

## Review Article

# A Plan to Promote NCLEX-RN Success of Saudi Arabian Nurse Graduates

**Ghareeb Mesawa Bahari\***

Faculty of Nursing College, King Saud University, Saudi Arabia

\*Corresponding author: Bahari GM, Faculty of Nursing College, King Saud University, King Abdullah St, 11451, Saudi Arabia, Tel: +966114693656, Fax: +966114693625; Email: gbahari@masonlive.gmu.edu

**Received:** March 11, 2015; **Accepted:** April 17, 2015;**Published:** April 28, 2015**Abstract**

Saudi Arabian nursing graduates have difficulty succeeding on the National Council Licensure Examination for Registered Nurses (NCLEX-RN). To assist nursing graduates to perform well on the exam, international nursing schools need to reduce students' test anxiety and improve their proficiency with the English language. Additionally, international schools need to focus on developing a curriculum that includes application-based-content and test-taking strategies. This paper is a proposal of a plan to promote the NCLEX-RN success of those students who graduated from King Saud University in Saudi Arabia. The paper provides different interventions to increase the success rate among Saudi nursing graduates. Roger's diffusion of innovation theory was also used to design the plan that seeks to improve the quality of nursing education at King Saud University. The change at the nursing school is needed to help increase Saudi nursing graduates passing the NCLEX-RN.

**Keywords:** NCLEX-RN; Test anxiety; English language skill; Application-based-content; Test taking strategies; International nurse graduates

**Abbreviations**

NCLEX-RN: The National Council Licensure Examination for Registered Nurses; RN: Registered Nurses; US: the United States; NCSBN: The National Council of State Boards of Nursing; CAT: Computerized Adaptive Testing; KSU: King Saud University; AACC: Anne Arundel Community College; ECU: East Carolina University

**Introduction**

The National Council Licensure Examination for Registered Nurses (NCLEX-RN) is a computer test taken to become a licensed registered nurse (RN) in the United States (US). After graduation from an accredited nursing school, students are required to take the test in order to practice as registered nurses in the US. The NCLEX-RN is designed to test a minimum level of knowledge necessary for safe nursing practice [1]. The test covers a wide range of nursing topics that require nursing graduates to think critically about decisions involving care. The NCLEX-RN measures minimum competency, can be taken by nurses with various levels of preparation, and is critical to all nursing graduates because of its requirement for employment opportunities in the US. However, compared to US graduates, students educated outside of the US often perform poorly on the test [2]. Nurses who were educated in Saudi Arabia experience this problem. Regardless of that, being a registered nurse in Saudi Arabia is valuable, and finding ways to develop knowledge and skills is more important. The first step for development could be associated with the ability to pass the NCLEX-RN exam in the US. The NCLEX-RN test is a requirement for becoming a RN in the US. Nursing graduates need encouragement, assistance, and guidance to help succeed on the exam and show they are prepared for professional and safe practice. Lack of information about the exam is worrisome for international students because information inadequacy might negatively affect nurse graduates' performance on the exam. The intention of this

project is to offer suggestions for improving the pass rate among Saudi nursing graduates on the NCLEX-RN.

**The importance of the NCLEX test**

US state boards of nursing require all graduating nurses to pass the NCLEX-RN in order to practice as a RN, certifying that they have met minimum requirements to work with patients in healthcare settings. To ensure public protection, nursing graduates must pass the exam that measures the competencies needed to provide effective and safe care to patients. The NCLEX-RN exam helps to ensure that nurses will not jeopardize the lives of those who are under their care, but provide safe care to patients [3]. Success on such exam can benefit nurses in improving their critical thinking and self-confidence for practice. Additionally, evaluation of factors influencing NCLEX-RN success is required for making effective decisions regarding admission requirements and curriculum design.

**The test format**

Questions for the NCLEX-RN are presented by Computerized Adaptive Testing (CAT) and in multiple-choice format. In the recent years, NCLEX-RN questions have been set with three different levels [4]. Level one questions relate to nursing fundamentals and comprise less than 10 percent of the total questions. These questions require students to recall information that helps answer higher-level test questions. Level two questions measure critical thinking. Time management may become an issue with these questions, as thinking critically may require persistence in understanding the question and choosing the correct answer. Level three questions are the most difficult type, requiring students to evaluate and synthesize information. Level three questions require students to select only the best answer among all options. Nursing students may face confusion regarding issues related to decision-making and analyzing facts and information. Level two and level three questions comprise about 90

percent of the questions on the NCLEX-RN, though the exam might exclude level one questions and include those from level two and level three exclusively. By using these different levels, the NCLEX-RN requires nursing graduates to recall knowledge-based information and use it to analyze the questions and select the correct answer [5].

