The influence of participation in student nurse extern programs on NCLEX-RN pass rates for first-time candidates

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THE INFLUENCE OF PARTICIPATION
IN STUDENT NURSE EXTERN PROGRAMS
ON NCLEX-RN PASS RATES
FOR FIRST-TIME CANDIDATES

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DEDICATION

I dedicate this dissertation to several people who mean so much to me. This accomplishment must be shared with each of them because all have had a profound influence on my life.

To my husband, Andrew, who was a true marital partner during my pursuit of a doctoral degree. Thank you for all of the dishes you washed without complaint, the household chores you completed, the transportation duties shared to take or pick up children from their various activities, and all of the other things you did to help as I worked towards my goal. Thank you too for the love/encouragement you provided to me during long days and nights of study, writing, and research. Thank you for believing that I would succeed and verbalizing it often. I could not have done this without you by my side.

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STRUCTURED ABSTRACT

Background: NCLEX-RN pass rate data for first-time candidates is used as a method to assess the quality of nursing education programs by nursing education accreditation bodies. In several states, the board of nursing uses NCLEX-RN pass rate data to measure the educational effectiveness of nursing programs operating within its’ jurisdiction. Educators and administrators in nursing programs are concerned about NCLEX-RN pass rates for first-time candidates who are graduates of their nursing programs. Journals for nurse educators and administrators include articles regarding variables affecting success and/or failure on the NCLEX-RN. Most of the identified variables are academic in nature (GPA, ACT/SAT scores, scores on standardized entrance/exit exams). Little information is available regarding other possible variables, both internal and external to nursing programs, which may affect NCLEX-RN pass rates for first-time candidates. One variable that could be studied is the influence of participation in student nurse extern programs on NCLEX-RN pass rates.

Purpose: To determine if participation in a student nurse extern program had any influence on NCLEX-RN pass rates for first-time candidates.

Setting/Subjects: The graduates of nursing programs who applied for initial RN licensure in the State of Michigan between April 1, 2004, and September 30, 2005, were the identified population for this study. A total of 252 persons participated in the study.

Research Design: Randomized sampling technique was used for this non-experimental study, which had a descriptive research objective and a cross-sectional time dimension.

Data Collection and Analysis: A questionnaire developed for this study was mailed to 600 persons in January and February 2006. A return rate of 42% was achieved (n = 252). Analyses of demographic and descriptive data indicated that the respondents closely reflected
population characteristics of RNs as described by the 2000 National Sample Survey of RNs
and the population characteristics gathered by the American Association of Colleges of
Nursing. Participation in a student nurse extern program was reported by 90 respondents,
and 162 respondents indicated they did not participate in a student nurse extern program.
Pertinent data were used to examine the null hypothesis through Chi-Square testing as the
data were nominal. Results indicated $\chi^2 = 4.19$ (df = 1) and were significant at $p \leq 0.05$.

Findings: Persons who had participated in student nurse extern programs were more
likely to pass the NCLEX-RN as first-time candidates than persons who had not participated
in student nurse extern programs. The extern experience was perceived to have had a
positive or very positive effect on their ability to pass the NCLEX-RN by 64.4% of the
persons who had participated in such a program. Comments from respondents indicated that
the interactions that occurred between and among person, environment, and behavior in a
student nurse extern program had an effect on the goal of passing the NCLEX-RN

Conclusion: Findings from this study provided supporting evidence suggesting that
participation in a student nurse extern program may positively influence NCLEX-RN pass
rates for first-time candidates.
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The Influence of Participation in Student Nurse Extern Programs on NCLEX-RN Pass Rates for First-Time Candidates

CHAPTER ONE
Introduction and Background

Across the USA, K-12 schools are evaluated by the results of student scores on standardized tests. In a similar vein, programs of nursing are evaluated by the first-time pass rates of their graduates on the National Council Licensure Examination for Registered Nurses (NCLEX-RN) developed by the National Council of State Boards of Nursing (NCSBN). The NCLEX-RN is nursing’s version of high-stakes testing.

The NCLEX-RN is a criterion-referenced exam using a pass/fail standard (Applegate, 1998). Analysis of nursing practice provides the basis for the construction of exam questions to assess learning outcomes specific to nursing practice. The NCLEX-RN is reviewed on a regular basis by NCSBN to assure its congruence with the realities of entry-level nursing practice. The ability to pass NCLEX-RN indicates that a graduate of a program of nursing has acquired a sufficient level of knowledge to prepare him/her to function as an entry-level registered nurse (NCSBN, 2003).

The NCSBN was given control of the development and administration of a national RN licensure exam in 1978. Four years later, the NCLEX-RN was implemented as the means to determine a candidate’s readiness to practice as an entry-level RN. Prior to 1994, the NCLEX-RN was offered twice each year and was a pencil and paper test taken over two consecutive days in predetermined test sites. A computerized adaptive test for the NCLEX-RN was introduced in 1994 and remains the current testing procedure. The NCLEX-RN examination requires a maximum of five hours, and the number of questions answered by the
candidate depends upon how the candidate responded to previous exam questions. The number of questions each candidate must answer ranges from a minimum of 75 questions on NCLEX-RN to a maximum of 265 questions. Returning to previous questions to alter selected responses is not an option in computerized adaptive testing. The computer program adjusts the complexity and difficulty of questions for each candidate on an individual basis.

A practice analysis is conducted every three years to validate the test plan for the NCLEX-RN. Each practice analysis assesses entry-level RN practice by surveying RNs during their initial six months of licensure (Smith, 2002). The survey results serve a dual purpose. Content validity for the NCLEX-RN has been consistently established and information is provided regarding the clinical practice sites of recently licensed nurses (Smith & Crawford, 2002). Results from the 2002 RN Practice Analysis survey indicated that BSN graduates (93.1 %) were more likely than ADN graduates (84.8%) to be employed in acute care/hospitals (Smith & Crawford, 2004, April). The Spring 2003 Practice and Professional Issues Survey conducted by NCSBN indicated that acute care facilities/hospitals were the employers of 88.1% of newly licensed RNs (Smith & Crawford, 2004, July). These findings are congruent with the results of the March 2000 national sample survey of Registered Nurses. This report indicated that 59.1% of RNs work in acute care/hospital settings, and 75% of RNs under the age of 30 are employed in acute-care/hospital settings (Spratley, Johnson, Sochalski, Fritz & Spencer, 2000).

The most recent analysis of entry-level RN practice did not include diploma prepared RNs due to the low percentage of those graduates who take the NCLEX-RN (Smith, 2002). Survey responses from newly licensed nursing graduates with an Associate’s degree (ADN) or a Bachelor’s degree (BSN) were compared. A Pearson r correlation of 0.98 indicated that
graduates of both types of nursing programs perform similar entry-level nursing activities and practice patterns (Smith, 2002). Differing practice patterns or activities attributable to ADN or BSN educational preparation were not identified (Smith, 2002).

The National League for Nursing Accreditation Commission (NLNAC) began mandating the use of NCLEX-RN pass rates as an outcome measure criterion in its 1999 Standards and Criteria document for programs of nursing accredited by this organization (NLNAC, 1999). The Commission on Collegiate Nursing Education (CCNE) also uses NCLEX-RN pass rates as benchmark data to indicate the effectiveness of baccalaureate nursing programs (CCNE, 1998). Failure to have an appropriate percentage of graduates pass the NCLEX-RN on their first attempt may result in intense scrutiny of a program of nursing by the state board of nursing. Repetitive failure rates that are unacceptable to the state board of nursing may result in withdrawal of board approval, which can close the nursing program.

State boards of nursing are government regulatory bodies whose purposes are to safeguard the health and safety of the public and to promote quality nursing care and nursing education. Monitoring NCLEX-RN pass-rate data of nursing programs in each board’s own jurisdiction is one of the functions of persons associated with this government agency. Data regarding NCLEX-RN pass rates for schools of nursing are accessible on the board of nursing website in many states. This information is available as a public service as well as to conform to the public’s right to know. Some of the states providing public access to NCLEX-RN pass rates by individual programs of nursing are Arkansas, California, Colorado, Georgia, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, North Carolina, Ohio, and Texas.
Public access to NCLEX-RN pass-rate data also allows prospective students to use the information when comparing the programs of nursing that they are interested in attending. This information may also influence student selection in choosing an institution of higher education where nursing education is offered. Students of high academic caliber who are interested in pursuing education leading to licensure as a Registered Nurse (RN) are unlikely to be attracted to a school of nursing with low NCLEX-RN pass rates (Beeson & Kissling, 2001).

Pass-rate data from NCLEX-RN are used to measure the educational effectiveness of nursing programs in some states. The Boards of Nursing in Kentucky and in Ohio require a pass-rate of 85% for first-time candidates, whereas the Boards of Nursing in Massachusetts and New Mexico stipulate that 80% of candidates must pass the NCLEX-RN on their first attempt. Administrative Rule R338.10310 of the Michigan Board of Nursing (MBON) indicates that the MBON may evaluate a school/program of nursing when the failure rate on the NCLEX-RN for first-time candidates reaches or exceeds 25% for any one year of compiled statistics or reaches 15% for any 2 of 3 years of consecutively compiled statistics (MBON, 2003, September 11). Essentially, this means that a school of nursing must maintain or exceed a baseline pass rate of 85% by graduates taking the NCLEX-RN for the first time. Pass-rate data meeting or exceeding the criterion of 85% demonstrates that appropriate student learning is taking place.

The NCSBN tracks passing rates for persons taking the NCLEX-RN. The annual pass rates for persons taking the NCLEX-RN have declined slightly since 1994, while the passing standard has been raised (NCSBN, 2002). According to NSCEN licensure and examination statistics, the first-time pass rate for nursing program graduates educated in the
USA was 90.3% in 1994; 90.4% in 1995; 88% in 1996; 87.7% in 1997; 85% in 1998; 84.8% in 1999; 83.8% in 2000; 85.5% in 2001; 86.7% in 2002; 87% in 2003; 85.3% in 2004; and 87.3% in 2005 (NCSBN, n.d.). Pass-rate data for the NCLEX-RN are computed on an annual basis and are not calculated as an average over a span of years.

Statement of the Problem

Administrators and faculty in schools of nursing are concerned about the NCLEX-RN pass rates of their program graduates. A successful nursing education program is one whose graduates are successful on the NCLEX-RN (Higgins, 2005). The reality is that the academic nursing community and the general public equate the reputation and the educational quality of each nursing program with the pass rate of its graduates who take the NCLEX-RN for the first time (Alexander & Brophy, 1997; Giddens & Gloeckner, 2005; Vance & Davidhizar, 1997).

Another concern within the nursing education community is the low pass-rate of persons who take the NCLEX-RN for a second or a third time. According to NSCBN licensure and examination statistics, the pass rates for nursing program graduates educated in the USA who were repeat candidates taking the NCLEX-RN again were 58.8% in 1994; 54.3% in 1995; 52.4% in 1996; 53.3% in 1997; 47.9% in 1998; 50.5% in 1999; 48.5% in 2000; 50% in 2001; 51.8% in 2002; 51.9% in 2003; 51.9% in 2004; and 53.6% in 2005 (NCSBN, n.d.) This information supports the premise that persons who initially fail the NCLEX-RN exam are at an increased risk of failing the exam again.

Consistent with the discrepancy problem analysis model (Achilles, Reynolds, & Achilles, 1997), a discrepancy between current NCLEX-RN pass rates and a desire to achieve higher pass rates has been identified within the academic nursing community. Success on the
NCLEX-RN results in feelings of satisfaction and goal achievement for both faculty members and their former students (Vance & Davidhizar, 1997). Failure on the NCLEX-RN leads to feelings of devastation, grief, or embarrassment (Griffiths, Papastrat, Czekanski, & Hagan, 2004; Vance & Davidhizar, 1997).

Nursing education journals include articles regarding NCLEX-RN success and/or failure. Researchers have identified several academic variables, such as cumulative grade-point average (GPA), ACT/SAT scores, grades in science courses, nursing clinical course grades, and scores on standardized nursing school admission and/or exit exams, which may predict a student’s potential to succeed or fail the NCLEX-RN as a first-time candidate (Alexander & Brophy, 1997; Arathusik & Aber, 1998; Barkley, Rhodes, & DuFour, 1998; Beeman & Waterhouse, 2001; Beeson & Kissling, 2001; Byrd, Garza, & Nieswiadomy, 1999; Daley, Kirkpatrick, Frazier, Chung, & Moser, 2003; Gallagher, Bomba, & Crane, 2001; Lauchner, Newman, & Britt, 1999; McKinney, Small, O’Dell, & Coonrod, 1988; Niebert & Young, 2001; Washington & Perkel, 2001; Yang, Glick, & McClelland, 1987; Yin & Burger, 2003).

However, little information is available in nursing journals regarding other possible variables, both internal and external to academic nursing programs, which may affect the ability of students to pass the NCLEX-RN as first-time candidates. Problem analysis requires one to ask questions. Why is there not more research regarding other variables that may affect a student’s ability to pass the NCLEX-RN? The problem analysis approach encouraged the analysis of this discrepancy and to perceive this problem as an opportunity to conduct problem-finding to determine if another variable that may affect NCLEX-RN pass-rates could be identified and studied.

One identified variable that could be studied is student nurse externship (SNE) programs.
Most SNE programs are external to academia yet supply student nurses with additional clinical contact hours providing patient care in a healthcare institution. Is it possible that the additional clinical hours and the exposure to practicing RN’s in a real-life clinical setting in the SNE program could have an influence on NCLEX-RN pass-rates for first-time candidates? What is the relationship of participation in an SNE program and NCLEX-RN success and/or failure for candidates taking the examination for the first time?

Research regarding any possible relationship that may be present between passing the NCLEX-RN as a first-time candidate and participation in a SNE program was not identified in any of the research literature reviewed for this study. This indicates a discrepancy in the literature that is open to examination. Educators and administrators in nursing programs are encouraged by nursing education leaders and accrediting or regulatory bodies to identify and examine possible variables that may affect the ability of their students to successfully pass the NCLEX-RN as first-time candidates.

Purpose of Study

The researcher’s purpose for this study was to determine if participation in SNE programs has any influence on NCLEX-RN pass rates for first-time candidates. Education leaders and administrators in nursing academia actively seek information to improve nursing education programs so that new graduates are prepared to practice in the entry-level nursing positions for which they were educated. Nursing education programs must include data regarding NCLEX-RN pass rates for graduates who take the exam as first-time candidates in the reports submitted to accrediting bodies and to the state board of nursing. Good pass rates help nursing education programs maintain accreditation. Information regarding NCLEX-RN pass rates can be used to attract and recruit students into nursing education programs. Research
on this topic may assist and guide administrators and faculty in schools of nursing as they
develop curricula and academic schedules or provide student advising services. It may also
provide information for nurse-administrators and staff nurse educators in healthcare
institutions as they review current student nurse extern programs in their health care facilities
or begin to develop such a program.

Definition of Terms for this Study

1. First-time candidate: a graduate nurse who has not taken the NCLEX-RN previously.
2. Graduate nurse: a person who has completed the academic requirements of a nursing
   program preparing students to take the NCLEX-RN and to work in an entry-level
   nursing position. A graduate nurse is not yet licensed as an RN.
3. NCLEX-RN: a national licensure exam taken by graduates of nursing programs in
   the USA and its territories. Graduates successfully passing this exam are licensed to
   practice as a Registered Nurse (RN) in the jurisdiction where they applied for
   licensure. Scores are reported on a pass/fail basis.
4. Nursing Education Program/Nursing School: an academic program in a college or
   university setting, which prepares students for entry-level nursing practice through a
   variety of teaching/learning techniques. Either an Associate’s Degree or a Bachelor’s
   Degree is granted upon successful completion of the academic nursing program.
   Graduates of a nursing program are considered to be graduate nurses.
5. Student Nurse Extern: a person taking coursework towards an associate’s or
   bachelor’s degree in nursing within a college or university setting who is selected to
   participate in a student nurse extern program at a healthcare institution.
6. Student Nurse Extern (SNE) Program: a program offered by healthcare institutions for student nurses before completion of the nursing school curriculum. An extern program offers students an opportunity for “hands-on” clinical nursing experience in a paid position. Nursing students usually participate in student nurse externship programs during the summer prior to the final year of nursing school. Participants are selected by personnel in the healthcare institution offering the extern program. No college credit is granted for participation in an SNE program.

Hypothesis and Research Questions

The following null hypothesis was investigated and any differences found were tested for significance (\( p \leq 0.5 \)). Ho: There is no relationship between participation in student nurse externship programs and first-time pass rates on the NCLEX-RN. The independent variable is participation in a student nurse externship program and the dependent variable is the NCLEX-RN.

The following research questions guided the study:

1. Which subgroup of nursing students is more likely to participate in student nurse externship programs: those pursuing a 2-year associate’s degree in nursing (ADN) or those pursuing a 4-year bachelor’s degree in nursing (BSN)?

2. What, if any, demographic differences exist among persons participating in student nurse externship programs and those who did not?

3. What is the perceived effect of the student nurse extern experience on passing the NCLEX-RN, and how do participants perceive the experience in regards to gaining clinical knowledge and clinical skills that assist them to answer questions on the NCLEX-RN?
4. If differences are found in the first-time pass rates of persons who participated in SNE programs, is this difference related to variations in SNE programs?

Summary

NCLEX-RN success or failure by first-time candidates has many ramifications. It affects new graduates, nursing education programs, healthcare institutions, and the public, who are the recipients of nursing care. As a nurse-educator, I am interested in identifying potential variables that may contribute to NCLEX-RN success so that I can advise and prepare student nurses appropriately. This study allowed me to examine the student nurse extern experience and its potential influence on NCLEX-RN success or failure by first-time candidates.

Organization of this Report

The organization of this report is outlined in the next several paragraphs. An overview of each chapter is presented.

Chapter One presents the purpose of the study and the problem studied. The etiology of the problem regarding decreased NCLEX-RN pass rates is likely multi-factorial in nature. However, review of potential or probable variables that may affect the ability of new graduates to pass NCLEX-RN successfully is prudent in an environment where licensure and practice as an RN depend upon passing this standardized examination.

Chapter Two provides information regarding student nurse extern programs and learning theory. This information should enhance one’s understanding of the purpose of the extern program, how learning theory is infused and related to such a program, and explain the theoretical framework for the study.

