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Nurse Educators' Perspectives of Supplemental Computer-Assisted Formative Assessment in an Associate Degree Nursing Program

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COLLEGE OF EDUCATION

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Abstract

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MSN, Walden University, 2009

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

Despite the implementation of various strategies to improve outcomes, the pass rates for the National Council Licensure Exam for Registered Nurses (NCLEX-RN) for an associate degree nursing (ADN) program continue to decrease. This study examined the use of a supplemental computer-assisted formative assessment (SCAFA) as a strategy for NCLEX-RN success. A qualitative case study with a theoretical framework based on constructivism was designed to investigate nurse educators' perspectives of this particular strategy for successful outcomes. To explore these perspectives, data were collected from face-to-face interviews with nurse educators and from program documents from 1 ADN program in the southeastern United States. Guiding research questions explored nurse educators' perceptions of SCAFA and determined if and how data from these assessments were utilized. The data were analyzed using lean coding to determine emerging themes. The findings showed that a lack of consistency in the use of this tool diminishes the effectiveness of this supplemental strategy. Additional themes that emerged: educator and student attitudes, orientation and SCAFA process, resource allocation, training and preparation, and data-driven decision making. These findings were used to design a professional development project focused on the effective use of SCAFA throughout the nursing program. The study and project are expected to promote positive social change by contributing to the body of evidence on computer-assisted formative assessment, bolstering student and nurse educator learning, increasing the number of nursing students who are prepared to successfully pass the NCLEX-RN, improving program outcomes, and contributing to the professional nursing workforce.

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Dedication

I dedicate this work to each person that has encouraged and supported me throughout this educational journey. Thank you to my Lord and Savior, for giving me the mental ability and perseverance to complete this journey, and most importantly for my salvation. To my husband Charles, without your unwavering love and support this journey would not have been possible. You have quietly stood beside me every step of the way. To my children, Stephanie and Charlie, and my son-in-law Austen, thank you for believing in me and supporting me. To the son of my heart, Terence, I wish you were here to see this journey completed and call me "Dr. Mom" just once. I am thankful that you all value education and lifelong learning. To my mother, thank you for your love and encouragement throughout this journey. To my father, I wish you could have lived to see how far I have come. To my precious grandson Liam, thank you for bringing me unimaginable joy. Although I am the baby of my family, I am the first to complete a terminal degree. To my siblings and extended family, I have completed this journey for all of us and to show our children and grandchildren that it is possible! I love you all more than words can adequately describe. Thank you!

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Section 1: The Problem

Introduction

Despite the incorporation of various strategies for National Council Licensure Exam for Registered Nurses (NCLEX-RN) success, an associate degree nursing (ADN) program in the community college setting continues to experience decreasing NCLEX-RN pass rates. Supplemental computer-assisted formative assessment (SCAFA) was implemented in 2008 as a strategy to increase NCLEX-RN pass rates (ABC College, 2013b). SCAFA is a tool that is designed to enhance student learning throughout the nursing curriculum and assist in preparing students for the NCLEX-RN licensure exam (Assessment Technologies Institute, 2014). As of 2013, this strategy has not been proven effective in contributing to successful NCLEX-RN pass rates, which is currently at 83%.

This is a crucial time in history for the nursing profession. The Patient Protection and Affordable Care Act of 2010 and a looming nursing shortage will impact the delivery of health care across the nation (Institute of Medicine, 2010; United States Department of Labor [DOL], 2012; United States DOL, 2014). Three factors will play a major role in shaping the future of health care delivery in the United States: the aging population, increasing demand for health care services, and the decreasing number of practicing nurses (American Association of Colleges [AACN], 2012; Federal Interagency Forum on Aging Related Statistics, 2010). The occupation of registered nurse (RN) is among the top 30 occupations with the largest projected employment growth between 2010 and 2020; by 2020 1.2 million jobs will be available (American Association of Colleges of Nursing, 2012; United States DOL, 2012). Currently, the median age of registered nurses

is estimated at 45 years of age, and 50% of the profession is nearing retirement (American Nurses Association, 2015).

Nursing educational programs and nurse educators play an integral role in preparing future nurses to meet the healthcare needs of the people at the local, state, and national levels. Nurse educators are held to standards set forth by state legislature, state boards of nursing, and various accrediting and governing bodies such as the National Council of the State Boards of Nursing (NCSBN), American Association of Colleges of Nursing (AACN), Commission on Collegiate Nursing Education (CCNE), and Accreditation Commission for Education in Nursing (ACEN); formerly the National League for Nursing Accrediting Commission (NLNAC). Nursing program administrators and nurse educators are challenged to meet the demands from accrediting and governing bodies as well as the demands of potential employers while providing quality education and ensuring adequate preparation for student success on the NCLEX-RN (Chitty & Black, 2007; Davenport, 2007; Roa, Shipman, Hooten, & Carter, 2011).

The demands of accrediting and governing bodies, and the challenge of ensuring high NCLEX-RN pass rates requires consistent and systematic program review and evaluation, as well as a variety of teaching strategies to meet the multifaceted learning needs of adult learners. Many nursing programs have turned to computer technology to reinforce nursing curricula and to ensure successful outcomes in nursing programs and on the NCLEX-RN exam by preparing students for standardized computer testing. Exploring the use of these programs and methods is essential to evaluating the impact of supplemental formative assessment tools on ADN faculty and programs.

Nursing faculty incorporate various teaching strategies in nursing programs across the nation to provide every opportunity for student success. Formative and summative assessments in the classroom, laboratory, and clinical settings—whether formal or informal—are types of strategies to promote student success. The integration and use of technology, in the form of assessments, is one such method that may be used as both an assessment and a teaching strategy. SCAFA and summative assessments such as the Heath Education Systems, Inc. (HESI) Exit Exam, Assessment Technologies Institute, Inc. (ATI) Comprehensive Predictor and Comprehensive Assessment and Review Program (CARP) are types of assessments utilized in nursing (Assessment Technologies Institute, n.d.; Nibert & Morrison, 2013). Studying nurse educators' perceptions of SCAFA are expected to provide insight into the utilization of these tools as a strategy to enhance student success on the licensure exam at a southeastern community college.

This study examined one community college that implemented SCAFA as a strategy for NCLEX-RN success. Henceforth, this college, located in North Carolina, is referred to as ABC College. This study explored nurse educators' perceptions of SCAFA as a strategy for NCLEX-RN success.

Definition of the Problem

One ADN program in North Carolina continued to encounter decreasing NCLEX-RN pass rates despite the use of a SCAFA tool designed specifically for NCLEX-RN preparation. After an initial increase in NCLEX-RN pass rates in 2009 to 95%, pass rates have steadily decreased and are currently at 83% (ABC College, 2013b; North Carolina Board of Nursing, 2013). The local problem involved exploring nurse educators'

perceptions of the use of SCAFA as a strategy to prepare students for the NCLEX-RN and subsequently improve pass rates on the NCLEX-RN. Although SCAFA was implemented in 2008 by a unanimous faculty decision, the nursing faculty never evaluated this strategy and NCLEX-RN pass rates continue to decrease.

Various components of SCAFA are available for use such as tutorials, practice assessments, and proctored assessments. Departmental policy required the use of proctored assessments only (ABC College, 2013a). The nurse educators' perceptions about using SCAFA were explored to obtain insight into the perceived effectiveness and use of this tool within this program. Internal program changes within the past 5 years and changes at the state and national levels have had a major impact on NCLEX-RN pass rates in this ADN program.

Rationale

Evidence of the Problem at the Local Level

SCAFA was implemented in an ADN program located in response to a decrease in NCLEX-RN pass rates from 96% in 2007 to 83% in 2008 (ABC College, 2013b). Research has shown that formative assessment favorably impacts student outcomes and highlights the student experience (Duers & Brown, 2009; Harding, 2012); however there is little information related to SCAFA or portrayal of the educators' perceptions of the impact on outcomes, implementation, and use of this tool in nursing education (Duers & Brown, 2009; Harding, 2010; 2012; Havnes, Smith, Dysthe, & Ludvigsen, 2012; Hwang & Chang, 2011).

SCAFA were implemented to help improve NCLEX-RN pass rates. North Carolina Board of Nursing (NCBON) data demonstrated a decreasing trend in this program's pass rates. Since 2008, the nursing program has encountered many changes such as a 50% turnover in nursing faculty, due to scheduled retirements, implementation of a statewide mandated curriculum in 2010, and most recently an increase in the difficulty level of the NCLEX-RN in 2013 from -0.16 logits to 0.00 logit (ABC College, 2008; 2013b National Council for the State Boards of Nursing, 2013).

Despite higher pass rates in 2009 (95%), 2010 (90%), and 2011 (93%); pass rates decreased significantly in 2012 (89%), and the 2013 pass rate was 83% (ABC College Department of Nursing, 2013b; North Carolina Board of Nursing, 2013). The NCSBN (2013) national pass rates for first time licensure candidates from April-June 2013 were 83%; this has decreased from 90.35% for the period, January-March 2013 due to the increased level of difficulty. Pass rates ultimately affect the students, program, college, and communities served (Roa, Shipman, Hooten, & Carter, 2011). This outcome measure is a direct indicator of program quality and success (Trofino, 2013). In addition, the national focus on outcomes affects national accreditation.

The Accreditation Commission for Education in Nursing (ACEN) requires evidence that the program demonstrates achievement of program outcomes. This includes program performance for the 3-year aggregate pass rate at or above the national mean (88% for 2010-2012), program completion, graduate satisfaction, employer satisfaction, and job placement rates (ACEN, 2013). As of June, 2014, the nursing program met ACEN criterion for 2010-2012 with an aggregate pass rate of 91% (NCBON, 2013).

Another year with decreased NCLEX-RN pass rates could compromise the 3-year program average and place the program's accreditation at risk.

Although the SCAFA were implemented, there is no evidence to support the use of this strategy for NCLEX success in this program. Due to the numerous changes within the program and at the national level, the data obtained from previous classes is not applicable in correlating data from proctored assessment scores to NCLEX-RN pass rates, or in predicting future outcomes. A departmental policy is in place for the use of specific proctored assessments across the curriculum; however, the results of these assessments do not impact progression within the program (ABC College Department of Nursing, 2013a). The NCBON (2014) does not support the use of standardized assessments for program progression or graduation. Proctored assessments are aligned as closely as possible to the curriculum (ABC College, 2013a). Results are available to instructors and may be utilized to enhance concepts taught within the curriculum.

Currently, there is not a comprehensive plan for the use of SCAFA in this ADN program. A comprehensive plan would include the use of tutorial, practice, and proctored assessments across the curriculum to enhance students' knowledge, comprehension, and application of concepts. A comprehensive plan would not impact progression within the ADN program (NCBON, 2014).

Evidence of the Problem from the Professional Literature

Formative and summative assessments are utilized in a variety of ways in higher education. The use of audience response systems (ARS) and integrated lecture is discussed in the literature as an important strategy that supports teaching and student learning in higher education (Krumsvik & Ludvigsen, 2013). Founded on the research of Black and William (1998), the authors' research demonstrated that formative assessment is valuable and can raise standards, but the implementation and improvement of formative assessment practices is challenging (Wylie, Lyon, Goe, & Educational Testing Service, 2009). Taking that premise one step further, the use of computer-assisted assessment in nursing education not only reinforces classroom teaching, but it assists in preparing students for the standardized testing that is to come.

Gikandi, Morrow, and Davis (2011) provided a review of the literature involving online formative assessment and discussed key themes such as reliability, validity, dishonesty, feedback, and functionality. This information can be applied to SCAFA. It is important that adult learners be self-motivated and use feedback to improve. In order to do that, the educator must present the assessment in such a way that value is placed on the assessment and the learner must, in turn, value the feedback.

In nursing education, Elsevier's HESI Exit Exam is a widely researched assessment tool for predicting outcomes (Harding, 2010; Langford, 2013; Lauer, 2013; Nibert & Morrison, 2013; Young, Rose, & Willson, 2013). Based on the evidence, the HESI Exit Exam (E^2) was determined to be between 93.36% and 99.16% accurate in predicting NCLEX-RN success (n = 49,115). Although this is only one type of nursing

exit assessment offered, the findings are significant and warrant nurse educators' attention.

Definitions

In order to amplify understanding of this study, the following terms have been clarified and defined:

Computer-Assisted Assessment: The use of technology to provide review materials and standardized testing opportunities that identify a student and/or groups' area(s) of weakness (Assessment Tecnologies Institute, n.d.; Nibert & Morrison, 2013).

Formative Assessment: Assessment that generates feedback whether it is in a face-to-face, simulation or computer-assisted environment (Clark, 2010; Drouin, 2010; Raupach, 2013).

Summative Assessment: Assessment that typically generates a grade or score compared to a standard in a testing environment (Drouin, 2010; Raupach, 2013).

Significance

Educating future nurses for success is a major consideration that impacts social change at the local, regional, and national levels. The shortage of nurses, which is looming, will impact society as a whole (American Nurses Association, 2015). Exploring nurse educators' perceptions of SCAFA at one community college in North Carolina is expected to provide insight into the use of this particular formative assessment tool as a strategy for NCLEX success.

Effective or ineffective use of SCAFA, could affect student and program outcomes in a positive or negative manner. Educators are challenged to provide learning

experiences that will promote personal, as well as professional, growth (Caffarella, 2002; Galbraith, 2004; Merriam, Caffarella, & Baumgartner, 2007). In order to obtain a clear view of this multifaceted issue, it is important to understand the educators' perspectives related to the use of SCAFA.

Guiding/Research Questions

The 2013 NCLEX-RN pass rate was 83% and the 3-year aggregate NCLEX-RN pass rate was 87.7% (NCBON, 2013). Despite a departmental policy regarding proctored testing across the curriculum, NCLEX-RN pass rates demonstrated a decreasing trend in this program. The purpose of this study was to explore nurse educators' perceptions of SCAFA when used as a strategy to prepare nursing students for NCLEX-RN success. The following questions were used to guide this qualitative research study to explore the nurse educators' perspective:

1. How do nurse educators perceive the use of SCAFA as a formative assessment strategy to prepare nursing students for NCLEX-RN success?
2. How do nurse educators utilize the data obtained from the use of SCAFA?

Review of the Literature

This study explored nurse educators' perceptions of SCAFA as a strategy to prepare nursing students for NCLEX-RN success. The comprehensive and focused review of the literature revealed that, while there are numerous studies related to formative assessment, predictors of success, and nursing licensure examination, there is little information related to SCAFA or portrayal of the educator's perception of the impact on outcomes, implementation, and use of this formative strategy in nursing

education. The following databases were used to perform the literature review: Cumulative Index to Nursing and Allied Health Literature, Education Research Complete, Education Resources Information Center, Google Scholar, Sage, and ProQuest Dissertation and Thesis Database. The following keywords were used: *assessment, evaluation, exit examination, standardized testing, computer-assisted testing, NCLEX-RN outcomes,* and *teaching/learning strategies.*

Theoretical Foundation

The theoretical foundation for this study was constructivism. Constructivism encompasses the progressive nature of learning and the importance of relating new information to previously learned concepts in order for learners to retain and utilize the information (Heroff, 2009; Knowles, Holton, & Swanson, 2012; Merriam, Caffarella, & Baumgartner, 2007). The educator's role is to facilitate and assist the learner to make meaning of information (Merriam, Caffarella, & Baumgartner, 2007). Savery and Duffy (as cited in Knowles, Holton, & Swanson, 2012, p. 191) discussed principles that provide a different approach to learning. These principles involve supporting the learner, designing an authentic task in a learning environment that reflects the complexity of that environment, and giving the learner ownership of the process (Knowles, Holton, & Swanson, 2012). SCAFA provides an authentic task, encourages participation, and provides the learner with ownership. This is consistent with distance education which supports the constructivist theory (Legg, Adelman, Mueller, & Levitt, 2009).

Computer-assisted formative assessment allows instructors to objectively assess students' strengths and weaknesses. This is a valuable tool based on the NCLEX-RN test

plan; not the program's curriculum. The proctored assessments are aligned to the curriculum as closely as possible. Although the ADN program selected for this study did not utilize all of the available formative assessments; the proctored assessments were designated within the departmental policy (ABC College Department of Nursing, 2013a). There were tutorial and practice assessments available for use but these assessments were not included in the departmental policy, therefore they were not utilized. The proctored assessments were strategically placed throughout the curriculum and provided an opportunity for the students to apply information learned. Upon completion of the assessment, the student received individualized feedback regarding performance. As these assessments are not tied to progression, the learner was responsible for remediating to enhance personal learning.