### Statistics for nursing graduates' success on the test

The NCSBN reported that in 2012, the international test-takers were greater in number than expected, but the pass rate was less than anticipated [2]. The total number of those who took the NCLEX-RN and received their education in the US was 150,266, while only 7,764 who had been internationally educated took the test. The pass rate for those who earned their bachelor's degree in nursing in the US. And took the exam for the first time was 90.34%, while those who were internationally educated and took the exam the first time was 36.59% [2]. The results reflect that approximately 14,516 nurses who had been educated in the US. Did not pass in the first time, and 4,924 nurses who were internationally educated did not pass in their first attempt. These statistics reflect a significant difference not only in the number of international students attempting the exam, but also in the performance rate between US graduates and international nursing graduates.

### The problem statement

The quality of a nursing education program is evidenced by the performance of its graduates on the NCLEX-RN. Nursing colleges work continually to improve the success of their students on this exam. Saudi nursing students have experienced challenges in passing the NCLEX-RN. The NCSBN reported that in 2009, 12 students educated in Saudi Arabia took the exam, but just two passed [6]. This is compared to 21,439 graduates who were internationally educated and took the exam in 2009 with a pass rate of 42.37%. This poor test performance suggests that the preparation of Saudi nursing graduates for the NCLEX-RN may have been inadequate and the curriculum of nursing education programs in Saudi Arabia may need to be evaluated. Test anxiety, language skills, application-based-content, and test-taking strategies of Saudi nursing students must be improved to increase the likelihood the graduates would pass the NCLEX-RN.

### The purpose statement

The purpose of this project is to develop a plan to increase the pass rate of nursing graduates educated in King Saud University on the NCLEX-RN. The exam presents a significant impasse among Saudi nursing students that must be overcome before they can work as registered nurses in the US. This project will present a plan that includes interventions to assist Saudi nursing students to perform effectively on the exam.

## Literature Review

Several studies have identified factors that measure students' performance on the NCLEX-RN [7-8]. Applying new ideas and interventions to develop students' performance was also presented in the literature. A literature search was performed focusing on such terms as NCLEX-RN performance, pass rate, anxiety control, language proficiency, application-based-content, and test-taking skills. Additionally, finding articles regarding international nursing graduates' experiences with the NCLEX-RN was included. Studies found that faculty in nursing schools work diligently to increase the

quality of the curriculum in order to help achieve students' goals in passing the NCLEX-RN and becoming registered nurses [9-11]. Other studies explored whether preparation for the exam could predict success on the NCLEX-RN [12-13]. A few articles discussed crucial approaches to prepare Saudi nursing graduates for the test [14-15]. The research identified that planning for a change to increase NCLEX-RN pass rates usually begins with faculty development at nursing schools [16]. Faculty development was acquired with attention to developing their competencies related to curriculum development, professional practice, collegial relationship, and teaching strategies [16]. Nursing faculty members at King Saud University (KSU) are expected to motivate their students to succeed and achieve a passing score on the NCLEX-RN. This project can serve as a model to improve Saudi students' performance on the exam.

### International nurse graduates' experiences on NCLEX

Passage of the NCLEX-RN is required at the end of a nursing student's undergraduate coursework to practice as RNs in the US. Precursor steps that assist in understanding the issue of NCLEX-RN failure include listening to and reading about nursing students' performance on the exam. Graduates who have passed the NCLEX-RN can be a source of information about how to successfully pass the test. "There might be an unidentified "something" contributing to declining first-time pass rates for their graduates, therefore the authors decided to try to understand the experience from the nurses' point of view" [17]. On the basis of these ideas, the experiences of Asian nurses could be considered because of the success of Asian nursing programs in preparing their students for the NCLEX-RN. Undergraduate nursing programs in Asia could be valuable for review because they have raised the rates in passing the exam [18]. Korean nurses' experience of test preparation and execution [19]. The authors stated that preparatory courses for the NCLEX-RN were provided at private institutions and nursing schools. Through these courses, Korean nursing students could familiarize themselves with the exam and practice taking questions prior to taking the actual exam. In conjunction with preparatory courses, there were a number of vital points that could be helpful for Korean nurses taking the NCLEX-RN test [19]. These subjects included motivation, flow in studying, expansion of knowledge for nursing practice, time management, and increased self-confidence and self-esteem. At Korean nursing education program, an educational plan was designed to help students succeed on nursing tests. The educational plan was designed based upon understanding nursing skills, improving thinking, and raising Korean students' confidence level. These subjects were beneficial for South Korean nurses to prepare for the exam and make a passing score. NCSBN reported that in 2009, because of these interventions, 1193 Korean nursing candidates took the exam; 723 performed well with a rate of 60.6% performance [6]. As nursing education expanded in Asia, nursing programs in the Philippines gained recognition among the nursing communities around the world [20]. The NCSBN reported that in October of 2009, 3408 Filipino nurses took the NCLEX-RN and 1489 passed, creating a success rate of 43.7% [6]. While still not an overwhelming performance, the statistic mirrored the remarkable development in the Philippine nursing education programs even though they have lacked governmental support and resources [21]. Filipino nurses were educated through a combination of competency-based and community-oriented Bachelor of Science

in nursing courses [20]. The teaching style and content offered substantial nursing knowledge, focused on critical thinking, and created a high confidence rate in test taking. Typically, the high quality of nursing education contributed to a corresponding rise in NCLEX-RN success.

