation to passing the NCLEX (Meyers & Karpinski, 2018). Meyers and Karpinski (2018) used Pell grant eligibility as a variable to represent lower socioeconomic status and found that students who were eligible for Pell grants had lower NCLEX pass rates than students who were not eligible for Pell grants. This is noteworthy to schools like NMC whose student body comes from a lower socioeconomic background. Because NMC offers open enrollment, allowing student with low ACT scores to take college classes, Meyers and Karpinski's (2018) research is especially poignant. The increased risk of not passing the NCLEX associated with low-socioeconomic background and low ACT scores merits special consideration and support to help students from such backgrounds have increased chances of passing the NCLEX.

In addition to low socioeconomic status, researchers have also identified minority status as a nonacademic risk factor for not passing the NCLEX licensure exam. Banks et al. (2018) found that ethnicity and/or race had a significant impact on NCLEX scores. They found an increase in NCLEX pass rates for nursing programs with higher ratios of white students (Banks et al., 2018). Conversely, Banks et al. (2018) found a decrease in NCLEX pass rates for nursing programs with higher ratios of Hispanic students. In addition, researchers have identified students who speak English as a second language (ESL) as a group with relatively low NCLEX pass rates (Kaddoura, Flint, Van Dyke, Yang, & Chiang, 2017). Graduates of prelicensure nursing programs for whom English is

not a native language, self-identified by selecting *other* as a primary language, have lower pass rates than those who selected *English* as the primary language (Kaddoura et al., 2017). Kaddoura et al. (2017) found that primary English speaking NCLEX test takers had 12-15% higher pass rates than nonprimary English-speaking test takers. Though the NCLEX is not meant to test English proficiency, and instead test nursing competency, the extra time that ESL students must take to read, translate, interpret and comprehend impacts their ability to finish the timed NCLEX exam and increases the chances that they will run out of time (Kaddoura et al., 2017).

Another nonacademic predictor of NCLEX success is whether a student is a traditional or nontraditional student. Silvestri, Clark, and Moonie (2013) considered environmental and personal issues that students face and conducted a quantitative study to see if they had an influence on passing the NCLEX. The researchers utilized instruments that considered any recent life changes, severity of worries, and perceived self-efficacy (Silvestri et al., 2013). After conducting an analysis of correlation between the personal issues and passing the NCLEX, Silvestri et al. (2013) found that events at home, personal and family responsibilities, as well as self-efficacy were positive variables affecting NCLEX passage. Furthermore, correlation analysis showed academic variables had a positive correlation with self-efficacy (Silvestri et al., 2013). Essentially, as a grade in a course improved, a student's perceived self-efficacy increased (Silvestri et al., 2013). The researchers also identified a negative correlation between nonacademic variables like personal and family responsibilities, severity of worries, and self-efficacy (Silvestri et al., 2013). As the identified nonacademic factors increased, self-efficacy

decreased, contrasting the positive effect of the self-efficacy increase that is the result of an improved grade (Silvestri et al., 2013). This is a significant finding when considering the NCLEX pass rates for NMC. As previously noted, a majority of students in the nursing program at NMC are nontraditional students with family obligations and work obligations that help the students provide for their family. Furthermore, the potential worries associated with the low-income status of the students at NMC could conceivably compound the self-efficacy decrease associated with family and work obligations found by Silvestri et al. (2013).

NCLEX Remediation Programs

When an RN licensure program's NCLEX pass rates dip below the standard required by state boards of nursing, or other accrediting bodies, the program risks losing accreditation and the approval of the accrediting bodies to operate (Banks et al., 2018). Libner and Kubala (2017) write about the Illinois Board of Nursing's response to an escalating number of pre-licensure program's low NCLEX pass rates. The team explains how crucial passing the NCLEX is to launching nursing careers for graduates of nursing programs (Libner & Kubala, 2017). Libner and Kubala (2017) also explain the importance of NCLEX pass rates regarding a prelicensure program's ability to maintain state regulatory body's approval status. Libner and Kubala (2017) describe a tool created by the Illinois Board of Nursing that addresses a programmatic approach to improving NCLEX pass rates. The tool includes guidance on administrative support, curriculum and resources, students, and faculty (Libner & Kubala, 2017). Libner and Kubala (2017) present research that showed increased NCLEX pass rates for the low performing school

who utilized the tools given to them from the Illinois Board of Nursing suggesting that a remediation/preparation program can promote increased NCLEX pass rates for RN programs with lower pass rates.

Adams Robertson (2017) created a project to discern whether a remediation program consisting of standardized tests coupled with applicable remediation would increase the NCLEX pass rates in a program with pass rates below the U.S. average. The setting of the project was a private associate degree of nursing program that had been placed on probation by an accrediting body and so it was important to show an immediate uptick in NCLEX pass rates (Adams Robertson, 2017). A retrospective study was completed to discern whether the remediation program had any effect on the NCLEX pass rates for the program (Adams Robertson, 2017). Results showed that in the private associate degree of nursing program, where the program was initiated, a standardized testing and remediation program can improve NCLEX pass rates (Adams Robertson, 2017). This data supports the prospect of a remediation program to improve NCLEX pass rates at NMC.

Another NCLEX remediation program found during the literature review utilized content reviews, standardized testing, mentoring, and games in an effort to improve NCLEX pass rates (Havrilla, Zbegner, & Victor, 2018). A retrospective analysis showed an increase in NCLEX pass rates for the college's accelerated and traditional bachelor's degree nursing programs (Havrilla et al., 2018). The study also considered predictors of whether a student would pass the NCLEX (Havrilla et al., 2018). The study identified GPA as a predictor of passing the NCLEX (Havrilla et al., 2018). Furthermore, the study

found that when students with a low GPA completed a mentorship remediation program their chances of passing the NCLEX improved (Havrilla et al., 2018). The findings of this study suggest that lower GPA nursing students, like those at NMC, have higher chances of passing the NCLEX after a remediation program.

It is becoming common practice in nursing programs to utilize standardized tests based on the NCLEX to measure a student's knowledge base in a specific content area, like mental health, as well as measure a student's readiness to sit for the NCLEX (Johnson et al., 2017). These standardized exams based on the NCLEX can offer insight into students who need more work before they can reasonably expect to pass the NCLEX and can also indicate areas of weakness that need to be reviewed before a student can expect to pass the NCLEX (Johnson et al., 2017). One popular standardized exam based on the NCLEX is offered by HESI Health Education Systems Incorporated (HESI) (Sosa & Sethares, 2015). Johnson et al. (2017) conducted a study to determine correlations between HESI content area exam scores and scoring well on the HESI exit exam and correlations between HESI exit examination scores, given at the end of a nursing program, and passing the NCLEX. They found a moderate correlation between content area exam scores and HESI exit exam scores and a strong correlation between HESI exit exam scores and passing the NCLEX (Johnson et al., 2017). This information is useful because a nursing program could utilize the content area exam scores by requiring remediation for students who score low on a content are exam with the aim of improving scores on the HESI exit exam. Based on the research this should increase NCLEX rates

for a program because a higher score on the HESI exam correlates to increased odds of passing the NCLEX.

Another standardized test that is used in nursing programs is the Kaplan exit exam. Salvucci (2015) wrote about the importance of accreditation of nursing programs as a safety measure in the healthcare system and the use of the NCLEX exam as an integral part of the accreditation process. Furthermore, Salvucci (2015) explained that the NCLEX exam is written by the National Council State Boards of Nursing and that the NCLEX has incrementally increased in difficulty due to an effort by the National Council State Boards of Nursing to ensure public safety by increasing RN licensure standards. Salvucci (2015) conducted a study to determine the relationship between Kaplan's exit exam for nursing students and first attempt passing of the NCLEX exam. Salvucci (2015) conducted a retrospective, descriptive, comparative study to look at the Kaplan exit exam raw percentage score and NCLEX first attempt outcome. Salvucci (2015) found that the Kaplan exit exam was a good predictor of a student's chance of passing the NCLEX. The mean sample for the Kaplan exit exam was considerably higher for those students who passed the NCLEX on their first attempt (Salvucci, 2015). Because the sample for the study was drawn from an accredited nursing program in Massachusetts, it would be interesting to see if the study could be repeated in an area of poverty like northern New Mexico. Nevertheless, this study does give credence to utilizing the Kaplan exam score as an indicator of need for remediation for NMC nursing students.