As of June 2014, guidelines were not in place for the delivery of results. According to the ATI policy at a southeastern community college, the student must score a specific proficiency level of 2 (ABC College, 2013a). ATI (2010) designates the following proficiency levels for proctored assessment content areas: For Proficiency Level 1, the student is expected to just meet NCLEX-RN standards; for Proficiency Level 2, the student is expected to readily meet NCLEX-RN standards; and for Proficiency Level 3, the student is expected to exceed NCLEX-RN standards. If a student failed to score the indicated profiency level, self-directed remediation and completion of a practice assessment with a score of 90% had to be submitted. The completion of the practice assessment with a score of 90% is simple to validate, however it is difficult to validate self-remediation.

Course coordinators would be aware of completion of this requirement; however there was not a current process in place to ensure self-directed remediation. This is an area of great importance for instructor assistance and facilitation. According to Heroff (2009), students who do not perform well are unlikely to complete this remediation as it is not required. In additon, students that do not perform well on standardized assessments are less likely to pass the NCLEX-RN on the first attempt (Assessment Technologies Institute, n.d.; Lauer & Yoho, 2013). The use of SCAFA aligns with the constructivist theory, scaffolding of learning, and this study from both the educator and student perspectives (Hagstrom, 2006; Legg, Aldeman, Mueller, & Levitt, 2009).

Formative Assessment

There are various approaches to formative assessment presented in the literature. These approaches include simple question-and-answer sessions to complex technology-integrated systems with built-in feedback delivery (Assessment Technologies Institute, n.d.; Black & Wiliam, 1998; Clark, 2012; Hagstrom, 2006; Heritage, 2010). According to Black and Wiliam (1998), effective formative assessment involves educator and student participation through assessment evidence and reflection as well as student feedback that involves advice for improvement. The technology-integrated systems are only as good as the educator that will implement the assessment. The educators' perceptions are very important in the formative assessment process.

Clark (2012) linked the "art" of instruction with lifelong learning which resonates with nursing education as both an art and a science. Both education and nursing require dynamic and visionary approaches to enhance student learning. Due to the focus on

outcomes and the challenges that educators face appealing to a diverse generational group of students, there are many educators that do not use the formative assessment tools that are at their disposal (Beckett, Volante, & Drake, 2010). Instead, educators tend to revert to quizzes, tests, presentations, and other summative assessment methods (Beckett, Volante, & Drake, 2010; Stull, Varnum, Ducette, Schiller, & Bernacki, 2011).

It should be noted that the adult learner is responsible for personal learning and success. Although the educator participates in the design and implementation of formative assessment and teaching strategies, the learner is responsponsible for his/her own learning (Black & Wiliam, 2009). Formative assessment can provide insight into important concepts in a complex curriculum (Vonderwell & Boboc, 2013). Sometimes it is difficult for students to decipher what is important and formative assessment can help guide the learner with the ultimate goal of enhancing the learning process (Garrison, 2011).

Formative assessment has been shown to improve program and student outcomes by assessing students' preparedness, providing opportunities for remediation, and predicting NCLEX-RN success (Black & Wiliam, 1998; Clark, 2010; Gikandi, Morrow, & Davis, 2011; Krumsvik & Ludvigsen, 2013; Langford & Young, 2013; Lauer & Yoho, 2013; Trofino, 2013; Wolkowitz & Kelly, 2010; Yeom, 2013; Young, Rose, & Wilson, 2013). The literature provides examples of the impact of formative assessment from primary to secondary educational settings with the goal of improving educators' practice and improving program as well as student outcomes (Stull et al., 2011).

Feedback is a major component in the learning process and can assist the student as well as assist the educator to improve curricula design (Hudesman, Crosby, Flugman, Issac, Everson, & Clay, 2013). Heritage (2010) discussed the development of systems for formative assessment, feedback, and the importance of formative assessment as a practice that involves the student and the educator in the learning process. Lipnevich and Smith (2009) studied the effects of feedback and found that there was not a difference in instructor-facilitated feedback or computer-generated feedback. There is research that supports the use of immediate feedback during formative testing which is considered an 'assessment for learning' approach that enhances students' engagement in the content; allowing the student to alter his or her learning (Black & Wiliam, 1998; McLaren, 2012: Stobart, 2008; van der Kleij, Eggen, Timmers, & Veldkamp, 2012). Student and educator perceptions of formative assessment is present in the literature, however the perception of the use of SCAFA is limited (Duers & Brown, 2009; Harding, 2012; Havnes, Smith, Dysthe, & Ludvigsen, 2012; Koh, 2010; Perera, Lee, Win, Perera, & Wijesuriya, 2008; Wilson, Boyd, Chen, & Jamal, 2011).

Perceptions

Exploring the perceptions of the educator and the student are important considerations for formative assessment. Literature is available the K-12 sector as well as other disciplines (Koch, Andrew, Salamonson, Everett, & Davidson, 2010; Koh, 2010; McLaren, 2012; Powell, Straub, rodriguez, & VanHorn, 2011). McLaren (2012) performed action research involving primary and secondary learners based on e-scape (e-solutions for creative assessment in portfolio environments) to support change in

assessment, learning, and teaching. This integration of technology incorporated the ability to capture data from a camera, touch screen or writing tablet, and microphone and allowed educators to provide feedback in text or audio format (McLaren, 2012). Using a case study narrative method, the researcher was able to capture rich descriptions of learner and educator responses. Although not directly related to nursing, the case study method provides information that may help educators to engage in the use of and incorporate various approaches to formative assessment and feedback.

The use of automated response systems (ARS), otherwise known as "clickers" is another form of technology that can be utilized for formative assessment in the classroom setting. Powell, Straub, Rodriguez, and VanHorn (2011), explored the use of this technology in a large psychology class utilizing a quasi-experimental approach (n =145). Descriptive statistics related to the perception of the ARS were collected on the experimental group only. The use of this technology can prompt discussion and allow students to answer questions anonymously via the device. This allows for self-reflection and assessment of knowledge as well as student engagement (Bright, Kroustos, & Kinder, 2013; Powell et al., 2011; Simlane & Mji, 2014). The results of this study demonstrated students that used the ARS performed better and the use of this tool increased understanding of the content (Powell et al., 2011).

Gender differences must be considered with the use of computer-assisted assessment. Terzis and Economides (2011) investigated gender differences in perception and acceptance of computer-based assessment (CBA). This is an important consideration for developers and educators (Duetsch, Hermann, Frese, & Sandholzer, 2012; Terzis &

Economides, 2011). A total of 56 men and 117 women completed the CBA and survey that followed. Gender findings of importance indicated that for males, CBA must be recommended by faculty and peers (social influence), must be playful, should enhance knowledge and performance, and must deliver appropriate content that is clear, understandable, and relevant (Terzis & Economides, 2011). For women, playfulness and content is important, but of more importance is ease of use, logical flow, and stimulation of interest must be present (Terzis & Economides, 2011). As this is a relatively new area of research, additional studies in various disciplines will provide more insight into gender differences and CBA (Terzis, & Economides, 2011).

Deutsch, Herrmann, Frese, and Sandholzer (2011) investigated the use of CBA in the form of a mock examination prior to a written test for fourth-year medical students. This CBA utilized multiple choice and one essay or free text question. The students' attitudes toward CBA were measured pre- and post-assessment. Some of the main concerns involved technology issues and ease of use (Deutsch et al., 2011). Post-assessment results indicate a more positive result in regard to technology issues, ease of use, assessment objectivity, and acceptance of CBA (Deutsch et al., 2011). Designing systems that are engaging and easy to use will ensure continued use (Terzis & Economides, 2011; Terzis, Moridis, & Economides, 2013). The use of CBA crosses disciplines. Applying CBA to nursing, students' fears should be decreased if the supplemental assessments are presented in a positive manner with the ultimate goal of preparing the individual in achieving successful outcomes.

Koch, Andrew, Salamonson, Everett, and Davidson (2010) explored nursing students' perception of a web-based intervention to support learning in bioscience. This type of intervention enhances learning and engages students (Deutsch et al., 2011; Terzis & Economides, 2011). The researchers developed a supplemental website with web-based learning activities including quizzes, an interactive glossary, PowerPoint clips, and video clips (Koch et al., 2010). A total of 665 students were enrolled and 553 accessed the intervention; 22% (n = 123) completed the web-based survey and 72% (n = 89) replied to open-ended questions (Koch et al., 2010). This mixed-method study found that 81% of participants (n = 70) perceived that the intervention enhanced learning and 72% (n = 63) wanted similar strategies integrated into all subjects within the course (Koch et al., 2010). Key comments included the flexibility or ability to study at their own pace, helpfulness in understanding difficult material, and feedback on the quizzes which instilled confidence in the students' knowledge of the content (Koch et al., 2010). The open-ended, qualitative component of this study provides more detailed information related to what the students liked or disliked and adds value and meaning that would not have been obtained with only the quantitative component.

Albutt, Ali, and Watson (2013) performed a qualitative, descriptive study that sought to report nurse educators' perspectives of the appropriateness of nursing education programs in preparing nurses to practice in primary care. The United Kingdom has shifted their government health policy from the acute care setting to primary or community settings (Albutt et al., 2013). This in turn has generated a need for a more intense look at the curriculum design and students' clinical experiences due the failure to

adequately prepare nurses to work in these settings (Albutt et al., 2013). Although this study is not related to supplemental assessment, the educators' perspectives are relevant. This is an area of the curriculum that could be enhanced by the use of SCAFA and clinical decision making. Based on the literature, nursing curricula can be designed with computer based assessment and teaching strategies to engage students and enhance learning (Deutsch et al., 2011; Koch et al., 2010; Powell et al., 2011; Terzis & Economides, 2011).

Koh (2010) performed a qualitative study to explore nurse educators perspectives related to formative assessment. The formative assessment addressed in this study involved written and verbal communication. Convenience sampling was utilized; participation was voluntary and involved semi-structured interviews (Koh, 2010). Common themes identified included purpose of formative assessment, peer involvement in the process, timing, types, and quality of feedback (Koh, 2010). One of the main themes that emerged involved timing, which is immediate when utilizing a computer-assisted program; however the researcher identified 'a degree of ambivalence' about when formative assessment should occur (Koh, 2010). Considering the positive impact of formative assessment on students' learning, formative assessment should occur on a regular basis. Assessment is a key component in higher education that can be used to ensure effective learning (Gikandi et al., 2011). The educators' perspective is valuable in understanding the local problem in this study.

Duers and Brown (2009) explored student nurse experiences related to formative assessment. Purposeful, random sampling was utilized to select 16 students for

participation in the study (Duers & Brown, 2009). Focus group discussion was utilized to explore the student nurses' experiences of formative assessment, the positive and negative aspects, and the perception of formative assessment as compared and contrasted to summative assessment (Duers & Brown, 2009). A total of 10 participants' views were expressed in the results. It is interesting to note that students prioritized summative assessment as more important. Formative assessment is considered relevant if pertaining to a real life situation (Duers & Brown, 2009). As grades are tied to progression, the findings are not surprising. Although educators and students perceive that formative assessment is valuable, this may alter the perception and the way formative assessment is approached. Formative assessment can also be used to monitor students' progress (Rodrigues & Oliveira, 2014). The presentation of assessments as well as feedback can impact students' perception of formative assessment (Gikandi et al., 2011).

Havnes, Smith, Dysthe, and Ludvigsen (2012) explored formative assessment feedback through a mixed-method design. Quantitative survey data and qualitative focus group interviews were obtained. Results indicated that there are varied practices in the teaching of languages, mathematics, and vocational training and the subject impacts the way feedback is provided (Havnes et al., 2012). Students perceived the feedback received as not useful and needing to be more explicit (Havnes et al., 2012). Regardless of the discipline, monitoring of student progress and tailoring feedback to meet the students' individualized learning needs is an important consideration (Gikandi et al., 2011). It is important to understand the students' as well as the educators' perception regarding

formative assessment in order to promote engaging learning environments that promote student success.

Preparedness and Predictors of Success

Preparing nursing students to successfully pass the NCLEX-RN exam is an important consideration for all stakeholders involved (Roa et al., 2011). Classroom, laboratory, and clinical learning experiences contribute to success; this includes the integration of technology in these settings (Bristol, 2012). The NCSBN reviews the passing standards every three years to ensure minimally competent and safe nursing practice for entry level nurses (Lavin & Rosario-Sim, 2013). The exam format is published and available to educators and students online via the NCSBN. This exam utilizes multiple-choice and alternative format questions such as fill-in-the-blank, hot spot (anatomical location), ordered-response (priority), and chart and graphic items (Lavin & Rosario-Sim, 2013). A higher level of thinking is required as test items are written at the application and analysis levels (Lavin & Rosario-Sims, 2013). Lavin and Rosario-Sims (2013) indicated several topics that are relevant such as admission criteria, standardized assessments, program data collection for tracking purposes, development of critical thinking and analytical skills, and the use of end-of-program testing and comprehensive reviews.

Critical thinking has taken the spotlight in nursing education as the demands of the healthcare system have changed dramatically over the years from a simple occupation to one that demands complex, technological, on-the-spot thinking (Romeo, 2010). Romeo (2010) performed a literature review of undergraduate students and analyzed

quantitative research students pertaining to the measurement of critical thinking skills and predictive ability of NCLEX-RN success. Although Romeo (2010) was unable to determine a statistical significance in the studies analyzed, the research did indicate a need for additional studies regarding critical thinking as a predictor of success.

Initial licensure programs typically utilize a selective admission process and entrance exams. Entrance exams for nursing program admission may include the American College Test (ACT), Scholastic Aptitude Test (SAT), Health Education Systems, Inc. (HESI) predictor examination, Nurse Entrance Test (NET), and the Test of Essential Academic Skills (TEAS). In addition, academic aptitude in the form of grade point average (GPA) and past performance in the sciences have been found to be significant (Breckenridge, Wolf, Roszkowski, 2012; Seago, Keane, Chen, Spetz, & Grumbach, 2012). Wolkowitz and Kelley (2010) contributed to the body of knowledge regarding predictors of success by utilizing TEAS to determine science as the strongest predictor of success followed by reading, written/verbal, and mathmatics.

Langford and Young (2013) discussed the use of the HESI Exit Exam to assess preparedness for the NCLEX-RN. Based on the critical thinking theory, this study utilized a descriptive, comparative, retrospective design to determine the accuracy of repeat testing in predicting NCLEX-RN success (Langford & Young, 2013). The results demonstrated that repeat testing with up to two versions of the exit exam is highly predictive of NCLEX-RN success (Langford & Young, 2013). Out of 66 participating programs, 43 programs reported using a remediation and retesting policy (Langford & Young, 2013). Although there are numerous computerized assessment products on the

market, there is more research available regarding HESI standardized assessments. Regardless of the product, research demonstrated that the use of standardized assessments and comprehensive exit assessments are a valuable formative strategy in nursing education.

Simon, McGinniss, and Krauss (2013) performed a descriptive correlational study utilizing regression analysis to attempt to understand the relationship between NCLEX-RN readiness exam scores and predictors. The researchers utilized the NCLEX-RN readiness exam administered by the National League for Nursing (Simon et al., 2013). Utilizing a sample of nursing students (n = 171) from 2001-2004 that had complete data for analysis (complete transcript and NLN-readiness exam results), the researchers found that science was a significant predictor (Simon et al., 2013). In addition the first nursing course was found to be highly influential in predicting success (Simon et al., 2013).

Lauer and Yoho (2013) discussed the use of the HESI Exit Exam as a predictor of NCLEX-RN success. Random samples of 154 nursing programs out of a population of 600 were chosen to participate; 66 schools participated indicating a response rate of 42.86% (Lauer & Yoho, 2013). Included were ADN, baccalaureate (BSN), and diploma programs; the student sample consisted of 3,758 nursing students (Lauer & Yoho, 2013). This study compared mean scores of students that attended schools that attached consequences to the scores (63.15%) with mean scores of students that attended schools that did not attach consequences (36.85%) (Lauer & Yoho, 2013). The results of this study indicated that the exit exam scores were higher when consequences were attached to the exit scores and when remediation was required (Lauer & Yoho, 2013). Although

the NCBON (2014) does not support the use of high stakes testing, course requirements for proof of student remediation may be implemented. This study contributes to the local problem and demonstrates the use of exit assessments in other programs and the impact of remediation on student learning and NCLEX-RN success.