## Themes

In reviewing the literature, themes related to taking the NCLEX-RN were identified. Themes that were noted include anxiety control, language proficiency, application-based-content, and test taking strategies.

### Anxiety control

Test anxiety had been identified as a barrier to exam success among international nursing students. Mentorship between graduate and undergraduate students could be a successful intervention [22]. In the same study, the authors indicated that constant encouragement from graduates to undergraduate students resulted in reduced test anxiety. The undergraduate students could learn effective ways to control their anxiety by former test-takers' experiences. Administering practice examinations could reduce students' anxiety by familiarizing them with the exam format [23]. Practicing the exams routinely would be helpful to reduce anxiety [24]. The fear of failure might increase anxiety and be the central concern for students [25]. Viewing the exam as a threatening situation could be associated with the fear of failure and with the individual's motivation for achievement [25]. The exam might cause stress and create psychological turmoil even among students who were considered successful in their home countries [26]. In turn, these concerns might lead to low self-esteem and shame, resulting in an inability to connect cognitively with course content and examinations and ultimately culminating in poor performance on the NCLEX-RN. To avoid these potential problems, nursing students in the study were made aware of the style of the exam and given strategies to pass it. Faculty members' encouragement was also helpful in motivating students and reducing anxiety. Students who received support by faculty members often exhibited the motivation and desire to succeed on the NCLEX-RN [27]. Specific techniques were discovered to reduce anxiety during the time of taking a test [28]. Test-takers should consider the following techniques: a) Test-takers should limit conversations with other colleagues prior to the exam because it might create doubt about their knowledge level, b) Test-takers should start breathing exercises 10 minutes before the exam starts so they could be calm and prepared for the test, and c) Test-takers should use deep breathing exercises during the test time when they felt increasing levels of anxiety. There are also different ways to reduce students' anxiety and maximize their performance [22]. Structured tutorial and individualized counseling programs were included to develop self-esteem and to improve the success rate. A structured learning program was also addressed to decrease anxiety and increase self-efficacy. Such a program encouraged students and provided planned steps in reducing students' test anxiety.

### Language proficiency

Language proficiency was also identified as a barrier to NCLEX-RN success for many international students. The most likely issue related to NCLEX-RN failure was mental fatigue from the use of the English language on the exam [29]. Confident English language skills

were necessary to understand NCLEX-RN questions [30]. Language and cultural transitions also might negatively affect grades [26]. Additionally, international students who spoke English as their first language performed better than those whose first language was not English. The highest pass rates on the NCLEX-RN were observed among those examinees who indicated that English was their first language [31]. To solve language problems with international nursing students, "inadequate readings, verbal, oral, and writing-dependent learning, as well as study skills, were statistically significant predictors of failure in college and on the NCLEX-RN" [29].

### Application-based-content

A significant number of articles addressed the development of knowledge among international nursing students. The acquisition of nursing knowledge and the development of effective test-taking skills were keys to passing the exam [32]. Nursing students who were able to expand their content knowledge in nursing were more likely to pass the exam and improving content knowledge of students by addressing their diverse learning styles that enhanced the pass rate among international nursing students [9]. Faculty members should collaborate and respond to students' needs for increased knowledge development, thus improving test performance [16]. The faculty should arrange for additional classes to review important information in nursing. By such classes, students would get more benefits and increase their knowledge to help succeed on the NCLEX-RN. Additionally, enhancing level of nursing knowledge and medical terms would be helpful to facilitate understanding nursing cases offered during the test [19]. Thus, students in the US are prepared adequately with application-based questions, but Saudi students are only taught and tested with knowledge-based material, thus creating a deficiency [33]. Delays in taking the exam following graduation might affect the pass rate among all graduates including internationals. The delay in test-taking reduced students' ability to remember important information for test-taking success. Taking the NCLEX-RN soon after graduating from nursing school would assist information retrieval [19]. Thus, nursing students would be able to recall important information easier and increase the chance of success on the NCLEX-RN. Analyzing the nursing curriculum also played a pivotal role in increasing NCLEX-RN success rates among international students. Nursing curricula should be designed to develop critical thinking, improve nursing skills, and provide safe practice in the communities [16]. The authors suggested that nursing curricula should be helpful to raise the standard of the nursing care to individuals, families and communities. Nursing faculty should identify students who are at high risk of failure on school exams, discover reasons for the high failure rates, and make subsequent changes to admission requirements and curriculum. Such changes must develop the student's cognitive and psychomotor skills. The curriculum design changes should focus on specific areas of the NCLEX-RN exam, including safe and effective care environment, health promotion and maintenance, psychosocial and physiological integrity, basic care and comfort, pharmacological and parenteral therapies, reduction of risk potential, and physiological adaptation [2].

### Test-taking skills

Improved understanding of the NCLEX-RN format and applying application-based questions were also helpful in passing the exam.