Implications

A study of the effectiveness of the NCLEX preparation project at NMC could add valuable knowledge about the effectiveness of such programs. There is a lack of data supporting or opposing the effectiveness of NCLEX remediation programs in the literature especially for minority students and students from disadvantaged backgrounds. Because the student population of NMC is comprised mainly of minority students and students from low socioeconomic backgrounds, valuable information could be gained from studying the project's effectiveness. Other associate degree nursing programs could use the results as a data point when deciding whether implementing a NCLEX remediation/preparation program is worth the work involved. The data compiled measuring the NCLEX preparation program's effectiveness could be especially useful for ADN programs with students from a low socioeconomic background or ADN programs concerned with helping minority students pass the NCLEX.

Summary

This section has described a problem at the local level, explained the larger problem and shared the rationale for the project. The NCLEX pass rates at NMC have fallen below the standards required of the New Mexico Board of Nursing and need to be improved for accreditation purposes. Furthermore, NCLEX pass rates are important for all nursing programs in the U.S. because it is a standard by which most Boards of Nursing measure nursing programs. The NCLEX pass rates of a nursing program are also important because students consider a program's NCLEX pass rates when choosing which programs to apply for. This section has also shared the guiding research questions

and shared a review of the literature. The review of literature showed that there is a gap in the research concerning NCLEX preparation effectiveness especially when focused on minority or students from a low socioeconomic background.

The purpose of this study was to investigate whether an NCLEX preparation program increases the NCLEX predictor exam scores for students in a minority majority Associate Degree Nursing (ADN) program. The focus of this study's next section will be the research methodology, the setting, the sample and the methods used to protect the participants as well as the data collection, instrumentation, materials, data analysis, assumptions and limitations.

Section 2: The Methodology

Introduction

The focus throughout this project study was the NCLEX remediation program at an ADN program in northern New Mexico. The underresearched ADN program had historically low NCLEX pass rates and needed to implement a plan to improve the NCLEX pass rates or risk losing accreditation. There is a dearth of formal inquiry regarding the effectiveness of NCLEX remediation programs in minority majority ADN programs. With Knowles' adult learning theory as a backbone for this project, I used a quantitative design to explore whether there was an improvement in NCLEX predictor scores and whether there was an increase in NCLEX pass rates for ADN nursing students who completed the remediation course.

Data were collected from two different sources. The first source of data for this project study came from the Kaplan predictor scores that all NMC nursing students take in the last semester of the ADN program. Scores for two cohorts were considered: the 2017 cohort that did not participate in the remediation program and the 2018 cohort that did participate in the remediation program. The second data source was the program NCLEX pass rates for the same two cohorts. The data were compared to look for an improvement in the predictor exam pass rate and an improvement in the NCLEX pass rates for the cohort that completed the remediation program.

Research Design and Approach

I used a quantitative nonexperimental design for this project study to investigate an association between the independent variable, completion of a NCLEX remediation

program, and two dependent variables, KAPLAN predictor exam scores and NCLEX pass rates. I used an independent t-test to test for an increase in the scores on the Kaplan NCLEX predictor exam from the cohort that took the remediation course (2018 cohort) compared to the scores on the Kaplan NCLEX predictor exam from the control group, the cohort did not take the remediation course (2017 cohort). I used a chi-square test to test for an increase in the percentage of students who passed the NCLEX from the students who took the remediation course (2018 cohort) compared to the percentage of students who passed the NCLEX from the control group, who did not take the remediation course (2017 cohort).

There were two sets of scores for the NCLEX predictor exam: one set of scores from the cohort of 16 students who did not receive instruction from the remediation program and one set of scores from the cohort of 26 students who did receive instruction from the remediation program. Similarly, there were two sets of NCLEX pass rates: one set from the cohort that did not receive instruction from the remediation program and one from the cohort that did receive instruction from the remediation program.

I chose the NCLEX predictor scores as a dependent variable to test for each of the cohorts because the scores were readily available and because there was no identifying information associated with the scores, which removes any chance of identifying the participants on the study. Additionally, NCLEX predictor exams have been shown to be accurate in forecasting success on the NCLEX. Specifically, students who score higher on the Kaplan predictor exam have considerably higher first attempt NCLEX pass rates (Salvucci, 2015). I chose the NCLEX exam pass rates as a dependent variable to test for

the two cohorts because the scores had no identifying information associated with them and because the data was readily available on the New Mexico Board of Nursing's website. For statistical analysis, the NCLEX pass rates for each cohort—the 2017 cohort that did not participate in the remediation program and the 2018 cohort that did participate in the remediation program—came from the New Mexico Board of Nursing's (2017b) NCLEX Pass Rates Report.

Socioeconomic data are not collected on students in the ADN program even though they are collected at the college level; therefore, these data were not used in the analysis. Nonetheless, the student body at NMC is consistently comprised of a majority of Native American and Hispanic students, and more than 80% of students come from homes with household incomes that fall below the national poverty; thus, the two cohorts have a similar makeup regarding confounding factors like socioeconomic status, culture, and race (Northern New Mexico College, 2018). Furthermore, covariables like gender and age were not considered because the research questions focus on whether the remediation program increased the pass rates on the NCLEX and the NCLEX predictor exam for each cohort. There was no pretest for either of the two cohorts because the NCLEX and Kaplan NCLEX predictor exams are both given at the end of the ADN program curriculum. When the students take the NCLEX predictor exam and the NCLEX, they have successfully completed the nursing curriculum and should have a strong nursing knowledge base. I used total population sampling, which presumably limited confounding factors.

Alternatives to a quantitative design for the project study were considered, but because I desired an objective analysis of the data, I selected a quantitative design. One of the approaches I initially considered was a qualitative design in which I would develop a questionnaire to study the students' perceptions of the remediation program. The questionnaire would have been dispersed after the students in the cohort had taken their NCLEX exam with the aim of determining whether the students perceived the remediation program to have been effective in preparing for the NCLEX and whether it impacted their scores on the NCLEX. Although this information would have been useful and might guide a future study, the aim of this project study was to discern the impact of the remediation program on NCLEX pass rates, so a quantitative approach was justified. Furthermore, it is historically difficult to contact graduates of NMC's ADN program. The program attempts to survey the graduates yearly for program evaluation purposes and the return rate for the survey is extremely low. The potential for a low return rate of the survey regarding the students' perceptions of the remediation program added to the validation of deciding on a quantitative approach to the project study.

Research Questions

RQ1: What is the relation between Kaplan NCLEX predictor exam's scores and remedial instruction?

H₀₁: There is no difference between the 2017 group that did have remedial instruction and the 2018 group that had remedial instruction with respect to KAPLAN predictor exam's mean scores.

H_{A1}: There is a significant difference between the 2017 group that did have remedial instruction and the 2018 group that had remedial instruction with respect to KAPLAN predictor exam's mean scores.

RQ2: What is the relation between the remedial instruction and the NCLEX pass rates?

H₀₂: There is no difference between the 2017 group that did have remedial instruction and the 2018 group that had remedial instruction with respect to the NCLEX pass rates.

H_{A2}: There is a significant difference between the 2017 group that did have remedial instruction and the 2018 group that had remedial instruction with respect to the NCLEX pass rates.

Setting and Sample

The setting of this project study was a rural northern New Mexico college. The college is in a rural high desert area of northern New Mexico with distant mountain views in all directions. The college is located in the Rio Grande River Valley, which allows irrigation to the fertile land in a water-scarce region leading to deep agricultural history in the area. There is also a strong cultural heritage in the area. The college service community includes eight Native American tribes and there is a strong influence of Hispanic culture in the area (Northern New Mexico College, 2018b).

The college offers an associate of applied science in nursing degree, which is referred to as an *associate degree of nursing* by the college; upon completion, students sit for the NCLEX licensure exam to become RNS (Northern New Mexico College, 2018c).

The ADN program was approved by the New Mexico Board of Nursing in 1986 and gained national accreditation by the Accreditation Commission for Education in Nursing in 2017 (Northern New Mexico College, 2018c). The associate degree of nursing is offered as a full-time program consisting of five semesters of study (Northern New Mexico College, 2018c). Each year, the ADN program at the college graduates around 30 students (Northern New Mexico College, 2018c). NCLEX licensure exam pass rates at NMC often fall below the national and state average. The NCLEX licensure exam pass rate for 2017 for NMC was 50%, the lowest of all programs listed on the New Mexico Board of Nursing (2017b) summary report. The National Council of State Boards of Nursing (2017) reported that the national average pass rate in 2017 for nursing programs on the NCLEX licensure exam was over 84%.

The sample for this study was selected using a purposive sampling method with the entirety of both cohorts. The purpose of the study was to discern the effectiveness of the college's NCLEX remediation program, using NCLEX pass rates and Kaplan NCLEX predictor exam scores as dependent variables. Therefore, the two cohorts that have taken the Kaplan predictor exam represented the sample. One cohort, the 2017 cohort, that took the Kaplan predictor exam at the end of their nursing program did not have instruction provided from the remediation program. Another cohort, the 2018 cohort, that took the Kaplan predictor exam at the end of their nursing program did have instruction provided from the remediation program.