Chapter Three explains the design and methodology used to conduct the study. The research design was non-experimental, with a research objective that was descriptive with a
cross-sectional time dimension. Survey research was an appropriate methodological choice for the study. The tool used was a questionnaire mailed to a randomly selected sample of persons who were issued an RN license in the State of Michigan between April 1, 2004, and September 30, 2005. Limitations of the study were related to the data collection method as questionnaires contain self-report data. Survey data reliability and validity depend upon the honesty and accuracy of the information shared by the respondents. Another limitation was that the researcher had no control over the selection criteria that personnel in health care institutions use to select participants for student nurse extern programs. The lack of any national or state standards defining the components to be included in a student nurse extern program is a limitation as well because the specifics of the program vary from institution to institution. The primary delimitation for this study was that questionnaires were mailed only to a randomized sample of persons licensed in the State of Michigan between predetermined dates. The other delimitation was the exclusion of graduates of diploma programs because most nursing education programs are situated in college and university settings.

Chapter Four provides the results of the data collected and analyzed for this study. This chapter includes descriptive and statistical analyses of data collected via the returned questionnaires sent to a random sample of 600 persons granted licensure to practice as RN’s in the State of Michigan between April 1, 2004, and September 30, 2005. A total of 252 usable questionnaires were returned to the researcher, for a response rate of 42%.

Chapter Five contains a summary of findings, discussion, and recommendations for policy, practice, and future research in regards to student nurse extern programs, nursing education, and NCLEX-RN pass rates for first-time candidates.
CHAPTER TWO
REVIEW OF RESEARCH AND LITERATURE

The NCLEX-RN pass-rate of graduate nurses who take the exam as first-time candidates is of concern to administrators and educators in academic nursing programs. It is of concern, as well, to nurses in administrative or staff development positions in health care institutions. Personnel associated with accrediting bodies for nursing education and state boards of nursing have indicated that pass-rate data from NCLEX-RN are among the measures used to assess the effectiveness of each academic nursing program.

The NCLEX-RN is a minimum competency test based on the knowledge and behaviors necessary to practice as an entry-level RN. Graduates who fail the NCLEX-RN cannot practice as RNs. Therefore, nurse educators have been researching variables that may contribute to NCLEX-RN success or failure.

For this study, the researcher examined the relationship between participation in student nurse extern (SNE) programs and first-time pass rates on the NCLEX-RN. The review of literature and of research for this study has been divided into sections. These sections are designed to promote understanding of student nurse extern programs, learning theory, the domains of learning, goal attainment theory, the acquisition of skills and abilities to practice nursing, academic preparation for the NCLEX-RN, and to establish the theoretical framework of the study.

Literature Review

Student Nurse Extern (SNE) Programs

A web search using the key words of “student nurse extern” on Google revealed more than 80,000 sites related to the topic. Many sites were health care facilities seeking to attract
potential recruits for SNE programs. Health care facilities offering SNE programs range from world-renowned institutions to small community hospitals. SNE programs exist nationwide, and most are independent of the academic nursing education programs in colleges and universities.

Administrators at health care institutions have long used SNE programs as a recruitment tool to attract future RNs to their facility (Berleth & Shemansky, 1992; Frizzell, 1993; Hughes, Cummings, & Allen, 1993; Kubicek, 2002; Tucker, 1987). Gucciardo (2001) recommended that health care institutions develop relationships with student nurses as soon as possible because these students are potential employees to fill staff RN positions in the future. Relationships cultivated with student nurses through summer SNE programs are likely to foster a sense of belonging and loyalty to the institution (Gucciardo, 2001).

While SNE programs are useful as a recruitment tool, that is not the only reason for their existence. These programs contain an education component by providing a bridge between the idealism of nursing academia and the realities of nursing practice (Beagle-Casto & Stefanik-Campisi, 1991; Frizzell, 1993; Hughes, Cummings & Allen, 1993; Tritek, Ross, Feldman, Paregoris & Setti, 1997). Kramer (1974) described this acknowledged gap between academia and practice as “reality shock.” Nursing program graduates who are not prepared for the realities of nursing practice experience reality shock within months of working as an RN (Kramer, 1974). The reality shock experienced during the transition from student to staff member is not only frustrating but is demoralizing when the graduate nurse or the newly licensed RN is unable to provide patient care at the level of competence expected of him or her (Daigle, 2001; Duncan, 1997; Kramer, 1974; Weber, 1993). The SNE programs are valuable because the extern experience may reduce the level of reality shock
experienced by new graduates as they transition from student nurse to the professional role of the RN (Cantrell, Browne, & Lupinacci, 2005; Starr & Conley, 2006).

A pilot SNE program of six weeks’ duration was developed for a hospital in the southeastern USA and also used to collect data regarding the externship experience (Rush, Peel, & McCracken, 2004). Seven students (four ADN students and three BSN students) participated in the SNE program. Data regarding the experience were collected in focus groups and during interviews. Data were coded independently by the researchers. Meeting as a group, the researchers categorized the independently coded data into units of meaning to reflect the themes described by the study participants. Findings suggested that participants perceived that the SNE experience allowed them to encounter the realities of nursing practice in a manner different from the academic clinical rotations they experienced as part of their nursing education program. Immersion into the clinical setting was facilitated by preceptors who assisted the SNE participants to feel like “insiders” on the clinical units. This empowered the participants to think of themselves as “nurses” and prepared them to practice within the scope of the profession of nursing (Rush, Peel, & McCracken, 2004). The small size of the study, its pilot-study status, and the fact that the study was conducted in a restricted geographical area are limitations of the study, but the results do provide insights regarding SNE participation that should be further explored.

An SNE program provides participants with opportunities for “hands-on experiences with patients, the development of therapeutic communication at the bedside with patients and families, and the awareness of and value of the team concept, i.e., a look at realism vs. idealism” (Beagle-Casto & Stefanik-Campisi, 1991, p. 42). The opportunity to narrow the gap between academia and the realities of nursing practice is evident. An SNE program can
also be defined as providing opportunities to develop and/or enhance clinical skills and knowledge while acquiring increased self-confidence in the clinical setting (Boyd et al., 1992; Hughes, Cummings, & Allen, 1993; Kubicek, 2002; Tritak et al., 1997). Abruzzese and Quinn-O’Neil (1996) characterized SNE programs as a preceptored experience lasting 8 to 10 weeks offered to students during the summer prior to beginning their last year of an academic nursing program.

A 10-week SNE program at a 611 bed regional hospital serving 17 counties reported that 230 student nurses have completed the SNE program. Increased confidence and competence in basic nursing skills was demonstrated by 93% of the externs. This was validated through skills check-off demonstrations following completion of the SNE program (Boyd et al., 1992). Because this information was reported more than 10 years ago (as of 2006) and because more recent information regarding the SNE program has not been made available, it is impossible to determine if participants in this SNE program have continued to demonstrate increased competence and confidence in basic nursing skills.

Grinstead (1995) surveyed 141 new graduates who had been SNEs. Most new graduates in the study described the SNE experience as positive. According to 44.7% of the new graduates, the most beneficial aspect of the SNE experience was improved technical skills/hands-on experience, and 13.5% reported that the preparation for “real-world” nursing practice was most beneficial. Another 10.6% of the participants stated the SNE experience eased the transition from student to RN. Participants also frequently reported that they perceived that the clinical rotations in their academic nursing programs contained an inadequate number of clinical hours and failed to prepare them for the realities of nursing practice. A limitation of this study was that it was conducted in one Midwestern state and
surveyed only graduates of BSN programs in that state. These graduates may not be representative of all graduates of nursing programs.

In a collaborative two-part research venture between a private university and a regional medical center, researchers evaluated the summer SNE program at the medical center (Tritek et al., 1997). Part one consisted of administering the Nurse Activity Scale (NAS) and the Nurse Self-Description Form (NSDF) to a group of SNEs as a pretest and again as a posttest at the completion of the SNE program. The NAS was a 30-item scale with an estimated reliability of 0.81 to 0.90 using Cronbach’s Alpha, and the NSDF was a 19-item instrument with a Cronbach’s Alpha of 0.90. The second part of the study was administration of the NAS and the NSDF one year later, soon after the former externs graduated from their respective nursing programs. Twenty-two former externs participated in both parts of the study. Data analysis indicated that participation in an SNE program had a positive effect on the academic performance of the students during their final year of nursing education. Study participants reported that during the SNE experience they developed increased self-confidence in their skills and abilities to provide nursing care, gained insight into the staff RN role/duties, cultivated time management and organizational skills, enjoyed the opportunity to work and learn concurrently on patient care units, and gained clinical experience that helped them when taking academic examinations. Study limitations included small size (n = 22) and the restricted geographic area where the study was conducted. However, the results appear congruent with finding of other studies regarding the SNE experience.

Researchers used a mixed-methods design in a cross-sectional descriptive study to investigate a summer SNE program in Canada (Holdway et al., 2005). The SNE program
philosophy was that effective adult learning occurs when knowledge and skills are applied in an authentic environment. Of the 24 persons hired into the SNE program, 79% chose to participate in the study (n = 19). Participants articulated that the SNE experience positively affected their confidence in performing patient care skills, allowed them to develop organizational skills, and facilitated their integration into the nursing role. The SNE program was an avenue for students to gain clinical skills and refine nursing knowledge through the process of reinforcement in the clinical site and interactions with experienced nurses. The study was limited by small sample size, and the SNEs who chose to participate in the study may not be representative of SNEs in the USA. However, results of this study, like those described previously, suggest that the SNE program was beneficial to those involved.

A qualitative study conducted at a regional medical center located in a southwestern state explored the expectations, experiences, and benefits of participation in an SNE program (Starr & Conley, 2006). Semi-structured, taped interviews of 60 to 90 minutes were conducted with participants. Data saturation occurred before all 16 of the externs willing to participate in the study were interviewed (n = 10). Interviews were transcribed and verified for accuracy through follow-up interviews. Participants reported that their ability to learn by doing and the repetitive practice of patient care skills bolstered their self-confidence and their capability to use critical thinking when caring for their assigned patients. The opportunity to apply didactic knowledge from their academic nursing education programs to various real-life clinical situations encountered during the SNE experience resulted in enhanced learning according to the participants. Participants reported that it was necessary for them to apply principles and guidelines of nursing care in order to provide safe, appropriate, and individualized care to patients and their family members. Participants identified that they
better understood the multiple roles and responsibilities of RNs after participating in the SNE program. The study was limited by geographic area and the fact that it was conducted at a single health care institution. Also, because there are no national or state standards to define components necessary for inclusion in an SNE program, the program developed and used at this particular institution may not be representative of SNE programs at other healthcare institutions.

Review of research on SNE programs presented here has indicated that similar results were obtained in each of the studies, adding believability by replication of findings. One conclusion is that the experiential learning aspect of the SNE program is beneficial to participants.

Benner (1984) advocated clinical internships and precepted clinical experiences because of the inherent experiential learning opportunities. Benner defined experiential learning as “posing and testing questions in real situations that deviate from expectations based upon theory and principles” (p. 187). This is congruent with Dewey (1963), who stressed that experiential learning and co-operative learning activities are important to the learning process. Experience provides a foundation for making clinical judgments and decisions in nursing practice.

Although Benner discussed experiential learning within the context of clinical internships for new graduates, the same concept seems applicable to SNE programs. Experiential learning for participants in an SNE program is provided through opportunities to develop increased competence in nursing knowledge and skills through expanded clinical experience. Student nurse externs are immersed in a clinical work environment where they interact with
experienced RN’s and apply the interpersonal, critical-thinking, and technical skills learned within academic nursing clinical practicums on a daily basis (Courney, 2005).

Clinical instructors in nursing academia would also report that experiential learning occurs in the clinical learning experiences required in the nursing school curriculum as student nurses receive patient care assignments. Student nurses have the opportunity to enhance their clinical decision-making skills within the academic clinical learning environment and/or as SNEs, should they participate in such a program.

For student nurses and for SNE participants, clinical units are the settings in which they, as learners, interact with and observe the behaviors of experienced RN’s regarding patient care. They experience socialization into the realities of the staff RN role. The SNE experience is also likely to foster a sense of inclusion into the profession of nursing as participants begin to “think” and “act” like nurses outside of the limitations of academic clinical practicums, yet under the guidance of a preceptor (Rush, Peel & McCracken, 2004). The interactive teaching-learning experiences “prompt the learner toward enacting appropriate behavior and thereby learning” (Schoenly, 1998, p. 291).

**Learning Theory**

Many theories about learning exist. Theories of learning describe the processes used by people as they organize, understand, and apply new information available to them in the environment (Norton, 1998). Variables within the learning process are formulated into theoretical principles or concepts to explain how people learn.

According to cognitive theories, learning cannot be defined solely by the adoption of a new behavior or the performance of a new task. Cognitive theories of learning focus on the mental processes or activities that facilitate learning, rather than on stimulus-response...
behavior. The mental process is the focus in cognitive learning theories. Perception, thinking, and understanding are information processing activities inherent within the mental process. The mental process facilitates the acquisition of learning and knowledge. For a cognitive learning theorist, learning is primarily an interpersonal event that is goal-oriented (Norton, 1998).

Vygotsky (1962) developed a theory of cognitive development. One principle in the theory is the general limitation of cognitive development to a certain range, dependent upon chronological age. For example, the usual range of cognitive development in the preschool population is different from cognitive development levels of college students. The mental process is affected by the difference in the chronological age. College students can be expected to attain higher levels of learning while constructing knowledge that is more elaborate and complex. This is because new learning builds upon the foundation of existing knowledge, in a helix effect. The foundation results from previous learning experiences.

Although Vygotsky is often classified as a cognitive learning theorist, the theory indicates that personal cognitive development is maximized through peer interaction and instructor guidance (Jaramillo, 1996), a process also known as social interaction. Social interaction, according to Vygotsky, is an important aspect in the development of cognitive function. The development and enhancement of higher-order thinking processes occur as a direct result of social interaction. This is consistent with Vygotsky’s belief that learning is embedded within a socio-cultural context. Learning does not occur in a vacuum but within a social environment through interactive processes, which Vygotsky referred to as the “Zone of Proximal Development.”

The recognition that social interaction is an important aspect of the learning process in
Vygotsky’s theory means that the theory can also be considered a constructivist learning theory. This theory is based upon the understanding that learning is a social process that occurs through meaningful experiences. Knowledge construction and application are outcomes of social interactions within a learning environment that is both significant and relevant. The learning process cannot occur unless social interaction among and between persons involved in the learning environment also occurs. Thus, Vygotsky’s theory complements Social Learning Theory (SLT).

Bandura developed SLT, which posits that learning occurs due to continuous and reciprocal interactions between and among person, behavior, and environment (Bandura, 1977). Interactions between person, behavior, and environment indicate that SLT contains principles from behavioral learning theories and cognitive learning theories. Behavior and learning result from external and interpersonal factors. Learned behavior is not merely a result of external stimuli, nor is it merely the result of interpersonal cognitive factors. Learning is extremely complex, and SLT acknowledges this premise within its explanation of the process of learning.

The significance of observation and modeling within the learning process is emphasized in SLT. Observation of behaviors or actions fosters learning by serving as a guide for future action (Bandura, 1986). A learner organizes the observed or modeled behaviors or actions within his or her personal cognitive structure prior to enacting it. A person is most likely to implement modeled or observed behaviors if there are perceived benefits, values, or functionality attached to those behaviors.

Application of learned behaviors or actions requires the learner to categorize situations or events by their similarities, as no two situations will be identical (Bandura, 1986). “By
categorizing experiences on the basis of likenesses, the knowledge gained from specific happenings serves as a general guide for judgment and action” (Bandura, 1986, p. 102).

Experience occurs through interaction with the environment and the situations encountered.

SLT can be considered an open systems theory. Systems theory has been described as the scientific exploration of wholeness (Bertalanffy, 1968). Open systems theory indicates the presence of interaction, interrelationships, and interdependency between and among elements of a system in order to formulate the system as a whole. Isolation of individual elements is not possible. Each element must be considered within the context of the whole system.

The structural elements of SLT are person, environment, and behavior. Without interactions between and among these elements, learning is unlikely to occur. Learning, as explained by SLT, is an interdependent process requiring interaction. The learning process cannot be divorced from behavior, from the environment, or from the person. Learning is interrelated to all of these elements.

Lewin (1935) pointed out the psychological influence of environment on person and behavior in the person/environment fit (p/e fit) theory. The p/e fit theory indicated that interactions between a person and the existing environment are the codeterminants of behavior (Lewin, 1935). A person influenced by individual internal characteristics or dispositions and by the socializing effects of the environment develops an affinity for certain behaviors, actions, and situations that either enhance or detract from the learning process. A negative or a sub-optimal “fit” between person and environment is likely to result in behavior and learning affected by stress and conflict. Optimal learning cannot occur when there is a discrepancy in the fit between the person and the environment. However, learning flourishes when there is a “fit” between the person and the environment.
Participation in an SNE program, according to several studies reviewed earlier, provided SNEs with opportunities for understanding the real-world environment of nursing practice, opportunities to apply theoretical knowledge to real-life clinical situations, and opportunities for socialization into the nursing profession. It indicates that the “fit” between the interactions of the SNE (person) and the SNE program environment results in changes in behavior and the acquisition of learning. This is consistent with the formula developed by Lewin (1935) to conceptualize the p/e fit theory, which indicated that behavior equals fit, which is influenced by person and environment \[B=F(P,E)\].

**Domains of Learning**

The domains of learning are also representative of an open systems framework as each of the three domains is interrelated and interdependent (Bloom, 1956; Krathwol, Bloom, & Masia, 1964; Reilly & Oermann, 1990). The domains of learning are normally referred to as psychomotor, cognitive, and affective.

The psychomotor domain includes the neuromuscular activities required to perform the physical and technical skills needed in nursing practice (Pollard & Green, 1995). Examples include preparing/administering injections and transferring patients from beds to wheelchairs.

The cognitive domain provides for processing of information with the purpose of acquiring knowledge. This includes building connections between newly obtained information and previously learned knowledge. The ability to use critical thinking or clinical judgment also falls within the boundaries of the cognitive domain (Jeska, 1998). Understanding side effects of medications or the pathophysiological changes resulting from diabetes mellitus are examples of acquired knowledge within the cognitive domain.
The affective domain includes the ethical, moral, emotional, and psychological aspects of providing care (Schoenly, 1998). It encompasses the interpersonal skills necessary to interact with patients and families (del Bueno, Weeks & Brown-Stewart, 1987). Examples include the ability to build therapeutic relationships with patients or providing emotional support to a woman experiencing the birth of a stillborn infant.