Raman (2013) studied the factors that contribute to student success utilizing a mixed-methods approach. Participants were asked questions regarding faculty support, self-efficacy, academic self-concept, goal orientation, math self-concept, affective and normative commitment in ADN program, and first year grade point average (GPA) (Raman, 2013). The qualitative portion of this study revealed the following themes: faculty support, peer support, family support, and workplace support (Raman, 2013). Most, but not all, comments were positive in nature and revealed that students felt positively about support (Raman, 2013, p. 55). In relating this research to the proposed study, faculty support is an important aspect and influence of student success. The nurse educator is instrumental in providing support in terms of monitoring students' progression and remediation (Gikandi et al., 2011; Lauer & Yoho, 2013).

Yeom (2013) studied the effects of formative assessments conducted throughout a program of nursing in determining effective predictors of NCLEX-RN success. The researcher utilized a convenience sample of graduates from a traditional baccalaureate program. Out of a total of 167 graduates, 16 graduates were excluded due to unavailable or missing assessment scores resulting in 151 participants with a pass rate of 78.1% for this group (Yeom, 2013). This quantitative study utilized the Statistical Package for the Social Sciences (SPSS) t-tests and logistic regression to provide possible predictors and

determine if outcomes could be correctly predicted from standard assessments (Yeom, 2013). The researcher took into consideration assessments across the curriculum such as fundamentals, maternal newborn, community health, and leadership and management (Yeom, 2013). The results were statistically significant in demonstrating that the participants that successfully passed the NCLEX-RN had higher mean scores on the standardized assessments than those participants that initially failed, but were not successful in predicting failure (Yeom, 2013). Students that do not successfully pass the standardized assessments are less likely to successfully pass the NCLEX-RN on the first attempt (Assessment Technologies Institute, n.d.; Lauer & Yoho, 2013). Utilizing the information derived from this study contributes to the local problem by demonstrating the usefulness of standardized assessments in predicting NCLEX-RN success.

The integration of technology in nursing education enhances formative assessment. Online case studies that have been designed by Elsevier assist students with the application of knowledge, critical thinking, and management of complex problems in a safe environment (Young, Rose, & Willson, 2013). Young, Rose, and Willson (2013) performed a study to verify results from the only study to date regarding this strategy (p. S18). The researchers compared the exit exam scores of students that utilized this technology to those students that did not; the NCLEX-RN pass rates were also compared (Young, Rose, & Willson, 2013). The results indicated that exit exam scores and NCLEX-RN success rates were higher for those students that utilized this strategy (Young, Rose, & Willson, 2013). It is important to note that most program directors indicated online case studies are utilized for remedial purposes and exam preparation

(Young, Rose, & Willson, 2013). It would have been interesting to determine the learning style of these students and include that information in the reported data as well. Nurse educators utilize numerous formative strategies to promote learning and enhance clinical decision making. The key is to enhance learning and engage the students (Deutsch et al., 2011; Koch et al., 2010; Powell et al., 2011; Terzis & Economides, 2011). This research provides another view into formative assessment and the impact on NCLEX-RN success.

Standardized assessments and various performance indicators have been used to predict success on the NCLEX-RN (Assessment Technologies Institute, n.d.; Lauer & Yoho, 2013; Trofino, 2013; Yeom, 2013). Trofino (2013) performed a quantitative, non-experimental, retrospective pilot study to determine the relationships between admission criteria and first-time NCLEX-RN success. The results of this study indicated that age, math score, pharmacology, and advanced medical surgical nursing had a statistically significant effect on the probability of passing the NCLEX-RN on the first attempt (Trofino, 2013). Student success is also dependent upon retention programs and remediation; inconsistent pass rates indicate a need to study formative assessment as well as admission criteria (Trofino, 2013).

Standardized assessments are utilized to determine admission in schools of nursing (Assessment Technologies Institute, n.d.; Lauer & Yoho, 2013). Wolkowitz and Kelley (2010) performed a study to determine predictors of success by using the Assessment Technologies Institute (ATI) Test of Essential Academic Skills (TEAS) and the ATI RN Fundamentals assessment. The multiple regression statistical analysis included 4,105 RN from 49 different programs across the nation (Wolkowitz & Kelley,

2010). The results indicated that science in the strongest predictor of early success within nursing programs, followed by reading, written/verbal, and mathematics (Wolkowitz & Kelley, 2010). Admission criteria are an important consideration for administrators. The use of formative assessment to evaluate rigor of admission criteria and student success is another option to consider in regard to the local problem.

Ukpabi (2008) studied the variables that would impact success on the NCLEX-RN in a baccalaureate program. North Carolina Central University's (NCCU) pass rate was 77% in 2006 (Ukpabi, 2008). A convenience sample of 39 graduates that sat for the 2006 version of the NCLEX-RN were utilized (Ukpabi, 2008). ATI TEAS, and various other content specific assessments score were included as well as National League for Nursing (NLN) assessments. Of the 18 assessment variables, only 11 were found to be helpful in predicting students that passed or failed (Ukpabi, 2008). It is important to consider these results as many of the same assessments are utilized in the nursing program described above. The assessment data should be utilized effectively to identify at-risk students.

Supplemental Assessment and Instruction

It is important to assess the students' needs and and factors that contribute to student success. Freitas and Leonard (2011) investigated this topic based on Maslow's heirarchy of needs. Proficiency in the sciences is a proven predictor of success but there are also non-academic factors such as test-taking anxiety, mutiple obligations and responsibilities, health status, psychological stress, and economic stability that contribute to nursing students' success (Freitas & Leaonard, 2011; Simon et al., 2013; Wolkowitz &

Kelly, 2010). In addition to the gender considerations noted by Terzis and Economides (2011), Freitas and Leonard (2011) found that female students have higher psychosocial needs than male students. Although the study proposed deals with SCAFA, it does not supercede the need for supplemental psychological assessment, assistance, and other supplemental resources available through the community college.

Harding (2012) studied the effects of supplemental nursing instruction on academic success. Promoting academic and NCLEX-RN success requires attention to the identification of at-risk students. In order to determine the effects of a 15-week, one-credit-hour supplemental course on student outcomes, the researcher utilized a longitudinal, descriptive design (Harding, 2012). While supplemental instruction did have an immediate impact on student success, there was no significant difference in HESI exam scores (Harding, 2012). Although the data was not statistically significant, the use of supplemental instruction or a comprehensive plan throughout the curriculum may be helpful in retaining students and ultimately improving outcomes.

Wilson, Boyd, Chen, and Jamal (2011) investigated the use of voluntary computer-assisted computer assessments (WEarth) on student performance in a first-year undergraduate geography course in 2008 and 2009. The study involved a student feedback survey and the analysis of the use of WEarth and exam grades (Wilson et al., 2011). In 2008, 52% of students used WEarth and in 2009, 54% of students utilized this assessment tool; usage varied from year to year (Wilson et al., 2011). Student feedback provided insight into usage such as accessibility and flexibility (Wilson et al., 2011). According to the researchers, the results are associated with learning improvement rather

than improvement in test taking skill (Wilson et al., 2011). The use of formative assessment in other disciplines indicates a positive impact on outcomes.

Hwang and Chang (2011) explored formative assessment-based mobile learning (FAML) as an approach to improve learning in mobile environments. This experimental research was conducted for an elementary school's culture course in Taiwan; integrating learning interest, learning attitude, and cognitive load (Hwang & Chang, 2011). Two groups of fifth grade students participated; one class of 29 students in the experimental group and the other class of 32 students in the control group (Hwang & Chang, 2011). ANCOVA results of the post-test demonstrated that the experimental group utilizing FAML scored higher than the control group; t-test results of the experimental group also show improvements in learning attitude and learning interest (Hwang & Chang, 2011). The impact of self-directed learning can be applied to adult learners as well, resulting in increased motivation to learn and a positive impact on achievement.

Pachler, Daly, Mor, and Mellar (2010) were able to identify current practices involving e-assessment through the focus groups or 'Practical Enquiry Days' (PEDs) and interviews. This data will be utilized to guide future e-assessment software development (Pachler et al., 2010). Although e-assessment can make a difference in learners' performance, it is dependent upon human response and motivational factors in conjunction with feedback and interaction found in this type of electronic assessment tool (Pachler et al., 2010). The goal is promoting understanding and achieving successful outcomes.

Simulation is a supplemental strategy that has been adopted by nurse educators to enhance understanding of difficult concepts (Richardson & Claman, 2014; Rutherford-Hemming, 2012; Sideras, McKenzie, Noone, Markle, Frazier, & Sullivan, 2013). The use of this strategy has increased dramatically from 2000-2010; providing nursing students with a safe environment to practice clinical decision making and skills (Sweigart, Burden, Carlton, & Fillwalk, 2013). The researchers described a four-year implementation process of interview skill development across the curriculum utilizing a virtual environment (Sweigart et al., 2013). Student and clinical faculty evaluations were positive. The students felt that the scenarios increased confidence prior to real-life situations and the clinical educators felt the students were more prepared and self-confident in the clinical setting (Sweigart et al., 2013).

Al-Hussami and Darawad (2013) performed an experimental study related to infection control in Jordan. This study involved random assignment of students to a control group or the experimental group; the total number of participants was 104 (Al-Hussami & Darawad, 2013). The experimental group participated in an infection prevention educational program and the control group received no additional training (Al-Hussami & Darawad, 2013). Results indicated improvement in the nursing students' knowledge of, and attitudes toward, infection control (Al-Hussami & Darawad, 2013).

Keefe and Wharrad (2012) developed supplemental e-learning resources to assist with educating student nurses in regard to pain management. The study, performed in the United Kingdom, was a randomized cohort design. Students completing the supplemental assessment scored 19.2% higher on average (Keefe & Wharrad, 2012). This study

contributes to the body of knowledge regarding supplemental instruction, demonstrating a positive impact on student outcomes.

SCAFA has been implemented in a variety of programs as a strategy for NCLEX-RN success. Schroeder (2013) discussed the testing policy strategies utilizing HESI in an ADN program. To examine the effectiveness of the testing policy, NCLEX-RN pass rates were measured five years prior to implementation and five years post-implementation (Schroeder, 2013). The results were significant and demonstrated that of the 304 students that took the NCLEX-RN prior to the implementation of the testing policy, 271students or 89.14% passed on the first attempt. Of the 268 students that took the NCLEX-RN post-implementation, 260 students or 97.01% passed on the first attempt (Schroeder, 2013). The adoption of a supplemental test plan and/or policy is paramount to success, as this process will provide a guide and a standard upon which data can be measured in the future.

Implications

SCAFA is one type of strategy that is utilized in an ADN program to prepare nursing students for the NCLEX-RN licensure exam. In order to obtain a true picture of this strategy, it is important to explore the perceptions of the nurse educators that implement this formative assessment tool. I anticipated the findings of this study to show a lack of knowledge about the computer-assisted formative assessments used by this nursing program. The data obtained from this study will influence projects such as a comprehensive curriculum plan, policy change, and/or remediation plan for SCAFA that utilizes tutorial, practice, and proctored assessments in conjunction with faculty training.

Based on the results of my research, I designed a professional development project that focuses on the effective utilization of SCAFA throughout the ADN curriculum (Appendix A).

Summary

This section focused on the issues surrounding SCAFA as a strategy for NCLEX-RN success in the southeastern United States. The literature review supports the use of formative assessment in nursing education. The exploration of nurse educators' perceptions provided insight into the use of this strategy for NCLEX-RN success. As this strategy had not been evaluated since implementation by the nursing faculty, it was difficult to determine the effectiveness or see a true picture of the issue. Nurse educators and nursing programs across the nation have a responsibility to society to produce competent nurses that are adequately prepared to pass the licensure exam. Data obtained from this study has the potential to impact program outcomes for all stakeholders. Section 2 presents the research study methodology used to determine the nurse educators' perceptions of SCAFA.

Section 2: The Methodology

Introduction

The use of SCAFA is designed to assist the student and the educator in identifying areas of strength, weakness, and provide a guide for remediation. This study used a qualitative case-study approach to explore nurse educators' perceptions of SCAFA and factors that impacted utilization of this tool. All data were obtained from program documents and through face-to-face interviews. This section includes a discussion regarding the research design, sampling procedures, participants, data collection, data analysis, and results.

Qualitative Research Approach and Design

This study used a qualitative approach and a case study design (Creswell, 2012; Lodico, Spaulding, & Voegtle, 2010; Merriam, 2009). The result was an enhanced understanding of the perceived meaning of, and processes involved with, the SCAFA strategy for preparing students for the NCLEX-RN licensure exam and ultimately, NCLEX-RN success (Creswell, 2012). Due to the close working relationships between nursing faculty members, the study uncovered complexities in the use of SCAFA and provided a more detailed picture of the local problem. The case study design allowed the researcher to explore a specific activity related to technology integration within an ADN program. Performing this type of study allowed the researcher to not only explore the central phenomenon, SCAFA, but also to get specific in terms of an area of interest or need, SCAFA use and data utilization (Creswell, 2012; Lodico et al., 2010). This case study explored perspectives from nursing faculty members who were responsible for

implementing SCAFA in a manner that would enhance student learning and would promote positive outcomes (Creswell, 2012; Galbraith, 2004).

Justification of the Qualitative Approach

The purpose of this study was to explore nurse educators' perspectives regarding SCAFA as a strategy to prepare nursing students for NCLEX-RN success. Nurse educators implement formative assessment in a variety of ways throughout the curriculum. The student's perception of SCAFA is captured in end-of-course and end-of-program evaluations; however, the educators' perceptions have not been previously captured. The nurse educators' perceptions provided insight into this assessment strategy. To explore the nurse educators' perceptions, a qualitative research design was indicated.

Although a quantitative approach may be more objective, the data available would not be applicable to the current curriculum. In addition, there are extraneous variables such as the curriculum changes that would prevent capture of the essence of the problem. Qualitative research may facilitate a better understanding of the phenomena being explored (Lodico, Spaulding, & Voegtle, 2010). This qualitative case study provided a glimpse into a perspective that has not been explored. The guiding research questions provided insight into the educators' perspectives, as to how they integrate this tool as a strategy for NCLEX-RN success:

1. How do nurse educators perceive the use of SCAFA as a formative assessment strategy to prepare nursing students for NCLEX-RN success in an ADN program?
2. How do nurse educators utilize the data obtained from the use of SCAFA?

Participants and Sampling Method

The participants consisted of nursing faculty members in one ADN program located in a community college setting in the southeast United States. A purposeful sampling procedure was used for this qualitative study. Purposeful sampling allows the researcher to select the individuals and the site for this study to gain a detailed understanding of the central phenomenon (Creswell, 2012). The ADN nurse educators within the nursing department were invited to participate in this study on a voluntary basis once permission and informed consent was granted.

The maximum number of participants was the full census numbering 10, which included the department chair, division chair, and a three-quarter time clinical instructor. The division chair and department chair are responsible for three to six direct teaching contact hours each semester within the ADN program and are involved in the use of SCAFA. The nursing faculty consisted of nine females and one male, ranging in age from 33 to 60 years. All nursing faculty were academically and experientially prepared for the nursing instructor role (ABC College, 2013b). Each faculty member was prepared with a Master of Science degree in nursing, three faculty members held Certified Nurse Educator (CNE) status, one faculty member was a Certified Critical Care Registered Nurse (CCRN), and one faculty member was a Certified Medical-Surgical Registered Nurse (CMSRN). Experiential backgrounds included community nursing, critical care, leadership and management, medical-surgical, mental health, obstetrics, and oncology; demonstrating a diverse perspective.

Justification for the number of participants was directly related to the research design. Eligibility criteria included nurse educators involved in the implementation of SCAFA. Utilizing the case study approach, I was able to delve into the specific phenomena and uncover greater meaning and understanding.

Permission

In order to obtain permission and gain access to the community college to perform this study, a variety of steps were performed (Creswell, 2012; Lodico et al., 2010; Merriam, 2009; Walden University, 2011). Permission was granted to perform research through ABC College Department of Institutional Research on August 11, 2014 (Appendix B). Official permission to conduct research was granted by Walden University's Institutional Review Board (IRB) on November 12, 2014. The IRB approval number for this study was 11-11-14-0061371. The nursing department chair completed the Data Use Agreement for collection of program documents on November 12, 2014.

Researcher-Participant Working Relationship

I am currently a 9-month, full-time nursing instructor at the study site. I do not hold a supervisory role in regard to the study participants. The researcher-participant working relationship was addressed at the onset of the face-to-face meeting with each participant. It was explained to each participant that he or she may elect to leave the study at any time without fear of reprisal. The role of researcher and that of employee is separate and was addressed. Explaining the study and data collection process set the tone for the semi-structured interviews that followed.