Because NMC began using the Kaplan predictor exam in 2017, the project cannot consider earlier cohort scores on the predictor exam, limiting the sample to the 2017 and

later cohorts. The 2017 cohort consisted of 14 students, and the 2018 cohort consisted of 24 students. The sample size was limited, so a total population sample was used, and because the project aimed to explore a problem existing in a specific program with a small student population, the data were useful.

Instrumentation and Materials

The data for this project study were obtained from the 2017 cohort's Kaplan NCLEX predictor exam scores and the 2017 cohort's NCLEX pass rates as well as the 2018 cohort's Kaplan NCLEX predictor exam scores and the 2018 cohort's NCLEX pass rates. The KAPLAN NCLEX predictor exam is a course requirement for NURS 240, the final course in the ADN program at NMC (Northern New Mexico College, 2018f). The KAPLAN predictor exam is an online proctored exam meant to measure a student's readiness to take the NCLEX licensure exam. The predictor exam test scores are available on Kaplan's secure website. The data compiled from the predictor exam scores was interval level data. The percentage scores for the 2017 cohort who did not take the remediation course and the pass rates for the 2018 cohort who did take the remediation course was considered. A second dependent variable that was examined in this study was the NCLEX pass rate for the 2017 cohort and the 2018 cohort. This data was nominal level data. The licensure exam for registered nurses is called the National Council of State Boards of Nursing Licensure Exam, NCLEX (Mager et al., 2017). The NCLEX pass rates were compared for the 2017 cohort, who did not complete the remediation program, and the 2018 cohort, who did complete the remediation program, to test for a

statistically significant change in pass rates. The NCLEX pass rates are public information available on the New Mexico Board of Nursing's website.

Data Collection and Analysis

Data collection for this project study was archival and included the KAPLAN predictor exam scores for the 2017 cohort and the 2018 cohort as well as the NCLEX pass rates for the 2017 and 2018 cohorts. Data was collected from the New Mexico Board of nursing website which lists yearly NCLEX pass rates by academic institution. Data was also collected from the KAPLAN predictor exam pass reports. The data from the Kaplan predictor exam pass report was downloaded from the Kaplan website for faculty for the 2017 and 2018 cohort. After the data was collected it was entered into the Statistical Package for Social Sciences (SPSS) for statistical analysis. The independent variables measured in this project study were instruction provided by the remediation program, represented by the 2017 cohort that did not receive the instruction provided by the remediation program and the 2018 cohort who did receive the instruction provided by the remediation program. Two dependent variables were tested in this project study, the NCLEX exam pass rate and the Kaplan predictor exam scores.

A chi-square test of independence was used to look for a statistically significant difference in the NCLEX exam pass rates, the dependent variable, for the two cohorts in the study, that either did or did not receive instruction provided by the remediation program, the independent variable. To look for a statistically significant difference in the mean of the Kaplan predictor exam scores, an independent t-test was conducted. The

mean of the predictor exam scores were the dependent variable, and the independent variable was completion of the remediation program.

SPSS software was used to run the chi-square test and independent t-test on the data. To avoid falsely rejecting the null hypothesis and keep the alpha level at .05 in the t-test, the Holm-Bonferroni method was utilized pretest. For this research study, a confidence level of 95% was used on the t-test. It was decided that if the methodological assumptions for the t-test were not met after the data collection, a contingency plan is in place that includes running a chi square test of independence to discern whether there was a relationship between the remediation program and scores on the NCLEX predictor exam. An independent t-test was selected as the statistical test because for this null hypothesis, that the mean score on the Kaplan NCLEX predictor exam is expected to be higher for the graduation cohort that had the instruction provided from the remediation program compared to a comparison/control cohort that did not have the instruction provided from the remediation program, there is one independent, categorical variable that has two levels/groups. A chi-square test was chosen to test whether the null hypothesis of the second research question, that there will be no increase in the pass rate on the NCLEX for the graduation cohort that had the instruction provided from the remediation program compared to a comparison/control cohort that did not complete such a program because the data is nominal. The p-value was kept above .05 for the chi-square test and the N will be greater than 38, presumably decreasing the risk of Type II errors.

Assumptions, Limitations, Scope, and Delimitations

A significant limitation of the study was the sample size. Two cohorts from a rural minority majority ADN program were studied for this project. This limited the sample size to the number of students in each cohort, 14 students in the 2017 cohort and 24 students in the 2018 cohort. Because the cohort size was small, a total population sampling was used. Another limitation was the inability to control other variables that might influence NCLEX pass rates and Kaplan predictor exam scores, the dependent variables. Changes in courses other than the remediation program, like instructor changes, as well as student study habits and experience working in the healthcare system might influence NCLEX pass rates and Kaplan predictor exam scores. Also, external factors like the nationally-normed scoring of the NCLEX examination and Kaplan predictor exams cannot be controlled. Some assumptions that were made so that the statistical test could be run included that there were two independent variables that were categorical in nature and that the independent variable was used to test the outcome on a dependent variable.

This project study intended to investigate the effectiveness of a remediation program aimed at improving NCLEX pass rates for an ADN program in Northern New Mexico. The influence of the area's rich Native American and Hispanic culture and the impact of the area's socioeconomic characteristics were deeply rooted in the study but were not specifically part of the statistical analysis. Though the covariables of socioeconomic status and race/culture were not be studied specifically, the knowledge gained from the data analysis should prove useful for nursing programs that have a large

minority student population, or a student population largely made up of students from low socioeconomic status when considering NCLEX remediation programs. The focus of this study was whether the remediation program increased the NCLEX pass rate and Kaplan NCLEX predictor scores of the cohort that received the instruction provided in the program when compared to the previous class that did not receive instruction from the remediation program. This information is important to NMC's ADN program as they consider whether to continue the remediation program. To this end, the Kaplan NCLEX predictor exam scores and the NCLEX pass rates were the dependent variables selected for this study. The independent variable was the remediation program, specifically whether the students received instruction from the remediation program. The independent variable was represented by the 2017 cohort, who did not complete the remediation program, and the 2018 cohort, who did complete the remediation program. The dependent variables for this project study were NCLEX pass rates and passing Kaplan predictor exam.

Protection of Participants' Rights

The protection of participants in a research study is critical (Creswell, 2014). There were no student identifiers associated with the data in this study. The report from the New Mexico Board of Nursing which lists each program of nursing's NCLEX pass rates has no student identifiers associated with it. Rather, there is a number of people who sat for the exam listed and a number of people who passed the exam listed for each school. Likewise, the Kaplan predictor exam report for each cohort has no student identifiers. Instead, the cohort report lists the scores of the students without student

names with the option of selecting a report showing the number of students who met the benchmark or passing score. Before data collection, permission from the Institutional Review Board at Walden University was obtained. The Walden Institutional Review Board approval for this study was No. 0663903 from 04-18-19.

Data Analysis Results

To address research question one, the mean score on the Kaplan NCLEX predictor exam higher for a graduating cohort that had the instruction provided from the remediation program compared to the previous cohort that did not have instruction provided from the remediation program, a quantitative approach was utilized. An independent-samples t-test was conducted to compare the Kaplan NCLEX predictor scores for students who completed the NCLEX remediation program with those that did not complete the NCLEX remediation program. The independent samples t-test was meant to test the null hypothesis that there is no increase in the mean score on the Kaplan NCLEX predictor exam for the graduation cohort that had the instruction provided from the remediation program compared to a comparison/control cohort that did not complete such a program. As can be seen in Table 1, the group that did not receive the remediation (N = 14) was associated with a mean predictor test score of 55.78 (M = 55.78, SD = 5.94). By comparison the group that did receive the remediation was associated with a numerically higher mean predictor test score of 66.49 (M = 66.49, SD = 8.08).

Table 1

Predictor Scores

	N	Mean	SD	SE Mean
Remediation (2018 cohort)	27	66.49	8.08	1.56
No remediation (2017 cohort)	14	55.78	5.94	1.56

The distribution of the predictor scores for the two groups were tested using skewness and kurtosis. As can be seen in Table 2, the set value for skewness for the cohort that received the remediation was .72 (skewness measure of $-.323$ divided by standard error of $.4480$). For the cohort that did not receive the remediation, the set value for skewness was .32 (skewness measure of $-.193$ divided by standard error of $.597$). For the cohort that received the remediation, the set value for kurtosis was -1.2 (kurtosis measure of -1.050 divided by standard error of $.872$). For the cohort that did not receive the remediation, the set value for kurtosis was 1.33 (kurtosis measure of -1.535 divided by standard error of 1.154). These values are sufficiently normal to run a t-test (skew $< [2.0]$ and kurtosis $< [9.0]$) (Emanuel, Matthias, Erik, Luzi, & Markus, 2010).