Several test-taking skills were recommended, one of which was to practice answering application-based questions since the NCLEX-RN relies heavily on that question format [7]. The study also mentioned other attitudes to consider, including the following: “a) Students must take the initiative to develop individualized study plans; b) Students must accept responsibility to adequately prepare to take the NCLEX-RN by accessing available resources; c) The use of standardized tests may be beneficial in helping students identify areas of weakness when combined with other factors such as nursing course grades” [7]. Test-takers should be taught how to make educated guesses during the NCLEX-RN [34]. In addition, selecting answers quickly was another issue that test-takers might use during the NCLEX-RN. Spending too much time on difficult questions might be a problem for nursing graduates. Finally, educators need to clarify for their students the current form of the test and effective ways to think and select the correct answer. Test-taking strategies are important because they helped international nursing students prepare well for the NCLEX-RN [35]. Note taking was a memory aid that helped store certain types of nursing knowledge and regain it at the test time [11]. Nursing programs should design a creative plan that focuses on test-reading and note taking using a course textbook and classroom lectures [11]. Over time, students were given the chance to collaborate, share, and discuss the information written in the notes. Peer tutoring strategy was also used to engage students and reduce attrition rates. Peer tutoring methods developed learning and critical thinking skills among nursing students, thus supporting their quest to pass the NCLEX-RN exam [36]. One of the main interventions to improve passing rates for students is improving item-writing skills by nursing faculty. NCLEX-RN questions focused generally on practice analysis and critical thinking skills for students [24]. The exam focused on measuring students’ knowledge level and meeting patients’ needs with application-based test questions. Bloom’s taxonomy for the cognitive domain was also used as a basis for writing items for the NCLEX-RN. Bloom’s taxonomy was important to distinguish the important questions within the exam [16]. Faculty knowing how to effectively construct application-based test items and practice such test in nursing school would help prepare students for the NCLEX-RN. To develop writing skills in preparing NCLEX-RN style questions, NCSBN stated that all test items should include three statistical standards: “a) the item is limited to the content area that would produce the best match to the test plan percentages. It is ensured that each candidate’s exam had enough questions from each content area to match the required test plan percentages. b) An item is selected that the candidate was expected to find challenging. c) any item that a repeat candidate had seen in the last year was excluded” [2].

## Interventions for Success on NCLEX-RN

Test-coaching method supported NCLEX-RN preparation by focusing on gaining nursing knowledge and advancing useful test-taking skills [32]. This intervention emphasized concept clarification and self-assessment through performance feedback. For example, nursing students answered and had the opportunity to edit their answers to the exam, following that with a review of the content material involved in the exam. Eventually, students took the nursing exam a second time, identifying the subject areas in which their answers were correct, incorrect, or correct on the first exam but incorrect on the repeat exam. Using test-coaching

method was beneficial in decreasing level of mental preoccupation that nursing students might have [32]. Another study brought a new technique to improve test performance [37]. The authors suggested that online quizzing would help nursing students study, take, and retake the quiz. These additional quizzes would be available online for nursing students to take at any time. Learning from mistakes in the first attempt helped prepare to retake the quiz for the second endeavor. Using online quizzes strategy, nursing students could have increased test success. “Compared to the national NCLEX-RN passing average (87.89%), students who reported using online quizzes during their final semester at nursing school had a 98.7% pass rate” [32]. The strategy of online quizzes can be offered across the nursing curriculum, including NCLEX-RN preparation and review courses.

## Theoretical Framework

The conceptual framework that undergirds this project is Roger’s theory that uses innovative ways for a positive change as its foundation. The diffusion of innovations theory was chosen due to its potential for influencing change. The theory has been continuously applied through the recent decades and is one of the most researched and prevalent models for creating a well-developed learning environment [38]. The theory has encouraged collaboration with consideration for all involved stakeholders with robust strategies for making an innovative change. This theoretical framework will be used to address changes in teaching strategies at nursing college in KSU. The theory features five stages of an adoption process, including knowledge, persuasion, decision, implementation, and confirmation [39]. At each stage, academic behaviors, communication skills, and decision making processes will be affected. This theory provides a scaffold for planning and making changes through use of an innovative project.

## Project Implementation

A large percentage of international nurse graduates are not appropriately prepared for success on the NCLEX-RN [9]. Saudi nursing students have trouble succeeding on the exam due to poor preparation in Saudi nursing programs [40]. Roger’s diffusion of innovations theory is used by this Project to design strategies to increase the success rate among Saudi students who graduated from KSU. The theory addresses five change stages including knowledge, persuasion, decision, implementation, and confirmation. Using these stages as a guide, innovative plans will be presented to help increase the pass rate among Saudi students on NCLEX-RN.