Measures for Ethical Protection

Measures for ethical protection of participants included confidentiality and informed consent as outlined in the Research Consent Acknowledgement. A copy of this document was provided to all participants prior to beginning the interview. Participation in this study was voluntary and there were no apparent risks involved. Any information provided by participants was kept confidential. All information is stored on a password-protected computer in my home that only I have access to. Paper records are stored in a locked file cabinet in my home that only I have access to. A back-up copy of the electronic documents is kept in a fireproof safe in my home. Documents will be stored for 5 years as required by the IRB. I will not use the information obtained for any purposes outside of this research study.

Data Collection

Due to the specific nature of this case study, locating an instrument to address the specific research questions was difficult. After exhausting the literature, and failing to locate an applicable instrument, I created eight open-ended interview questions with the assistance of an expert committee consisting of the doctoral committee chair and second committee member. The interview questions were:

1. Do you currently utilize SCAFA in your courses as a strategy for NCLEX-RN preparation? If the answer is yes, identify the course and the assessments utilized.
2. How long have you been utilizing SCAFA for NCLEX-RN preparation in your courses?

3. What do you perceive are the challenges associated with the use of SCAFA for NCLEX-RN preparation?
4. What do you perceive are the benefits associated with the use of SCAFA for NCLEX-RN preparation?
5. How do you assess and evaluate student use of SCAFA and remediation?
6. Based on your experiences, do you perceive student remediation related to SCAFA to be effective? Why or why not?

   Please note that remediation currently consists of review of the "Individual Performance Profile" for any proctored assessment with a score below a "Level 2 Profiency" and an assigned practice assessment with a score of 90% or greater within 1 week.
7. What types of data are obtained from the use of SCAFA and how are these data utilized?
8. Do you perceive that SCAFA are an effective strategy for NCLEX-RN preparation? For NCLEX-RN success?

Optional: Please add any additional information regarding SCAFA as a strategy for NCLEX-RN preparation that was not addressed in the questions above.

Questions 1 and 2 focused on the use of SCAFA. Questions 3 and 4 were related to benefits and challenges associated with SCAFA for NCLEX-RN preparation. Question 5 focused on the use (assessment and evaluation) of SCAFA. Questions 6-8 were related to the efficacy of student remediation, types of data obtained from SCAFA, and perceptions of the effectiveness of this strategy for NCLEX-RN preparation. Also included was a

final question for participants to discuss any additional information regarding SCAFA that was not addressed and that they may desire to share.

Once permission was granted, I met with the nursing department chair to review the data collection process and initiate document collection. During this meeting the data use agreement was signed. Nurse educators were provided with an invitation to participate and the informed consent document via electronic mail, with instructions to return the document electronically with the words "I consent" within 1 week. Participant response via electronic mail constituted the participants' electronic signature. Once consent was received, appointments were made for face-to-face audio-recorded semi-structured interviews using an interview protocol (Appendix C), which provided consistency during the interviews (Creswell, 2012). The interviews were held in a private conference room within the nursing department building. The semi-structured interview form of data collection allowed the participants to express their thoughts in their own words (Lodico et al., 2010, p. 121).

Measures for ethical protection of the participants include informed consent and confidentiality. The participants received an informed consent document explaining the purpose of this research and a notice of voluntary participation. The faculty members were not obligated to participate in this study. In addition, participation in this study did not impact employment status. Participants were labeled using distinctive identifiers such as "Participant A" to maintain confidentiality.

Individual, semi-structured interviews allowed for the collection of rich, descriptive text. An interview protocol (Appendix C) was used to provide a standard

procedure for the interview process (Creswell, 2012). This protocol included details such as the date, place, time, interviewer, and interviewee. In addition, the questions were spaced for documentation of my responses and observations. Qualitative observations were documented in addition to the spoken word such as descriptive notes regarding the interviewee, the setting, and any thoughts or feelings that I had at that point in time (Creswell, 2012). This semi-structured interview style allowed the opportunity to ask probing questions to clarify information or obtain more detailed information (Lodico et al., 2010). In addition, this method provided a rich text database with the ability to ask follow-up questions via electronic mail, which was not necessary (Creswell, 2012).

Data was also obtained from course and program documents from 2011 to 2013 as outlined in the Data Use Agreement. Individual course documents and program documents related to the use and remediation of SCAFA provided valuable information. Documents such as course artifacts, course evaluations, course meeting minutes, faculty meeting minutes, end-of-course evaluation meeting minutes, program evaluation documents, policies, and guidelines were collected.

The use of a digital audio recorder was used. Word documents and spreadsheets were utilized to transcribe data. Data is secured on a data file on a computer that is password protected and can only be accessed by me. A backup file, handwritten documents, and audio recordings will be kept in a locked file cabinet in a secure location that only I have access to. The data is stored in a secure data file and fireproof file cabinet and will be kept for a period of 5 years. After this time the data will be destroyed by deleting and shredding of all documents and audio files.

The role of the researcher in this setting is that of a nine-month full time nursing instructor. All nursing faculty works together for the greater good of the program. There are three faculty members that I work more closely with than others depending on the semester requirements. Since 2010, during the fall and spring semester, I have served as course coordinator for the largest courses in the nursing curriculum. I do not serve in a supervisory capacity in regard to the participants. Due to academic pursuits, I have more insight into SCAFA. Being aware of personal biases, the role I have as a researcher, and the insight I have into this strategy heightened the need for objectivity during the interview, data collection, and analysis processes. Controlling for bias began with the recognition of potential bias and development of the interview questions. Maintaining neutral demeanors in terms of facial expression, body language, tone, and dress during the interview assisted in controlling for bias. Striving for objectivity when analyzing and reporting the data assisted in controlling for researcher bias. Member checking was one strategy used to ensure that the researcher's own biases do not influence the results (Lodico et al., 2010). Maintaining the integrity of the research is of the utmost importance.

Interviews and document collection took place over a 2-week period, beginning November 13, 2014 and ending on November 24, 2014. Interviews were transcribed as soon as possible following the interviews. Word documents and spreadsheets were used for organization of data.

Data Analysis

Creswell's (2012) qualitative analysis was used to analyze the data obtained from this study. The raw data gathered from the interviews was organized and transcribed prior to beginning the coding process (Creswell, 2012). Thorough proofing assisted in preventing misconceptions during data analysis. Reading the data provided a general overview and provided the opportunity for me to reflect on the data (Creswell, 2012). The actual coding procedure was completed by hand with the use of word documents and spreadsheets. Lean coding was used to code the interviews and documents. The process of lean coding allows for the assignment of fewer codes during the first reading of the transcriptions to reduce the smaller number of codes to broad themes (Creswell, 2012, p. 244). The coding process allowed me to make sense out of the data and form broader themes, with the goal of identifying five to seven themes by the end of the coding process (Creswell, 2012). These themes assisted in understanding the nurse educators' perspective in regard to this SCAFA strategy within an ADN program.

Course and program documents as described in the Data Use Agreement (Appendix C) were utilized to seek answers for research questions as well as corroborate and support information derived from the face-to-face interviews. Course artifacts, course evaluations, coursing meeting minutes, faculty meeting minutes, nursing program policies, program evaluations, and information pertaining to utilization and remediation of SCAFA were obtained and reviewed. These documents were reviewed for accuracy, completeness, and usefulness in answering the research questions (Creswell, 2012). Merriam (2009) indicates that determining authenticity and accuracy of the documents is

part of the research process (p. 151). The researcher should determine as much as possible about the document such as the author, origin, and context (Merriam, 2009). Documents provide an objective, unobtrusive source of information as well as a good source for word text for a qualitative study (Creswell, 2009; 2012; Merriam, 2009). Lean coding was used to analyze the documents and form broad themes which will offer another dimension of analysis which may provide historical insight and tracking of change or developments in the use of SCAFA (Creswell, 2012; Merriam, 2009).

A narrative summary of the data analysis and my interpretation of the themes are provided. Strategies to address qualitative credibility and dependability included clarification of researcher bias, thorough proofing of transcripts, member checking, triangulation with program documents, course documents, and interviews, as well as peer review by a non-participant (Creswell, 2012; Lodico et al., 2010; Merriam, 2009).

Clarifying researcher bias is essential in this study due to the role of the researcher in the professional setting. I thoroughly proof-read the transcripts immediately after the interviews were transcribed. Member checking was utilized by allowing each participant to review my findings for each participant's own data to determine the accuracy and credibility of the preliminary qualitative findings. Member checking provided a valid means of preventing misconceptions or misinterpretations (Creswell, 2012; Merriam, 2009). This involved a follow-up meeting with each of the participants to review and discuss the preliminary findings for his/her own data (Creswell, 2012). This occurred throughout the day on December 4, 2014 and took approximately 15 minutes with each participant. Non-participant peer review involved requesting a colleague that is not

involved in this study to review the data and determine if the themes and findings are plausible (Merriam, 2009). The individual agreeing to participate in this non-participant peer review is the associate dean of a baccalaureate nursing program. The reviewer is not employed by the community college system. Peer review provided an objective view of the themes and findings. The peer reviewer was instrumental in validating my findings (Appendix E). We communicated via electronic mail and telephone. Triangulation of different data sources was used to justify themes and add to the credibility of this study (Creswell, 2012). The use of interviews, course, and program documents were used to corroborate evidence. The detailed, rich, and descriptive text that evolved from the data analysis may be used to ensure the possibility of transferability.

Qualitative Case Study Results

Creswell's (2012) qualitative analysis was used to analyze the data obtained from this study. The raw data gathered from the interviews was organized and transcribed prior to beginning the coding process (Creswell, 2012). Thorough proofing assisted in preventing misconceptions during data analysis. Reading the data provided a general overview and provided the opportunity for me to reflect on the data (Creswell, 2012). The actual coding procedure was completed by hand with the use of word documents and spreadsheets. Lean coding was used to code the interviews and documents. The process of lean coding allows for the assignment of fewer codes during the first reading of the transcriptions to reduce the smaller number of codes to broad themes (Creswell, 2012, p. 244). The coding process allowed me to make sense out of the data and form broader themes, with the goal of identifying five to seven themes by the end of the coding process

(Creswell, 2012). These themes assisted in understanding the nurse educators' perspective in regard to this SCAFA strategy within an ADN program.

Course and program documents as described in the Data Use Agreement (Appendix C) were utilized to seek answers for research questions as well as corroborate and support information derived from the face-to-face interviews. Course artifacts, course evaluations, coursing meeting minutes, faculty meeting minutes, nursing program policies, program evaluations, and information pertaining to utilization and remediation of SCAFA were obtained and reviewed. These documents were reviewed for accuracy, completeness, and usefulness in answering the research questions (Creswell, 2012). Merriam (2009) indicates that determining authenticity and accuracy of the documents is part of the research process (p. 151). The researcher should determine as much as possible about the document such as the author, origin, and context (Merriam, 2009). Documents provide an objective, unobtrusive source of information as well as a good source for word text for a qualitative study (Creswell, 2009; 2012; Merriam, 2009). Lean coding was used to analyze the documents and form broad themes which will offer another dimension of analysis which may provide historical insight and tracking of change or developments in the use of SCAFA (Creswell, 2012; Merriam, 2009).

A narrative summary of the data analysis and my interpretation of the themes are provided. Strategies to address qualitative credibility and dependability included clarification of researcher bias, thorough proofing of transcripts, member checking, triangulation with program documents, course documents, and interviews, as well as peer review by a non-participant (Creswell, 2012; Lodico et al., 2010; Merriam, 2009).

Clarifying researcher bias is essential in this study due to the role of the researcher in the professional setting. I thoroughly proof-read the transcripts immediately after the interviews were transcribed. Member checking was utilized by allowing each participant to review my findings for each participant's own data to determine the accuracy and credibility of the preliminary qualitative findings. Member checking provided a valid means of preventing misconceptions or misinterpretations (Creswell, 2012; Merriam, 2009). This involved a follow-up meeting with each of the participants to review and discuss the preliminary findings for his/her own data (Creswell, 2012). This occurred throughout the day on December 4, 2014 and took approximately 15 minutes with each participant. Non-participant peer review involved requesting a colleague that is not involved in this study to review the data and determine if the themes and findings are plausible (Merriam, 2009). The individual agreeing to participate in this non-participant peer review is the associate dean of a baccalaureate nursing program. The reviewer is not employed by the community college system. Peer review provided an objective view of the themes and findings. The peer reviewer was instrumental in validating my findings (Appendix E). We communicated via electronic mail and telephone. Triangulation of different data sources was used to justify themes and add to the credibility of this study (Creswell, 2012). The use of interviews, course, and program documents were used to corroborate evidence. The detailed, rich, and descriptive text that evolved from the data analysis may be used to ensure the possibility of transferability.

Supplemental Computer-Assisted Formative Assessment

SCAFA is used in the ADN program as a strategy to prepare students for the NCLEX-RN. The tool selected by this program involves the use of tutorial, practice, and proctored formative assessments. The current departmental policy requires the use of proctored assessments, however tutorial and practice assessments are not addressed. Listed below are the proctored assessments that are required throughout the curriculum:

NUR 111	Critical Thinking Entrance
NUR 111	Fundamental of Nursing Practice
NUR 114	Mental Health
NUR 113	Pharmacology
NUR 113	Maternal-Newborn
NUR 212	Nursing Care of Children
NUR 212	Leadership
NUR 213	Adult Medical-Surgical
NUR 213	Critical Thinking Exit
NUR 213	RN Comprehensive Predictor

(ABC College, 2014)

Nursing faculty members aligned proctored assessments with the appropriate course as noted in the nursing faculty meeting minutes. Students are required to score a Level 2 on the following proctored assessments: Fundamentals, Pharmacology, Maternal-Newborn, Nursing Care of Children, Leadership, and Adult Medical-Surgical. Students are required to score a minimum of a 90% Predictability on the RN Comprehensive

Predictor. Failure of students to meet these requirements results in remediation. The policy states:

> Remediation is required for any proctored assessment with a score below a Level 2 (or below 90% predictability on the Comprehensive Predictor). Remediation consists of review of the "Individual Performance Profile." In addition, the student will be required to submit a report of an assigned practice assessment or custom practice assessment with a score of 90% within 1 week of proctored assessment to the appropriate instructor.
>
> Remediation for the ATI RN Comprehensive Predictor is required for students that do not achieve a 90% or greater predictability score. This consists of retaking the ATI RN Comprehensive Predictor at a later date as scheduled by the course coordinator or designee.
>
> Rationale:
>
> Allowing students to repeat the NCLEX-RN Comprehensive Predictor one additional time reflects our commitment to student success. Students will be cautioned that this score is valid only at the time the examination is taken and does not guarantee a 90% chance of passing NCLEX-RN at the time the licensure exam is taken. Students will be counseled to continue to review and take sample test questions prior to the exam (ABC College, 2014).

Individual student results and aggregate group reports are available to nurse educators. A broad overview of concepts assessed as well as detailed information based on the detailed NCLEX-RN test plan may be obtained. The current policy does not

address data collection or use (ABC College, 2014). Program document review validated the use of proctored assessments throughout the curriculum.

Themes

I developed six themes from a combination of the data obtained from the document review and interviews pertaining to SCAFA within this nursing program (Appendix D). A lack of consistency was noted throughout many of the themes and is a major factor contributing to the lack of effectiveness with this strategy. Most participants mentioned the lack of consistency with the use of this tool, remediation, data collection, and decision-making. The additional themes of attitudes, process, resource allocation, training/preparation, and data driven decision-making emerged from the data.

Theme 1: Lack of Consistency

A lack of consistency is the overarching theme in this study. Each participant discussed the lack of consistency during the interview process. Document review demonstrated a lack of consistency in addressing SCAFA within the end of course evaluation meeting minutes. The document review supported gaps within the program documents and a lack of consistency with the dissemination of data. The document review and information that was gleaned during the interview process validated the lack of consistency in the use of SCAFA within this program.

Interviews. In regard to challenges associated with the use of this tool, Participant B stated "A lack of consistency among faculty in the use of resources is a challenge. If the assessments and supplemental resources are not required for completion of the course, the students will not likely take the time to complete them." Participant C

explained, “Lack of consistency in utilization, the only required components are practice assessments. Practice and tutorial assessments are not utilized because they are not addressed in the nursing policy manual.” Participant D mentioned, “It is a challenge to get the entire faculty engaged in the process and to use it consistently”.