Table 2

Descriptives for the t-test for independent samples

		Remediation		Statistic	SE
Predictor score	Yes	Mean		66.49	1.56
		95% CI for mean	Lower bound	63.30	
			Upper bound	69.70	
		5% trimmed mean		66.73	
		Median		66.67	
		<i>SD</i>		8.82	
		Minimum		50.67	
		Maximum		77.33	
		Range		26.66	
		Skewness		-.323	
	Kurtosis		-1.05	.87	
	No	Mean		55.78	1.59
		95% CI for mean	Lower bound	52.35	
			Upper bound	59.22	
		5% trimmed mean		55.71	
		Median		55.00	
		<i>SD</i>		5.94	
		Minimum		47.65	
		Maximum		65.33	
Range			17.68		
Skewness			.193	0.6	
Kurtosis		-1.54	1.15		

Additionally, the assumption of homogeneity of variances was tested with a Levene's Test for Equality of Variances. Homogeneity of variances was satisfied with a Levene's F test, as can be seen in Table 3; $F(39) = 1.79$. The independent samples t -test was associated with a statistically significant effect of $t(39) = 4.37$ with a p value of .000. Therefore, the null hypothesis, that there is no increase in the mean score on the Kaplan NCLEX predictor exam for the graduation cohort that had the instruction provided from the remediation program compared to a comparison cohort that did not complete such a

program, can be rejected. There was a significant increase in the mean score on the Kaplan NCLEX predictor exam for the 2018 cohort that participated in the remediation program when compared to the 2017 cohort that did not participate in the remediation program.

Table 3

Independent samples test

		Levene's test for equality of variances		t-test for equality of means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean difference	SE difference	95% CI of the difference	
									Lower	Upper
Predictor score	Equal variances assumed	1.789	.189	4.372	39	.000	10.709	2.449	5.754	15.664
	Equal variances not assumed			4.817	34.175	.000	10.709	2.223	6.192	15.226

To address research question two, what is the relation between remediation instruction and the pass rate for the NCLEX, a quantitative approach was utilized. A chi-square test for independence, or a two by two cross tabulation, was conducted to test the null hypothesis: there is no statistically significant relationship between the completion of the remediation program and passing or failing the NCLEX licensure exam. Assumptions made when conducting the test include: that the participants were at least from an

independent random sample, that there were two independent variables that were categorical in nature and that the independent variable was used to test the outcome on a dependent variable. Those assumptions were met. The entire population of two cohorts were studied so there was random sampling was irrelevant. The independent variable was whether the student completed the remediation. This variable was categorical, i.e., either the students did or did not complete the remediation program, and the category of not completing the remediation program was considered a risk factor for failing the NCLEX. The second variable, or dependent variable, was passing the NCLEX, an outcome variable that was also categorical. The students either failed or passed the NCLEX. In summary, for this chi-square test there were two variables, each with two categories: remediation program; did complete or did not complete, and NCLEX; passed or failed.

The research question that this test was meant to help understand was whether completing an NCLEX remediation program predicted whether a student would pass or fail the NCLEX licensure exam. Table 4 shows that 17 students who sat for the NCLEX exam in 2018 ($N = 27$) passed the NCLEX on their first attempt while 10 students failed on their first attempt. Table 4 also shows that 6 students who sat for the NCLEX exam in 2017 ($N = 12$) passed the NCLEX on their first attempt while 6 students failed on their first attempt. To test the null hypothesis, that there was no statistically significant relationship between completing the remediation program and passing or failing the NCLEX, the alpha level of p was set to .05. If the chi-square value calculated was associated with a p value of less than .05 then the null hypothesis would have been rejected and it could be said that there was a statistically significant relationship between

completing the remediation program and passing or failing the NCLEX. However, as can be seen in Table 5, the chi-square value was associated with a p value of .447, greater than .05. Therefore, the null hypothesis was accepted, and the outcome suggests an unclear relationship between the completion of the remediation program and passing or failing the NCLEX. The results of chi-square test showed no significant difference in the NCLEX pass rates for students who completed the remediation compared to students who did not complete the remediation.

Table 4

Number of Students to Pass/Fail NCLEX Remediation Crosstabulation

	2018 NCLEX	2017 NCLEX	Total
Passed	17	6	23
Failed	10	6	16
Total	27	12	39

Table 5

Chi-Square Tests

	Value	df	Asymptotic significance (2-sided)	Exact sig. (2-sided)	Exact sig. (1-sided)
Pearson chi-square	.577 ^a	1	.447	-	-
Continuity correction	.166	1	.684	-	-
Likelihood ratio	.572	1	.449	-	-
Fisher's exact test				.498	.340
Linear-by-linear association	.562	1	.453	-	-
N of valid cases	39				

The chi-square statistic is 0.577 with a p -value is 0.45. This result is not significant at $p < .05$. The chi-square statistic with Yates correction is 0.17 with a p -value is .68, hence, not significant at $p < .05$.

Conclusion

For this project, the primary goal was to examine the effectiveness of a new NCLEX remediation program in an ADN program. To do this, two research questions were developed along with null hypothesis directed at these questions that were tested using a quantitative method. RQ1 asked: What is the relation between Kaplan NCLEX Predictor scores and remedial instruction? The null hypothesis tested for this research question was: There is no effect on mean score on the Kaplan NCLEX predictor exam for the graduation cohort that had the instruction provided from the remediation program compared to a comparison/control cohort that did not complete such a program. The independent samples t-test showed a strong positive dependency between participation in the remediation program and a higher score on the Kaplan NCLEX predictor exam $t(39) = 4.37, p = 000$. Thus, completion of the remediation program was associated with a statistically significant higher mean score on the Kaplan NCLEX predictor exam.

Research question 2 asked: What is the relation between a graduating cohort's first attempt NCLEX pass rate and the remedial instruction? The null hypothesis for this research question was: there is no change in the percentage of students who passed the NCLEX exam on their first attempt for the graduation cohort that did not have the instruction provided from the remediation program compared to a comparison/control cohort that had the instruction provided from the remediation program. The chi-square

test showed no statistically significant relationship between completion of the remediation program and passing the NCLEX on the first attempt Chi-square ($N = 39$) value of .577 with a $p = .447$.

However, it is difficult to interpret the impact of the remediation program on first attempt passing of the NCLEX because the results reported by the New Mexico Board of Nursing are only presented by year the exam was taken, not by year the tester graduated from nursing school. Furthermore, a nursing school graduate is not required to sit for the exam the same year they graduate nursing school and can wait years before they first sit for the NCLEX exam. It is not possible to precisely separate the graduating cohort, and in this case whether the remediation program was completed, using the year the exam was first taken breakdown that the New Mexico Board of Nursing uses to report the data.

Though the study of the first attempt NCLEX pass rate data was not supportive, the Kaplan NCLEX predictor exam data showed a statistically significant positive relationship between the remediation program and mean scores. As a result of the findings, a great option for a project related to the problem of this study, whether a remediation program can improve the NCLEX pass rate for an ADN program, is the creation of policy recommendations designed to help maximize the benefit of the remediation program. The project outlines remediation program integration into the curriculum and provide guidance on continuation of data accumulation to continue to monitor the effect of the program.

Section 3: The Project

Introduction

This project study was developed to discern the effectiveness of an NCLEX remediation program in an ADN program so that the results may be used in adapting the curriculum to enhance learning. The college where I conducted the research has an open enrollment policy and many of the students begin their college coursework needing to take remediation courses because of their low scores on entrance exams. These characteristics could put the graduates of the ADN program at a higher risk of failing the nursing licensure exam, the NCLEX, and the data from the state board of nursing show low pass rates for the program. The NCLEX licensure exam pass rate for 2017 for NMC was 50%, the lowest of all programs listed on the New Mexico Board of Nursing (2017) summary report. The National Council of State Boards of Nursing (2017) reported that the national average pass rate in 2017 for nursing programs on the NCLEX licensure exam was over 84%. The project for this research involved an evaluation and curriculum plan. The ADN program where the study was conducted can use the findings of the project described in the evaluation report. The policy recommendations associated with this project study were based on the findings of the research and suggest a continuation of the NCLEX remediation program.

Rationale

The project evaluation was intended to gain information regarding the effectiveness of an NCLEX remediation program in an ADN program that has periodically had NCLEX pass rates below the national average. The results of the project

evaluation were considered in the creation of a policy recommendation letter. I chose a policy recommendation letter for the project because it provided a concise context to present my findings and subsequent suggestions to the nursing department (see Bardach, 2016) with the goal of continued improvement in NCLEX pass rates for the program.