The practice of nursing is equally dependent upon functionality within each domain. Student nurses use psychomotor knowledge, cognitive knowledge, and affective knowledge to provide patient care in SNE programs and in academic clinical practicums. No domain exists independently, as a deficit in one domain may adversely affect one’s ability to provide safe, effective nursing care to patients and their families (Jeska, 1998). To illustrate: weak interpersonal skills do not lend themselves to the development of therapeutic relationships with patients and their families. The inability to respond appropriately to an emergent situation such as anaphylactic shock resulting from a recently administered medication indicates a deficit in the ability to process information cognitively. Poor technique in preparing and/or administering injections may be indicative of deficiencies in the psychomotor domain.

A prevalent attitude among educators is that repetitive practice in any domain of learning will negatively affect motivation and attitudes of learners, but a literature review by Péladeau, Forget, and Gagné (2003) failed to identify any studies demonstrating negative effects of drill and practice learning techniques. They conducted experimental research on the effects of drill and practice on mastery learning and on overlearning. College students enrolled in an introductory quantitative methods class (n = 168) were randomly assigned to one of three groups. Instructor bias was avoided by use of a blind control situation, as only
the researchers knew which students were assigned to which group. Results indicated that practicing until mastery was attained positively affected academic achievement. Also, data analysis indicated that participants responded positively to the effects of drill and practice, which led to improved learning efficiency. Limitations of the study included small sample size, academic points added to each participant’s final grade at the end of the study, and the acknowledgement that students least likely to participate in drill and practice activities were low achievers who appeared to need external incentives at a greater rate than high achievers. Another limitation was that female students were more likely than male students to participate in drill and practice activities. Reduction in the ability to generalize study findings to college students of both genders was the result of this limitation. However, study results indicated that repetitive practice can be a helpful adjunct in the repertoire of teaching/learning techniques, particularly if the repetitive practice activities are well-designed, engage the learner, and promote the learning of skills and/or knowledge that can be applied to other complex learning situations.

Repetitive practice is not a new concept. Bloom (1968 as cited in Motamedi & Sumrall, 2000) recognized the importance of it within the mastery learning model. Instruction using the mastery learning model combines practice opportunities with feedback. Students who have problems achieving mastery of a particular learning outcome are provided with additional practice time, tutoring, or small-group instruction. Mastery learning requires students to be accountable and responsible for their own learning.

In the ideal educational setting, a combination approach using mastery learning and constructivist learning techniques would be used (Motamedi & Sumrall, 2000). Mastery learning instruction would allow students to build foundational skills and/or knowledge.
Application of foundational skills or knowledge would be encouraged through the use of constructivist learning principles.

Goal-Attainment Theory

King used an open-systems framework as the conceptual model for goal-attainment theory. The elements included in the open-systems framework are personal systems, interpersonal systems, and social systems (King, 1971). According to King (1981), triangulation among the three systems formulates the environment. The constant interactions and transactions among these systems lead to the formation of goals. The focus becomes goal attainment.

The self or the individual is represented by the personal system. King viewed each individual as a rational, social being who displays characteristics common to the human condition. The characteristics include the ability to perceive, think, feel, make decisions, determine goals, and achieve goals (King, 1981).

Inherent within the personal system is the concept of growth and development. Growth and development includes the cellular, molecular, and behavioral changes within the individual over the passage of time (King, 1981). Growth and development may be either positively or negatively influenced by the environment and/or social systems.

The interaction of individual humans with other humans results in the formation of interpersonal systems. A dyad is the interaction between two persons, a triad is the interaction among three persons, and a group is composed of four or more persons interacting together (King, 1981). Complexity of interpersonal systems increases when the number of persons interacting also increases. The linkage of multiple interpersonal systems results in the formulation of social systems.
Social systems are defined as the organized practices and policies that determine social roles, rules of behavior, and accepted practices to maintain the social system according to its customs, values, and beliefs (King, 1981). Examples of social systems include nuclear and extended families, peers, religious organizations, business/healthcare organizations, educational institutions, cultural/ethnic groups, and the community in which one lives.

Interactions involve two or more people and are influenced by each person’s individual perceptions and values. A necessary component of interactions is communication. “Communication is the means whereby social interaction and learning take place” (King, 1981, p. 62). Verbal and non-verbal communication methods are both utilized in the interaction process. Verbal communication includes written and spoken language. Non-verbal communication includes touch, posture, space or distance, vocal cues (volume, pitch, and tone) facial expressions, body gestures/movement, posture and physical appearance.

A broader definition of communication indicates that “communication may be intentional or unintentional, may involve conventional or unconventional signals, may take linguistic or non-linguistic forms, and may occur through spoken or other modes” (National Joint Committee for the Communicative Needs of Persons with Severe Disabilities, 1992, p. 2). Such a broad definition would allow communication to include the assessment of vital signs (temperature, blood pressure, pulse, respirations) as this information is exchanged between the patient and the caregiver.

According to King, effective communication results in learning, as information is exchanged and new meaning is created as a result (George, 1990). In the vital signs scenario, appropriate assessment of the pulse, respiratory, blood pressure, and temperature status communicates information to the RN. Meaning must be created from the data by the RN in
order to develop and share a plan of care with the patient to complete the interaction process. Interaction provides the means for the transfer of information between and among human beings and the environment.

The communication and interaction process is influenced by three primary factors: cultural values and norms, type of relationship between the persons communicating, and the context or the situation in which communication takes place (Cicca, Step, & Turkstra, 2003). These three factors are implied within King’s characterization of interactions. According to King (1981), values, relationships, reactions, perceptions, and mutual presence have an effect on interactions and, ultimately, on transactions.

Transactions are a series of interactions and communications between and among human beings and/or the environment in order to achieve goals that are valued or desired (King, 1981). Bargaining, negotiation, and social exchange are representative of the transaction process (George, 1990). Transactions are meant to result in goal achievement; thus, if the goal is not achieved, the transaction process is faulty and will need to be either refined or re-evaluated before it can be re-initiated.

King (1981) defined goals as outcomes in which individuals place personal value or have a desire to achieve. Goal attainment is observable and/or measurable. An example of a goal common to student nurses is the acquisition of the technical skills to administer injections. Attainment of this goal is observable as student nurses must demonstrate the skill in order to provide patient care.

*Acquiring the Skills and Abilities to Practice Nursing*

Benner (1984) applied the Dreyfus model of skill acquisition to nursing. Student nurses enter nursing school as novices. They have little to no experience with the concepts,
knowledge, and technical skills necessary to function safely as an entry-level RN. Initially, they have limited ability to apply theoretical nursing knowledge to patient care situations during clinical rotations at healthcare facilities. By the time student nurses graduate, they should be functioning at the advanced-beginner level. They have experienced a variety of patient care situations and are beginning to understand how to apply nursing knowledge and theory in a contextual manner. Guidelines and principles for patient care dictate their nursing practice.

Although Benner did not specifically use the term “critical thinking,” the interpretive and/or intuitive approach to nursing practice was discussed. This approach to nursing practice was acknowledged as the ability of the RN to understand the particular context of a clinical situation (Benner, 1984). In clinical situations, the RN utilizes experience and knowledge, as well as constructing new applications of both, to formulate technical and behavioral responses while providing patient care. This is also known as clinical judgment, which is a part of critical thinking. However, Benner did not make it clear as to how interpretive/intuitive thinking is learned or, once it is learned, how it is specifically applied to the process of clinical judgment.

RNs use clinical judgment to provide individualized and appropriate nursing care for each patient. Clinical judgment relies upon critical thinking skills in order to problem-solve and/or make clinical decisions that are based upon evidence-based practice and research findings. According to Edwards (2003), “Critical thinking skills are developed and cultivated through personal and professional experience/education and practical skills” (p. 1148). However, the definition of critical thinking in nursing literature was variable, inconsistent, and lacking in agreement until Scheffer and Rubenfeld (2000) employed a
Delphi technique with five rounds of input to determine a consensus definition of critical thinking for the practice of nursing. Expert nurses from a variety of geographic areas (USA and internationally), cultures, and specialty practice areas participated in the study. Of the persons (n = 51) who responded to Round V, 88.2% agreed with the following consensus statement regarding critical thinking in nursing practice.

Critical thinking in nursing is an essential component of professional accountability and quality nursing care. Critical thinkers in nursing exhibit these habits of the mind: confidence, contextual perspective, creativity, flexibility, inquisitiveness, intellectual integrity, intuition, open-mindedness, perseverance, and reflection. Critical thinkers in nursing practice the cognitive skills of analyzing, applying standards, discriminating, information seeking, logical reasoning, predicting, and transforming knowledge. (Scheffer & Rubenfeld, 2000, p. 357).

Academic Preparation and the NCLEX-RN

Both accrediting bodies for nursing education (NLNAC and CCNE) have adopted critical thinking as a necessary outcome for graduates of nursing programs. Faculty members are aware of the need to integrate strategies to teach and promote critical thinking in student nurses. Results of a study of 218 BSN students conducted by Giddens and Gloeckner (2005) suggested that there may be a relationship between higher scores on the California Critical Thinking Skills Test and passing the NCLEX-RN as first-time candidates. However, limitations of this study included convenience sampling and the small number of participants who failed the NCLEX-RN as first-time candidates (n = 16). The authors reported that the sample, as a whole, passed the NCLEX-RN at a rate higher than the national pass rates during the same time frame.
Students receive academic preparation/nursing education through clinical rotations and in classroom theory courses that include various teaching techniques such as role-plays, written assignments, case-studies, simulations, and computer-assisted instruction. The purpose of nursing education is to prepare graduates of the program to function safely as entry-level RNs. However, in order to practice as an RN, the new graduate must pass the NCLEX-RN. Attaining RN licensure is the goal of graduates of all schools of nursing. The degree conferred upon the graduate, be it an associate’s degree or a bachelor’s degree, does not bestow the title of RN. Passing the NCLEX-RN is the only means to obtain a license to practice as an RN and to use the RN title.

Item-writers of NCLEX-RN questions assume that candidates have baseline nursing knowledge and comprehension after the completing the requirements to graduate from a nursing program. Test questions on the NCLEX-RN are based on entry-level nursing practice and the clinical decision-making skills necessary to practice safely. Analysis of nursing practice provides the basis for construction of exam questions to assess learning outcomes specific to nursing practice.

Test questions on the NCLEX-RN rarely require the candidates to simply recognize or recall facts. Applications of skills and knowledge, to the practice of nursing, are essential in order to provide safe care. For this reason, most NCLEX-RN questions are written at the application and at the analysis levels, which requires candidates to use clinical judgment or critical thinking to determine the “best” or “most immediate” action to provide nursing care (Wendt, 2003). Other questions are written at the synthesis level as complex situations are presented and the candidates must construct meaning from the information in order to make a judgment based upon standards of nursing care (Wendt, 2003). The ability to correctly
answer questions at the application, analysis, and synthesis levels (higher order thinking skills in Bloom’s taxonomy) on the NCLEX-RN demonstrates competence to practice as an entry-level RN.

Conceptual Framework

The conceptual framework for this study, as depicted in Figure 1, is based upon elements in SLT and goal-attainment theory while incorporating the domains of learning. The model includes person, environment, behavior, and goal. In this model, the definitions for each concept are as follows:

Person is the graduate nurse who has completed the requirements to obtain a degree from a program of nursing but is not yet licensed as an RN. Each person is a unique, goal-oriented individual who is comprised of external physical characteristics and internal characteristics or dispositions. Internal characteristics include perception, motivation, values/beliefs, attitudes, emotions, ability to think and to communicate, and the inherent intelligence quotient.

Environment is external and includes the academic setting of nursing education (both classroom and clinical), and the institutional healthcare environment. Student nurse extern programs take place within the institutional healthcare environment. Humans are an integral part of the environment because the environment encompasses the external socio-cultural systems that exist within academia (faculty, students, and administrators) and in the healthcare institutions (patients, families, healthcare providers, preceptors, administrators). It also includes the social systems of which the person is a member, such as family, community, culture/race/ethnicity, and religion. This indicates that socialization of the
person occurs within the environment. The “fit” between the person and the environment is important, as this will have an effect on behavior.

Behavior is the combination of internal and external activities and/or processes that result in learning and may or may not be directly observable at the time it occurs. Behavior encompasses the three domains of learning: cognitive, psychomotor, and affective. Examples of behavior include but are not limited to skill acquisition, development of critical thinking and clinical judgment skills, improved communication skills, mastery learning using drill and practice techniques, and/or construction of knowledge as a result of experiential learning opportunities integrated with social interaction.

Goal is derived from goal-attainment theory. It represents the outcome of the interactions/transactions between and among person, environment, and behavior leading to attainment of the desired outcome.

![Figure 1: Conceptual Framework - influence of P-E-B interactions/transactions on the goal](image-url)
Summary

Following the literature review, it becomes apparent that the developers of SNE programs hope to immerse each participant in a socio-cultural environment that facilitates learning. Student nurses/graduate nurses who have and who have not participated in SNE programs have a common goal, and that is to pass the NCLEX-RN to attain licensure to practice as an RN. But what influence does participation in student nurse extern programs have on NCLEX-RN pass rates for first-time candidates?

In this chapter, the researcher discussed purposes of Student Nurse Extern programs and reviewed learning theories, goal attainment theory, and critical thinking as elements that combine to increase the potential for NCLEX-RN success for first-time candidates. The conceptual framework presented connects key components and supporting theories to help explain the framework for the study.

In Chapter Three, the researcher reviews the design and methodology for the study. Chapter Four presents the study results. Chapter Five discusses the study findings, conclusions, recommendations for policy and practice, and future research.
CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

Introduction

In Chapter One, the researcher discussed the decline of NCLEX-RN pass rates for first-time candidates (NCSBN, n.d.) and the study of multiple variables related to the pass rate. As of 2005, one area that had not been examined was the relationship between participation in student nurse externship (SNE) programs and pass-rates of first-time candidates on the NCLEX-RN. Therefore, the purpose for this study was to examine what, if any, influence SNE participation had on NCLEX-RN pass-rates for first-time candidates in order to add to the body of knowledge regarding factors that may affect NCLEX-RN success. The current chapter presents the design and methodology used to conduct the research that addressed the hypothesis and research questions presented in Chapter One.

Design

This research design was non-experimental. A non-experimental design allowed the researcher to examine an area of interest without introducing an intervention. Also, it used primarily quantitative methodology. The research objective was descriptive and the time dimension was cross-sectional in the classifications of non-experimental quantitative research developed by Johnson (2001). This design was appropriate because the researcher sought neither to control nor to manipulate the variables, but to describe the characteristics of a specific phenomenon.

The Human Subjects Institutional Review Board (IRB) at Eastern Michigan University determined that appropriate safeguards were included in the research design and methods to protect the rights of study participants. Approval to conduct the study was granted (see
Appendix A). The cover letter and informed consent letter mailed to persons in the sample (see Appendix B) were reviewed and likewise approved.

**Method**

The selected research design was appropriate for a survey study (Polit & Beck, 2004). A survey uses self-report data, and the most common methods of collecting data are through questionnaires and/or interviews (Nieswiadomy, 2002; Polit & Beck, 2004). Survey studies are often used to elicit information that is not already available (Gay & Airasian, 2003).

Because research directly examining the relationship between participation in an SNE program and passing the NCLEX-RN as a first-time candidate was not found during reviews of literature and research on NCLEX-RN success or on SNE programs, survey research was an appropriate methodological choice for this study. The researcher elicited information about participation in an SNE program and connected that information to success or failure on the NCLEX-RN for first-time candidates, as this aspect of SNE participation had not been previously studied by researchers in nursing education or higher education (according to the research and literature review conducted for this study). A survey allowed the researcher to obtain the needed information to examine the null hypothesis; \( H_0: \) There is no relationship between participation in student nurse externship programs and first-time pass rates on the NCLEX-RN.

Surveys and survey research have several advantages. Surveys are flexible and used to collect data on a broad range of topics (Polit & Beck, 2004). Survey research results in data usually obtained fairly quickly. Surveys are a convenient and generally inexpensive method to obtain data (Scheuren, 2004). A well-planned research design that uses a survey as the data collection method can result in the acquisition of valuable data (Gay & Airasian, 2003).
Instrumentation

Interviews and questionnaires are the means by which survey data can be obtained (Gay & Airasian, 2003; Nieswiadomy, 2002; Polit & Beck, 2004; Scheuren, 2004). Interviews allow for depth in data collection, while questionnaires typically allow for breadth in data collection. Questionnaires allow for collection of data from a larger sample than is usually available or used for interviews (Gay & Airasian, 2003; Scheuren, 2004). The researcher relied upon a questionnaire to collect data in this study because of its self-administered nature. Study participants received a written, self-report questionnaire distributed through mail service. According to Scheuren (2004), “a well-conducted mail survey can be just as effective and meaningful as other more resource-intensive surveys” (p. 51).

No existing questionnaire applicable to the present study was identified. Therefore, the researcher developed a questionnaire (see Appendix C) designed with clarity and simplicity so that recipients could easily understand how to provide the information to be collected and analyzed (Nieswiadomy, 2003; Scheuren, 2004). Demographic and descriptive information were requested within a structured, written format. Most questions had predetermined response alternatives, which is a response format consistent with questionnaire construction advice given by Gay and Airasian (2003), Nieswiadomy (2002), Polit and Beck (2004), and Scheuren (2004). Three questions were open-ended to allow participants to respond with individual comments and thoughts regarding the SNE experience.

Survey questions were developed by reviewing research on variables related to NCLEX-RN success or failure and by reviewing questionnaires on various topics. The researcher read articles and reviewed web sites as well as brochures about SNE programs. Discussions with colleagues, student nurses, and graduate nurses regarding NCLEX preparation and SNE
programs were coupled with professional knowledge, which aided in the development of questions.

The appearance of the questionnaire was also considered. A questionnaire with spelling and/or grammatical errors, that appears cluttered to the human eye, or is excessive in length can have an adverse effect on the response rate (Gay & Airasian, 2003; Nieswiadomy, 2002; Polit & Beck, 2004; Scheuren, 2004; Shelley, 1984). The questionnaire was limited to three pages. All respondents were requested to complete the first page. Respondents who participated in a SNE experience were requested to complete the second and third pages.