Document review. Review of the program documents and individual course evaluation meeting minutes provided insight related to gaps in decision-making related to SCAFA, as well as SCAFA from the students’ perspective. Student comments from course evaluations were found within the course evaluation meeting minutes. NUR 111 and NUR 213 end of course evaluation documents from 2012 and 2013 discussed student orientation to the supplemental tool as well as the use of practice and proctored assessments. Student recommendations were noted to, “Embed materials into each course module” and “Strengths are the supplemental exercises”. No information was found in end of course evaluation minutes for 2011 in NUR 111, 112, 211, 114, 113, or 212. Nursing faculty meeting minutes 2011-2013 address SCAFA in retrospect.

After reviewing all of the information, the lack of consistency in utilization, remediation, data collection, and reporting is a major factor in the perceived effectiveness of this tool. The data clearly demonstrates a lack of consistency, which can be remedied by a curriculum plan by course that addresses all aspects of SCAFA including remediation, data collection, and reporting.

Theme 2: Attitudes

The participants described a variety of positive and negative attitudes pertaining to faculty as well as students. Understanding the importance of SCAFA, accountability, effort, and motivation were mentioned during the interview process.

Faculty. Generally, the nursing faculty members have a positive attitude and are receptive to using this supplemental tool. Interview responses indicate that there are many positive aspects involved in the use of this tool. Participant C discussed benefits of this tool, "Taking NCLEX-RN style questions from day one of the nursing program. Providing an assessment tool that is not based on the CIP curriculum, but directly related to the NCLEX-RN Test Plan". Participant D indicated, "Many students like the online tutorials and assessments in lieu of traditional classroom approaches and paper-and-pencil tests". Participant J utilizes the assessments for personal development and stated, "For my courses I use the assessments to identify gaps in my teaching content. When the majority of students do poorly on specific content, I make sure I strengthen those weak areas".

Frustration is evident with the lack of student effort and motivation to remediate and the lack of use of this tool throughout the curriculum. Faculty members feel that remediation is ineffective and that there needs to be a formal process in order for the tool to be utilized effectively. Participant C elaborated, "At this time, I do not feel that remediation is effective. I feel that is just an easy 'hoop to jump through'. Completing a practice assessment in five minutes because the student has memorized a correct answer

does not ensure knowledge or understanding of concepts". Participant J stated remediation is:

> Ineffective; it concerns me that when students take the assessment over again they do it sometimes in less than five or ten minutes. Some of the students tell me they take pictures of the assessment using their smart phone; this totally prevents students being able to benefit from understanding and learning the rationale for the correct answer. The reason students are doing this is to get the remediation done so they can move on to the next assignment.

Students. Participant A, B, C, F, G, H, and J discussed the fact that the students do not take the assessments or remediation seriously. Participant A indicated, "I have found that at times the students see this type of testing as another hurdle to get through and just click through it to get it over with." Participant B stated, "Students do not take the assessments seriously sometimes which results in data that is not accurate." Participant D explained, "I work with first year ADN students who seem to think NCLEX-RN is far away and of no concern to them while they are just trying to make it through nursing school". Participant G stated, "They often do not take is serious and therefore it isn't utilized to its maximum benefit." Participant H addressed accountability:

> The biggest challenge I see is on the student's part. Without mandating required practice tests or developing a way for students to take proctored tests seriously jeopardizes the legitimacy of the tools. I also feel the students are not taking the tests seriously or the remediation. Currently the remediation is not mandated. What value are the students putting

> into their efforts? I also believe the students are very overwhelmed with all the course work as well as supplemental assessments.

Document review revealed positive and negative student comments in regard to SCAFA. NUR 111 positive course evaluation comments include: “All of the materials and resources provided for the course were very helpful”, “I really did benefit from the PREP-U site. I really believe it boosted my competency level to do well on the tests”, “Encourage the use of the tools offered for example the ATI”, “More required ATI assignments” and “Describe and implement ATI in order for students to better use it”. Another student voiced negative comments:

> Get rid of ATI. ATI’s material seems to be abstract and their topics and questions seem to be far removed from those we’ve studied in class. The material cannot always be found in the texts and I think more than any knowledge gained, it provides frustration. It feels as though it’s just one more thing to complete and that I don’t learn much from it. I feel as though if the time spent on ATI could be better utilized on other work.

Course documents and the interviews indicate that SCAFA is utilized the most in NUR 213. This is the final course in the curriculum and weekly practice and/or tutorial assessments have been assigned for the last two years. Practice assessments must be completed with the rationales off according to Participants A and C. Course evaluation comments indicate that these assessments are a strength of the course. Student comments from 2013 include: “Gave us good practice for the NCLEX and made us critically think”, “Continue to use weekly”, “As much as I hate ATI, I do feel that it was helpful”,

"Although ATI was time consuming I felt it was helpful with what we were learning at that moment, it helped to grasp the concepts better", "I thought the ATI was very helpful. Though not fun, I think it will help a lot with the NCLEX", and "The ATI test practices went along with content and helped me understand concepts better." End of course evaluation minutes from 2012 include the following student comments: "ATI is helpful when you can get time to do it. Test scores increased after using ATI" and "Stress the importance of having the students use ATI. It helped tie material together. Consider counting it as a grade".

Theme 3: Process

SCAFA was implemented in 2008 in response to a major decrease in NCLEX-RN scores. Program documents do not reveal any major changes in the initial policy. Based on the document review and interviews, faculty and student buy-in, lack of consistency, and knowledge of the use of this tool are major concerns for the nursing faculty. The lack of consistency is evident through participant comments and program documents as noted in Theme 1. Participant A stated, "Ensuring all faculty is on board with ATI testing and its importance" is a challenge. Participant C indicated there is a "Lack of faculty buy-in. A lack of time to set up the assessments. Lack of consistency in the utilization, the only required components are the proctored assessments". Participant D stated, "It is a challenge to get the entire faculty engaged in the process and to use it consistently".

Perceptions related to the assessment and evaluation of SCAFA and remediation are varied. It appears that each participant performs assessment and evaluation differently with varying perceptions of what should be completed. Participant A stated:

> At this time the students submit a transcript, which highlights the completion of each assignment. The transcript contains the time and date the assignment was completed, the student's score, the length of time it took to complete, and all the attempts made to complete the assignment(s). As a nursing instructor, it is interesting to see what the student scored the very first time he/she completed the assignment. It helps to see those students who rush through the assignments (completing an assignment in 10 minutes when in fact they should have spent 45 minutes). Remediation is evaluated through completion of an alternate assignment in which the student must make a certain score. The student turns the results in to the instructor.

Participant B explained the process:

> Students are required to complete specific practice assessments and remediation. Students must then submit proof of completion of the assessments (transcripts). This is included in the syllabus as course requirement, and a small percentage of their overall grade is awarded for completion of the assignments within the required deadline.

Participant G revealed the process used:

> The students take proctored exams and we print off the results. The students must make a certain grade on the proctored exam or they are required to do remediation, which usually consists of completing another practice test. Students are also required to do the tutorials and practice test before the proctored test and are required to submit the transcript

showing this work has been completed.

Participant H stated, “That’s the problem…We do not have a formal process right now”.

Various types of data are obtained from the use of SCAFA. Participant A stated, “Some of the data obtained illustrates how the class performed as a whole, how they scored in very broad topics such as safety and also how they scored on more specific topics such as restraints”. Participant B indicated, “Data is available both by student and aggregated as group performance”. Participant E stated, “Scores from proctored tests designated in the policy provide individual and group strengths”. Participant G indicated, “The data collected is really just that the students completed the work, they make a certain grade on the proctored exam, and the one we look the most at is the comprehensive predictor for predictability of success on the NCLEX-RN”. Participant J stated, “Weak content is identified through the proctored assessments”.

Utilization of data obtained from SCAFA is performed in a variety of ways and is primarily retrospective. Participant A indicated the assessment tool, “provides wonderful statistics that help the faculty identify those areas that must be strengthened in the curriculum”. Participant B stated:

> Aggregated group data is helpful for faculty to make curriculum changes and improve focused learning strategies for future groups. Data is available to see how much time students have spent remediating or taking practice assessments. This may be valuable in determining if students are taking the product seriously.

Participant C addressed the Self -Assessment Inventory as well as group data:

> Self -Assessment inventory: provides an overview of the learning styles of the class as a whole as well as individual learning styles. This information is provided to the nursing faculty so that adjustments can be made (if possible) to teaching strategies to engage the group. The current class is highly visual, so more pictures and visual items have been incorporated into the classes. Group data from the proctored assessments provide information to help with changes within each concept, course, and the curriculum – to strengthen weak areas. This can help the faculty with individual teaching strategies as well.

Participant D stated, "Individual student data and aggregate group data is available. Aggregate data is shared with students and reviewed at nursing faculty meetings". Participant G indicated:

> The data collected is really just that the students completed the work, they make a certain grade on the proctored exam, and the one we look the most at is the comprehensive predictor for predictability of success on the NCLEX-RN. This data is used to show the students that if they are predicted to not pass they need to do a review course or get additional help to ensure they pass. We have attempted to trend the predictability of ATI and the majority of the time it has not been accurate.

The responses regarding use of data and data found in program documents indicate that changes have been made for future classes based on SCAFA data and student recommendations.

Theme 4: Resource Allocation

Nurse educators addressed the availability of computer rooms for proctored assessment, laptop availability, battery life, and lack of electrical outlets in classrooms. Participant A stated:

> Some of the challenges encountered are not having enough computers for proctored testing. Room availability can be challenging (finding rooms with enough computers for each student). We do have laptops available for the students, however, the battery life may not last in order to complete some of the assessments since they vary in length and time.

Participant B indicated, "Availability of classrooms with computers that allow for computerized proctored testing for a large number of students at one time; electrical outlets" are challenges associated with the use of SCAFA. Participant F stated, "Limited availability of classrooms with computers that allow for computerized proctored testing for a large number of students at one time" is a challenge.

Theme 5: Preparation and Training

Program document review revealed a formal SCAFA orientation process for students in NUR 111. All orientation information is available online for faculty and students. The course coordinator is responsible for introducing and implementing SCAFA within each course. There is no script or outline for introducing SCAFA.

New nursing faculty members are paired with a mentor for orientation to this tool. Each educator has a secure access to the online site. A formal process for faculty SCAFA training is not defined within program documents. The only formal process is the

assignment of a mentor for new faculty. The mentor is designated by the nursing department chair.

Training and preparation for college faculty is arranged through the professional development committee. This is a campus-wide committee and serves the needs of the entire college faculty and staff. The NCCCS conference is an option for faculty to obtain additional professional development. This annual conference provides a wide range of educational offerings for educators in the community college system. Professional development is incorporated into the departmental budget on an annual basis as noted in the faculty meeting minutes. Faculty members may request to attend various conferences to meet learning needs, and if approved, the faculty member may attend.

Theme 6: Data-Driven Decision Making

Students have access to individual reports for each assessment. The premise of accessing and reviewing the results is to enhance remediation of individual weaknesses. Program document review provided one comment related to this aspect of data utilization. The current SCAFA policy indicates that remediation consists of review of the Individual Performance Profile. No other direction or comments are noted. One participant addressed this aspect of data driven decision-making, but it pertains to a transition course for licensed practical nurses that wish to enter the limited admissions ADN program. Participant D stated:

> We implemented a new strategy in NUR 214 in Spring 2014. We met with each student individually to review their results and topics previously covered

> in the curriculum in courses they would not take if admitted into the ADN program as an advanced standing student. However, we do not know if they self-remediated in their areas of weakness as they were encouraged to do.

Participant E stated, “These data are used to increase rigor in weak areas within the curriculum and assist in helping students strengthen their weak areas”.

Individual and group performance results are available to all nursing faculty members. According to the data obtained from interviews and document review, the data is reviewed retrospectively. The changes made to the courses impact future cohorts. Weaknesses are addressed in future courses through lecture and/or student presentations. This is noted in NUR 113 in 2013 only. Participant J stated, “Areas that the majority of students missed can be tested on during the course tests, as well as having the students do research and present in class or in clinical about the areas that ATI indicated as weak”. Nursing faculty meeting minutes in 2011 discuss the oversight of SCAFA, but no specific direction is provided. In 2012, the faculty meeting minutes reflect specific topics that require strengthening within the courses as well as emphasizing student use of SCAFA. In 2013, the RN Comprehensive Predictor results are discussed in addition to better utilization of this supplemental tool. No specific direction for use is provided.

Outcomes

Qualitative case studies are instrumental in facilitating a better understanding of the problem being explored (Lodico, Spaulding, & Voegtle, 2010). The outcomes should evolve from the data and must be relevant to the research questions (Creswell, 2009).

During the analysis, I repeatedly reviewed the interview transcripts and documents separately to determine the emerging themes. Once all transcripts and documents were reviewed and emerging themes were determined, I applied the information to the guiding research questions to validate the data I collected. Separate documents were created for the participant's responses document review, themes (Appendix D), and guiding research questions. The non-participant peer reviewer validated my findings via electronic mail and telephone communication.

Research Question 1

> How do nurse educators perceive the use of SCAFA as a formative assessment strategy to prepare nursing students for NCLEX-RN success in an ADN program?

Nurse educators generally perceive SCAFA to be an effective strategy for NCLEX-RN preparation. Although many feel specific guidelines for use and remediation need to be provided. The responses regarding preparation for the NCLEX-RN were positive. Participant A stated "I believe that SCAFAs are effective for NCLEX-RN preparation and for NCLEX-RN success. Numerous students have stated that a great factor that contributed to their NCLEX-RN success was ATI". Participant D expanded, "Yes. There definitely needs to be a third party used for formative assessment that provides comparative data for trending purposes, as well as student and faculty resources for success". Participant G explained, "I do think they are effective to prepare the students, again mostly for that computerized testing experience". Participant H stated, "No, we need a more formal process to identify weak students or students struggling in a

particular subject. We need a refined schedule of activities for all the products the students purchase". Participant J explained, "Yes. There definitely needs to be a third party used for formative assessment that provides comparative data for trending purposes, as well as student and faculty resources for success".

Nurse educators generally perceive to be effective in contributing to NCLEX-RN success within this program. There is not a process in place for data collection and use, which would provide information regarding success as compared to program outcomes. Participant A stated, "I believe that SCAFAs are effective for NCLEX-RN preparation and for NCLEX-RN success. Numerous students have stated that a great factor that contributed to their NCLEX-RN success was ATI". Participant D explained, "Yes, with a caveat. It is impossible for any vendor to adjust for students who use their personal predictive score for NCLEX-RN success as a wake-up call, remediate as needed, and pass NCLEX-RN on the first attempt in spite of their predictability to fail". Participant G stated, "… I have not been able to really see that the testing has helped with NCLEX-RN success". Participant H explained, "We need a formal analysis process for student's outcomes and program outcomes. We also need to consider allowing credit for the work students are doing with ATI". Participant I state, "Yes, it can be effective, but only if the students use it to the fullest and do outside studying and non-proctored tests to prepare".

Research Question 2

How do nurse educators utilize the data obtained from the use of SCAFA?

After analyzing and synthesizing the data from participant interviews and program documents, it appears that SCAFA is generally used to identify weakness within

individual courses and the overall curriculum through the proctored assessment results. It does not appear that this tool is used consistently throughout the curriculum or to identify individual students "at-risk", which could impact student engagement and retention. In addition, there are courses and documents that do not address or utilize the SCAFAs available (tutorials, practice, and/or proctored assessments). Participant A stated:

> Some of the data obtained illustrates how the class performed as a whole, how they scored in very broad topics, such as safety and also how they scored on more specific topics such as restraints. ATI's program provides wonderful statistics that help the faculty identify those areas that must be strengthened in the curriculum. For example, in NUR 113 and NUR 212 each student is required to provide a clinical presentation during post conference related to an assigned topic. The topics assigned to the students were those that were identified as weaknesses for the group as a whole. Having the ability to see what our students typically tend to be weak on has helped us strengthen those weaknesses via other assignments.

Participant C explained:

> The ADN program needs to incorporate all of the available tools throughout the curriculum (tutorials, practice, and proctored assessments). I feel that this tool will be much more effective if we could incorporate specific assessments in specific courses to help students pull information forward. Many of our students have not had to pull information forward before and they struggle with moving away from the "cram and dump" mentality. I feel that utilization of all available tools throughout the curriculum can assist the students, which will impact engagement

> and retention…. Nursing tends to use higher level questioning such as application, analysis, and evaluation and this tool can help the students with this style of questioning.

Evidence of Quality

Acknowledging my biases and maintaining integrity was of the utmost importance as a researcher as well as a faculty member at the study site. Creswell (2009) indicated that a researcher's personal biases may interfere with objectivity and reporting of data. Throughout the study, I strived to remain open-minded to explore the local problem.