The policy recommendations were based on the findings of the study I conducted to investigate whether participation in an NCLEX remediation program improved students' NCLEX predictor scores and NCLEX pass rates. The analysis of the gathered data showed a positive correlation between participation in the remediation program and an increase in NCLEX predictor exam scores. I addressed the problem of low NCLEX pass rates in the policy recommendation by suggesting that the implementation of the NCLEX remediation program be continued as part of the ADN curriculum. I also recommended that practice NCLEX questions be added to courses earlier in the curriculum because the literature review revealed an increase in NCLEX pass rates for students who begin practicing NCLEX questions early in their nursing education (Presti & Sanko, 2019). The policy recommendations will be provided for consideration to the director of the ADN program as well as other curriculum committee members at the research site.

I wrote the policy position paper to provide recommendations to the faculty and administration of the ADN program based on the findings of my research and the literature review. The findings of the study showed a statistically significant increase in the Kaplan NCLEX predictor scores for the group that completed the remediation program compared to the group that did not complete the remediation program. An

independent samples t-test showed a statistically significant effect of $t(39) = 4.37$ with a p value of .000, leading to a rejection of the null hypothesis that there was no increase in the mean score on the NCLEX predictor exam for the graduation cohort that had instruction provided from the remediation program compared to a cohort that did not complete such a program. There was a significant increase in the mean score on the Kaplan NCLEX predictor exam for the 2018 cohort that participated in the remediation program compared to the 2017 cohort that did not participate in the remediation program. The group that did not receive the remediation ($N = 14$) was associated with a mean predictor test score of 55.78 ($M = 55.78, SD = 5.94$). By comparison, the group that did receive the remediation was associated with a numerically higher mean predictor test score of 66.49 ($M = 66.49, SD = 8.08$). These results were significant enough to merit a continuation of the remediation program, and the position paper reflected the recommendation.

Review of the Literature

This project was developed using adult learning theory as a theoretical framework and a comprehensive review of the literature as the foundation. Initially, the literature review focused on minority students, standardized testing, and the NCLEX. While conducting the first literature review for this project study, I read of other tactics to employ when trying to boost NCLEX pass rates, which focused on increasing students' critical thinking skills. Therefore, as a topic of interest in the search for additional student remediation at the study site, critical thinking was the first search term I used in my second review of the literature. Additional topics that were searched included *passing*

NCLEX, NCLEX predictor, critical thinking, and NCLEX critical thinking. The databases I searched included Google Scholar, Dissertations & Theses at Walden University, ProQuest Nursing & Allied Health Source Education Research Information Center (ERIC), and ScienceDirect. I applied the following keywords to the database search: *passing NCLEX, NCLEX success, NCLEX practice, and NCLEX strategies.*

Critical Thinking

Critical thinking skills are crucial to clinical nursing practice, and because critical thinking skills can help students preparing for clinical practice and improve their probability of passing the NCLEX, developing critical thinking skills has become a focus of nursing education (Kaya et al., 2017; Yue, Zhang, Zhang, & Jin, 2017). Critical thinking is an integral part of the nursing process; it enables nurses to manage patients' problems effectively, make appropriate clinical decisions, and provide quality care to patients in a safe manner (Kaddoura et al., 2017). The National League for Nursing (2016) includes critical thinking as an accreditation standard for nursing programs, and critical thinking has been found to be a predictor of NCLEX success (Kaddoura et al., 2017). Von Collin-Applying and Giuliano (2017) studied critical thinking in nurses and detailed the ability to seek information, analyze data, make decisions, and reflect as definitive abilities for critical thinking. However, many students graduate nursing school without these skills. Del Bueno (2005) found that only 30% of nursing graduates met the requirements of critical thinking needed for nursing practice. Based on these findings, efforts to increase critical thinking skills in a nursing licensure program should have a positive impact on NCLEX pass rates, while also preparing graduates of the nursing

program to better care for patients with complex health needs in a complex healthcare system.

During the literature review, I searched other approaches to nursing education. A problem-based learning approach to nursing education has been shown to improve the critical thinking skills of nursing graduates (Gholami et al., 2016). Gholami et al. (2016) used the metacognitive awareness inventory and the California Critical Thinking Skills Test-B to compare students' critical thinking scores after being exposed to different teaching methods. A before and after test was administered to compare a lecture-based teaching method to a problem-solving teaching method (Gholami et al., 2016). The study showed a significant increase in the critical thinking scores following the problem-solving teaching and no increase in critical thinking scores following the lecture-based teaching (Gholami et al., 2016).

Another teaching technique used in nursing school is concept mapping, which is an active learning technique meant to help nursing students relate information being learned to their existing knowledge base (Yue et al., 2017). Ideally this method of learning will also help integrate knowledge from other areas of study and other disciplines (Yue et al., 2017). Yue et al. (2017) conducted a systematic review and meta-analysis to study whether concept mapping improved critical thinking skills in nursing students. The study found that in comparison to traditional teaching methods, like lecture, concept mapping led to higher scores on the critical thinking scale, California critical thinking skill test, and critical thinking disposition inventory (Yue et al., 2017).

The search term *critical thinking* also found research about the nursing process increasing critical thinking skills. Fertelli (2019) wrote that the nursing process consists of data collection, data analysis, planning, and evaluation; that critical thinking is essential to the nursing process; and that critical thinking is therefore essential to passing the NCLEX because the exam is based on the nursing process. The nursing process is a powerful tool in the clinical setting, and even though critical thinking is an essential aspect of it, the nursing process can almost paradoxically be used to enhance critical thinking skills (Lin, Han, Pan, & Chen, 2015). By collecting and analyzing data, then creating a plan and evaluating it, students are taught the tools to think critically (Yue et al., 2017). Fertelli used the California critical thinking disposition inventory as a pretest for students in a peer-based assessment of the nursing process during a nursing course and then as a posttest to see if the peer-assessment intervention increased critical thinking skills. Fertelli found a significant increase in the scores on this inventory for the group taught using a peer-assessment method. The research I studied during the literature review suggested that a peer-based assessment might be a useful tool for nursing instructors when they are trying to increase the critical thinking in students, and it fits nicely with adult learning theory.

Another approach to increase critical thinking skills in students is a flipped classroom approach to nursing education. Dehghanzadeh and Jafaraghaee (2018) studied the effects of a flipped classroom in a second-year medical surgical nursing class. Researchers compared two sections of students in a nursing program when large enrollment numbers led to the addition of a section of the course (Dehghanzadeh &

Jafaraghaee, 2018). The students were randomly assigned to either the flipped classroom section or the traditional classroom (lecture-based) section (Dehghanzadeh & Jafaraghaee, 2018). Both sections used the same course objective to cover the same content (Dehghanzadeh & Jafaraghaee, 2018). Of the 85 students, the 43 students in the flipped classroom setting scored significantly higher on Ricketts' Critical Thinking Disposition Inventory (Dehghanzadeh & Jafaraghaee, 2018). This unique study supported the use of a flipped classroom to increase critical thinking skills.

Clinical practice is an active learning technique and important component of nursing education (Blakeslee, 2019). However, clinical spots for practice are becoming scarce, and there is competition between nursing programs for the limited spots available. Nursing programs are increasingly using high-fidelity simulation to teach students and provide them with clinical experience in a safe setting (Blakeslee, 2019). It has been thought that clinical practice and high-fidelity simulation work to increase critical thinking in nursing students (Blakeslee, 2019). A quantitative study by Blakeslee (2019) utilized a pre and post design to compare critical thinking scores of students who were taught using a case study approach to those who were taught in a high-fidelity simulation approach. The researcher found that there was no discernable difference in the scores for the group who were taught through high fidelity simulation when compared to the group who was taught using a case study (Blakeslee, 2019). Though there are other reasons to run high-fidelity simulations in nursing school (e.g., practicing the skills of nursing), this study does not support the use of high-fidelity simulation as a way to improve critical thinking skills in nursing students. Though there might be other learning associated with

high-fidelity simulation that improves NCLEX pass rates, the critical thinking aspect of high-fidelity simulation should not be relied on to improve NCLEX pass rates. This research could be useful for the ADN program as it tries to increase the critical thinking abilities of the nursing students and hence the NCLEX pass rates of the ADN graduates.