Validity of the research instrument in a quantitative study is important. Failure to use a valid instrument can result in collected data that do not reflect what was intended to be measured. According to Nieswiadomy (2002, p. 203), “Validity is often considered first in the construction of an instrument.” Gay and Airasian (2003) stated, “Validity is the most important characteristic a test or measuring instrument can possess” (p. 135). Therefore, I arranged for a panel of experts (n = 9), including nurse-educators, a psychometrician, and the dissertation committee, to review the draft instrument to determine validity. Each person received a copy of the questionnaire as well as information on the purpose and objectives of the study. On an individual basis, each expert evaluated the questionnaire and provided feedback. Changes in the questionnaire were made prior to the initiation of the pilot study based on feedback received. Face and content validity were determined through the use of this evaluative method (Gay & Airasian, 2003; Nieswiadomy, 2002).

A valid instrument should provide reliable results (Gay & Airasian, 2003; Nieswiadomy, 2002; Polit & Beck, 2004). To determine validity and estimate the reliability of the questionnaire with the population for the study, pilot testing was done and the data analyzed.
New graduates (n = 35) who had passed the NCLEX-RN between April 1, 2004, and June 30, 2005, were recruited and enlisted through personal contacts as the sample to pilot test the questionnaire. Data from the 35 valid questionnaires were entered into a statistical program (SPSS), and reliability statistics were performed. Analyses indicated that a Cronbach’s Alpha (internal consistency) of 0.985 was obtained during the pilot study of the questionnaire. Item-to-total correlations were greater than 0.9 for all items. Reliability of the questionnaire results was demonstrated based on obtaining estimates that were greater than or equal to 0.8. Results of 0.8 or higher are desirable and indicative of internal consistency (Polit & Beck, 2004).

Participants who pilot tested the questionnaire were invited to make comments regarding the wording or clarity of the questionnaire. Few comments were received, and none resulted in any substantive change to the questionnaire.

Population for this study

Approximately 40 institutions of higher education in the State of Michigan offer either an associate’s degree or a bachelor’s degree in nursing. Graduates of both types of programs are eligible to take the NCLEX-RN exam leading to licensure as a registered nurse (RN). This translates to several thousand new graduates annually applying to take the NCLEX-RN for initial licensure. The NCLEX-RN results are reported to each nursing education program by the Michigan Board of Nursing on a reporting year that begins annually on April 1. In Michigan, NCLEX-RN pass-rates for each nursing program are not available to the general public.

The target population for this research included nursing program graduates who applied for initial licensure in the State of Michigan by taking the NCLEX-RN between April 1,
The decision to delimit potential study participants to this time frame was based upon changes in both the test format and in the score needed to pass the NCLEX-RN (although scores are only reported on a pass/fail basis) by the National Council of State Boards of Nursing. The effective date of change in the NCLEX-RN test plan was April 1, 2004. This delimitation ensured that study participants took the NCLEX-RN under the same test plan rules and regulations.

The Michigan Board of Nursing maintains a database of the names and addresses of new graduates who have applied for RN licensure. This information was thought to be a matter of public record. However, obtaining a list of names and addresses was more difficult than originally anticipated. Communication with the Michigan Board of Nursing proved to be time-consuming, as the administrative personnel are not nurses and have many duties and/or responsibilities for which they are accountable to government officials and to the citizens. Assisting a doctoral student to obtain a list of names and addresses was of low priority. Assistance from several nurse recruiters from healthcare organizations and intervention by the Chief Nurse Executive of the State of Michigan resulted in a referral to a representative of the Michigan Department of Community Health, which oversees the Michigan Board of Nursing. This was helpful as records of licenses of all persons licensed in health care professions in the state are maintained by the Michigan Department of Community Health.

Initially, the plan was to study two different subgroups in the target population. The two subgroups were a) new graduates who passed the NCLEX-RN as first-time candidates and b) new graduates who failed the NCLEX-RN as first-time candidates. Whenever the population to be studied can be divided through the use of a characteristic that is mutually exclusive, the population is considered to be stratified (Polit & Beck, 2004). The mutually
exclusive characteristic is that a new graduate will either pass or fail to pass the NCLEX-RN as a first-time candidate. This natural stratification of pass/fail in the target population was congruent with the initial selection of stratified random sampling. This sampling technique would have allowed sampling of identified subgroups to ensure their representation in the sample selected for the research study (Creswell, 2003; Gay & Airasian, 2003). However, the Michigan Board of Nursing and the Michigan Department of Community Health declined to consider the request for names and addresses of persons who failed the NCLEX-RN as first-time candidates between April 1, 2004, and September 30, 2005. Confidentiality regarding test results was cited as the reason for refusing the request. As a result, regular random sampling was used.

The Michigan Board of Nursing, through the Michigan Department of Community Health, indicated that 7,287 persons were issued original Registered Nurse (RN) licenses in order to begin practicing in the State of Michigan between April 1, 2004, and September 30, 2005 (personal communication, D. Lintemuth, November 3, 2005). The names and addresses for these persons were available for purchase or a customized list of the population could be purchased. Customized lists prepared by the Michigan Department of Community Health contain parameters determined by the purchaser, such as identifying RNs by the zip codes of their residences or other modifying information.

**Sample**

Sending a questionnaire to each person who has applied for initial licensure as an RN in the State of Michigan between April 1, 2004, and September 30, 2005, would have been one way to conduct this study. However, for economy and efficiency, a sample representative of the population was selected. Therefore, the researcher purchased a randomized list
containing names and addresses of persons who were issued an initial RN license in Michigan between April 1, 2004, and September 30, 2005, after successfully passing the NCLEX-RN. The minimum number of names that could be purchased from the Michigan Department of Community Health was 1,000 per departmental policy. Assurances were given that the list would be composed of 1,000 names randomly selected via computer from the population that met the criteria for this study (personal communication, D. Lintemuth, November 7, 2005). Consultation with the dissertation committee chair provided assurances that the purchase and use of a randomized list of names and addresses was congruent with random sampling technique. Randomization has been determined to be the most scientifically rigorous method for sampling (Creswell, 2003).

The selection of the sample is a crucial element of the research design (Gay & Airasian, 2003; Nieswiadomy, 2002; Polit & Beck, 2004). Random selection is more likely to increase the researcher’s ability to generalize findings to the target population (Nieswiadomy, 2002). Also, probability sampling is held in high esteem by many researchers because it is a systematic process designed to be representative of the target population (Henry, 1990; Kish, 1965; Krosnick, 1999; Nieswiadomy, 2003; Polit & Beck, 2004).

Gay and Airasian (2003) stressed the importance of selecting a sample large enough to convey confidence in the results obtained from the research analysis. A large sample is more likely to represent the population than a small sample, and this reduces the probability of sampling error (Polit & Beck, 2004). The size of the population to be sampled and the confidence level required determine the sample size required for any given study. The population for this study was the several thousand new graduates applying for initial licensure in Michigan over an 18-month period. Information regarding the number of new
graduates in the State of Michigan who took NCLEX-RN as first-time candidates during the time frame for this study was not readily available. However, the NCSBN (2005) indicated that 2,787 persons in the State of Michigan took the NCLEX-RN as first-time candidates between January 1, 2003, and December 31, 2003. This information was used to estimate the number of persons in the population for this study, which was 4,181 (2,787 multiplied by 1.5 years).

If there are 2000 in the population, then at least 322 should be included in the sample; if there are 2200, then 327 should be sampled; if there are 2400, then 331 should be sampled (Krejcie & Morgan, 1970). Generally, 20% of the population should be sampled (Gay & Airasian, 2003). However, a sample size rarely exceeds 500 persons (Roscoe, 1975).

Data Collection Procedures

Two mailings for data collection were conducted for this study. The total sample size chosen for this study was 600 persons, a number higher than what Roscoe (1975) suggested, as over-sampling can be useful. This is congruent with Nieswiadomy’s (2000) advice that selection of a sample size larger than needed accommodates the possibility of making allowances for non-response. Had the total response rate been fewer than 200, an additional mailing would have been conducted using the remaining names from the original randomized list.

The first mailing to 400 persons was sent out on January 4, 2006. The second mailing to an additional 200 persons was sent out on February 6, 2006. Each person received a cover letter explaining the purpose of the research, a document detailing informed consent, and a copy of the study questionnaire. A request to complete and return the questionnaire was included in the cover letter. A pre-addressed, non-descript postage-paid envelope for return
of the completed questionnaire to the principal investigator (PI) was included. The requested return date for completed questionnaires was three weeks from the original mailing date. Recipients who chose to respond were guaranteed anonymity because the questionnaires did not request any information to identify individual respondents. Inability to cross-match returned questionnaires with the names or addresses of any of the sample was inherent in the study design to meet the IRB requirement for anonymity and was a limitation of the study. Return of the questionnaire signified voluntary consent to participate.

Of the 600 surveys mailed, 10 were returned as undeliverable; 29 persons contacted the PI via phone, mail, or email to indicate that they were ineligible to participate in the survey as they had been issued RN licenses in Michigan through the process of endorsement. A final return rate of 42% was achieved as 252 analyzable surveys were returned.

Reminder postcards may have improved the response rate by encouraging participation of non-responders (Creswell, 2003; Gay & Airasian, 2003; Scheuren, 2004). However, the anonymous design of the study would have required sending postcards to all recipients of the questionnaire. Follow-up postcards or reminder letters were not used because of financial limitations and because the first mailing of 400 questionnaires in January 2006 elicited a usable return of 35% within three weeks of the initial mailing.

Data for the study were collected from the returned questionnaires. Data analyses with appropriate statistical tests were conducted using SPSS 12.0.1 software. Appropriate statistical tests were performed on data collected. Data were nominal in nature so only frequencies, descriptive and non-parametric statistical tests were used for analyses. Chi-square was used to test for group differences in the data. Significance level was accepted at \( p \leq 0.05 \).
Potential Strengths

Persons who take the NCLEX-RN are prepared at different educational levels. In the United States, 661 programs granting a Bachelor of Science in Nursing (BSN) were offered in four-year college or university settings, and 885 Associate Degree in Nursing (ADN) programs were offered, most often in two-year community colleges (NLNAC, n.d.). By randomly sampling persons who applied for initial RN licensure in Michigan, graduates from both types of programs were included in this study. This study strength allowed the researcher to generalize the research findings to either type of nursing education program. Nursing educators who teach in either BSN or in ADN programs could view the study findings as potentially useful.

As an added strength, the sample in this study was diverse. Graduates of nursing programs in both public and private institutions were included as well as graduates prepared in ADN and BSN programs. Persons living in rural, suburban, and urban areas received the questionnaire. The list of names obtained from the Michigan Department of Community Health contained addresses distributed throughout the upper and lower peninsulas of the state.

The use of random sampling to obtain data was congruent with the recommendation of survey research scholars who have identified probability methods as best able to represent a population (Creswell, 2003; Henry, 1990; Kish, 1965; Krosnick, 1999; Nieswiadomy, 2002; Polit & Beck, 2004). Random sampling added strength and credence to the results.

Little research regarding SNE programs has been featured in nursing journals. The present study has the potential to add to the knowledge base in nursing education and to the nursing profession as a whole.
Potential Weaknesses and Limitations

The use of a questionnaire as a data collection method is a potential limitation as the return-response rate may be low. Burns and Grove (1997) reported that mailed questionnaires generally have a return rate of 25% to 30%. A poorly designed survey that appears of unprofessional quality may also affect the response rate (Scheuren, 2004). The questionnaire used was professional in appearance and printed on high-quality paper. A higher response rate is more likely to produce results that are more accurate and meaningful than a lower response rate (Scheuren, 2004). However, non-response error is not synonymous with a low survey return rate (Krosnick, 1999).

Data collected from the questionnaires were self-reported by respondents who chose to participate. Inherent biases that the researcher could not predict or prevent may have occurred. This is a limitation of survey research.

Demographic and descriptive data from the questionnaires were evaluated by comparison to demographic and descriptive data obtained in the National Sample Survey of Registered Nurses (Spratley et al., 2000) and information obtained from the American Association of Colleges of Nursing. This allowed demographic data from the respondents and from the total nursing population to be systematically compared for similarities and/or differences.

Validity of the data depended upon a respondent’s willingness to provide accurate information (Nieswiadomy, 2002). A persistent predicament in the collection of self-report data involves respondents who have depicted themselves in a manner congruent with prevailing social norms (Polit & Beck, 2004), a factor known as social response bias or social desirability bias. Thus, respondents may answer questions in a manner they believe is
socially acceptable and avoid answers they perceive as less socially acceptable (Chung & Monroe, 2003; Fisher & Katz, 2000; Krosnick, 1999).

Within the RN community, it has been and remains socially desirable for a new graduate to pass the NCLEX-RN as a first-time candidate. A social norm stressed within nursing programs is the need to pass the NCLEX-RN the first-time. Multiple companies offer test-prep classes to prepare recently graduated nurses to pass the NCLEX-RN. New graduates who fail the NCLEX-RN have been described as despondent and feeling stigmatized (personal communication, M. Holstine, February 24, 2006). Feelings of grief and loss, depression, shame, and self-doubt in candidates who fail the NCLEX-RN have been identified by Griffeths et al. (2004), Poorman and Webb (2000), and Vance and Davidhizar (1997). RNs who initially fail the NCLEX-RN and successfully pass it at a later time rarely share this information with new graduates. Discussing NCLEX-RN failure is the admission that one did not meet personal expectations or the expectations of the profession.

The questionnaire for this study asked respondents to indicate how many times they took the NCLEX-RN to attain RN licensure. Therefore, anonymity in this study was intentional to minimize or prevent social desirability bias from affecting survey results. Reduction of social desirability bias has been noted with the use of anonymity (Fisher & Katz, 2000). This is congruent with a meta-analysis that indicated that questionnaires returned anonymously are less likely to be affected by social desirability bias (Richman et al., 1999).

Personnel at health care institutions offering SNE programs determine the criteria for selecting nurse externs. The researcher had no control over what selection criteria were used and which nursing students were selected to participate in extern programs. There are no national or state standards defining the components to be included in SNE programs. The
length of SNE programs varies from institution to institution. The didactic and the experiential or clinical components of SNE programs vary as well. Personnel in each health care institution determine the specifics of how to design and incorporate an SNE program into the facility.

An unexpected possible limitation was the post hoc discovery that the list of names and addresses purchased did not completely meet the predetermined study criteria. All names on the list had an original issue date of an RN license in Michigan between April 1, 2004, and September 30, 2005. However, there is a difference between an original license date and an initial license date. An initial license date is attained when a recently graduated nursing student passes the NCLEX-RN and receives an RN license for the first time. An original license may be obtained by endorsement because the applicant has a valid RN license in another state or by examination because the applicant successfully passed the NCLEX-RN.

This limitation meant that some of the sample who received and answered the questionnaire might have been ineligible to participate in the study because they were licensed through endorsement. The limitation was identified when some questionnaire recipients (n = 29), who did not meet the criteria as outlined in the cover letter, notified the researcher via mail, phone calls, or e-mail of their ineligibility. None of those 29 completed the questionnaires. It is unknown if other persons who did not meet all of the criteria in regard to licensure received and answered the questionnaire.

Delimitations

A delimitation of this study is the exclusion of graduates of diploma nursing programs. Diploma programs were once the norm for nursing education; however, this is no longer true. The education of student nurses has shifted to college and university settings. Of the 1,634
programs preparing students to become RNs in the United States, only 88 are diploma nursing programs (NLNAC, n.d.). There are no diploma nursing programs in the State of Michigan.

A second delimitation was that only persons who applied for initial licensure as an RN in Michigan were to be sampled. These persons may not be representative of the population of nursing program graduates in the United States who took the NCLEX-RN between April 1, 2004, and September 30, 2005. This delimitation may have resulted in a weakness of the study.

Importance of Findings to Research and Practice

The findings of this research could provide educators and administrators in higher education with information regarding student participation in nurse extern programs and any influence that experience may have on passing the NCLEX-RN on the initial attempt. As nurse educators and administrators seek to identify variables that may either positively or negatively affect new graduate success in passing the NCLEX-RN, results of this study may add to the literature base available within nursing education. Results may lead to studies being conducted on variables external, but perhaps related to academia that may affect NCLEX-RN success. The findings may help administrators and faculty in making informed decisions regarding curricular development and may provide them with research-based information to share with nursing students when discussing student nurse externship programs. The findings may be of use to nurse administrators and staff RN educators in health care facilities as well.

Summary

This chapter explained the research design and the methods used to examine the null
hypothesis and research questions presented in Chapter One. Chapter Four presents the analyses of the data obtained for the study. Chapter Five discusses the summary of findings, conclusions, and the recommendations for policy, practice, and future research.
CHAPTER FOUR
PRESENTATION AND ANALYSES OF DATA

Introduction

This study examined the influence of participation in student nurse extern (SNE) programs and pass rate success on the NCLEX-RN for first-time candidates. Questionnaires (n = 600) were mailed to a random sample of persons who were issued licenses to practice as RNs in the State of Michigan between April 1, 2004, and September 30, 2005. A return of 252 questionnaires provided a responses rate of 42%. Data are analyzed and discussed in the order in which data appeared on the questionnaire. Demographic and descriptive data are presented first. The data related to the hypothesis and research questions are presented after the descriptive data.

Demographic and Descriptive Data

Age

Respondents provided information regarding their age at the time of graduation from a nursing education program by selecting one of four predetermined age categories (20-29; 30-39; 40-49; 50 or older). Table 1 provides the results.

Table 1

<table>
<thead>
<tr>
<th>Years in Age</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 – 29</td>
<td>152</td>
<td>60.3</td>
</tr>
<tr>
<td>30 – 39</td>
<td>61</td>
<td>24.2</td>
</tr>
<tr>
<td>40 – 49</td>
<td>33</td>
<td>13.1</td>
</tr>
<tr>
<td>50 and older</td>
<td>6</td>
<td>2.4</td>
</tr>
</tbody>
</table>
In the present sample, 60.3% of the participants were between 20 and 29 years of age and 39.7% were 30 years of age or older. These respondents were similar in age to the average new graduate when compared to the results of the 2000 National Sample Survey of Registered Nurses. However, it was not possible to do a direct comparison of age because this study asked respondents to select an age range, and the 2000 National Sample Survey requested that respondents report an exact age. According to the results on age released by Spratley et al. (2000), the average age at graduation from a nursing program preparing students for initial RN licensure was 30.9 years. Therefore, the researcher expected the age distribution percentage to be highest for the age category of 20 – 29, which was the result in this study.