### Knowledge

Information is gathered during the knowledge stage [39]. The first step in creating a change at KSU program for the faculty is to provide data regarding Saudi students’ achievement on the NCLEX-RN. Providing statistical information from the NSCBN regarding the performance rate among Saudi students will also provide baseline data for comparison at the end of the change process. These statistics will also be presented to the faculty as evidence, which indicates that change is needed to improve NCLEX-RN scores. The faculty will then be presented with the plan to organize and facilitate the change. The knowledge stage must include important information, which describes the reason and way in which to create an innovation [41]. Such a reason that reflects the poor-quality education at KSU includes Saudi graduates’ poor performance on the NCLEX-RN.

In addition, to improve the Saudi faculty's knowledge regarding students' performance of the NCLEX-RN, the needs of the health care must be addressed. Improving knowledge regarding clients' needs and increasing quality of client care are important aspects to this project. Addressing clients' needs is one of the primary focused areas included in the NCLEX questions. Improved understanding regarding content areas of NCLEX questions is required to increase the success rate among Saudi students. Content areas include offering safe and effective care environments, improving psychosocial and physiological integrity, and reducing medication errors. Additionally, successfully passing the exam will instill greater confidence and help Saudi students be better prepared for offering safe care to patients in Saudi [41]. As a result, nursing faculty at KSU need to understand the significance of students' success on the exam. Successful NCLEX testing demonstrates confidence, competence, and critical thinking, thus providing safe care to patients.

### Persuasion

During the persuasion stage, an individual seeks further information and new ideas regarding the issue, which must be changed [39]. Nursing faculty at KSU should be persuaded that NCLEX-RN success starts primarily with the quality of education offered in Saudi education programs. Focusing on the content taught at the nursing college helps improve the quality of education. An improved level of education will assist students at KSU to succeed on the licensure exam. The first step in the persuasion process is presenting detailed statistics to the faculty members, which show unsatisfactory achievement on the NCLEX-RN among their students. Nursing faculty need also to review reports of studies conducted by the NCSBN regarding NCLEX-RN pass rates and consider that failure to pass the exam is a barrier to enrolling in many of Master degree programs, particularly in the US. Such data will help strengthen the desire for making a change in the nursing curriculum. To combine the knowledge stage with the persuasion stage, a special survey on the quality of Saudi education will be included. The survey will be administered to all faculty members to gather their perceptions regarding the quality of education. The survey is a significant tool for influencing change in the current education program and covers different areas (Appendix A). The survey also measures the satisfaction of Saudi educators regarding the current education curriculum. Results of the survey will be disseminated in a printed report to the dean and nursing faculty during a faculty meeting. Following the results of the survey, the plan for creating changes that will increase Saudi students NCLEX-RN pass rate will be presented. The plan will focus mainly on strategies to reduce students' test anxiety, develop students' English language, improve application-based-content, and explain test-taking strategies to nursing students at KSU. After explaining the plan and all strategies to the faculty members, they can present their decisions regarding the plan.

### Decision

The decision stage occurs when the individual or group chooses to adopt or reject the innovation [39]. Following the results of the survey, the staff will have the opportunity to present their opinions and suggestions regarding increasing NCLEX-RN pass rates. Additionally, they will be asked to explain their views regarding curriculum changes. A work group or task force would be needed to set goals for curriculum change and then a plan to meet those goals

would be required. The current curriculum and teaching strategies at the nursing college at KSU will be reviewed also as a first step toward implementation of the plan. The faculty members will be asked to present their reasons for accepting or rejecting this project. The faculty, who accept the purpose of this project, will read and confirm elements of the plan. If there are a number who reject the plan for change, they will be asked to present their ideas that will help improve Saudi students' performance on the NCLEX-RN. Asking graduates who took the NCLEX-RN in the past to explain the difficulties in passing the exam could also help convince the faculty to accept the change. After that, the plan of change will be presented again to all faculty members, addressing previous objections in an effort to create consensus among the faculty.

### Implementation

During the implementation stage, the plans turn into practice [39]. The plans for increasing the NCLEX-RN pass rates for Saudi students include improved student anxiety control, language proficiency, content knowledge, and test taking strategies. First, to reduce students' test anxiety, the following steps are recommended: a) the faculty members must explain the NCLEX-RN exam format to nursing students. b) Different coping strategies to manage test anxiety are presented. Such strategies are important because it trains students gradually to reduce anxiety resulting from the NCLEX-RN (Appendix B). c) The faculty members arrange forums in which nursing students and those educators or professionals who have passed the test could participate. This step would be a helpful way to share faculty's personal ways to cope with stress and reduce test anxiety. Mentoring may be used to help students hear from former test-takers and follow their advice. These meetings can be arranged in a conference hall so the speakers' voice is clear and understandable. d) The faculty should develop a mechanism to communicate with students and encourage continued practices that promote NCLEX-RN success. A common way to contact educators and ask questions is by using emails. Online chatting is another technique that connects faculty members with their students. The constant presence of nursing educators with their students is helpful for encouragement and decreasing anxiety. Second, to develop English skills among Saudi students, nursing faculty should follow these steps: a) Identify requirements for English language proficiency and develop a plan for studying English skills. The nursing school at KSU can offer English courses that help students develop skills with the English language. The goal of this step is to shorten the road to develop English language skills. Developing English skills in Saudi Arabia helps students save time that can be better used practicing test-taking strategies. Saudi students can prepare for the NCLEX-RN in a short time instead spending one or two more years studying the English language. Therefore, studying English at KSU helps in taking the test promptly after thereby improving performance on the exam. b) Practice the English language with their students in nursing classes. Practicing English at KSU is needed for raising language confidence among Saudi students. c) Offer presentations continuously in English will be important to improve the language skills. Such presentations which include nursing cases will be effective in helping Saudi students understand complex scenarios such as those found on the NCLEX-RN, and to develop their English language skills. Nursing faculty can add this assignment particularly for students who are about to graduate from