Standardized Tests

A method used by some nursing schools to identify students at risk of failing the NCLEX as well as specific content areas of weakness is standardized testing (Smith Glasgow, Dreher, & Schreiber, 2019). Smith Glasgow et al. (2019) researched standardized tests like the Kaplan predictor exam. The team found that more than 70% of nursing schools utilize standardized tests as part of their curriculum requiring remediation if a benchmark established for the specific exam is not met (Smith Glasgow et al., 2019). Smith Glasgow et al. reported on the ability of standardized tests like the Kaplan predictor exam to measure whether a student possesses the knowledge level necessary to provide safe and effective care. The team found that standardized tests measuring NCLEX readiness are between 96% and 99% predictive (Smith Glasgow et al., 2019).

Many nursing schools utilize standardized end-of-program tests that require a minimum score as part of a progression requirement (Presti & Sanko, 2019). The negative implications of failing such a test are significant to students, nonprogression perhaps being the most immediate, and there are negative implications for nursing programs as well (Presti & Sanko, 2019). Researchers have studied ways to decrease the anxiety related to the negative implications of failing a high-stakes test because the anxiety felt by a student might have negative implications on a student's ability to

perform well on a test (Presti & Sanko, 2019). Presti and Sanko (2019). The practice of using adaptive quizzing in nursing courses has been shown to lower anxiety related to testing and increase NCLEX scores (Presti & Sanko, 2019). Presti and Sanko (2019) researched the effects of adaptive quizzing on high-stakes end-of-program examination scores. They compared end-of-program exam scores of a group who were assigned adaptive quizzing as part of their final course in nursing school with the scores of a group of students who were not assigned adaptive quizzing as part of the final course in nursing school (Presti & Sanko 2019). The team utilized a pre and posttest method and found a statistically significant increase in end-of-program exam scores for the group that were assigned adaptive quizzing as part of their final course (Presti & Sanko 2019). Similar results were found in a study conducted by Corrigan-Magaldi, Colalillo and Molloy (2014). The team studied the effects of a remediation project in an associate degree nursing program targeting at risk students which utilized adaptive quizzing (Corrigan-Magaldi et al., 2014). They reported a significant increase in student scores on the end of program exam and reported positive remarks from students about test anxiety and the remediation program itself in their qualitative data (Corrigan-Magaldi et al., 2014). These studies are relevant because the associate degree nursing program where this study was conducted educates at risk students who have reported test anxiety.

The results of this project study reported in section two suggest that remediation programs can increase scores on the NCLEX predictor exam for students in the associate degree of nursing program where the study was conducted. The literature review also provided support for NCLEX remediation programs and offered additional ideas and

teaching strategies to be added to the remediation program that this project studied. The ideas garnered from the literature review align with constructivism. Glance et al. (2018) explained a shift in higher education learning theory from an objectivist approach, in which the teacher transmits knowledge to the learner, to a constructivist approach which uses the life experiences that gives the learner perspective and builds on the knowledge that is within the learner. The results of the study by Yue et al., (2017) which showed increased critical thinking skills when students were taught utilizing a concept mapping technique provide further support to the objectivist approach to learning. The results of the literature review also align with Knowles' adult learning theory because the literature review showed increased learning and critical thinking in situations where there was more active learning and less lecture (Gholami et al., 2016). The policy recommendation paper reflects the results of the study and incorporates active learning and adaptive quizzing as ways to increase the ADN student's critical thinking skills and hopefully continue to improve NCLEX pass rates.

Project Description

The ADN program at NMC has historically low NCLEX pass rates threatening the program's accreditation status. After the low NCLEX pass rates, the ADN program at NMC instituted an NCLEX preparation program. The study compared the scores on the NCLEX predictor exam for the 2018 cohort, which completed the preparation program, with the NCLEX predictor scores for the 2017 cohort, which did not complete the remediation program. The study also compared the NCLEX pass rates for the calendar years coinciding with the two cohort's graduation years.

A policy recommendation paper was developed with the goal of increasing NCLEX pass rates for graduates of the nursing program. The policy recommendations were based on a comprehensive literature review as well as the findings of the project study conducted at the college. The literature review revealed other potential interventions that have been shown to have a positive effect on NCLEX pass rates. Critical thinking is a skill that is paramount to the nursing process and research has shown a strong correlation between critical thinking skills and NCLEX success. Furthermore, there are several teaching methods that can be employed in the nursing curriculum to improve critical thinking skills. The literature review also revealed that early identification of at-risk students, and practice at taking standardized tests as keys for NCLEX success.

The recommendations in the policy recommendation paper include continuing the remediation program and implementation of other interventions that might prove useful in preparing students for the NCLEX and therefore improve the NCLEX pass rates for the nursing program. It was recommended that the pilot NCLEX remediation program be incorporated into the NURS 240 course. Additionally, it was recommended that if a student does not pass the Kaplan predictor exam at the end of the final semester of the nursing program, an expedited system allowing the student to complete the remediation course work, graduate as soon as possible and be prepared to take NCLEX upon graduation should be implemented. The guidelines for the new policy include setting the benchmark for the Kaplan predictor exam test at a 65% raw score and allotting the predictor exam at 20% of course grade. The following method will be used to determine

the grade: Student total percent score, 65 % or greater = 10 points, 64–55% = 9 points, 54–45% = 8 points, and less than 45% = 0 points. The policy recommendation also includes the following remediation time and points for the Kaplan predictor exam: (a) remediates for the full time (3 minute/question) = 10 points; (b) remediates less than full time = 0 points; and (c) remediation must be completed within 1 week from the test date

If the student does not achieve the designated passing raw score for Predictor A of 65% on the first attempt, the policy recommends that the student be given one additional opportunity to retest within 2 weeks of the first attempt. The grade will be based on the highest score achieved. Furthermore, the recommendation states that if on the second attempt, the student is unable to achieve a raw score of 65%, the student will receive an incomplete in N 240. The student's grade will be held (up to 12 months) until they meet all requirements for N240 or enroll in and complete the virtual ATI NCLEX Preparation at their own expense.

Project Evaluation Plan

To evaluate the remediation project and implementation of the policy recommendations, a quantitative method will be utilized. NCLEX pass rates for the ADN program will be monitored and recorded so statistics can be utilized to test for continued improvement. Likewise, the Kaplan predictor exam scores will be monitored and recorded so statistics can be utilized to test for continued improvement.

For further evaluation of the project, a qualitative method will be utilized. Nursing students, key stakeholders in the project, will be asked to evaluate the remediation program and detail any suggestions for improvement. Key questions for the students will

include: Do you feel that the workload for the remediation program is merited? Do you feel that the remediation program was effective? Do you feel like your test-taking skills improved after completing the remediation program? And do you feel like your critical thinking skills improved after completing the remediation program. The course faculty, also significant stakeholders, will be asked to evaluate the program and offer suggestions for improvement. Key questions to ask the faculty will include: Is the scoring for the remediation program adequate? Is monitoring the remediation program feasible? And do students understand the requirements of the remediation program?

Project Implications

Local Setting

The goal of this project was to evaluate the pilot remediation course in the ADN program. The research showed that the remediation program had a positive impact on the Kaplan predictor exam scores for the cohort that participated in the program. If the policy recommendations are fully implemented, there should be a continued increase on Kaplan predictor exam scores and ultimately an increase in NCLEX pass rates for the ADN program. This will positively impact the local community by increasing the number of licensed nurses available to provide care to patients as well as provide income to families of the licensed nurses.

Larger Setting

This project addressed minority nursing students and the struggles that some of them experience as they work through nursing school and prepare to sit for the NCLEX exam. As the demographics continue to diversify in the United States nursing schools

will presumably educate a more diverse group of students. Ideas and techniques that arose as result of this study could be useful for nursing programs as they work to prepare their student to pass the NCLEX exam.

Conclusion

Section 3 explained the project development, described the policy recommendation, and explained the evaluation plan and implications of the project. The NCLEX remediation project policy recommendations were developed based on the quantitative study conducted a minority majority nursing program as well as a thorough literature review. The goal of the project was to continue to improve NCLEX pass rates for the ADN program. The policy recommendation paper outlined the guidelines for implementation of the remediation program and continued data analysis will provide more input as the program is continually evaluated and adapted. Section 4 will include my personal reflections and ideas and suggestions for further study.

Section 4: Reflections and Conclusions

Introduction

This project was designed to assess a recently implemented NCLEX remediation program. The immediate goal of the project was to study the test scores of the students who participated in the remediation program and discern whether the program was successful in improving NCLEX pass rates for the ADN program. The overall goal of the project was to aid in improving the NCLEX pass rates in a minority majority ADN program. In Section 2, I detailed the data collection and analysis regarding NCLEX pass rates and NCLEX predictor exam scores for two cohorts of students: one that did not participate in the remediation program and one that did. Based on the analysis of the data, I developed a policy recommendation letter, detailed in Section 3, suggesting the continuation of the remediation program with additional techniques discovered in the literature review that have been shown to improve critical thinking and test scores. In Section 4, I detail the strengths, limitations, and recommendations for alternative approaches. I also present my reflections on scholarship, program development, as well as leadership and change. Section 4 also includes my reflections on the significance and applications of the project as well as direction for future research.