**Racial/Ethnic Background**

The March 2000 National Sample Survey of Registered Nurses in the United States collected data regarding racial/ethnic background. Analysis indicated that 86.6% were White, 4.9% were African American, 2% were Latino/Hispanic, 3.7% were Asian/Pacific Islander, 0.5% were Native American, 1.2 % identified themselves as two or more races, and 1.1% failed to identify their racial/ethnic background (Spratley et al., 2000).

Participants in this study reported ethnic backgrounds that varied in percentages from the National Sample Survey. Compared to the National Sample Survey, a greater percentage of participants in this study identified themselves as African-American, Latino/Hispanic, or Asian/Pacific Islander. Fewer participants identified their ethnic background as White. The percentage of respondents reporting Native American ethnic status was congruent with the National Sample Survey. Information regarding the ethnicity of participants is presented in Table 2.
Table 2

**Background of Respondents in this Study and in the 2000 National Survey**

<table>
<thead>
<tr>
<th></th>
<th>Present Study (N = 252)</th>
<th>2000 National Survey (N = 35,358)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>White</td>
<td>209</td>
<td>82.9</td>
</tr>
<tr>
<td>African-American</td>
<td>18</td>
<td>7.1</td>
</tr>
<tr>
<td>Latino/Hispanic</td>
<td>8</td>
<td>3.2</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>10</td>
<td>4.0</td>
</tr>
<tr>
<td>Native American</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>2.4</td>
</tr>
</tbody>
</table>

**Gender**

The American Association of Colleges of Nursing (AACN, 2001) reported that 8% of student nurses were male and 92% were female. Persons who chose to participate in the present study closely reflect the population of student nurses in the USA (see Table 3).

Table 3

**Gender of Respondents in this Study (N = 252)**

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>20</td>
<td>7.9</td>
</tr>
<tr>
<td>Female</td>
<td>232</td>
<td>92.1</td>
</tr>
</tbody>
</table>

**Post-Secondary Education Obtained Prior to Starting Nursing Education**

Currently, many persons enrolled in nursing education programs are considered to be second-degree students. Second-degree students have earned a degree from another formal post-secondary education program prior to starting the nursing education program to prepare them for initial RN licensure. Second-degree students in this study graduate from ADN
programs and from BSN programs. The 2000 National Sample Survey of Registered Nurses queried respondents regarding post-secondary degrees obtained before starting a nursing education program. Results from the national study indicated that 13.6% of respondents had a previous post-secondary degree (Spratley et al., 2000). In the present study, 33.3% of the respondents indicated that they had earned a post-secondary degree prior to enrolling in a nursing education program. Prior degrees earned by participants in this study included bachelor and associate degrees. Table 4 presents data regarding educational preparation levels prior to entering a basic nursing education program for this study and for the 2000 National Sample Survey.

Table 4

<table>
<thead>
<tr>
<th>Prior post-secondary degree obtained?</th>
<th>Present Study (N = 252)</th>
<th>2000 National Sample Survey (N = 35,358)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>84</td>
<td>33.3</td>
</tr>
<tr>
<td>No</td>
<td>168</td>
<td>66.7</td>
</tr>
</tbody>
</table>

A higher number of respondents in the present study than in the 2000 National Sample Survey indicated that they had earned a degree prior to entering a nursing education program. This is likely due to multiple factors. Since 2000, more media attention has been focused on the current, and projected to be ongoing, national shortage of RNs in the USA. The Johnson and Johnson Company sponsored the “Dare to Care” campaign in an effort to encourage people to pursue education to become an RN. As a result, the number of persons interested in obtaining education to become an RN has increased in past five years. In addition, the
economic climate in Michigan during the past ten years has been depressed as a consequence of corporate mergers, foreign competition, deficit spending, downsizing, and the loss of well-paid jobs in the manufacturing industry (both blue-collar and white-collar positions). A post-secondary degree does not offer much job security in many employment sectors in the State of Michigan. However, job growth has continued within the healthcare sector, with much advertising for RNs to fill open positions. The lure of job security is appealing in a state where economic uncertainty and loss of jobs are commonplace. The researcher theorizes that the economic climate in the state where the study took place influenced the finding regarding post-secondary degrees obtained prior to entering a nursing program. The need for economic survival can be a powerful motivator that encourages return to an academic setting in an effort to improve personal socio-economic status. Time and money invested in a nursing education program are likely to result in a positive economic return on the investment.

**Type of Nursing Education Obtained**

In the State of Michigan, 2,787 candidates took the NCLEX-RN for the first time between January 1, 2003, and December 31, 2003 (NCSBN, 2005). Of these candidates, 34.3% had earned Bachelor’s degrees, 65.5% had earned Associate’s degrees, 0.2% took the exam because of special code status, and 0% completed a diploma program (NCSBN, 2005). National numbers in regard to education degrees attained to take the NCLEX-RN vary somewhat from those in Michigan. Nationally, of the RNs who completed their nursing education between 1995 and 2000, 38% obtained a Bachelor’s degree, 55.4% obtained an Associate degree, 6% obtained a Diploma, and 3.6% took the NCLEX-RN as a result of special codes (Spratley et al., 2000). However, it must be noted that no hospital-based diploma nursing education programs exist in Michigan. All nursing education programs in
Michigan are located in college and university settings.

The percentage of respondents in this study were more likely to have earned a Bachelor’s degree and less likely to have earned an Associate’s degree as compared to Michigan NCLEX-RN data compiled in 2003. Table 5 contains a summary of the education preparation of the respondents in this study and comparison to the 2003 Michigan results.

Table 5

<table>
<thead>
<tr>
<th>Degree Earned to Become Eligible to Take the NCLEX-RN</th>
</tr>
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<tbody>
<tr>
<td>Degree Earned</td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Associate Degree</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
</tr>
<tr>
<td>Did Not Specify OR Special Code</td>
</tr>
</tbody>
</table>

Type of Academic Institution

Respondents for this study were educated in a variety of academic institutions. A majority of the respondents (58.7%) indicated that they received their nursing education in a community college setting. This is congruent with the fact that the majority of persons taking the NCLEX-RN have earned an Associate’s degree. Associate’s degrees are generally awarded after successfully completing the requirements for a degree earned in two years of full-time study in a community college. Bachelor’s degrees are generally offered in four-year colleges and universities. Information regarding specifics of the type of academic institution from which the respondents in this study graduated is in Table 6.
Table 6

*Type of Academic Institution Where Nursing Degree was Earned*

<table>
<thead>
<tr>
<th>Institution (N = 252)</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public 4-year college/university</td>
<td>81</td>
<td>32.1</td>
</tr>
<tr>
<td>Private 4-year college/university</td>
<td>34</td>
<td>13.5</td>
</tr>
<tr>
<td>2-year community college</td>
<td>136</td>
<td>54.0</td>
</tr>
<tr>
<td>Did not specify institution type</td>
<td>1</td>
<td>0.4</td>
</tr>
</tbody>
</table>

*Grade Point Average*

The majority of respondents in this study (86.9%) reported Grade Point Averages (GPA)s at 3.0 and above. See Table 7 for additional information.

Admission standards and criteria for admission into nursing education programs may have influenced this finding as it is common for administrators and faculty in many nursing programs to use specific admission standards or criteria to select students for the nursing program. Examples of admission criteria include cumulative GPA, grades in prerequisite science courses, ACT/SAT scores, and scores on standardized nursing program entrance tests. However, it is likely that not all students who meet the admission standards and criteria will be admitted to any given nursing education program because the number of applications often exceeds the enrollment openings. Of qualified applicants, the best and the brightest of the applicant pool are likely to be admitted to the nursing education program, which means those completing the nursing program are likely to have higher than average GPAs upon admission to the nursing program.
Table 7

*Cumulative GPA of Respondents in This Study at Time of Graduation from Nursing Program (N = 252)*

<table>
<thead>
<tr>
<th>GPA</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0 – 2.49</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>2.5 – 2.99</td>
<td>30</td>
<td>11.9</td>
</tr>
<tr>
<td>3.0 – 3.49</td>
<td>115</td>
<td>45.6</td>
</tr>
<tr>
<td>3.5 – 4.0</td>
<td>104</td>
<td>41.3</td>
</tr>
<tr>
<td>Did not specify</td>
<td>1</td>
<td>0.4</td>
</tr>
</tbody>
</table>

**NCLEX-RN Pass-Rates for First-Time Candidates**

National pass-rates for first-time candidates (educated in the USA) have fluctuated from a high of 90.4% in 1995 to a low of 83.8% in 2000 (NCSBN, n.d.). In 2003, first-time candidates in Michigan had a pass rate of 86.8% which was similar to the national pass rate of 87% (NCSBN, 2005). National NCLEX-RN pass-rates for first-time candidates educated in the USA were 87.3% in 2005 and 85.3% in 2004 (NCSBN, n.d.). Pass-rates for first-time candidates in Michigan were 87.4% in 2005 and 84.5% in 2004 (personal communication, M. Smidt, May 3, 2006). As indicated in Table 8, respondents in this study reported a pass-rate lower than the national averages, consistent with the Michigan pass-rate of 84.5% in 2004 and lower than the 2005 pass-rate for first-time candidates in Michigan. However, this pass-rate is congruent with the MIBON requirement that 85% of candidates educated in Michigan pass the NCLEX-RN the first time.

The time frame used for this study (April 1, 2004 to September 30, 2005) was 18 months. This does not correspond with the calendar year of 12 months used by the NCSBN to report
NCLEX-RN pass rate data. Therefore, the researcher was unable to obtain exact data for comparison in Table 8. NCLEX-RN pass-rate data as reported from respondents this study are summarized in Table 8.

Table 8:

<table>
<thead>
<tr>
<th>Results</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passed</td>
<td>214</td>
<td>84.9</td>
</tr>
<tr>
<td>Failed</td>
<td>38</td>
<td>15.1</td>
</tr>
</tbody>
</table>

Participation in Student Nurse Extern Programs

Slightly more than one-third of the respondents in the present study reported participation in and completion of a student nurse extern (SNE) program. See Table 9.

The researcher could not determine how many graduate nurses or newly licensed RNs participated in an SNE program prior to graduation from a nursing education program on a national, state, or local level. Data regarding SNE participant numbers have not been reported in the nursing education literature, and the researcher could not identify sources that were able to provide that information on the local, state, or national level.

Table 9

<table>
<thead>
<tr>
<th>SNE Participant (N = 252)</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>162</td>
<td>64.3</td>
</tr>
<tr>
<td>Yes</td>
<td>90</td>
<td>35.7</td>
</tr>
</tbody>
</table>
Summary of Descriptive Data

Demographic and descriptive information obtained from respondents in this study indicated that they were similar to data gathered by AACN regarding student nurses and to the population of RNs studied in the 2000 National Sample Survey. There were a few differences, in that the sample for this study were more ethnically diverse and more likely to have obtained a post-secondary degree prior to entering a nursing education program than the RN sample in the 2000 National Sample Survey.

Examination of Hypothesis and Research Questions

Data obtained from the respondents (n = 252) in this study were used to examine the hypothesis and the research questions. Participation in an SNE program was reported by 90 respondents, and 162 respondents indicated they did not participate in an SNE program.

The researcher used a null hypothesis for this study as follows:

\( H_0 \): There is no relationship between participation in student nurse extern programs and first-time pass rates on the NCLEX-RN.

One of the questions on the mailed survey developed for this study asked the respondent to indicate how many times the NCLEX-RN was taken in order to attain RN licensure. Analysis of data from respondents indicated that the observed frequency was that 214 respondents passed the NCLEX-RN as first-time candidates. Of those who passed, 82 did participate in an SNE program, and 132 did not. The observed frequency was that 38 respondents failed the NCLEX-RN as first-time candidates. Of those who failed, 30 did not participate in an SNE program, and 8 did. The pertinent quantitative data obtained from the respondents via the questionnaire are outlined in Table 10.
Table 10

<table>
<thead>
<tr>
<th></th>
<th>First-time Candidate</th>
<th>Student Nurse Extern</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCLEX-RN Results</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passed</td>
<td>132</td>
<td>82</td>
<td>214</td>
</tr>
<tr>
<td></td>
<td>81.5</td>
<td>91.1</td>
<td>84.9</td>
</tr>
<tr>
<td>Failed</td>
<td>30</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>18.5</td>
<td>8.9</td>
<td>15.1</td>
</tr>
<tr>
<td>Total</td>
<td>162</td>
<td>90</td>
<td>252</td>
</tr>
</tbody>
</table>

The null hypothesis was examined using the non-parametric Chi-Square test of association as the data were nominal in nature. The Chi-Square contingency table allowed the researcher to analyze the data to determine whether a relationship existed between the groups and the strength of that association \(X^2 (df= 1, N = 252) = 4.19\). Results were significant at \(p \leq 0.05\) level. The null hypothesis was not accepted because analysis of data obtained in this study indicated that there is a statistically significant difference in the NCLEX-RN pass rates of first-time candidates who had participated in SNE programs and those who did not.

Once the null hypothesis was not accepted, the researcher turned to analyses of questions of interest related to specific subgroups of the sample. Results of analyses for each research question are detailed individually.

Research Question One

Question 1: Which subgroup of student nurses is more likely to participate in student nurse extern programs, those pursuing a 2-year associate’s degree or those pursuing a 4-year bachelor’s degree?
In this study, 90 respondents indicated they had participated in an SNE program. An associate’s degree was earned by 54.4% of the persons who had been SNEs, and a bachelor’s degree was earned by 45.6% of the persons who had been SNEs. When the researcher analyzed the data further to determine the actual percentage of SNE participation by degree, it was determined that persons most likely to participate in an SNE program were those enrolled in a nursing program leading to a bachelor’s degree. The variation in percentages of SNE participation by academic degree was significant at $p \leq 0.02$ when Chi-Square test of association was applied ($\chi^2 = 5.919$; df = 1). See Table 11 for information regarding SNE participation by academic degree.

Table 11

| SNE Participation by Academic Degree |
|-----------------|-----------------|-----------------|
|                  | SNE Participation Frequency ($n = 90$) | Sample for this Study ($n = 252^*$) | Percentage of SNE Participation by Academic Degree |
|                  | $n$ | %    | $n$ | %    |                  |
| Associate’s Degree | 49  | 54.4 | 148 | 58.7 | [49/148] 33%   |
| Bachelor’s Degree  | 41  | 45.6 | 102 | 40.5 | [41/102] 40%   |

* Two respondents did not indicate degree earned and were not included in this analysis

According to the NCSBN (2005), candidates from Michigan who took the NCLEX-RN between January 1, 2003, and December 31, 2003, were more likely to have earned an associate’s degree (65.5%) than a bachelor’s degree (34.3%). This information was used to compute the expected frequencies of participation in SNE programs by academic degree (ADN: $fe = 59$; BSN: $fe = 31$; $n = 90$). Therefore, it was not surprising that Chi-Square testing supported a difference in participation in SNE programs by academic degree. In
addition, the researcher identified SNE programs in multiple healthcare institutions with application stipulations indicating that only student nurses in four-year, Bachelor degree-granting programs were eligible to participate. Several SNE programs with the stipulation that only Bachelor of Science in Nursing (BSN) students need apply were in Michigan, where the study was conducted.

**Research Question Two**

Question 2: What, if any, demographic differences exist among persons who participated in student nurse extern programs and those who did not?

Data from the 252 returned questionnaires were examined for demographic differences between SNEs and Non-SNEs. Demographic differences analyzed included age, ethnicity, and gender. Results of analyses are listed in Table 12 (Age), Table 13 (Ethnicity) on page 64, and Table 14 (Gender) on page 65.

**Table 12**

*Ages of SNE Participants and Non-SNE Participants in this Study*

<table>
<thead>
<tr>
<th>Age Categories</th>
<th>SNEs (n = 90)</th>
<th>Non-SNEs (n = 162)</th>
<th>Total Respondents (N = 252)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>20 – 29 years</td>
<td>62</td>
<td>68.9</td>
<td>90</td>
</tr>
<tr>
<td>30 – 39 years</td>
<td>22</td>
<td>22.4</td>
<td>39</td>
</tr>
<tr>
<td>40 – 49 years</td>
<td>5</td>
<td>5.6</td>
<td>28</td>
</tr>
<tr>
<td>50 or older</td>
<td>1</td>
<td>1.1</td>
<td>5</td>
</tr>
</tbody>
</table>

For the purposes of data analysis, two of the age categories (40-49 years and 50 or older) were collapsed into a single category. The SNE group and the non-SNE group were
analyzed using Chi-Square to determine if there were any significant differences in the ages of SNE participants and those who did not participate in an SNE program. \( X^2 = 8.669 \) (df = 2), which indicated significance at the \( p \leq 0.02 \) level. In this study, persons who were between 20 and 29 years of age were more likely to have participated in an SNE program. Persons aged 40 or older at the time of graduation from a nursing program were much less likely to have participated in an SNE program. The instrument for this study did not contain a question regarding reason for participating or not participating in an SNE program; therefore, the reason for the discrepancy in SNE participant age is not known.

Table 13

*Ethnicity of SNE Participants and Non-SNE Participants in this Study*

<table>
<thead>
<tr>
<th>Ethnic Background</th>
<th>SNEs (n = 90)</th>
<th>Non-SNEs (n = 162)</th>
<th>Total Respondents (N = 252)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>White</td>
<td>76</td>
<td>84.4</td>
<td>133</td>
</tr>
<tr>
<td>African-American</td>
<td>7</td>
<td>7.8</td>
<td>11</td>
</tr>
<tr>
<td>Latino/Hispanic</td>
<td>4</td>
<td>4.4</td>
<td>4</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>0</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Native American</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>3.3</td>
<td>3</td>
</tr>
</tbody>
</table>

For the purposes of data analysis, three categories (Asian/Pacific Islander, Native American, and Other) were collapsed into a single category. The researcher tested if persons in the SNE group were similar in ethnicity to those in the non-SNE group. The result of Chi-Square testing revealed there was no significant differences (\( p \leq 0.05 \)) in the ethnic
backgrounds of SNE participants versus those who did not participate in an SNE program \((X^2 = 4.92\) with \(df = 3\)).

Table 14

<table>
<thead>
<tr>
<th>Gender</th>
<th>SNEs (n = 90)</th>
<th>Non-SNEs (n = 162)</th>
<th>Total Respondents (N = 252)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Male</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Female</td>
<td>81</td>
<td>90</td>
<td>151</td>
</tr>
</tbody>
</table>

Gender of SNE participants and non-SNE participants were subjected to Chi-Square testing to determine if the groups were different. The results were not significant at \(p \leq 0.05\) as \(X^2 = 0.816\) (df = 1). Males and females participated or did not participate in SNE programs at the expected frequency levels.