the school. d) Offering an English-based medical terminology class will make it easier to comprehend application-based NCLEX style questions. Third, in order to emphasize application-based content, the nursing faculty should focus on the following steps: a) the faculty members add courses in the curriculum specifically designed to address content areas included in the NCLEX-RN. The NCLEX-RN has a relationship with the curriculum design, and that connection is obvious among students' performances on the exam. In the analysis of the NCLEX-RN scores, it shows the areas that students perform well and areas they did not. In turn, the faculty can make changes in the curriculum depending on the high level of poor performance in specific content areas. b) More effective teaching strategies will also help students achieve higher grade point averages and improve the success rate among those taking the NCLEX-RN. During the faculty meetings, it will be a good idea to have continuing discussions about the relationship between NCLEX-RN and curriculum development. Such discussion should focus on courses, which must be added to the curriculum including nursing ethics, health promotion, and basic care and comfort with a strong focus on safe practice in all content areas. Primary health care course must be developed also to help faculty members focus on the clients, families, and communities' health care needs. c) The training programs in Saudi hospitals can measure students' knowledge and critical thinking skills by testing during the internship year. Providing application-based questions in the hospitals during the internship will assist students to connect clinical experiences with the classroom content. Test results will be more valuable if nursing administrations at Saudi hospitals offer tests, which focus primarily on real-life nursing case scenarios. The faculty members can assist by writing questions based on the NCLEX-RN format and work with hospital supervisors to provide them to students. Other tests may be offered by nursing departments in Saudi hospitals, but this step is still needed to help students gain a true sense of the NCLEX-RN. The results of such tests must be presented to the nursing school so the strengths and weaknesses of students may be evaluated. d) The faculty adds online courses to allow students to review materials when they want and at the pace appropriate for the students. Online courses encourage communication between nursing students and their faculty and feature online quizzes [37]. Online quizzes offer another opportunity for Saudi students to practice questions in the style of the NCLEX-RN. Additionally, this online format also features flexible schedules and is good to share and discuss ideas with colleagues and faculty members. Indeed, adding online courses with help with the integration. e) The faculty needs to engage in continuing education regarding test development and analysis skills. Integrating nursing research findings and evidence-based practices will improve the faculty's thinking and knowledge, and test writing. The faculty will be encouraged also to search websites and databases to discover new data, statistics, and additions to the NCLEX-RN. Nursing educators should be aware of the ongoing development and changes related to the test. The faculty can then relate those developments to their students. Nursing workshops also is effective in providing information to educators to prepare their students for the NCLEX-RN (Appendix C). f) The faculty should use NCLEX-RN review materials and study questions to increase their own familiarity with the NCLEX-RN examination. Practicing the test guarantees familiarity with the test. Nursing faculty review nursing materials continuously to discover new information or strategies

related to performance on the test. Such a step helps raise the level of familiarity with the most recent and updated format for the NCLEX-RN. Forth, test-taking skills should be improved to help students at KSU to perform on the test. Nursing faculty need to follow the following steps: a) the faculty needs to explain effective test-taking strategies regarding multiple choice test questions. Such strategies include the process of elimination and making educated guesses when multiple answers are presented. Knowing these strategies of selecting the best answer is beneficial for improving Saudi students' skills to pass the NCLEX. Additionally, note taking and peer tutoring strategy would be effective in improving the preparation of Saudi students' for the NCLEX-RN. b) The faculty should encourage Saudi students to participate in test-taking skill workshops to facilitate the development of such skills. Participating in training courses and workshops is an important strategy to increase chances of success on the exam. Such workshops could be offered at the nursing school. In case these workshops cannot be offered at Saudi nursing schools, then sending Saudi students to the US could be an alternative solution. c) Test-takers must be informed that they need to read and reread questions correctly before choosing the final answer. Nursing faculty need to reinforce this technique with Saudi students in order to help students not only to answer the question correctly, but as an aid in self-control and lack of tension. The faculty may provide students an opportunity to practice and recognize the significance of a 'read and reread' strategy by integrating the technique within the curriculum. d) The faculty member needs to remind students to think critically before selecting the answer because the test requires selection of the best answer among all options. One element, which makes the NCLEX-RN test difficult, is the presentation of multiple answers, which require careful examination of language and meaning to discern the best choice. In this situation, test-takers must take enough time think critically and focus before selecting the final answer. Practicing the NCLEX-RN frequently would be a good way to improve students' thinking and knowledge. e) The Saudi nursing college should present computerized adaptive testing to simulate a genuine NCLEX-RN test environment. This step is necessary to facilitate the students experience in the test environment, improve their comfort with computers, and ultimately reduce test anxiety. f) Integrating application-based questions into the curriculum on a regular basis gives the student more of an opportunity to practice this style of questions. This can be done in a realistic testing setting with computerized testing.