Project Strengths

The purpose of this study was to investigate whether an NCLEX preparation program increased the mean scores on an NCLEX predictor exam as well as NCLEX pass rates for a majority minority ADN program. In this study, I examined two consecutive graduation cohorts at an ADN program: one that participated in the NCLEX

remediation program and one that did not participate in the remediation program. The data showed a statistically significant positive relationship between the remediation program and mean scores on the predictor exam. The findings of the study support the continuation of the NCLEX remediation program, and I developed a policy recommendation letter that will be sent to the ADN program director to be disseminated to the curriculum committee and other pertinent faculty. The policy recommendation letter outlines specific guidelines for improvement of the remediation program based on a thorough review of the literature regarding high-stakes testing, minority students, and the NCLEX. The guidelines include grading parameters for testing in the remediation program as well as guidelines for remediation times, including focused studying techniques.

Project Limitations and Recommendations for Alternative Approaches

A possible limitation of the project is the assumption that the nursing students will commit to the NCLEX remediation program and devote their time to the self-regulated portion of the program. Student effort and attention is important for the question trainers and focused review exams to have a maximum impact on student learning. Aside from the focused review exams and question trainers, part of the policy recommendation is timed student review. If students are not devoted enough in their quest to pass the NCLEX to put forth the effort to use the suggested study topics, put in quality review time, and address areas of identified areas of weaknesses, then the remediation program will presumably not have the desired effect of raising NCLEX pass rates.

An alternative approach would be to assign the students study groups in an effort to improve the quality of study time in the remediation program. The groups could be assigned based on preliminary NCLEX predictor scores. Students with high grades on the preliminary predictor exam presumably do not need to spend as much time reviewing the material, so their groups would not need to meet as often or would not have as much required remediation time. Students with lower scores would be placed in groups with similarly scoring students. These groups would have more required remediation time and more required meetings. This method would require students who are greatest risk of failing the NCLEX to put in the most time remediating for the NCLEX.

Scholarship, Project Development and Evaluation, and Leadership and Change

As an educator, I have found the most fulfilment in working with students from disadvantaged backgrounds. To me, there is nothing in the profession like seeing the pride of students who have struggled because of life's circumstances as they rise to the task and succeed in their academic endeavors. This has led me to find work at colleges where the student body comes from a disadvantaged background. When the time finally came for me to develop a doctoral-level study, the NCLEX remediation program at NMC corresponded with my professional interests. The students participating in the remediation program were mostly from disadvantaged backgrounds, and they were committed to passing the NCLEX exam so they could become licensed RNs. The remediation program was in the pilot stage, and the nursing program needed data to support continuation of the program. I learned the necessary skills for project development in the doctoral program, and when I stumbled in developing the project, I

was able to find my footing with the assistance of my project study chair and team. Perhaps I made the most significant step in becoming a scholar during the evaluation phase of the project study. The analysis of data, the writing of the results, and the development of the project were the stages when I struggled and, therefore, learned the most.

Throughout the doctoral program, I learned much about being a scholar. I enjoyed the rigor, required self-regulation and allowed self-exploration. Completing this project study was an endeavor that forced me to dramatically improve my time management skills, tested my determination, and taught me about perseverance. During the process, I learned to think like a researcher, utilize available resources, and succinctly ask questions that I want to find the answers to. I also learned how hard it can be to get back on track when I strayed from my schedule, and I learned to overcome setbacks that can happen in the educational process.

The scholarship of this doctoral study helped me ascend into a leadership position at my college. I was ready to step in as interim director when our department was unable to find a suitable director, and I plan to pursue another leadership position once I have completed my doctoral program. I have already been able to use some of the knowledge ascertained during this program, and as I continue a career in a leadership role, the bank of knowledge promises to continue to be an asset.

Reflection on Importance of the Work

I believe in the positive change that can happen in a community from an investment of time and effort. I also believe that education can be a springboard to help

individuals live a better life. The educational work of the college where this project study was completed helps improve the quality of life for a community struggling economically. The nursing program at NMC provides an opportunity for people in the community to improve their economic status and remove some of the stressors that accompany poverty.

NMC has an open admission policy allowing individuals from various academic histories the opportunity to continue their education, but many students begin their coursework at the college requiring much remediation. In a college program like nursing, it can be difficult for a student who has struggled academically to persevere because of the pace of nursing programs and the level of science, math, and psychology knowledge necessary to understand the material and concepts taught in the program. Those students who are able to navigate the program successfully and graduate must take the NCLEX licensure exam in order to practice as a nurse and gain employment paying an income that can help raise individuals and families out of poverty. This project study showed the NCLEX remediation program to be beneficial for students in their preparation for the NCLEX. Furthermore, the guidelines presented in the policy recommendation letter outline an implementation strategy based on research that should increase NCLEX pass rates for the program and help graduates gain licensure to practice as an RN.

Implications, Applications, and Directions for Future Research

Implications for further research might include the need to study future NCLEX pass rates for the ADN program. The State Board of Nursing reports on pass rates by year for a nursing program. Because anyone who has graduated a nursing program may apply

to take the NCLEX in any given year regardless of when they graduated, it is difficult to discern NCLEX pass rates for a specific graduation cohort. It would be interesting to continue to study the remediation program and NCLEX pass rates for the nursing program because as more graduating cohorts complete the remediation program, the number of people sitting for the NCLEX from NMC who have not completed the remediation should decrease. The data concerning the remediation program and NCLEX pass rates for NMC should show more clearly the impact of the remediation program.

This study was conducted in a majority-minority ADN program. It would also be interesting to study the results of the application of a similar NCLEX remediation program in other nursing programs. Further study in BSN, online programs, or programs with other characteristics would contribute to the body of knowledge. This study had a limitation in the number of participants, so further study with more participants would prove useful.

Conclusion

This section concludes the project study and policy recommendation letter. In this section, the strengths and limitations of the study as well as recommendations were explained. In this section, I detailed reflections as a scholar and practitioner, and I reflected on the experience of developing the project. I discussed the implications of the project and discussed recommendations for further research.

The analysis of the data collected during the study showed a positive impact on NCLEX predictor exam scores for the students who completed the remediation program. The results of the study may suggest the implementation of an NCLEX remediation

program to nursing programs with similar characteristics or even those with different characteristics. This study can provide positive social change by aiding not only programs educating at-risk students or those with lower socioeconomic status but also programs that aim to improve their NCLEX pass rates in an effort to gain accreditation status, or keep accreditation, as well as increase the odds that graduates of their nursing program pass their licensure exam.

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Appendix A: Policy Recommendation

Date: XX/XX/2019

To: Dean of Nursing Education, College Administrators, and Faculty

From: Christopher Young, MSN, RN, Assistant Professor of Nursing

Executive Summary

Problem

NCLEX pass rates that often fall below the national average put program accreditation at risk.

Methodology

A policy recommendation paper was developed incorporating suggestions to help increase NCLEX pass rates for a minority majority ADN program. The recommendations were based on the results of a quantitative research study conducted at the college. The study compared the KAPLAN NCLEX predictor exam scores for two graduating cohorts, one cohort that did not participate in the remediation program and one cohort that did participate in the remediation program. The study also compared the NCLEX pass rates for the calendar years coinciding with the two cohorts' graduation years. Additional strategies to increase NCLEX pass rates were based on the results of a literature review regarding efforts to increase NCLEX pass rates.

Findings and Recommendations

The quantitative study regarding the remediation program showed a statistically significant increase in the KAPLAN NCLEX predictor exam scores. The results of the study are summarized below:

1) Findings regarding Participation in the NCLEX Remediation Program

- The 2018 graduating cohort, who participated in the NCLEX remediation program, had a mean KAPLAN NCLEX Predictor Exam score of 66.49.
- The 2017 graduating cohort, who did not participate in the NCLEX remediation program, had a mean KAPLAN NCLEX Predictor Exam score of 55.78.
- Participation in the remediation program was associated with higher scores on the Kaplan NCLEX Predictor exam.

2) Recommendation:

- Continue the NCLEX remediation program in N240.
- Consider further integration of the NCLEX remediation program throughout the ADN curriculum.

Conclusions and Implications

The NCLEX remediation program that was instituted resulted in increased KAPLAN Predictor Exam scores for the participating cohort. Continuing the program will benefit students in their goal of attaining a license to practice nursing. The program should eventually increase the NCLEX pass rates for the program. Further integration of

NCLEX preparation into the curriculum could further increase pass rates for the program and should be considered.