Research Question Three

Question 3: What is the perceived effect of the student nurse extern experience on passing the NCLEX-RN, and how do participants perceive the experience in regards to gaining clinical knowledge and clinical skills that assist them to answer questions on the NCLEX-RN?

Research question three was qualitative and quantitative in nature as it allowed the researcher to obtain SNE participant perceptions regarding the SNE experience.

Of the 252 participants in this study, 90 reported they were student nurse externs. These respondents were asked to answer additional questions to elicit their perceptions regarding the effect of the SNE experience on their ability to pass the NCLEX-RN and rating of the
SNE experience in regard to clinical skills and clinical knowledge gained which assisted them in answering questions on the NCLEX-RN.

Of the 90 persons in this study who had participated in an SNE program, 58 respondents (64.4%) reported that participation in an SNE program had a positive or very positive effect on their ability to pass the NCLEX-RN, and 29 respondents (32.2%) reported the SNE experience had a neutral effect on their success on the NCLEX-RN. Three respondents (3.3%) reported that the SNE experience negatively affected their ability to pass the NCLEX-RN. See Table 15.

Table 15

<table>
<thead>
<tr>
<th>Perceived Effect</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Positive</td>
<td>19</td>
<td>21.1</td>
</tr>
<tr>
<td>Positive</td>
<td>39</td>
<td>43.3</td>
</tr>
<tr>
<td>Neutral</td>
<td>29</td>
<td>32.2</td>
</tr>
<tr>
<td>Negative</td>
<td>3</td>
<td>3.3</td>
</tr>
</tbody>
</table>

The SNE participants in this study were asked to rate the SNE experience in regard to how it helped them gain clinical knowledge and clinical skills that may have assisted them in answering questions on the NCLEX-RN (see Table 16). Of the 90 SNE respondents, 73 (81.1%) rated the SNE experience as good or excellent in the acquisition of clinical knowledge that helped them to answer NCLEX-RN questions; 17 (18.8%) rated the SNE experience as fair or poor in the acquisition of clinical knowledge that assisted in answering NCLEX-RN questions. Clinical nursing skills, gained from the SNE experience that assisted
respondents in answering NCLEX-RN questions, were rated as good or excellent by 76 respondents (84.5%) and fair to poor by 14 respondents (15.5%).

Table 16

Perceptions Regarding How Clinical Knowledge and Clinical Skills Gained During SNE Experience Assisted in Answering NCLEX-RN Questions (N = 90)

<table>
<thead>
<tr>
<th>Perception Rating</th>
<th>Clinical Knowledge n</th>
<th>Clinical Knowledge %</th>
<th>Clinical Skills n</th>
<th>Clinical Skills %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>31</td>
<td>34.4</td>
<td>33</td>
<td>36.7</td>
</tr>
<tr>
<td>Good</td>
<td>42</td>
<td>46.7</td>
<td>43</td>
<td>47.8</td>
</tr>
<tr>
<td>Fair</td>
<td>13</td>
<td>14.4</td>
<td>10</td>
<td>11.1</td>
</tr>
<tr>
<td>Poor</td>
<td>4</td>
<td>4.4</td>
<td>4</td>
<td>4.4</td>
</tr>
</tbody>
</table>

In order to grasp a fuller or richer understanding in regard to research question three, the questionnaire for this study invited respondents who had been SNEs (N = 90) to share comments regarding their participation in an SNE program and its relationship to either passing or failing the NCLEX-RN. Many comments indicated that interactions between and among person, environment, and behavior had an effect on the goal. These perceptions provided support for the presence of interactions/transactions between and among person, environment, and behavior, which formed a plausible explanation for the effects of the SNE experience on the goal of passing the NCLEX-RN. Comments from the respondents were divided into Person, Environment, and Behavior categories. The comments, however, were difficult to separate because many of the comments addressed more than one area of the conceptual framework for this study.
**Comments Regarding Person**

1. “I feel it (the SNE experience) helped a great deal because I could reflect back on experiences I had during my externship.”

2. “You become more confident.”

3. “I honestly never studied for my NCLEX so I think my externship really helped me to pass my boards.”

4. “I tell every nursing student that they should get an externship because it makes you feel more confident in your skills.”

5. “It built up my self-confidence.”

6. “It gave me more confidence and prepared me for my role as a new nurse.”

7. “It enhances confidence and gives an opportunity to learn.”

8. “Knowledge and confidence I gained helped me with my boards.”

9. “I never thought about the relationship to the NCLEX. However, it probably did help my attitude going into the exam – like I’m already a nurse and the test is just a formality.”

**Comments Regarding Environment**

1. “More time with experienced RNs gives the student different perspectives. It changed the way I learned.”

2. “The more clinical experience the better.”

3. “I also think I learned a lot from just listening to the nurses talk about their patients and what should be done to help them get better.”

4. “Gain real-life experiences.”
5. “The ability to answer NCLEX questions comes from experience with real-life situations that an extern will encounter with regards to assessment/prioritization of a team of patients and knowing who needs to be seen now versus who can wait a bit.”

6. “It is a great learning environment and being with a preceptor is great.”

7. “The extra hands-on experience was helpful when taking the NCLEX-RN.”

8. “Getting feedback from coworkers confirmed my assessment accuracy and provided confidence I would rely on in future situations.”

9. “My externship gave me the chance to see so much more than just my school clinicals. This helped me during my NCLEX-RN.”

10. “Some of my classmates credit their success on NCLEX to the extern program.”

11. “Being an extern exposed me to more of the real-world, hands on nursing - that I needed.”

12. “One on one experience with seasoned nurses.”

13. “It provides situations that can be referred back on to help answer NCLEX questions.”

14. “My externship experience is why I was able to pass the NCLEX my first time and in 75 questions.”

Comments Regarding Behavior/Learning

1. “Working as an extern provides an opportunity to apply book knowledge at a pace and standard of an RN.”

2. “Externing helps you put all the knowledge that is learned into the clinical setting and prepares you for future semesters of nursing school.”
3. “I was able to come to the correct conclusion from first-hand experiences rather than just from a textbook. Prioritizing, critical thinking, and med experience – what a bonus!”

4. “Being a nurse extern helped build my critical thinking skills which in turn gave me the ability to think through NCLEX questions.”

5. “For me, nursing is all about doing. You learn about diseases and health promotion in the classroom, but in an extern program you can apply it to other circumstances and also to test questions.”

6. “I was not studying for boards at the time of the externship. But I used the experience as a practical reference.”

7. “I feel it is easier to remember something you have experienced rather than something you read or heard.”

8. “I think what helped me pass the NCLEX on the first try was my clinical experience. During my nurse externship I learned a lot about health conditions and the nursing care associated with them.”

9. “The relationship to passing the NCLEX the first time is that you actually get to see the results of every action you or the patient decide. You see the whole picture. The extern position helped me to so much to understand the ‘normal’ and to be able to see what’s not. It helped me to see other stuff going on or to think critically about what’s going on.”

10. “The extern program is real-life experience and learning.”

11. “Hands-on experience is always the best way to learn.”
Person-Environment Fit

Of the participants in this research study who had been SNEs, 87 out of 90 (96.7%) recommended that student nurses participate in a student nurse extern program prior to graduation (see Table 17). This provided evidence that the person-environment fit between externs and the clinical environment of most SNE programs were mutually acceptable, thereby promoting learning.

Comments from SNE participants indicated they had gained hands-on experience, developed increased self-confidence in their abilities to provide patient care, learned how to better organize and prioritize their time to provide efficient and effective nursing care, felt better prepared to communicate with healthcare providers, patients and their families, and transitioned more easily from student nurse to graduate nurse because of a better understanding of the realities of the RN role in the clinical setting.

Table 17

<table>
<thead>
<tr>
<th>Recommend participation in SNE program prior to graduation</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>87</td>
<td>96.7</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Uncertain</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Did not specify</td>
<td>1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Research Question Four

Question 4: If differences are found in the first-time pass rates of persons who participated in SNE programs, is this difference related to variations in SNE programs?
The SNE participants were more likely to pass NCLEX-RN on their first attempt than were the non-SNE participants (91.1% vs. 81.5%), which was significant at \( p \leq 0.05 \) when analyzed with Chi-Square testing. The 90 SNE respondents participated in SNE programs at 48 different institutions (six participants did not report an institution). None of the eight SNE respondents who failed the NCLEX-RN as first-time candidates were in the same SNE program; six of the SNE respondents who failed were students in BSN programs and two were students in ADN programs. Three SNE participants who failed reported that they did not have an assigned preceptor for the SNE experience, and four indicated that they had multiple RN preceptors during the SNE experience. Seven SNE participants who failed were employed in SNE programs located in acute care facilities, and seven indicated that the SNE program in which they participated was eleven or more weeks in length.

More extensive qualitative approaches, such as in-depth interviews or focus group discussions, might have provided some clues or answers to research question four. However, the anonymity issues used to gain IRB approval would have had to be adjusted to fit a different approach to the research. Definitive answers to question four may be a topic that future research could explore.

Summary

Chapter Four contained the presentation and analyses of data for a research study that examined the influence of SNE participation on NCLEX-RN success for first-time candidates. Questionnaires developed for the study were mailed to a random sample of 600 persons licensed as an RN in the State of Michigan between April 1, 2004, and September 30, 2005. A criterion for inclusion in the study was taking the NCLEX-RN between April 1, 2004, and September 30, 2005. A return rate of 42% was obtained, as 252 usable
questionnaires were returned. Ninety respondents (35.7%) participated in an SNE program, and 162 respondents (64.3%) indicated they did not.

Descriptive statistics and the non-parametric test of Chi-Square were used for data analyses that allowed the researcher to address the null hypothesis and the research questions of this study. The null hypothesis was not accepted because \( \chi^2 \) was significant at the \( p \leq 0.05 \) level \( (\chi^2 = 4.19; \text{df} = 1) \). Data analysis indicated that there was a statistically significant difference in the NCLEX-RN pass rates for first-time candidates who participated in SNE programs.

Analyses for research questions one through four were conducted and provided additional information regarding SNE participation.

- Persons enrolled in nursing programs leading to a bachelor’s degree were more likely to participate in an SNE program than persons enrolled in associate’s degree programs (40% vs. 33%). Chi-Square testing was significant at \( p \leq 0.02 \) because \( \chi^2 = 5.919; \text{df} = 1 \).
- There was no significant difference in the SNE group versus the non-SNE group in regards to gender or ethnic background. There was a statistically significant difference \( (p \leq 0.02) \) in the ages of SNE participants and the non-SNE participants. SNE participants tended to be younger than those persons who did not participate in an SNE program \( (\chi^2 = 8.669; \text{df} = 2) \).
- Of the 90 persons who participated in an SNE program, 58 (64.4%) indicated that the experience had a very positive or positive effect on their ability to pass the NCLEX-RN; 73 (81.1%) indicated that the SNE experience provided the opportunity to gain clinical knowledge that assisted them in answering questions on the NCLEX-RN; 76
(84.5%) indicated that the SNE experience allowed them to gain clinical nursing skills that assisted them in answering questions on the NCLEX-RN.

- Data collected for research question four indicated that there were some identifiable variations in first-time pass-rates for SNE participants because 82 of the 90 (91%) SNE participants passed the NCLEX-RN as first-time candidates. Respondents indicated that they had participated in SNE programs at 48 different healthcare institutions. Use of anonymity in this study precluded any in-depth qualitative research approaches and could be explored in future research.

Chapter Five presents the summary of findings for this study. It includes a discussion of the results, conclusions, and some recommendations for policy, practice, and future research.
According to the National Council of State Boards of Nursing (2002), the annual first-time pass rates for persons taking the NCLEX-RN have declined slightly since 1994, while the passing standard has been raised. Accrediting bodies for nursing education programs and state boards of nursing use NCLEX-RN pass rates of first-time candidates as one criterion for measuring educational effectiveness of a nursing program. Therefore, administrators and faculty in nursing programs are concerned about the NCLEX-RN pass rates of their program graduates. Concern regarding NCLEX-RN pass rates has resulted in researchers identifying and examining many variables that may affect the NCLEX-RN pass-rates of first-time candidates. In looking at previous research and literature, no information regarding the possible influence of participation in a student nurse extern (SNE) program and NCLEX-RN pass-rates for first-time candidates was identified.

The researcher’s purpose for this study was to examine the relationship between participation in SNE programs and NCLEX-RN success by first-time candidates. The researcher conducted randomized sampling of new graduates in the State of Michigan who took the NCLEX-RN between April 1, 2004, and September 30, 2005. Questionnaires were mailed to 600 people. A total of 252 participated in the study for a return rate of 42%.

Summary of Findings

Descriptive statistics and the non-parametric statistical test of Chi-Square were used to analyze data because the data obtained were nominal and ordinal. Table 18 contains a summary of the demographic and descriptive data of the respondents in this study.
Table 18

Demographic and Descriptive Data Summary for this Study (N = 252)

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age at Graduation from Nursing Program</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 – 29 years</td>
<td>152</td>
<td>60.3</td>
</tr>
<tr>
<td>30 – 39 years</td>
<td>61</td>
<td>24.2</td>
</tr>
<tr>
<td>40 – 49 years</td>
<td>33</td>
<td>13.1</td>
</tr>
<tr>
<td>50 and older</td>
<td>6</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Ethnic Background</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>209</td>
<td>82.9</td>
</tr>
<tr>
<td>African-American</td>
<td>18</td>
<td>7.1</td>
</tr>
<tr>
<td>Latino/Hispanic</td>
<td>8</td>
<td>3.2</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>10</td>
<td>4.0</td>
</tr>
<tr>
<td>Native American</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>20</td>
<td>7.9</td>
</tr>
<tr>
<td>Female</td>
<td>232</td>
<td>92.1</td>
</tr>
<tr>
<td><strong>Nursing Degree Earned</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate Degree (ADN)</td>
<td>148</td>
<td>58.7</td>
</tr>
<tr>
<td>Bachelor’s Degree (BSN)</td>
<td>102</td>
<td>40.5</td>
</tr>
<tr>
<td>Did not specify</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Institution Attended</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public 4-year college/university</td>
<td>81</td>
<td>32.1</td>
</tr>
<tr>
<td>Private 4-year college/university</td>
<td>34</td>
<td>13.5</td>
</tr>
<tr>
<td>2-year community college</td>
<td>136</td>
<td>54.0</td>
</tr>
<tr>
<td>Did not specify</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>NCLEX-RN Results as First-time Candidates</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passed</td>
<td>214</td>
<td>84.9</td>
</tr>
<tr>
<td>Failed</td>
<td>38</td>
<td>15.1</td>
</tr>
<tr>
<td><strong>Participation in SNE Program</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>90</td>
<td>35.7</td>
</tr>
<tr>
<td>No</td>
<td>162</td>
<td>64.3</td>
</tr>
</tbody>
</table>

*Yes = 41 BSN grads & 49 ADN grads (n = 90) / No = 61 BSN grads & 99 ADN grads (n = 162)
A null hypothesis (Ho: There is no relationship between participation in student nurse externship programs and first time pass rates on the NCLEX-RN) was used for this study. Data analysis ($\chi^2 = 4.19; \text{df} = 1$) revealed results that were statistically significant ($p \leq 0.05$) and indicated that SNEs were more likely than non-SNEs to pass the NCLEX-RN as first-time candidates. The null hypothesis was not accepted. A summary of study results regarding the null hypothesis is in Table 19.

Table 19

*Summary of Data Used for $\chi^2$ Testing ($N = 252$)*

<table>
<thead>
<tr>
<th>First-Time Candidate</th>
<th>SNE</th>
<th>Non-SNE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Passed NCLEX-RN</td>
<td>82</td>
<td>91.1</td>
<td>132</td>
</tr>
<tr>
<td>Failed NCLEX-RN</td>
<td>8</td>
<td>8.9</td>
<td>30</td>
</tr>
<tr>
<td>Totals</td>
<td>162</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

Several research questions were posed to guide the study into identifying details about SNE participation and the benefits of the SNE experience as perceived by the participants.

*Question One*

Question 1: Which subgroup of student nurses was more likely to participate in student nurse extern programs, those pursuing a 2-year associate’s degree or those pursuing a 4-year bachelor’s degree? Results ($\chi^2 = 5.919; \text{df} = 1; p \leq 0.02$) indicated that persons enrolled in nursing programs leading to a Bachelor’s degree were more likely to participate in an SNE program than persons enrolled in associate’s degree programs. This finding was not unexpected; the researcher had identified several SNE programs that required SNE applicants
to be enrolled in a nursing program leading to a Bachelor’s degree – in other words, persons enrolled in associate’s degree nursing programs need not apply.

Research Question Two

Question 2: What, if any, demographic differences exist among persons participating in student nurse extern programs and those who did not? There was no significant difference in the SNE group versus the non-SNE group in regards to gender or ethnic background. There was a statistically significant difference ($p \leq 0.02$) in the ages of SNE participants and the non-SNE participants. SNE participants tended to be younger than those persons who did not participate in an SNE program ($\chi^2 = 8.669; \text{df} = 2$).

Research Question Three

Question 3: What is the perceived effect of the student nurse extern experience on passing the NCLEX-RN and how do participants perceive the experience in regards to gaining clinical knowledge and clinical skills that assist them in answering questions on the NCLEX-RN? Of the 90 persons who participated in an SNE program, 58 (64.4%) indicated that the experience had a very positive or positive effect on their ability to pass the NCLEX-RN; 73 (81.1%) indicated that the SNE experience provided the opportunity to gain clinical knowledge that assisted them in answering questions on the NCLEX-RN; 76 (84.5%) indicated that the SNE experience allowed them to gain clinical nursing skills that assisted them in answering questions on the NCLEX-RN. Qualitative comments regarding the SNE experience are located in Chapter Four. Out of the 90 respondents who participated in an SNE program, 87 (96.7%) recommended that student nurses participate in an SNE program prior to graduation.
Research Question Four

Question 4: If differences are found in the first-time pass rates of persons who participated in SNE programs, is this difference related to variations in SNE programs? Data collected for research question four indicated that there were some identifiable variations in first-time pass-rates for SNE participants as 82 of the 90 (91%) SNE participants passed the NCLEX-RN as first-time candidates. Respondents indicated they had participated in SNE programs at 48 different healthcare institutions. Of the eight SNE participants who failed NCLEX-RN as first-time candidates, six were BSN students, seven were involved in SNE programs of 11 or more weeks, and seven participated in SNE programs located in an acute care facility (hospital). Use of anonymity in this study precluded any in-depth qualitative research approaches and could be explored in future research.