### Confirmation

Roger explained that at the confirmation stage, the individual looks for support for his or her decision [39]. Throughout this stage, the final decision about this project will be provided and the chance of accepting or rejecting completely will be available. To strengthen the position and opinion regarding the consequences of this project, another survey will be presented after one year to measure the progress of change. A special survey might be offered also for graduates to determine the effectiveness of preparatory strategies that have been implemented (Appendix D). After reviewing the surveys' results, findings will be shared with the faculty, including those who rejected the project earlier. Assuming positive feedback from the faculty, the confirmation of this project will be completed and the new era of development will be started.



## Conclusion

Success on the NCLEX-RN ensures a minimum quality of practice and raises the level of competence for registered nurses in the US [8]. Nursing educators must focus on understanding new techniques to promote success on the NCLEX-RN exam. This project is needed so that Saudi nursing educators at KSU can take a proactive role in increasing the success of Saudi students on the nurse licensure examination. Creating a change within a nursing school requires tenacity and confidence to present that change. Importantly, international nursing programs must find innovative methods to elevate the success rate among those who have been internationally educated. These innovative methods will also help for raising the quality of teaching nursing at KSU. Improving the quality of teaching at KSU starts with discovering the strengths, weaknesses, and satisfaction level for the current education program. Following that with offering a plan to help raise the quality of education, thus improving Saudi students' performance on the NCLEX-RN. Ultimately, if this pilot project provides positive effects, it should be extended to other nursing colleges around the country.

## Acknowledgement

First and above all, I would like to thank God. Second, I would like to thank my inspiring parents, my wife, my friends, and my colleagues for their love and encouragement. Third, my honest thanks and appreciation to Dr. Gorrell, Dr. Blackmon, Prof. LeGrande, and Prof. Parrott for helping me so much to complete this project. I believe that I could not complete this project without their continued assistance and guidance. Also, I thank Mr. Christopher Black for offering his time to help editing this project. I have learned from all of you the ways to succeed in completing this project, so I am grateful for what you have given to me. It has been a long journey coming to Oklahoma City University to ultimately pursue my dreams of earning my Master degree in nursing. My time at Oklahoma City University has been amazing and I feel proud of myself for having the chance to be graduated from such a university. The year and six months were challenging but the learning environment at Kramer School of Nursing facilitates everything and encourages students to face these challenges. Nowadays, I am confident enough to act as a nursing instructor to participate in developing nursing in Saudi Arabia. It is my honor to graduate from Kramer School of Nursing and I believe that students who have graduated from this school have earned a high level of knowledge, skills, and critical thinking in nursing. I have an amazing passion for the nursing profession and have found pleasure in helping people and making them feel happy. Nursing needs continued work, and I believe that you and I will be absolutely thrilled when we improve nursing in our countries. Again, I thank all for wishing me the best of luck and I have the same passion for all.