Background of Existing Problem

NCLEX licensure exam pass rates at NMC were below the national and state average and the low NCLEX pass rates put the program at risk of punitive actions by accrediting bodies. The NCLEX licensure exam pass rates for 2017 for NMC was 50%, the lowest of all programs listed on the New Mexico Board of Nursing summary report (2017). The National Council of State Boards of Nursing (2017) reported that the national average pass rate in 2017 for nursing programs on the NCLEX licensure exam was over 84%. Though there are many NCLEX preparation programs available to nursing students on an individual basis, with such low NCLEX pass rates it was evident that NMC needed an aggressive NCLEX preparation program as a requirement for the entire cohort. The problem addressed in this study was that at NMC the average pass rate for the National Council Licensure Examination (NCLEX) for the ADN program often falls below the 80% pass rate mandated by the New Mexico Board of Nursing (2017).

After the low NCLEX pass rates, the ADN program at NMC instituted an NCLEX preparation program. This study compared the scores on the NCLEX predictor exam for the 2018 cohort, which completed the preparation program, with the NCLEX predictor scores for the 2017 cohort, which did not complete the preparation program.

The policy recommendations in this document are presented with the goal of increasing NCLEX pass rates for graduates of the nursing program. The policy

recommendations were based on a comprehensive literature review as well as the findings of the project study conducted at the college.

Summary of Findings

In this project, an NCLEX remediation program was studied to discern whether the NCLEX remediation program had any effect on the KAPLAN NCLEX Predictor exam. The research showed that the cohort that completed the remediation program had increased scores on the predictor exam in comparison to the cohort that did not participate in the remediation program. The mean score for the group that did not complete the remediation program was 55.78 and the mean score for the cohort that completed the remediation program had a mean score of 66.49. Analysis of the data showed a statistically significant increase in the predictor exam scores for the group that completed the remediation program. Continued implementation of the remediation program is recommended as it has proven to be effective in increasing the Kaplan NCLEX predictor exam scores.

Other potential interventions that have been shown to have a positive effect on NCLEX pass rates were revealed in the literature review. Critical thinking is a skill that is paramount to the nursing process and research has shown a strong correlation between critical thinking skills and NCLEX success. Furthermore, there are several teaching methods that can be employed in the nursing curriculum to improve critical thinking skills. The literature review also revealed that early identification of at-risk students, and practice at taking standardized tests as keys for NCLEX success. The recommendations in this policy include continuing the remediation program and implementation of other

interventions that might prove useful in preparing students for the NCLEX and therefore improve the NCLEX pass rates for the nursing program.

Outline of Recommendations and Supporting Evidence Analysis of Existing Policy:

NCLEX Remediation Program

The remediation program is part of NURS 240, a course that is offered in the final semester of nursing studies and prepares the student for taking the national board exam for RN licensure or the NCLEX-RN exam. The focus of this course is to provide the student with multiple opportunities to take NCLEX style tests, to build their test taking skills and strategies, to analyze and remediate the questions, and to concentrate their study in the areas of needed knowledge.

Students learn to apply their previous knowledge and critical thinking abilities to develop test taking strategies that are successful with NCLEX style questions. This course utilizes a combination of classes, live (or online) seminars, outside class assignments and ongoing communication with the instructor.

Policy Recommendation: NCLEX Remediation Program

It is recommended that the pilot NCLEX remediation program be incorporated into the NURS 240 course. Additionally, it is recommended that if a student does not pass the KAPLAN predictor exam at the end of the final semester of the nursing program, an expedited system allowing the student to complete the remediation course work, graduate as soon as possible and be prepared to take NCLEX upon graduation should be implemented. The guidelines for the new policy follow.

Grading for Predictor A

Kaplan Secured Predictor A

- Benchmark for this test is 65% raw score.
- Predictor A is allotted 20% of course grade.

The following method will be used to determine the grade

Student total percent score:

- 65 % or greater = 10 points
- 64-55% = 9 points
- 54-45% = 8 points
- Less than 45% = 0 points

Remediation

- Remediates for the full time (3 minute/question) = 10 points
- Remediates less than full time = 0 points
- Remediation must be completed within one week from the test date.

Retest for Predictor A

- If the student does not achieve the designated passing raw score for Predictor A of 65% on the first attempt, the student will be given one additional opportunity to retest within 2 weeks of the first attempt. The grade will be based on the highest score achieved.
- If on the second attempt, the student is unable to achieve a raw score of 65%, the student will receive an incomplete in N 240. The student's grade will be held (up to 12 months) until they meet all requirements for N240 or enroll in and complete

the virtual ATI NCLEX Preparation at their own expense.

Evidence: NCLEX Remediation Program Results

The review of literature showed that NCLEX success is an important issue for nursing programs throughout the United States. First time pass rates on the NCLEX are an integral reference point for accrediting bodies of RN licensure programs (Banks, McCullough, Ketner, & Darby, 2018.) The mean sample for the Kaplan exit exam was considerably higher for those students who passed the NCLEX on their first attempt (Salvucci, 2017). The research conducted on the remediation program showed promising results. An independent-samples t-test was conducted to compare the KAPLAN NCLEX predictor scores for students who completed the NCLEX remediation program with those that did not complete the NCLEX remediation program. The independent samples t-test was meant to test the null hypothesis that there is no increase in the mean score on the Kaplan NCLEX predictor exam for the graduation cohort that had the instruction provided from the remediation program compared to a comparison/control cohort that did not complete such a program. As can be seen in Table 1, the group that did not receive the remediation (N=14) was associated with a mean predictor test score of 55.78(M =55.78, SD=5.94). By comparison the group that did receive the remediation was associated with a numerically higher mean predictor test score of 66.49 (M =66.49, SD=8.08).

Table 1

Predictor Scores

	N	Mean	Std. Deviation	STD. Error Mean
Remediation (2018 cohort)	27	66.49	8.08	1.56
No Remediation (2017 cohort)	14	55.78	5.94	1.56

The Kaplan exit exam (predictor exam) is a good indicator of a student's readiness to take the NCLEX (Salvucci, 2017). If a student is not able to pass the predictor exam it is likely that they will not be able to pass the NCLEX. Setting the benchmark for the Kaplan Predictor Exam at 65% and requiring that any student who does not meet the benchmark complete remediation before retesting, the nursing program will be working to catch at risk students to help them be better prepared to take the NCLEX.

Immediate Applicability and Implementation Admissions Process and

Criteria

If the proposed changes to the NURS 240 remediation are adopted, the responsibility of implementation will fall on the NURS 240 instructor and the curriculum committee. The pilot remediation program is in place and only needs to be modified. The course objectives, course calendar and course deliverables/grading scheme, will need to

be modified to reflect the improvements to the remediation program. The proposed new course objectives, calendar and course deliverables will be as follows:

Course Objectives

The Student will:

- ▶ Describe and practice a testing, remediation and study process that leads to passing the NCLEX-RN exam.
- ▶ Explore multiple NCLEX style tests, analyze results, remediate questions and identify areas of needed study.
- ▶ Describe and utilize effective analysis and remediation for an NCLEX style question.
- ▶ Describe and explore the Decision Tree process in assisting to make correct choices with NCLEX style questions.
- ▶ Discuss effective study strategies in preparing for the NCLEX-RN exam.
- ▶ Explore effective test taking strategies that lead to success with the NCLEX-RN exam.
- ▶ Describe, discuss and develop a professional resume.
- ▶ Describe and discuss the process for submitting an application for licensure to the Board of Nursing.

Proposed Course Calendar

► Classes	Date	Topic	Hours
► Session 1	1st day of classes	Orientation	2
► Session 2	Mar	19-22 Live Review	24
► Session 3	Before spring break	Secure Predictor A proctored	2
► Session 4	1st week in May	Applying to BON, Licensure	2
► Total			30

Course deliverables

Percentage

► Question Trainer tests 1-6 with analysis and remediation	50%
► Q Bank Questions (minimum of 500)	20%
► Predictor A	20%
► Question Trainer #7	10%
► Total	100%

Summary

The goal of this project was to evaluate the pilot remediation course in the ADN program. The research showed that the remediation program had a positive impact on the KAPLAN predictor exam scores for the cohort that participated in the program. The goal of this policy recommendation was to incorporate the remediation program into the curriculum with slight improvements. The recommendation was based on the quantitative study conducted at the college and the information garnered in a review of the literature.

The proposed recommendations could be evaluated by continuing to collect and analyze data regarding the KAPLAN predictor exam and the NCLEX pass rates for the ADN program.