The relatively low participation rate (42%) in this study as well as the collection and use of data from one state reduces the ability to generalize the study results and suggests that the results must be interpreted with caution. To assist in generalizing the findings, the researcher compared the study sample to national data (see Table 20 on page 81).

The researcher generated a conceptual framework after an extensive review of literature and research. A graphic depiction of the conceptual framework is on page 33 in Chapter Two. Details regarding each element of the conceptual framework and the sources upon which each element are based are found in Chapter Two. Key elements of the framework are found in Table 21 on page 82.

“Person” is the graduate nurse who has completed the requirements to obtain a degree from a program of nursing but is not yet licensed as an RN. Each person is a unique, goal-
oriented individual who is composed of external physical characteristics and internal characteristics or dispositions. Internal characteristics include perception, motivation, values/beliefs, attitudes, emotions, ability to think and to communicate, and the inherent intelligence quotient.

“Environment” is external and includes the academic setting of nursing education (both classroom and clinical), and the institutional healthcare environment where student nurse externships take place. Humans are an integral part of the environment because the environment encompasses the external socio-cultural systems that exist within academia (faculty, students, and administrators) and the healthcare institutions (patients, families, healthcare providers, preceptors, administrators). It also includes the social systems of which the person is a member, such as family, community, culture/race/ethnicity, and religion. This indicates that socialization of the person occurs within the environment. The “fit” between the person and the environment is important, as this will have an effect on behavior.

“Behavior” is the combination of internal and external activities and/or processes that result in learning and may or may not be directly observable at the time it occurs. Behavior encompasses the three domains of learning: cognitive, psychomotor, and affective. Examples of behavior include but are not limited to skill acquisition, development of critical thinking and clinical judgment skills, improved communication skills, mastery learning using drill and practice techniques, and/or construction of knowledge as a result of experiential learning opportunities integrated with social interaction.

“Goal” is derived from goal-attainment theory. It represents the interactions/transactions between and among person, environment, and behavior leading to attainment of the desired outcome.
Table 20

**Comparison of Sample (N = 252) in this Study to State or National Data**

<table>
<thead>
<tr>
<th>Age:</th>
<th>This Study</th>
<th>State or National Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>20 – 29 years</td>
<td>152</td>
<td>60.3</td>
</tr>
<tr>
<td>30 – 39 years</td>
<td>61</td>
<td>24.2</td>
</tr>
<tr>
<td>40 – 49 years</td>
<td>33</td>
<td>13.1</td>
</tr>
<tr>
<td>50 and older</td>
<td>6</td>
<td>2.4</td>
</tr>
</tbody>
</table>

The 2000 National Sample Survey indicated the average age at graduation from a nursing program was 30.9 years.

<table>
<thead>
<tr>
<th>Ethnic Background</th>
<th>This Study</th>
<th>2000 National Sample Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>White</td>
<td>209</td>
<td>82.9</td>
</tr>
<tr>
<td>African-American</td>
<td>18</td>
<td>7.1</td>
</tr>
<tr>
<td>Latino/Hispanic</td>
<td>8</td>
<td>3.2</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>10</td>
<td>4.0</td>
</tr>
<tr>
<td>Native American</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>2.4</td>
</tr>
</tbody>
</table>

No comparative data.

<table>
<thead>
<tr>
<th>Gender</th>
<th>This Study</th>
<th>AACN (2001)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Male</td>
<td>20</td>
<td>7.9</td>
</tr>
<tr>
<td>Female</td>
<td>232</td>
<td>92.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nursing Degree to take NCLEX-RN</th>
<th>This Study</th>
<th>2000 National Sample Survey</th>
<th>Michigan in 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Associate’s</td>
<td>148</td>
<td>58.7</td>
<td>55.4</td>
</tr>
<tr>
<td>Bachelor’s</td>
<td>102</td>
<td>40.5</td>
<td>38.0</td>
</tr>
<tr>
<td>Diploma</td>
<td>0</td>
<td>0.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Special Code/ Did not specify</td>
<td>2</td>
<td>0.8</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Michigan in 2003: 65.5%
Table 21

*Elements of the Conceptual Framework from Review of Literature and Research*

<table>
<thead>
<tr>
<th>Element</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Person</strong></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Bandura</td>
</tr>
<tr>
<td>Self-confidence</td>
<td>Tritek et al.</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td></td>
</tr>
<tr>
<td>Person-Environment Fit</td>
<td>Lewin</td>
</tr>
<tr>
<td>Clinical Site Immersion</td>
<td>Rush, Peel, &amp; McCracken; Benner</td>
</tr>
<tr>
<td>Authentic Environment</td>
<td>Holdway et al.; Vygotsky; Benner; Starr &amp; Conley</td>
</tr>
<tr>
<td>Social Systems</td>
<td>King; Vygotsky; Bandura</td>
</tr>
<tr>
<td><strong>Learning/Behavior</strong></td>
<td></td>
</tr>
<tr>
<td>Skill Acquisition</td>
<td>Benner</td>
</tr>
<tr>
<td>Experiential Learning</td>
<td>Benner; Dewey; Grinstead; Starr &amp; Conley; Vygotsky</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>Scheffer &amp; Rubenfeld; Wendt; Giddens &amp; Gloeckner</td>
</tr>
<tr>
<td>Repetition/Reinforcement</td>
<td>Péladeau, Forget, &amp; Gagné</td>
</tr>
<tr>
<td>Mastery Learning</td>
<td>Bloom; Motamedi &amp; Sumrall</td>
</tr>
<tr>
<td>Observation</td>
<td>Bandura</td>
</tr>
<tr>
<td><strong>Interactions/Transactions</strong></td>
<td></td>
</tr>
<tr>
<td>Social Interaction</td>
<td>King; Bandura; Vygotsky; Rush, Peel, &amp; McCracken</td>
</tr>
<tr>
<td>Communication</td>
<td>King; Cicca, Step, &amp; Turkstra; Bandura; Vygotsky</td>
</tr>
<tr>
<td><strong>Goal</strong></td>
<td>King</td>
</tr>
</tbody>
</table>
Discussion and Conclusions

Success or failure on the NCLEX-RN by first-time candidates is a multi-dimensional and complex issue. The pursuit to identify variables associated with NCLEX-RN pass rates for first-time candidates occurs in many nursing programs as educators and administrators seek to prepare student nurses appropriately for entry-level RN practice. To practice as an entry-level RN, graduates of any nursing program must pass the NCLEX-RN. Findings from this research study provided supporting evidence suggesting that participation in an SNE program may positively influence NCLEX-RN pass-rates for first-time candidates. Further discussion and conclusions regarding the findings in this study are organized by additional questions prompted by the study findings.

*Why do student nurse extern programs appear to positively influence NCLEX-RN pass-rates for first-time candidates?* One conclusion could be that SNE programs immerse participants (person) in the clinical setting (environment). This is consistent with authentic learning/immersion learning, which is based upon constructivist learning theory. A central tenet of this theory is that meaningful and effective learning is most likely to occur if the learning experience utilizes authentic tasks in a realistic setting. SNE programs can engage student nurse externs in the actual, hands-on use of equipment, competencies, actions, and behaviors applicable and relevant to the real world of nursing practice. Authentic learning requires active participation of the student nurse externs because the experience utilizes discovery and application of knowledge to assess, interpret, and perhaps resolve problems common in the provision of nursing care to patients. Communication in real-life settings may also be of benefit as the interactions/transactions among and between people provides the externs with observable and experiential situations that may reinforce their
communication patterns in the current setting as well affect future communication patterns.

It is possible that the clinical experience gained in SNE programs inspires participants to acquire meaningful and interconnected knowledge, skills, and attitudes applicable to professional nursing practice due to their developing ability to construct a more authentic representation of the realities of nursing. The opportunity to develop meaningful and interconnected knowledge, skills, and practice in the SNE clinical setting may be transferred to testing situations, such as the NCLEX-RN examination, where the testing procedure requires the candidate to apply skills and knowledge to the practice of nursing, not merely recall or recognize facts. As such, the SNE experience may influence the attainment of the goal, which is passing the NCLEX-RN as a first-time candidate. This conclusion is supported by the finding in this study that persons who participated in SNE programs were more likely to pass NCLEX-RN as first-time candidates than those who did not participate in SNE programs.

*Could NCLEX-RN success as a first-time candidate be influenced by the use of a preceptor model in the SNE programs?* Most student nurse externs are assigned one or more experienced RN preceptors, which allows them to witness modeled behaviors, skills, and attitudes relevant to nursing practice in the real world. Preceptors can support and assist the learning process for SNEs. Collaborative communication among and between the health care personnel, the preceptors, and the SNEs encourages the application of theory to nursing practice. At this time, nursing practice propels NCLEX-RN test development (Aucoin & Treas, 2005).

*Does the SNE experience provide students with the social interaction necessary to develop higher order thinking and learning?* There are two comments made by respondents in this
study who participated in SNE programs that illustrate the effect of social interaction on learning. One of the comments was, “I also think I learned a lot from just listening to the nurses talk about their patients and what should be done to help them get better.” The other comment was, “More time with experienced RNs gives the student different perspectives. It changed the way I learned.” Both comments indicate there is a socio-cultural component of SNE programs as the participants interact with healthcare providers, patients, and families while participating in activities requiring the use of cognitive, psychomotor, affective, and communication skills to provide nursing care to patients within a real-world setting. This is consistent with Vygotsky’s belief that learning is embedded within a socio-cultural context (Zone of Proximal Development), which in this case is the environment where the SNE experience is situated. Learning is promoted by observational and experiential activities as well as interactions/transactions with others.

The SNE program may serve as a catalyst in the development of higher order thinking skills in SNE participants through interactions with experienced RNs. In an ideal situation, experienced RNs share information with SNEs, such as how they think about clinical situations and why they use or do certain activities when providing nursing care to assigned patients. The SNEs who are exposed to this information can process it to formulate new learning, which serves as a guide for future behaviors when providing patient care or when taking the NCLEX-RN. This would be consistent with SLT theory as defined by Bandura.

*Could the increased clinical hours the SNE experience provides influence NCLEX-RN success for first-time candidates?* SNE programs provide participants with additional hours above and beyond the clinical rotation/clinical practicum
hours integrated into academic nursing programs. Participants in SNE programs are scheduled to work in clinical units providing patient care, usually under the guidance of an RN preceptor. These additional clinical hours provide SNE participants with opportunities to master fundamental skills through repetitive practice while applying skills and knowledge to provide nursing care to assigned patients (behavior/learning). It can be theorized that these additional clinical hours may provide a greater depth of experience that is helpful when taking the NCLEX-RN since the NCLEX-RN is guided by nursing practice. This is illustrated by a comments made by respondents in this study regarding how they perceived participation in an SNE program affected NCLEX-RN success. One stated, “I was able to come to the correct conclusion from first-hand experiences rather than just from a textbook. Prioritizing, critical thinking, and med experience – what a bonus!” Other comments included “For me, nursing is all about doing. You learn about diseases and health promotion in the classroom, but in an extern program you can apply it to other circumstances and also to test questions”; “I was not studying for boards at the time of the externship. But I used the experience as a practical reference”; “I feel it (the SNE experience) helped a great deal because I could reflect back on experiences I had during my externship”; and “My externship gave me the chance to see so much more than just my school clinicals. This helped me during my NCLEX-RN.”

The number of hours student nurses are scheduled in clinical practicums/clinical rotations varies for each nursing education program. New graduates surveyed by Grinstead (1995) expressed concerns that the clinical practicum hours included within their nursing education programs did not adequately prepare them for the expectations of entry-level nursing practice in real-world environments. The NCSBN has observed that the limited clinical hours
integrated into nursing education programs may be a problem. The average number of hours
student nurses spent providing direct care to more than two patients was 131 hours out of an
average of 596 clinical care hours scheduled in a nursing education program (NCSBN, 2005,
January 25).

The Ohio Board of Nursing commissioned a study to review the total clinical clock hours
included in RN pre-licensure nursing programs. Total clinical clock hours include both
nursing laboratory and nursing clinical rotation hours. According to the Ohio Board of
Nursing report (2004), the range of clinical clock hours in associate’s degree programs was
from 570 to 960 (mean of 759 hours, and median of 765 hours), while nursing education
programs awarding bachelor’s degrees had a range of 652 to 1,638 total clinical clock hours
(mean of 970 hours, and median of 854 hours).

Unlike the Ohio Board of Nursing, other state boards of nursing do not publish
information regarding clinical clock hours included in nursing education programs preparing
students for initial RN licensure. The researcher was unable to identify other state boards of
nursing which made this information readily available. Neither of the accrediting bodies for
nursing education programs (NLNAC or CCNE) have established a standard or criterion
regarding the minimum number of clinical instruction hours that must be included in nursing
education programs in order to attain or maintain accreditation.

Various nursing organizations have expressed concern regarding clinical instruction hours
integrated within programs of nursing preparing students to become RNs. Members of the
Colorado Board of Nursing (CBON) recently mandated that graduates of non-campus-based
nursing programs that fail to offer clinical experiences concurrent with theory instruction
must complete 750 clinical hours before approval to take the NCLEX-RN will be granted
(CBON, 2006). However, mandated clinical hours for programs offering concurrent clinical and theory was not addressed in the 2006 CBON document. The NCSBN issued a position statement in August 2005 regarding the necessity of the integration of supervised “hands-on” clinical experiences with actual patients in authentic clinical settings to prepare student nurses for initial entry into practice. Although simulations can mimic the clinical environment and complement clinical experience, simulations cannot replace supervised, hands-on clinical experience with real patients (NCSBN, 2005, August). However, the NCSBN did not make any recommendations regarding the minimum number of clinical clock hours that should be included in a nursing program preparing students for initial RN licensure.

Currently, a prevailing belief within nursing education is that a broad base of theoretical knowledge along with limited clinical experience is the preferred methodology to prepare student nurses for entering the nursing profession. Many educators believe that repetitive practice fails to promote meaningful learning. But this begs the question as to whether there is a basis for this belief. Bloom (1976, as cited in Motamedi & Sumrall, 2000) noted that time spent mastering prerequisite skills and knowledge is an important component of instruction. Motamedi and Sumrall (2000) have presented arguments for combining mastery learning techniques with constructivist learning principles to promote higher order thinking and application of knowledge to real-world problem-solving situations. Péladeau, Forget, and Gagné (2003) concluded that repetitive practice to attain mastery was of substantial benefit to students.

Mastery of skills and repetitive practice are not new concepts, nor are they relegated only to the academic setting. Athletes such as ice-skaters, baseball players, basketball players,
dancers, gymnasts, swimmers, and runners consistently participate in skill drills or repeatedly practice a new athletic maneuver until it is mastered. Even after mastery is attained, additional practice to hone the maneuver is part of the routine. Repetitive practice encourages fluidity, competence, and comfort with the skills as well as mastery. Some coaches would argue the point that repetitive practice encourages athletes to think smarter and play smarter. The thought is that the athletes have to apply knowledge and skills learned as a result of repetitive practice situations to new situations that arise during competitions and then determine the best way to deal with the situation.

The SNE experience can provide time for repetitive practice in a clinical situation that requires participants to apply knowledge and skills to real, live patients. Additional clinical time integrated into nursing education programs could allow students to gain a better grasp of the skills and abilities needed to provide safe competent nursing care. It may also translate into higher NCLEX-RN pass rates for first-time candidates.

Recommendations for Policy and Practice

There are two particular findings from this study that could influence policy and practice in nursing education settings. The first finding is that student nurses who participate in SNE programs are more likely to pass NCLEX-RN as first-time candidates (N= 252; \(X^2 = 4.19;\) df = 1; \(p \leq 0.05\)). The second finding is that of the 90 respondents who participated in SNE programs, 87 (96.7%) recommended that student nurses participate in an SNE program prior to graduation.

Administrators and educators in nursing academia can use these findings in a couple of ways. The first suggestion has to do with the advisory function of administrator and faculty roles. Student nurses could be advised that participation in an SNE program may positively
influence their ability to pass NCLEX-RN as first-time candidates. Other benefits of participation in SNE programs could be shared as well. Student nurses could be advised to identify and apply for available SNE positions in health care institutions. Most SNE programs involve paid positions and are offered during the summer months when academic nursing programs are typically on break, so it is an opportunity to earn and learn in a real-world clinical work environment.

A second suggestion, based on the findings of this research, regards strengthening nursing program curricula by providing student nurses with an integrated and sustained clinical experience during the last term of the program curriculum. This clinical experience would pair each student nurse with a preceptor and reflect some of the common elements found in SNE programs. Although issues regarding allocation of academic credits would have to be addressed, an integrated, sustained, and preceptored clinical experience could have positive benefits for student nurses. An integrated experience of six weeks duration requiring 24 to 32 hours of clinical time per week would provide students with 144 to 192 hours of working under real-world conditions. The length of six weeks was chosen because the shortest SNE programs are 6 weeks and some SNE programs require participants to work as few as 24 hours per week. In addition, it may be to the advantage of the student if the preceptored clinical experience took place in an acute care institution since the first employment setting for the majority of new graduates (88.1%) is in an acute care setting (Smith & Crawford, 2004, July).

Additional support for the researcher’s recommendation for the integration of a sustained clinical experience during the nursing program was identified. The BSN program at California State University-Los Angeles includes a senior capstone course that integrates a
sustained clinical experience into the nursing curriculum. The clinical portion is a work-study experience on medical-surgical units in acute care facilities. Student nurses work two shifts per week during the term in which they are enrolled in the senior capstone course. Administrators in the nursing program report that 92% or more of their graduates pass the NCLEX-RN as first-time candidates (California Board of Registered Nursing, 2000).

Changing educator attitudes regarding preceptored clinical experiences for student nurses and its effect on NCLEX-RN success may be an issue. A task force commissioned by the California Board of Registered Nursing sent a questionnaire to the administrative team at each school of nursing in the state. One question specifically asked participants if preceptored clinical experiences had an impact on program graduates when they took the NCLEX-RN. Results indicated that 40% of ADN nursing program administrators and 25% of BSN program administrators agreed with this statement (California Board of Registered Nursing, 2000). Findings from one task force in one state cannot be extrapolated to all administrators and educators in nursing education across the country, as it is likely there are varying opinions on the impact and/or importance of preceptored clinical experiences for student nurses. However, it may be cause for concern when administrators in nursing education programs fail to acknowledge the importance of experiential learning within an authentic clinical learning environment, as this is generally what a preceptored clinical experience offers to student nurses.