Creswell (2009) recommended using at least two validation strategies. Thorough proof-reading of transcripts, member checking, non-participant peer review, and triangulation of different data sources were used. Member checking is another means to ensure that the researchers' own biases do not influence the results (Lodico, et al., 2010). Preliminary findings pertaining to each participant's responses were presented in private meetings. All participants agreed with my preliminary findings based on his or her own individual responses to the interview questions. Non-participant peer review involved requesting a colleague that is not involved in this study to review the data and determine if the themes and findings are plausible (Merriam, 2009). Non-participant peer review provided an objective view of themes and findings. The associate dean of a baccalaureate nursing program served as the non-participant peer reviewer. This reviewer was able to validate my interpretation of themes and preliminary findings via electronic mail and

telephone communication. These strategies enhanced the quality of the study by validating accuracy of responses, credibility, and reliability.

In reviewing the data, I found that three of the participants described data that was contradictory in relation to the majority of participant responses. Participant G and H did not perceive that SCAFA is an effective strategy for NCLEX-RN success. Participant G stated, "…I have not been able to really see that the testing has helped with NCLEX success". Participant H elaborated:

> No, we need a more formal process to identify weak students or students struggling in a particular subject. We need a refined schedule of activities for all the products the students purchase. We need a formal analysis process for student's outcomes and program outcomes.

Due to curriculum changes and lack of consistency in use of the tool and data, objective data is not available to determine the effectiveness of this tool on program outcomes. Participant J indicated:

> It would be helpful if I knew the specific content that was weak because I am not sure that some of the material is accurate with the resources I am using. For example I am concerned that students miss a question regarding orthostatic hypotension and dietary teaching for MAOIs.

SCAFA is a tool that is derived from the NCLEX-RN Detailed Test Plan. This tool is not derived from the program curriculum or selected textbooks. In presenting this tool to students, it may be necessary to script orientation at the beginning of each course so that

students and nursing faculty are aware of the purpose and possibilities of incongruent information between the supplemental tool and selected program textbooks.

These discrepant or negative cases do not fit the common pattern (Merriam, 2009). Merriam indicated that researchers must have procedures in place to deal with discrepant cases. The procedure I used involved a reexamination of the data after the initial analysis was completed to determine if the emerging themes were applicable to each participant's responses. Discrepant cases are not uncommon in qualitative research and discrepant case analysis enhances rigor of the study (Anthony & Jack, 2009; Merriam, 2009).

Conclusion

SCAFA has been implemented in a variety of nursing programs as a strategy to enhance understanding of difficult concepts and as a strategy for NCLEX-RN success (Richardson & Claman, 2014; Rutherford-Hemming, 2012; Schroeder, 2013; Sideras, McKenzie, Noone, Markle, Frazier, & Sullivan, 2013). The results indicated an overarching lack of consistency that has impacted the use of SCAFA in this program. The findings of this qualitative case study led to the creation of a professional development project that addresses the utilization of SCAFA across the ADN curriculum. The next section will focus on the proposed project that is based on these study results.

Section 3: The Project

Introduction

Nurse educators are challenged to provide learning experiences that promote personal and professional growth (Caffarella, 2002; Galbraith, 2004; Merriam, Caffarella, & Baumgartner, 2007). Formative assessment is a valuable strategy that supports teaching and learning in higher education, but improving formative assessment practices is challenging (Wylie, Lyon, Goe, & Educational Testing Service, 2009). Educating future nurses for success is a major factor that contributes to social change at the local, regional, and national levels. The purpose of this doctoral study was to explore nurse educators' perceptions SCAFA as a strategy for NCLEX-RN success. The investigation was performed using a qualitative case study design that used data from interviews and program documents. Six themes emerged from these data: (a) lack of consistency in the use of SCAFA, (b) student and faculty attitudes, (c) implementation and remediation process, (d) electrical and technology resource allocation, (e) faculty and student training and preparation, and (f) program data-driven decision making. Based on the findings, a 3-day professional development seminar was developed to provide nurse educators with additional training and insight to enhance the implementation and effectiveness of SCAFA throughout the ADN curriculum.

Description and Goals

The proposed project is a 3-day professional development seminar (Appendix A) for nurse educators that will focus on effective utilization of SCAFA. A SCAFA plan will be outlined in detail for each course within the 2-year ADN curriculum, so that faculty

will use all of the available tutorial, practice, and proctored assessments to enhance student success. The goal of the seminar was to enhance effectiveness and utilization of SCAFA throughout the ADN curriculum. The purpose of this project seminar is to provide the faculty with an opportunity to perform hands-on activities, to become familiar with all aspects of SCAFA, and provide consistency through a formal process. Hands-on activities include accessing the SCAFA website and familiarizing the educators with the formative assessment tools that students utilize as well as the available resources and tools for educators and students. The nurse educators will have an opportunity to complete the tutorial, practice, and proctored assessments. The professional development seminar is expected to enhance the implementation and utilization of SCAFA, promote encouragement and monitoring of student remediation, provide a guide for data collection and reporting at the end of course evaluation and nursing faculty meetings, and improve data driven decision-making throughout the ADN curriculum.

The professional development seminar will begin with an overview of the goals, purpose, and learning outcomes. A review of the ADN curriculum and alignment of SCAFA within each course of the ADN curriculum will be provided. The materials for this professional development seminar are included in Appendix A. In this seminar, faculty will be taught research-based best practices for the use of formative assessment and remediation. An interactive approach will familiarize nurse educators with the student's role and the educator's role in SCAFA. Online assessments are to be completed by nurse educators, and the results will be reviewed. This will allow for reflection and a discussion about the dissemination of information and data-driven decision making.

After participation in this program, the nursing faculty will facilitate course-by-course implementation of SCAFA throughout the 2-year ADN curriculum.

Rationale

Based on the data analysis of this case study, I concluded that nurse educators' perceptions of SCAFA were positive, but that the use of this tool requires specific direction. Without specific direction, the nursing faculty will not utilize all available components of this assessment tool. I designed an interactive professional development seminar based on the study results and identified components in the literature related to professional development, curriculum development, and data-driven decision making. The intent of this project is to improve utilization of SCAFA in the ADN program and increase student success.

Review of the Literature

The literature review in Section 1 focused on formative assessment, perceptions, preparedness and predictors of success, and supplemental assessment and instruction. The literature review in this section was focused on the underlying theory for the project, professional development, effective training, curriculum development, student engagement, retention, and data driven decision-making. The following databases were searched to perform the review: Cumulative Index to Nursing and Allied Health Literature, Education Research Complete, Education Resources Information Center, Google Scholar, Sage, and ProQuest Dissertation and Thesis Database. The following keywords were used in the search for evidence: *professional development, curriculum development,* and *data driven decision-making*.

The theoretical framework for this project will be guided by Knowles's (1984) Andragogy, which is based on the following assumptions:

1. The need to know. It is important for adults to understand why they need to learn before they invest in the learning process (Knowles, 1984; Knowles, Holton, & Swanson, 1998).
2. The learners' self-concept. Adults are capable of self-direction once they understand they are responsible for their own decisions (Knowles, 1984; Knowles et al., 1998).
3. The role of the learners' experiences. Learning may be enhanced by life experiences. The ability to relate past experiences to new knowledge facilitates learning (Knowles, Holton, & Swanson, 1998).
4. Readiness to learn. Adult's readiness to learn is directly associated with developmental tasks. An adult's readiness is related to how this learning will impact them now and in the future (Knowles et al., 1998).
5. Orientation to learning. Adults are motivated to learn information that will help them perform new task or solve problems in current situations (Knowles et al., 1998).
6. Motivation. An internal desire or drive will motivate adult learning. Adults respond to external motivation, but internal motivation is more effective (Knowles et al., 1998).

Educators must understand how adults learn and what motivates the adult to learn. Learners' experiences must be acknowledged and utilized to address readiness and

orientation to learning. The educator should be prepared to offer a variety of learning activities to engage and motivate all types of learners (Caffarella, 2010). Nurse educators will bring a vast amount of experience to the seminar. The nurse educators are self-directed and are invested in the ADN program. The participant responses indicated that the nurse educators are invested in SCAFA as a strategy for NCLEX-RN success.

In addition, constructivism is also a component of the theoretical framework for this project. SCAFA within this program is designed to build upon concepts learned. As noted in Section 1, constructivism encompasses the progressive nature of learning and the importance of relating new information to previously learned concepts in order for learners to retain and utilize the information (Heroff, 2009; Knowles, Holton, & Swanson, 2012; Merriam, Caffarella, & Baumgartner, 2007). The educator's role is to facilitate and assist the learner to make meaning of information (Merriam, Caffarella, & Baumgartner, 2007). This is applicable to the educator as well. Nurse educator's must build upon their knowledge of SCAFA and apply this knowledge during the seminar.

Professional Development

Professional development, education, and training programs must be developed to meet the diverse needs of the learners (Caffarella, 2010). Active learning is considered to be the preferred method for acquiring skills (Jefferies et al., 2013). Updating, reflective, and collaborative activities are utilized for professional development (de Vries, Jansen, & van de Grift, 2014) and the greater the participation in professional development, the more student-oriented educators will become (deVries et al., 2014). It is important to maintain rigor within the ADN curriculum and ensure that students are building upon

fundamental concepts, which encompasses the constructivist approach to this study and project (LaChausse, Clark, & Chapple, 2013). The success of SCAFA as a strategy for NCLEX-RN success ultimately depends upon the implementation and evaluation process. Qualitative study results demonstrated inconsistency in the use of SCAFA and professional development can assist in providing consistency for the nursing faculty.

LaChausse, Clark, and Chappel (2013) performed a study to determine how educator characteristics affected program fidelity and to propose a comprehensive training and support model (p. S54). Surveys were used prior to and after training related to a sexual health education course for students in high school (LaChausse et al., 2013). The researchers found that a two-day training session may not adequately address the skills needed to address sex-related topics. It was discovered that credentialed health education teachers had greater comfort in this type of instruction. Jansen in de Wal, den Brok, Hooijer, Martens, and van den Beemt (2014), explored teachers' engagement in professional learning. Questionnaires were completed by 2,360 Dutch secondary teachers from 99 schools and four profiles were identified and labeled as extremely autonomous, moderately motivated, highly autonomous, and externally regulated (Jansen in de Wal et al., 2014, p. 33). The researchers delved into the internal and external drives that motivate adult learners, which is consistent with Knowles's (1984) Andragogy.

Yurtsever (2012) explored English language instructors' preferences regarding professional development. Convenience sampling was utilized and 91 instructors from Akdeniz University and state universities in Turkey participated in this study. Four models of professional development were explored: Training Model, Mentoring Model,

Peer-coaching Model, and Self-Directed Model (Yurtserver, 2012). The Self-Directed model was the preferred model of professional development and is consistent with personal comfort, internal drive, and autonomy (Jansen in de Wal et al., 2014; LaChausse et al., 2014; Leen & Lang, 2013; Saks & Leijen, 2014).

Although the Self-Directed Model is preferred by many educators; this model may not be the best choice when it comes to technology. Many educators are resistant to change, especially when technology is involved. Ketelhut and Schifter (2011), indicated that digital game-based learning has had limited success due to the lack of support and guidance, as well as teachers' resistance to implement technology in the intended manner. This would indicate a lack of consistency that is evident in this study related to SCAFA. Mehrotra, San Chee, and Chuan Ong (2014) examined the professional development trajectories of two teachers who implemented a game-based learning curriculum. The use of a reflective, reflexive, guided appropriation model was used to bring about a change in practice. Mehrotra et al., (2014) discussed the importance of depth, ownership, and system support will influence a stable shift in teaching practice (p. 15).

Professional development and faculty training varies by need, however the motivation to learn and need for continuous process improvement will drive the individual learner (Jansen in de Wal et al., 2014; Jeffries et al., 2013; Lachausse et al., 2014; Mehrotra et al., 2014; Nicholae, 2014; de Vries et al., 2013). Bourke, Mentis, and O'Neill (2012), discussed the need to know what educators are currently doing in order to develop an improved process. Nurse educators participate in and promote lifelong learning. Developing a curriculum plan to address the lack of consistency as well as meet

the needs of the nurse educators and students is the primary goal of the doctoral study project.

Curriculum Development

A variety of changes, including a curriculum change has impacted this ADN program. In order to incorporate a comprehensive curriculum plan for SCAFA in the professional seminar, it is important to understand curriculum development. In addition, many participants indicated that students must be able to pull foundational concepts and knowledge forward throughout the ADN curriculum. Although it is difficult to align SCAFA perfectly with the current ADN curriculum, SCAFA can be aligned to assess the students' knowledge and assist in pulling information forward by using various tutorial, practice, and proctored assessments. There are several faculty members that teach in the ADN program as well as the diploma licensed practical nurse (LPN) program. These nurse educators must be knowledgeable of both curricula. Due to the fact that the current curriculum was implemented in 2010, all but three of the ten nurse educators were actively involved in the implementation of current ADN curriculum.

Jandric (2012) discussed the development of a conceptual framework for e-learning involving Uses Determination, Technological Determination, and Social Determination. The purpose of this framework is developing an understanding the relationships between technical, practical, and emancipatory aspects of e-learning (Jandric, 2012, p. 68). Al-Eraky (2012) described a conceptual framework called Curriculum Navigator. The author provided a view into curriculum planning using an overview and detailed view. This view spans attitudes toward curriculum, attention to

detail, awareness of self-image, flexibility to change, perception of rules, resources, design, communication, and decision-making (Al-Eraky, 2012). Su (2012) provided a comprehensive literature review related to the term curriculum. The author indicated that curriculum planning is one of the most important factors in predetermining the success and effect of curricular implementation (Su, 2012, p. 157). Nduna (2012) discussed the complications and importance of the transfer of academic knowledge into practice or workplace knowledge (p. 233). This directly relates to the proposed project. SCAFA is designed to supplement the curriculum and prepare students for the NCLEX-RN examination. The professional development project for SCAFA is designed with the current curriculum and the various facets of curriculum development in mind.

Tabari and Tabari (2014) discussed the application of computer and technology in language programs. The authors suggested that the availability of computer programs does not guarantee successful integration. Rollins and Bailey (2014) indicated that technology should be used to create learning experiences that would otherwise not be possible (p. 35). Based on the responses of 250 educators, the researchers concluded that administrators should review the needs of students and faculty and align the current curriculum and information technology strategic plans (Rollins & Bailey, 2014, p. 33).

Curriculum mapping is discussed throughout the literature. Rahimi, Borujeni, Esfahani, and Liaghatdar (2010), discussed curriculum mapping as a strategy that may improve students' performance and the quality of the educational program. Neilsen and Yahya (2013) discussed the use of curriculum mapping to encourage ownership, enhance student engagement, and enhance collaborative learning. This is in alignment with the

current learner-centered ADN curriculum. ABC College utilizes a third-party provider for SCAFA. The use of an outside party provides for the objective assessment of student and program strengths and weaknesses. Participant D indicated that there "definitely needs to be a third party used for formative assessment that provides comparative data for trending purposes, as well as student and faculty resources for success".

Change is imminent. Nursing education is challenged to uphold specific standards. In addition to the NCCCS, this ADN program must address specific requirements set forth by the NCBON and ACEN. These requirements are in addition to the challenges and changes associated with higher education. Fahey (2012) discussed the effects of curriculum change and climate change. The author discussed internal pressures and external pressures related to change. Internal pressures included academic incentive, professional development, university strategic policy and plan, quality assurance, and academic committees (Fahey, 2012, p. 707; Rollins & Bailey, 2014). External pressures included global societal issues, employer requirement, employer expectations, industry expectations, professional norms, and external-to-the-university quality reviews and teaching standards (Fahey, 2012, p. 707). These internal and external pressures reflect components that impact the ADN program.

Data-Driven Decision Making

Participant responses and the document review revealed a lack of consistency and gaps in the use of data to make decisions related to the ADN program. Data-driven decision making is a process that crosses disciplines from business to healthcare. The premise of data-driven decision making is to collect, organize, and analyze data to make

informed decisions. According to Gullo (2013), the collection of raw data does not equal information or ensure that it will be used to make informed decisions (p. 414).
Gullo (2013) also indicated that data-driven decision making is related to standards-based accountability (p. 414). As it pertains to data collection of SCAFA, although data is collected, there are gaps in the use and dissemination of data.