## References

1. Department of Consumer Affairs.
2. National Council of State Boards of Nursing.
3. Etheridge S. Learning to think like a nurse: Stories from new nurse graduates. *Journal of Continuing Education in Nursing*. 2007; 38: 24-30.
4. Simon EB, McGinniss SP, & Krauss BJ. Predictor variables for NCLEX-RN readiness exam performance. *Nursing education perspectives*. 2013; 34:18-24.
5. Daley L, Kirkpatrick B, Frazier S, Chung M, & Moser, D. Predictors of NCLEX-RN success in a BSN nursing program as a foundation for remediation. *Journal of Nursing Education*. 2003; 42: 390-398.
6. National Council of State Boards of Nursing.
7. Pennington T, Spurlock DR. A systematic review of the effectiveness of remediation interventions to improve NCLEX-RN pass rates. *Journal of Nursing Education*. 2010; 49: 485-492.
8. Porter A, Tousman S. Evaluating the effect of interactive audience response systems on the perceived learning experience of nursing students. *Journal of Nursing Education*, 2010; 49: 523-527.
9. Rebesch L, Aronson B. Assessment of nursing students' learning outcomes and employment choice after the implementation of a senior capstone course. *International Journal of Nursing Education Scholarship*. 2009; 6
10. Yeom Y. An investigation of predictors of NCLEX-RN outcomes among nursing content standardized tests. *Nurse Education Today*. 2013; 33: 1523-1528.
11. Eskritt M, Ma S. Intentional forgetting: Note-taking as a naturalistic example. *Memory & cognition*. 2014; 42: 237-246.
12. Mc-Farquhar C. Lived experiences of failure on the National Council Licensure Examination - Registered Nurse (NCLEX-RN): Perceptions of registered nurses. *International Journal of Nursing Education*. 2014; 6:10-14.
13. Carr S. NCLEX-RN pass rate peril: One school's journey through curriculum revision, standardized testing, and attitudinal change. *Nursing Education Perspectives*. 2011; 32: 384-388.
14. Jrad H, Zaidan A, Shehri A. Public health nursing education in Saudi Arabia. *Journal of Infection and Public Health*. 2013; 6: 63-68.
15. Almalki M, FitzGerald G, Clark M. The nursing profession in Saudi Arabia: an overview. *International Nursing Review*. 2011; 58:304-311.
16. Billings D, Halstead J. *Teaching in nursing*. St. Louis, Mo.: Saunders/Elsevier. 2012.
17. Eddy L Epeneter B. The NCLEX-RN experience: Qualitative interviews with graduates of a baccalaureate nursing program. *Journal of Nursing Education*. 2002; 41: 273-278.
18. Xu Y, Crane P, & Ryan R. School nursing in an underserved multiethnic Asian community: Experiences and outcomes. *Journal of Community Health Nursing*. 2002; 19: 187-198.
19. Yang B, Choe K. Korean nurses' experience of preparing for and taking the National Council Licensure Examination for Registered Nurses. *Asian Nursing Research*. 2009; 3: 177-185.
20. Rogado, M. *Critical care nursing education in the Philippines*. Connect: The World of Critical Care Nursing. 2005; 4: 2-6.
21. Ramos C, Estudillo J, Sawada Y, Otsuka K. Transformation of the rural economy in the Philippines, 1988–2006. *Journal of Development Studies*. 2012; 48:1629-1648.
22. Kim S, Oliveri D, Riingen M, Taylor B, Rankin L. Randomized controlled trial of graduate-to-undergraduate student mentoring program. *Journal of Professional Nursing: Official Journal of the American Association of Colleges of Nursing*. 2013; 29: 43-49.
23. DeBartolo M, Seldom ridge L. A review of intervention studies to promote NCLEX-RN success of baccalaureate students. *CIN: Computers, Informatics, Nursing*. 2008; 78-83
24. Romeo E. Quantitative research on critical thinking and predicting nursing students' NCLEX-RN performance. *Journal of Nursing Education*. 2010; 49: 378-386.
25. Chernomas WM, Shapiro C. Stress, depression, and anxiety among undergraduate nursing students. *International Journal of Nursing Education Scholarship*. 2013; 10: 255-266.
26. Boshier S, Bowles M. The effects of linguistic modification on ESL students' comprehension of nursing course test items. *Nursing Education Perspectives*. 2008; 29: 165-172.

27. Kemsley M, McCausland L, Feigenbaum J, Riegle E. Analysis of graduates' perceptions of an accelerated Bachelor of Science program in nursing. *Journal of Professional Nursing: Official Journal of the American Association of Colleges of Nursing*. 2011; 27:50-58.
28. Anne Arundel Community College.
29. Starr K. Nursing education challenges: Students with English as an additional language. *Journal of Nursing Education*. 2009; 48: 478-487.
30. Finfgeld-Connett D, Johnson E. Literature search strategies for conducting knowledge-building and theory-generating qualitative systematic reviews. *Journal of Advanced Nursing*. 2013; 69:194-204.
31. O'Neill T, Tannenbaum R, Tiffen J. Recommending a minimum English proficiency standard for entry-level nursing. *Journal of Nursing Measurement*. 2005; 13: 129-146.
32. Ashley J, O'Neil J. The effectiveness of an intervention to promote successful performance on NCLEX-RN for baccalaureate students at risk for failure. *Journal of Nursing Education*. 1991; 30:360-366.
33. Meo SA. Evaluating learning among undergraduate medical students in schools with traditional and problem-based curricula. *Advances in Physiology Education*. 2013; 37: 249-253.
34. East Carolina University.
35. Higgins B. Strategies for lowering attrition rates and raising NCLEX-RN pass rates. *Journal of Nursing Education*. 2005; 44: 541-547.
36. Tsuei, M. Mathematics synchronous peer tutoring system for students with learning disabilities. *Journal of Educational Technology & Society*. 2014; 17: 115-127.
37. JuliaC. Phelan. An investigation of student use of Peru and NCLEX success. Wolters Kluwer: Lippincott Williams & Wilkins. 2014.
38. Demir K. Rogers' theory of the diffusion of innovations and online course registration. *Educational administration: Theory & practice*. 2006; 47: 386-392.
39. Rogers EM. Diffusion of innovations New York: The Free Press. 1995:3<sup>end</sup>.
40. California School of Health Sciences.
41. Sahin I. Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *The Turkish Online Journal of Educational Technology Tojet*. 2006; 5: 14-23.