As indicated in the literature review for this study, SNE programs are commonly used as a recruitment and retention tool to fill vacant RN positions in health care institutions. One of the objectives for the SNE program is the cultivation of institutional loyalty and belonging
during the SNE experience so that participants will choose to work as RNs at the same institution following graduation from their respective nursing programs.

Graduate nurses are often hired into health care facilities prior to taking the NLCEX-RN. The expectation is that the graduate nurses will pass the examination, receive a license to practice as an RN, and thereby fill the vacant RN positions for which they were hired. The costs associated with filling a single vacant RN position range from $42,000 to $64,000 (Lindy & Reiter, 2006). Direct costs include advertising, interviewing time, reference checks, drug screening, criminal background checks, pre-employment physical, general hospital orientation, classroom orientation, unit-based orientation, and costs associated with covering vacant shifts (overtime costs, hiring an RN from an outside staffing agency as a temporary staffing measure, etc.). Indirect costs include decreased morale in unit staff secondary to vacant shifts, increased patient care loads, and the reduced efficiency and productivity of the new hire. The resulting financial implications to the institution that occur if and when a new graduate fails the NCLEX-RN are obvious because the vacant RN position remains open and cannot be filled until a person with a valid RN license is in the position. Failure on the NCLEX-RN might result in economic repercussions for the graduate nurse who may be demoted or fired as a result of failing the examination.

Staff RN educators and nursing administrators in health care institutions may be able to use the findings from this study because it supports the continuation of SNE programs within the organization. Effective fiscal management within health care institutions requires staff RN educators and nursing administrators to conduct cost-benefit analyses to identify how each staff development program contributes to the goals of the organization (Lindy & Reiter, 2006). An anticipated benefit likely to help justify the cost of the SNE program is the finding
that SNE participants are more likely to pass the NCLEX-RN as first-time candidates. Thus, it is likely that the costs to fill a vacant RN position with a new graduate who was an SNE participant are lower than the costs associated with filling a vacant RN position with a new graduate who was not an SNE. The SNE program is likely to be particularly cost-effective for the health care institution when SNE participants elect to remain with the institution as graduate nurses.

Recommendations for Future Research

The quest to identify variables associated with success and/or failure on the NCLEX-RN for first-time candidates is likely to be an ongoing process within nursing academia. This study identified a variable external to academic nursing programs, and the findings indicated that participation in SNE programs may have a positive influence on NCLEX-RN success for first-time candidates. Identification of this variable will provide opportunities for future research on this topic.

Although this was the initial study to examine the influence of SNE participation on NCLEX-RN pass-rates for first-time candidates, it should not be the last because of the relatively small sample size (N = 252; Non-SNEs: n = 162; SNEs: n = 90). Another limitation was that it was conducted in one state. However, strengths of the study included use of random sampling technique and the ability to gather data from graduates of both associate degree and bachelor degree nursing programs.

The researcher recommends this study be repeated in another state or geographic area to determine if the results can be replicated. Ideally, the sample size would be larger as well.

Future researchers should consider the effects of standardized testing on NCLEX-RN pass-rates and try to separate this variable from the SNE variable. Many nursing education
programs require students to pass a standardized exit exam, designed to predict the probable success or failure on the NCLEX-RN, before graduation. Persons failing the standardized exit exam may not be allowed to graduate and/or may not receive permission to take the NCLEX-RN until satisfactory scores are obtained on the exit exam. Other nursing education programs utilize standardized testing throughout the academic program as a means of formative evaluation to prepare students to take the NCLEX-RN.

In situations where students are required to take exit exams/standardized NCLEX-RN practice tests, the researcher could request that each student share information regarding SNE experience prior to the time of exit testing. This would allow the researcher to measure this variable when analyzing the predictive pass-rates of students.

Availability of data allowed the researcher to check one further descriptive statistic that was not directly addressed in the present study. Of the eight SNE participants who failed the NCLEX-RN as first-time candidates, six (75%) were graduates of BSN programs and two (25%) were graduates of ADN programs. This was an interesting finding given the relatively high NCLEX-RN pass rate (91.1%) for first-time candidates who had participated in SNE programs. It piqued the researcher’s personal curiosity, which resulted in identifying the following descriptive data regarding the sample for this study. Of the 250 respondents who identified the degree earned to take the NCLEX-RN, 148 earned Associate’s degrees and 102 earned Bachelor’s degrees. Of the 148 persons with an Associate’s degree, 128 (86.5%) passed NCLEX-RN and 20 (13.5%) failed NCLEX-RN as first-time candidates. Of the 102 persons who earned Bachelor’s degrees, 84 (82.4%) passed the NCLEX-RN and 18 (17.6%) failed the NCLEX-RN as first-time candidates. Further research is needed to identify if this
finding is a possible trend in NCLEX-RN results for first-time candidates or merely an anomaly isolated to this particular study.

It is unknown why some of the respondents in this study participated in SNE programs and others did not. What are the barriers to participation in SNE programs? What factors influence the decision to participate in an SNE program? Why does it appear that younger student nurses are more likely to participate in SNE programs than older students? These areas could be examined in future research studies.

Another future area of exploration could be to examine if the SNE experience fosters critical thinking skills that are beneficial to candidates taking the NCLEX-RN. Researchers could consider using a standardized instrument to measure the critical thinking skills of SNEs prior to beginning the program, at the end of the program, and perhaps at graduation. Correlation of the critical thinking testing results to NCLEX-RN pass rates could be conducted.

Future researchers may also wish to examine the quality of SNE programs, as the quality of the program can vary from institution to institution. Some programs are designed to utilize SNEs in the nurse-aide or patient care assistant role. Other programs are designed to integrate educational content into the experience and actively facilitate socialization into the RN role. SNE participants in some programs are assigned one or two primary RN preceptors, while SNE participants in other programs have no assigned RN preceptor to guide them through the experience.

There are several more questions related to SNE programs that could be examined in future research. Why does participation in an SNE program have an effect on NCLEX-RN pass-rates? How and why do personnel in health care institutions select certain applicant
criteria, such as BSN student nurses only, for SNE programs in their facilities? What components of the SNE program promote optimal learning? How can an SNE program be structured to provide an optimal learning environment for participants? What is the best way to provide an authentic learning environment in an SNE program? Does participation in an SNE program affect the development of critical thinking skills? If so, how and why does participation in SNE programs affect critical thinking skills? How can educators in nursing academia and staff nurse educators in healthcare facilities work together to integrate planned learning activities to transition the student nurse into the graduate nurse role? It is obvious that further research on SNE programs is necessary to examine these questions and other questions that have not yet been developed.

Reflections

SNE programs were originally conceived as a recruitment and retention tool to attract student nurses to the health care institution and then retain them as graduate nurses to fill open staff RN positions. However, reviews of research and of literature, as well as the findings of this study, indicate that SNE programs are more than a recruitment and retention tool. Perhaps it would be of benefit if educators/administrators in nursing education programs and in healthcare settings worked together to formulate SNE programs and academic clinical experiences that complemented each other by providing socio-cultural interaction in authentic learning environments to promote the development and application of cognitive, psychomotor, and affective nursing knowledge and skills. It is possible that such a partnership between the healthcare sector and the academic sector could ultimately help reverse the trend of lower NCLEX-RN pass rates for first-time candidates and reduce reality
shock in new graduates or newly licensed RNs. It could be a win-win situation for student nurses, graduate nurses, educators, and administrators.

In my ideal world, administrators and educators in nursing education programs and administrators and educators in health care institutions would work together in cooperative ventures. I envision joint planning, implementation, and evaluation sessions that would prepare student nurses for the realities of nursing practice through SNE programs or sustained clinical integration experiences, facilitate education programs to prepare staff RNs for the preceptor role, develop graduate nurse intern/residency programs to help transition new graduates into the professional nursing practice role in order to decrease the incidence of reality shock, yet also awaken student nurses/graduate nurses/newly licensed RNs to the myriad of potential practice opportunities that may await them in the profession of nursing and how they can improve nursing practice through education and research.
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APPENDICES
APPENDIX A

Approval from

Human Subjects Institutional Review Board
April 22, 2005

Ms. Joy Washburn
Department of Leadership and Counseling

RE: “The Relationship Between Participation in a Student Nurse Extern Program and Passing the NCLEX-RN as a First-Time Candidate”

The Human Subjects Institutional Review Board (IRB) of Eastern Michigan University has granted approval to your proposal: “The Relationship Between Participation in a Student Nurse Extern Program and Passing the NCLEX-RN as a First-Time Candidate”.

After careful review of your application, the IRB determined that the rights and welfare of the individual subjects involved in this research are carefully guarded. Additionally, the methods used to obtain informed consent are appropriate, and the individuals are not at a risk.

You are reminded of your obligation to advise the IRB of any change in the protocol that might alter your research in any manner that differs from that upon which this approval is based. Approval of this project applies for one year from the date of this letter. If your data collection continues beyond the one-year period, you must apply for a renewal.

On behalf of the Human Subjects Committee, I wish you success in conducting your research.

Sincerely,

[Signature]

Dr. Patrick Melia
Administrative Co-Chair
Human Subjects Committee

CC: Dr. Steve Pernecky, Faculty Co-Chair
Dr. Charles Achilles
APPENDIX B

Cover Letter

and

Informed Consent Letter
Dear __________________________:

This letter is a request for your participation in a study examining the relationship between participation in student nurse extern programs and NCLEX-RN success. This study has been approved by the Human Subjects Review Committee at Eastern Michigan University. Your participation will provide information which can be shared with nurse educators in institutions of higher education and in healthcare facilities. Your participation has the potential to benefit future student nurses.

The definition of a student nurse extern program for this study is as follows: A student nurse extern program provides hands-on clinical experience in a paid position during the summer prior to the final year of nursing school. Student nurse externs are selected and hired by the healthcare institution offering the program. No college credit is granted for participation in a student nurse extern program.

Your name was selected at random from a list of persons applying for initial RN licensure in the State of Michigan by taking the NCLEX-RN between April 1, 2004 and September 30, 2005. The list was obtained from the Michigan Board of Nursing. You are requested to complete and return the questionnaire whether or not you were a student nurse extern prior to graduation from a nursing program. The questionnaire is anonymous as you are not asked to identify yourself in any manner. Participation in this study is voluntary. Return of the questionnaire will indicate your informed consent and voluntary agreement to participate in the study.

Will you please assist me by completing the enclosed questionnaire? It will take approximately 10 to 15 minutes of your time. A postage-paid return envelope has been included for your convenience. In order for me to analyze the data in a timely manner, please return the questionnaire by {date}.

Thank you in advance for your participation. If you have any questions regarding this study, you may contact me at (616) 957-0766 or you may contact Dr. Charles Achilles, chair of my dissertation committee, at (734) 487-7120, ext. 2679.

Sincerely,

Joy Washburn, RN, MSN
Doctoral Candidate at Eastern Michigan University
Informed Consent Letter for Research

Dear Participant,
You are being asked to participate in a study conducted by Joy Washburn, MSN, RN. She is a doctoral candidate in the School of Education at Eastern Michigan University. Please read this letter and ask any questions you may have prior to agreeing to participate in the study.

Study:
The Relationship Between Participation in a Student Nurse Extern Program and Passing the NCLEX-RN as a First-Time Candidate

Purpose:
The purpose of this study is to examine what, if any, relationship that may exist between participation in a student nurse extern program and passing the NCLEX-RN. A literature review revealed a lack of research regarding this topic. Research on this topic may assist faculty in schools of nursing as they develop curricula or provide advising services to students.

Study Procedures:
If you choose to participate in the study, you are requested to fill out the enclosed survey regarding participation in a student nurse extern program. Questions about your age, gender, and other demographic questions will be asked as well. It will take approximately 15 minutes to complete the questionnaire. If you choose to participate in the study, return the completed questionnaire to Joy Washburn in the postage-paid envelope provided.

Benefits and Risks of the Study:
There are no direct benefits to the participants; however, the information from this study may benefit future student nurses. At this time, there are no known risks to participation in this study.

Compensation:
There is no compensation for participation in this study.

Confidentiality/Anonymity:
Participants are not asked to identify themselves in any manner as the questionnaire is designed to maintain the anonymity of those who choose to participate in the study. Data obtained as a result of this study will be reported in the aggregate only.

Voluntary Participation/Withdrawal:
Participation in this study is voluntary. There are no negative consequences for choosing not to answer any, or all, of the questions. Return of the questionnaire indicates your informed consent and voluntary agreement to participate in the study.

Questions:
If you have any questions, you may contact Joy Washburn at (616) 957-0766 or via e-mail at JoyNP@aol.com. Questions or concerns regarding your rights as a research participant, the consent agreement, and/or the research protocol approval procedures should be directed to Dr. Steve Pernecky, or Dr. Patrick Melia at Eastern Michigan University. They may be contacted at (734) 487-0379.

Study Results:
Results of this study will be shared with nurse educators in academic institutions and in healthcare facilities. Copies of the results of this study will be made available to participants at their request. If you would like a copy of the results, please contact Joy Washburn.
APPENDIX C

Questionnaire for Research Study
Questionnaire: Participation in Student Nurse Externship Programs

This study is examining the relationship between participation in student nurse extern programs and NCLEX-RN success. Student nurse extern programs offer an opportunity for “hands-on” clinical nursing experience in a paid position during the summer prior to the final year of nursing school. Student nurse externs are selected and hired by the healthcare institution offering the program. No college credit is granted for participation in a student nurse extern program.

You are requested to complete and return this questionnaire whether or not you were a student nurse extern prior to graduation from nursing school. Completion of the questionnaire will take approximately 10 -15 minutes. Return of the questionnaire indicates your informed consent and voluntary agreement to participate in the research study.

Instructions: Please check one answer for each question.

1. What was your age at the time you graduated from your nursing program?
   20-29_____  30-39_____  40-49_____  50 or older _____

2. What is your ethnic background?
   White_____  African-American_____  Latino/Hispanic_____  Asian/Pacific Islander_____  Native American_____  Other_____

3. What is your gender?  Male _____  Female_____  

4. Did you earn a college degree in another area of study prior to your admission to a nursing program?
   Yes, a bachelor’s degree_____  Yes, an associate degree_____  No_____  

5. Which degree did you earn to become eligible to take the licensure exam to become an RN?
   Associate Degree_____  Bachelor’s Degree_____  

6. From which type of academic institution did you graduate with your degree in nursing?
   Public 4-year college or university_____  Private 4-year college or university_____  2-year community college_____  

7. What was your cumulative grade point average (GPA) when you graduated from nursing school?
   2.0 - 2.49_____  2.5 - 2.99_____  3.0 - 3.49_____  3.5 – 4.0 _______  

8. How many times did you take the licensure exam (NCLEX-RN) to become an RN?
   1_____  2_____  3 or more_____  

9. Did you participate in and complete a Student Nurse Externship program prior to graduating from nursing school?
   _____No  (Thank you for participating in this research study. It is not necessary for you to respond to the remaining questions. Please return your questionnaire in the pre-addressed, stamped envelope provided.)

   _____Yes  (Please answer the remaining questions.)
10. In what type of healthcare institution did you complete a student nurse extern program?

Acute Care Facility/ Hospital_____ Long-Term Care Facility_____  
Rehabilitation Facility______ Home Health Care_____ 
Outpatient Clinic/Ambulatory Care/Community Health Center______  
Other (please list)________________________________________________________  

11. What was the length of time of your student nurse extern program?  
7 weeks or less_____ 8 – 10 weeks_____ 11 or more weeks_____ 

12. Did the healthcare institution provide you with an assigned RN preceptor?  
Yes, one primary RN______ Yes, multiple RN’s______ No assigned preceptor______  

13. How many hours per week were you scheduled to work as a student nurse extern?  
23 or less______ 24 -31______ 32 - 40_____  

14. Did the healthcare facility provide classroom sessions or seminars during the extern program (beyond general orientation) to assist you in gaining knowledge or skills to provide patient care?  
Yes_____ No_____  

15. If your extern experience took place in an acute care facility/ hospital, to which type of unit were you assigned for more than 50% of the time?  
Medical/Surgical______ Critical Care______ Emergency_____  
Outpatient Surgery_____ Operating Suite/Post-Anesthesia Recovery_____  
Obstetrics/Labor & Delivery/Post-Partum_____ Pediatrics/NICU/PICU_____  
Other (please list)______________________________________________________  

16. What effect did participation in a student nurse extern program have on your performance in nursing classroom/lecture courses when you returned to school?  
Very Positive_____ Positive_____ Neutral_____ Negative_____ Very Negative_____  

17. What effect did participation in a student nurse extern program have on your performance in clinical nursing courses when you returned to school?  
Very Positive_____ Positive_____ Neutral_____ Negative_____ Very Negative_____  

18. What effect did participation in a student nurse extern program have on your self-confidence in your skills and abilities to provide nursing care to clients?  
Very Positive_____ Positive_____ Neutral_____ Negative_____ Very Negative_____  

19. What effect did participation in a student nurse extern program have on your ability to pass the NCLEX-RN?  
Very Positive_____ Positive_____ Neutral_____ Negative_____ Very Negative_____  

20. How would you rate the student nurse extern experience in helping you gain clinical knowledge which assisted you in answering questions on the NCLEX-RN?  
Excellent_____ Good_____ Fair_____ Poor_____
21. How would you rate the student nurse extern experience in helping you gain *clinical nursing skills* which assisted you in answering questions on the NCLEX-RN?
   Excellent_____  Good_____  Fair_____  Poor_____  

22. What aspects/parts of the student nurse extern experience did you find to be the most valuable?

23. Would you recommend that nursing students participate in a student nurse extern program prior to graduation from nursing school?
   Yes_____  No_____  Uncertain_____  
   Please explain your answer in the space below:

24. Please provide the following information regarding the extern program in which you participated:
   Institution Name_________________________________
   Location (City/Town)_____________________________

25. In the space below or on the back, please share any additional comments you may have regarding participation in a student nurse extern program and its’ relationship to either passing or failing the NCLEX-RN.

Thank you for participating in this research study. Please return your questionnaire in the pre-addressed, stamped envelope provided.