Suhirman et al. (2014), discussed that continuous evaluation must occur in order to improve the quality of education and institution of learning. Data mining is used to provide predictive data to assist with decision making at all levels (Murray, 2014; Suhirman et al., 2014). Murray (2014) indicated that schools now have more access to data, however ongoing professional development is needed to develop the knowledge and skill to make sense of the data. Ball and Christ (2012) discussed a conceptual framework within a response to intervention context that is centered on problem identification, problem analysis, progress monitoring, and program evaluation. Gullo (2013) described a conceptual framework for improving instructional practice and student outcomes through data-driven decision making. Four questions were used to structure this framework:

1. Why do data need to be collected?
2. What kinds of data should be collected?
3. How are data collected?
4. How are data used for making decisions? (Gullo, 2013)

Dunn, Airola, Lo, and Garrison (2013), explored the data-driven decision making beliefs obtained from 537 teachers. The results indicated that the teachers have anxiety regarding this process and statistical analysis, which impacted data-driven decision

making practices. Newman and Newman (2013) discussed teacher accountability and the use of data-driven decision making. The authors provided descriptions and assessment use for effective instruction.

The use of data collected from SCAFA can contribute to program improvements that may impact program and student outcomes. Educator accountability and data-driven decision making is required in nursing education. Nursing programs have to meet specific criterion for governing and accrediting bodies. The appropriate use of data to make decisions has the potential to contribute to successful outcomes (Ball & Christ, 2012; Dunn et al., 2013; Gullo, 2013; Murray, 2014; Newman & Newman, 2013). ABC College can improve the use of SCAFA data and make effective curriculum changes by providing an interactive professional development seminar that incorporates a comprehensive SCAFA plan.

Implementation

In designing the professional development seminar for nurse educators, the learning objectives must be developed first. An interactive three-day seminar will be offered prior to the beginning of the fall, 2015 semester. The current ADN curriculum and aligned SCAFAs will be presented with a course-by-course breakdown. Hands-on sessions will be included to provide educators with the opportunity to identify resources, complete assessments, review results, and set up assessments within the online SCAFA tool. Immersing the nurse educators in the SCAFA tool will assist in addressing any learning needs or questions regarding this online strategy for NCLEX-RN preparation. The results of practice and proctored assessments will be addressed at the monthly

faculty meetings, within the course meeting minutes, and at the end of course evaluation minutes for each course. Course grades and assessment scores will be collected in a spreadsheet for the duration of the program. Data from the class of 2017 will be evaluated upon the receipt of NCLEX-RN scores. This plan will remain in place to allow for the collection of three years' worth of class data.

Potential Resources and Existing Supports

Minimal resources are required for successful implementation of the faculty seminar. ABC College offers faculty members access to multiple online databases to access current research. A nursing classroom will be used to hold the faculty seminar. Classrooms are equipped with computers, overhead projectors, document readers, and white boards. Each nursing faculty member has access to a laptop and secure access to the SCAFA tool to utilize for the interactive portion of the seminar. Handouts will be provided for the nurse educators. Additional resources may include a guest speaker or representative at a faculty meeting from the SCAFA tool company that is currently utilized.

Potential Barriers

Nurse educators will be planning for the semester during this time and may feel pressured by the time required for this seminar. Encouraging the faculty to participate in an open discussion regarding the SCAFA will set the tone and ensure buy-in from this group of stakeholders. The administrators of the ADN program can provide ongoing encouragement and verbalize expectations in regard to SCAFA within this program.

Requesting a SCAFA report during faculty meetings would encourage discussion of use and results, as well as provide documentation in faculty meeting minutes.

Proposal for Implementation and Timetable

The professional development seminar will take place at the beginning of the fall semester prior to syllabi development. The use of learner-centered teaching strategies related to SCAFA will be ongoing. The department chair will be responsible for designating the initial meeting time and future meeting agendas that include SCAFA discussion and dissemination of data each semester. The professional development seminar will include interactive activities to immerse nurse educators in the SCAFA tool and provide the educators with insight into the student's role as well as the educator's role. Please refer to Appendix A for seminar documents.

Day One. Day 1 of the professional development seminar will consist of an overview of the goal, purpose, learning outcomes, and learning objectives. A review of the ADN curriculum and aligned SCAFAs will be provided. Each nurse educator will be provided with a detailed handout of the comprehensive SCAFA plan. This document will be used throughout the seminar. Interactive activities include a review of the SCAFA website, educator resources, orientation videos, and training resources. Tutorial lessons and assessments will be reviewed by course. In order to provide nurse educators with insight into the student's role in SCAFA, nurse educations will complete tutorial lessons and assessments. Open discussion will follow. An overview of day one and plan for day two will complete the first seminar day.

Day Two. Day 2 of training involves review of practice assessments available by course utilizing the comprehensive SCAFA plan handout. Each nurse educator will complete a practice assessment with the rationales turned off, then review his/her individual results. Following the lunch break, the proctored assessments will be reviewed by course. Each nurse educator will have the opportunity to complete a proctored assessment and review his/her individual results. Open discussion will follow. An overview of day two and plan for day three will complete the second seminar day.

Day Three. Day 3 will begin by addressing any comments, concerns, or questions regarding information covered. Remediation, data driven decision-making, and dissemination of information by course will complete the seminar. Interactive activities involve the review of group and individual assessment results, and development of a remediation plan for a group and a student. An open discussion will be included. Finally, based on group or individual assessment results, the nurse educators will strategize how to strengthen weak areas, and how to provide the information to the class, individual, and faculty. Day three will end with an evaluation of the seminar.

Roles and Responsibilities of Student and Others

The nurse educators' role during the professional development seminar is that of the active learner. My role is that of the nurse educator facilitator. The students' role is that of the active learner. The students must complete tutorial, practice, and proctored assessments as directed by the comprehensive SCAFA plan. During the professional development seminar, nurse educators will have the opportunity to complete student assessments. During implementation of SCAFA, I will fulfill the role of facilitator. The

course coordinators will be responsible for implementing SCAFA within the designated courses. In addition, these nurse educators are responsible for identifying at risk students, including SCAFA in course and end of course meeting minutes, collection of SCAFA data (reports), and dissemination of SCAFA data at faculty meetings and the annual program review. The nursing department chair is responsible for including the SCAFA data in the annual program meeting minutes and accrediting reports. Program administrators are responsible for supporting the use of SCAFA and providing the necessary facilities and equipment.

Project Evaluation

The key stakeholders include nurse educators, community college administration, students, and the community. Evaluation of the project will be outcome based. The purpose of this project is to develop a professional development seminar to increase the effectiveness and utilization of SCAFA as a strategy for NCLEX-RN success. Student proctored assessment scores and course grades will indicate whether or not outcomes are being met. Faculty members will be asked to complete an evaluation regarding the professional development seminar. Changes may be made based on the data obtained from the evaluation. An ongoing formative evaluation will occur to determine the effectiveness and utilization of SCAFA each semester. The summative assessment will occur with the receipt of NCLEX-RN scores for each graduating class. SCAFA will be addressed in each end of course evaluation meeting and the annual program evaluation.

Implications Including Social Change

Local Community

The goal of this project is to increase the effectiveness and utilization of SCAFA as a strategy for NCLEX-RN success. Preparing students for success will ultimately positively impact on time completion of the ADN program, graduation, licensure as a registered nurse, and employment. This is important to the students, nurse educators, community college administrators, and the community it serves by providing educated nurses to care for members of this community and surrounding areas.

Far-Reaching

In the larger context, schools of nursing across the nation are struggling with the demands of educating future nurses. Specific benchmarks must be met for accreditation and governing agencies (ACEN, 2013; NCBON, 2013). Meeting specific benchmark has a tremendous impact on nurse educators and community college administrators. This study addressed nurse educators' perception of a SCAFA tool, which was not discussed in the literature. The study may prompt other institutions to conduct its own research, implement comprehensive curriculum plans, or provide in-depth professional development to maximize effectiveness of the tools in use.

Conclusion

The results of this study indicated that consistency may positively impact the effectiveness and utilization of SCAFA. One method to provide consistency is to implement professional development for the utilization of SCAFA. Providing faculty members with a course-by-course guide and support will contribute to the effective

utilization of SCAFA. The next section will provide an analysis of the strengths and limitations of the project as well as review the potential for future research. An analysis of my development as a scholar-practitioner and project developer will also be discussed.

Section 4: Reflections and Conclusions

Introduction

Nurse educators are challenged to meet the demands of the ever-changing healthcare system and the looming nursing shortage, which impacts the delivery of nursing care (AACN, 2012; Federal Interagency Forum on Aging Related Statistics, 2010; Institute of Medicine, 2010; United States DOL, 2012; United States DOL, 2014). Nurse educators play a crucial role in preparing future nurses to meet the healthcare needs of the people at the local, state, and national levels. Formative assessment is one strategy that can be used to prepare nurses for NCLEX-RN success. In this section, I present the strengths and limitations of the proposed professional development seminar for the effective use of SCAFA. A reflection of what I have learned about myself through this dissertation journey is included. The section also includes a discussion of the (a) implications, applications, and importance of the study and the project, (b) the potential for social change, and (c) recommendations for future research will be provided.

Project Strengths

The strength of this project is that it provides a solution for one ADN programs' ineffective use of SCAFA as a strategy for NCLEX-RN preparation. In this qualitative case study design, nurse educators' perceptions were explored and a lack of consistency was identified, analyzed, and a solution was developed (Creswell, 2012; Lodico, Spaulding, & Voegtle, 2010; Merriam, 2009). Current evidence indicates the importance of understanding the diverse needs of learners, current practices in education, encouraging active learning, and student engagement (Caffarella, 2010; de Vries et al.,

2014; Jansen in de Wal et al., 2014; Jefferies et al., 2013; O'Neil, 2012). The seminar provides nurse educators with direction and insight into SCAFA, including a map for implementing the tools across the ADN curriculum. In addition, the seminar includes an interactive component to facilitate the use of data collection and allow for any questions to be addressed.

Recommendations for Remediation of Limitations

The proposed project will be implemented to provide nurse educators with consistency in the use of SCAFA throughout the 2-year ADN program. The limitations of this project are based on its implementation, transferability, and evaluation (Creswell, 2009; Creswell, 2012; Merriam, 2009). The class of 2017 will begin the ADN program in August, 2015. Implementation must begin with this incoming class. Beginning data collection with the class of 2017 will prolong the summative evaluation process. Each course will evaluate the process, but outcomes cannot be addressed until the class of 2017 receives results for the NCLEX-RN. An alternative recommendation for implementation and evaluation is to begin using the curriculum plan with the current ADN class of 2016 during the last two semesters of the curriculum only.

Transferability of the findings is limited based on the case study design, which explored one nursing program (Creswell, 2009; Creswell, 2012; Merriam, 2009). Although many nursing programs that utilize this form of assessment can find value in these findings, the findings in other programs may differ. A rich, narrative description of the study findings and project description would help with this limitation (Creswell, 2009; Creswell, 2012; Merriam, 2009).

Scholarship

Nurse educators are challenged to create learner-centered environments, which involve the integration of technology and active involvement of students in the learning process (Billings & Halstead, 2005). The role of the nurse educator is complex and demanding with specific expectations related to scholarship. Boyer (1990) proposed a paradigm for scholarship that is actively used by nurse educators and includes the scholarship of discovery, integration, application, and teaching. The individual and the individual's employing academic institution will guide how the educator may incorporate scholarship.

Throughout this journey, I have participated in each form of scholarship. Teaching is the most common form of scholarship. Teaching is a daily activity in the classroom, laboratory, and clinical setting within an ADN program. The daily interactions with students force educators to stay current with best practices, equipment, technology, and trends. Maintaining a national certification and participating in local, state, and national organizations demonstrates the scholarship of application. This study included a detailed literature review regarding formative assessment, curriculum development, and professional development, which provided insight for the development of a professional seminar for the use of SCAFA. This demonstrates the scholarship of discovery. By conducting this research and sifting through current evidence, I have been able to identify a gap in current practice as well as a gap in the literature regarding SCAFA. This involves the scholarship of integration, blending education, higher education, and nursing education as well as the different types of scholarship.

I have grown significantly as a scholar-practitioner through the research process. Qualitative research was not my first choice, as I tend to gravitate toward numeric data. Through this process, I have gained greater insight into the rich detail that qualitative research offers. I have also learned of the great responsibility involved in the protection of participants and maintaining the integrity of the data. The data analysis process was something that I was concerned about, but found that following a plan allowed me to identify gaps in our program. It was an eye opening experience to sift through documents and see inconsistencies that I did not expect to find. This process is much like being a detective and searching for answers. I have always told my students that the smallest things can make the biggest difference. I have found that to be true in this process as well; that a small change has the potential to make a major difference in outcomes. Scholarship is something that I will continue to pursue in a variety of ways.

Project Development and Evaluation

I have experience with project development and evaluation, however the extent of this experience has been challenging. Setting out on this journey, I did not expect the extensive investment of time or money. The literature review and data analysis phase were overwhelming. I am glad that I chose to work with the data by hand and not use software to assist with the analysis. Working with the data allowed me to see how the responses, data from the documents, and themes came together to guide project development. Although transcribing the data was time intensive and provided much needed data, the document review really opened my eyes to many inconsistencies and failure to ‘close the loop’. Developing the course plan for SCAFA and the professional

development seminar forced me to become familiar with each course in the ADN program. I used information from the interviews to incorporate what the educators wanted in a comprehensive plan for the effective use of SCAFA. In developing this project, I enhanced my professional practice as a nurse and an educator. I became more knowledgeable in researching a topic, evidence-based practice, teaching strategies, current issues, and the importance of formative assessment. This time-intensive journey led to the development of a solid project study based on evidence.

Evaluation is an important component of any change or process (Caffarella, 2002). Evaluation for this project will require wait time. Formative evaluation can take place with each course after implementation; however summative evaluation will not take place until NCLEX-RN results have been received for the class. The nursing faculty will complete an evaluation of the professional development seminar, which will provide information related to the process.

Leadership and Change

My project focused on a professional development seminar to address the utilization of SCAFA. Conducting this study and developing this project contributes to leadership and change within an ADN program. Although I do not hold a formal title as a leader within the nursing department, informally, I am leading by example. A leader can be described as someone who shapes the environment and motivates others to work for the good of all (Salmela, Eriksson, & Fagerström, 2013). Change can occur by identifying a problem, researching the issue, and developing a plan or solution. Change is not easy, but by leading, I found that others are more willing to participate and become

part of the change, rather than hindering the process. Ensuring that SCAFA is utilized effectively within the ADN program, has the potential to impact outcomes in a significant way. This journey has promoted leadership and change on a personal as well as a professional level.

Analysis of Self as Scholar

Upon embarking on this journey, I knew it would be time intensive and difficult. I also knew it would take perseverance. The process of becoming a scholar involved the development of a deep commitment to learning and the value of knowing. I began my career with an ADN degree and worked hard to learn and grow as a nurse. Similarly, once I became an educator, I was driven to learn and grow in that role as well. Obtaining a terminal degree that will intertwine nursing practice and nursing education bridges the space between academia and professional nursing practice. This journey has joined my love of nursing with my love of education and has allowed me to evolve into a scholar.

Analysis of Self as Practitioner

I entered professional nursing as a bedside practitioner. Over the years I have had many learning opportunities that have forced me to step outside of my comfort zone and grow personally and professionally. Entering academia was a leap of faith, and for eight years I have learned something new each day. This doctoral journey has provided me with additional opportunities for growth. The knowledge that I have gained during this process will impact my current practice as a nurse educator now and for the rest of my nursing career. Seeking answers to questions provides one with knowledge that can impact change at all levels.

Analysis of Self as Project Developer

I have participated in project development in various roles in the past. This is the first time I have completed the entire process independently. Having experience in the nurse educator role was a major benefit throughout the development of this project. The study results guided the development of the project. I expected the results to indicate a policy change for the project. In the end, the results led me down a different path for the project. After completing the comprehensive curriculum plan and professional development seminar, I felt a great sense of accomplishment. The cost of SCAFA is incorporated into the students' fees. I feel very strongly that the students should utilize this tool if they are paying for it. Unfortunately, the students do not have the educational background and knowledge to understand the importance of formative assessments or computer-assisted tools to increase success. Implementation and effective utilization is dependent upon nurse educators. I anticipated the results to show that nurse educators had a lack of knowledge or willingness to use SCAFA. I was surprised to find that was not the case. The professional development seminar incorporates specific areas addressed by the study participants, based on the study's results.

The Project's Potential Impact on Social Change

Understanding nurse educators' perceptions of SCAFA led to the development of a professional development seminar. This project has the potential to impact nursing faculty, students, the ADN program, and the community college by improving outcomes. Utilizing SCAFA as a supplemental tool to assess strengths and weaknesses can increase student and program success. This project has the potential to strengthen NCLEX-RN

preparation and ultimately, NCLEX-RN success. Increasing student and program success impacts social change at the local, regional, state, and national levels by increasing the number of practicing professional nurses. This addresses the looming shortage of nurses that serve this community and surrounding areas.

Implications, Applications, and Directions for Future Research

A comprehensive curriculum plan and faculty seminar was developed to address the identified problem. Formative assessment is valuable in nursing education and can raise standards by reinforcing classroom teaching and preparing students for a standardized licensure exam (Assessment Technologies Institute, n.d.; Black & William, 1998; Lauer & Yoho, 2013; Wylie, Lyon, Goe, & Educational Testing Service, 2009). The faculty seminar will be instrumental to the implementation of SCAFA across the ADN curriculum.

Although SCAFA tools have the potential to improve outcomes, the accountability ultimately lies with the students (Black & Wiliam, 1998; Clark, 2010; Gikandi, Morrow, & Davis, 2011; Krumsvik & Ludvigsen, 2013; Langford & Young, 2013; Lauer & Yoho, 2013; Trofino, 2013; Wolkowitz & Kelly, 2010; Yeom, 2013; Young, Rose, & Wilson, 2013). Educators are responsible for implementation, promoting use in a positive manner, and evaluating results. The students, as adult learners must understand the value of the tool. Students that perform well on assessments may develop a false sense of security and fail to actively study for the licensure exam (Heroff, 2009).

There are many options for future research. The problem involves one ADN programs decreasing NCLEX-RN scores despite strategies for improvement. This

problem may be used to determine if admission criteria is sufficient based on attrition and program outcomes. Obtaining nurse educators' perspectives regarding attrition and program outcomes may provide insight that has not been considered. More stringent admission criteria may impact outcomes in a positive manner. Future research may include a correlational study that is derived from this research. By comparing proctored assessment scores, course grades, predictor scores, and the NCLEX-RN scores, ABC College will be able to determine if SCAFA is the best option for the ADN program and NCLEX-RN preparation. In addition, a mixed-methods approach that takes into account graduates' perceptions of SCAFA and NCLEX-RN scores would provide insight into the effectiveness of this tool in preparing graduates for the NCLEX-RN.

Conclusion

The integration and use of technology in nursing education is evident in the literature. This study explored nurse educators' perceptions of SCAFA. The results revealed a lack of consistency in regard to the utilization of SCAFA. Providing nurse educators with a comprehensive curriculum plan and faculty seminar to implement the plan will likely improve student success with NCLEX-RN preparation. Achieving success with preparation will contribute to improved student and program success, which will increase the number of nurses prepared to enter professional practice.

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Appendix A: Supplemental Computer-Assisted Formative Assessment Seminar

Participants: Full-time nursing faculty involved in the implementation of supplemental computer-assisted formative assessment (SCAFA).

Goal: The goal of the seminar is to enhance effectiveness and use of SCAFA.

Purpose: The purpose of this project is to provide the faculty with an opportunity to perform hands-on activities related to SCAFA, to become familiar with all aspects of SCAFA, and to provide consistency in the use of SCAFA through a formal process. Hands-on activities include accessing the SCAFA website and familiarizing the educators with the formative assessment tools that students utilize as well as the available resources and tools for educators and students.

Duration:

Three-day professional development seminar

Resources Needed:

- Classroom equipped with presenter computer, projector, overhead and document reader
- Individual laptops
- Wi-fi availability
- Elmo (document reader)
- Access to SCAFA online tool
- Writing utensils/paper
- Nursing Student Manual

Learning Outcomes:

1. Nurse educators will be able to articulate the SCAFA process for the ADN program, which includes SCAFA assessment, implementation, and evaluation.

2. Nurse educators will be able to incorporate tutorial, practice, and supplemental assessments in all ADN courses.
3. Nurse educators will be able to identify ‘at risk’ students/groups and assist those students/groups with a remediation plan.
4. Nurse educators will be able to utilize proctored assessment data to identify strengths and weaknesses, review results with class, and make data-driven decisions.
5. Nurse educators will be able to disseminate SCAFA data within end of course evaluation meeting minutes and faculty meetings.

Objectives:

1. Discuss the current ADN curriculum and curriculum plan for SCAFA across the ADN curriculum.
2. Locate orientation materials, training and integration resources on the SCAFA website.
3. Compare and contrast tutorial, practice, and proctored assessments.
4. Access and review student orientation materials.
5. Locate a tutorial assessment and complete the module, beginning student test, and advanced student test.
6. Locate a practice assessment related to content assigned to teach, complete the assessment, and review results.
7. Access a proctored assessment, complete the assessment, and review results.
8. Access the online SCAFA tool and set up individual assessments by course.

9. Demonstrate the ability to retrieve historical proctored assessment data.
10. Discuss proctored assessment results.
11. Discuss the process for remediation.
12. Identify group strengths and weaknesses.
13. Identify data that will be reported to the class, in course meeting minutes, in end of course evaluation meeting minutes, and faculty meetings.

Methods of Instruction:

1. Discuss ADN curriculum and aligned SCAFA curriculum plan
2. Group discussion
3. Group activities
4. Interactive online activities
5. Handouts
6. Audiovisual materials

Agenda:

Day 1:

0800-1000	Overview of Goal, Purpose, Learning Outcomes, Learning Objectives
	Overview of ADN curriculum and aligned SCAFAs by Course
1000-1015	Break
1015-1200	Interactive Activity
	SCAFA Website
	Review of Educator Resources, Orientation, and Training Resources
1200-1300	Lunch

1300-1345	Review Student Orientation and Tutorials
	Review Tutorial Modules and Assessments by Course
1345-1400	Break
1400-1530	Complete a Tutorial Module Lesson, Beginning Assessment and
	Advanced Assessment
1530-1600	Discussion
1600-1630	Wrap Up and Plan for Day 2

Day 2:

0800-0830	Re-Cap Day 1
0830-1000	Review Practice Assessments by Course
1000-1015	Break
1015-1200	Interactive Activity
	SCAFA Website
	Complete Practice Assessment and Review Results
1200-1300	Lunch
1300-1345	Review Proctored Assessments by Course
1345-1400	Break
1400-1530	Complete a Proctored Assessment and Review Results
1530-1600	Discussion
1600-1630	Wrap Up and Plan for Day 3

Day 3:

0800-0830	Re-Cap Day 2
0830-1000	Review Remediation Process by Course
1000-1015	Break
1015-1200	Interactive Activity
	SCAFA Website
	Review Group and Individual Results
1200-1300	Lunch
1300-1330	Interactive Activity
	Develop a Remediation Plan using Results
1330-1345	Break
1345-1415	Data-Driven Decision Making
1415-1430	Dissemination of Data
1430-1500	Discussion
1500-1600	Interactive Activity
	Data-Driven Decision Making and Dissemination of Data
1600-1630	Wrap Up and Evaluation

Handouts:

Power Point Handout

Supplemental Computer-Assisted Formative Assessment Seminar

Jennifer Sugg, RN, MSN, CCRN

Slide 1: This profession development seminar is based on the results of the study performed regarding nurse educators' perceptions of SCAFA. Provide a hard copy and electronic copy of the study to all participants.

Overview

- Goal
- Purpose
- Learning Outcomes
- Learning Objectives

Slide 2: Review handout with goal, purpose, learning outcomes, and learning objectives.

SCAFA ADN Curriculum Plan

- SCAFA by course
  - NUR 111
  - NUR 112
  - NUR 211
  - NUR 114
  - NUR 113
  - NUR 212
  - NUR 213

Slide 3: Refer to SCAFA Curriculum Plan Handout

Refer to Nursing Student Manual (Use Elmo to show Policy)

This plan incorporates tutorial, practice, and proctored assessments.

SCAFA

- Educator Resources
- Orientation
- Training Resources

Slide 4: Let's grab a laptop and log into the SCAFA website. We are going to review some key components of the SCAFA tool that are available to you and the students 24/7.

Main page, review all tabs: Faculty Home, Products, Results, and Users.

Faculty Home: Dashboard

Products: All products that are available by class; you can view students enrolled by viewing the roster. If a student drops or is academically unsuccessful this is where you will remove them from the roster. The product code for the class will be on this tab as well.

Results: This is where you can obtain group results, individual results, and individual transcripts for test counseling.

Users: This is where login information and roles are managed.

Bottom right: Integration Resources

This tab provides information related to the RN review modules and assessment information including recommended time for assessments

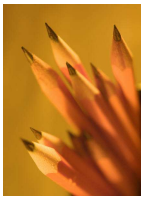
In addition, there are a variety of remediation templates available for use.

Middle of page: How To?

This tab includes orientation, training, and customer support information

Student Orientation & Tutorials

- Student Orientation
  - Covered in NUR 111
- Tutorials by Course
  - Lessons/Modules
  - Beginning Assessments
  - Advanced Assessments



Slide 5: Keep your SCAFA curriculum plan at hand, we will refer to this handout throughout the training session.

Student Orientation is provided in NUR 111, however students and faculty have access to this information 24 hours a day, seven days a week.

SCAFA Website: Review Student Orientation and Tutorials.

How to? Review each tab.

Remind nurse educators that this is the only strategy that we have to provide students with computerized testing for NCLEX-RN preparation.

Tutorials are designed to help students think like a nurse and practice test-taking strategies. Tutorials include a lesson, beginning test, and advanced test. Beginning tests should be used during the 1st year of the ADN program; advanced tests should be used during the second year as noted on the SCAFA curriculum plan.

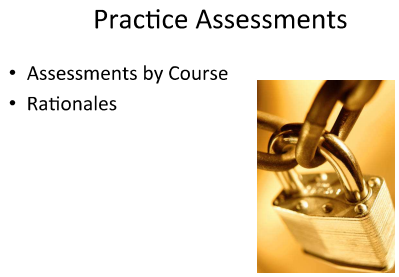
Review Tutorial Modules and Assessments by Course: Pick one module and assessment to review with group as an example.

After lunch, you will complete a tutorial lesson, beginning assessment, and an advanced assessment to get an idea of the student's role in this process.

After lunch complete assessments.

Discussion

Wrap up and provide plan for day 2.



Slide 6: Review the SCAFA practice assessments by course (handout).

Online practice assessments are informal and unsupervised assessments that are designed for learning. Practice assessments can be accessed as many times as the student would like. Rationale for each assessment can be turned on or off. The nursing faculty has elected to turn rationales off and the students must achieve a score of 78%. Rationales can then be turned on once the due date has passed. This will allow the student the opportunity to go back into the assessment and read the rationales for each answer.

Break

Go to SCAFA website.

Review practice assessments.

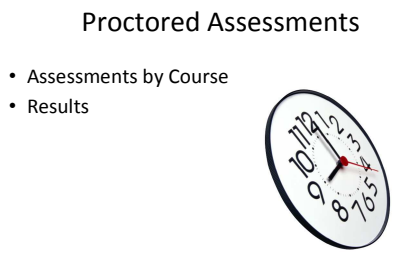
Preview of the assessment is available (assessment topic list is available in Integration resources).

Enable/Disable Assessment and Rationales: Rationales for Practice assessments should be turned off initially. Students must score a 78% on each assessment. Once the due date for the assessment has been reached, rationales should be enabled for individual

review. According to the data obtained from nursing faculty, the faculty indicated the students worked harder and put more effort into the assessments when the rationales were turned off. Refer to data obtained from the study regarding rationales.

Pick a practice assessment, complete the assessment and review your results.

Lunch



Slide 7: Review proctored SCAFA by course (handout).

Proctored assessments are timed and supervised by nursing faculty. The assessments are standardized and compare students' performance to other students nationwide.

Timed assessments (Integration resources)

Discuss proctored assessments by course and how to locate the number of questions and amount of time to allow for each assessment.

Break

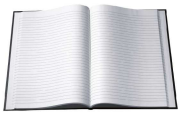
Complete a proctored assessment and review results.

Discussion

Wrap up and day 3.

Remediation

- Remediation by Course



Slide 8 Remediation: The My Results tab provides students with an assessment report that outlines topics to review and shows the student where to find the content to remediate. In addition, the students can perform a focused review after every practice or proctored assessment by creating a plan to study content and practice application exercises. Provide information from study literature review and results regarding remediation.

Review SCAFA remediation by course (handout).

SCAFA website

Review Group and Individual Results

Lunch

Develop a remediation plan using results (group or course/individual).

Data Driven Decision-Making

- Results

Slide 9: Data-Driven Decision Making

Review information obtained from the literature and document review regarding this topic. Discuss the gaps found in the course and faculty meeting minutes and review how data has been used in the past.

Discuss how data should be used moving forward. Please address or review areas of weakness with current group of students. This data should be used proactively rather than retrospectively.

The plan is to collect three years worth of data and perform additional studies to see if there is a correlation between assessments, attendance, course grades, and NCLEX-RN outcomes.

Dissemination of Data

- Class
- Course Meeting Minutes
- End of Course Evaluation
- Faculty Meeting

Slide 10: Class: Review the group results with the class. This provides them with information from the educators and reinforces the importance of preparing for the NCLEX-RN and taking the assessments seriously.

Group results for practice and proctored assessments should be included in the

Course Meeting Minutes:

Identify the SCAFA tools used, identification of strengths/weakness, and action taken.

Identify ‘at risk’ students/groups, collaborate to engage and retain student/group. This could include clinical post conferences presented by the students to strengthen weak areas.

End of Course Evaluation and Faculty Meetings:

Discuss these results in the evaluation meeting, obtain feedback from student representatives and include in meeting minutes.

Provide department chair with results, actions taken, and an electronic copy of the minutes.

Wrap Up

Evaluation of Seminar

Comprehensive SCAFA Curriculum Plan

Course	Tutorial Recommended	Tutorial Required	Practice Assessments	Proctored Assessments	To Do
NUR 111 (16 wk)		**Getting Started: Steps to Success (Orientation)** Welcome to ATI How to take Proctored Assessments How to take Practice Assessments How to use Tutorials How to access Results & Remediate **Nurse Logic All Beginning Students** Knowledge & Clinical Judgment Nursing Concepts Priority Setting Frameworks Testing & remediation	Self Assessment Inventory Web Nutrition Practice A Fundamentals Practice A Rationales off 78% Score required on Fundamentals and Nutrition	Critical Thinking Entrance Fundamentals Fundamentals requires a Level 2 Proficiency Students not meeting the Level 2 proficiency must complete remediation which consists of a practice assessment – rationales off with a score of 90% and a detailed plan for remediation in a word document along with copy of results placed in ADN Portfolio	Set up Moodle dropbox for transcript during last week of class to demonstrate completion of assessments Apply 1% of course grade to this requirement in course syllabus Provide the class with an overview of proctored assessment results, tie into learning outcomes Report issues and proctored assessment results in course meeting minutes and at the end-of-course evaluation, include a detailed list of weaknesses (under 70%)
	Nurse Logic	**Learning**	Fundamentals B		Moodle

NUR 112 (8 wk)	**Review:** Knowledge & Clinical Judgment Nursing Concepts	**System RN Practice** Communication Pharmacology Fundamentals 1 (pull information forward – review) Endocrine (new)	Rationales off 78% Score Required		dropbox for course transcript Syllabus 0.5% of course grade Report issues and practice assessment group results in course meeting minutes and end-of-course evaluation, include a detailed list of weaknesses
NUR 211 (8 wk)	**Nurse Logic Review:** Priority Setting Frameworks Testing & remediation	**Learning System RN Practice** Medical Surgical: Renal & Urinary Medical Surgical: Musculoskeletal (Review) Medical-Surgical: Respiratory (Review) Medical-Surgical: Immune	Nutrition B (pull information forward) Pharmacology A (pull information forward) Rationales off 78% Score Required		Moodle dropbox for course transcript Syllabus 0.5% of course grade Report issues and practice assessment group results in course meeting minutes and end-of-course evaluation minutes, include a detailed list of weaknesses
NUR 114 (10 wk)		**Learning System RN Practice** Gerontology (Review)	Nutrition B (pull information forward) Pharmacology	Mental Health Nutrition Students not meeting the	Moodle dropbox for course transcript Syllabus

		Mental Health 1 Mental Health 2 Fundamentals 2 (Review)	A (pull information forward) Rationales off 78% Score Required	Level 2 proficiency must complete remediation which consists of a practice assessment – rationales off with a score of 90% and a detailed plan for remediation in a word document along with copy of results placed in ADN Portfolio by the student	0.5% of course grade Report issues and proctored assessment group results in team meeting minutes and end-of-course evaluation minutes, include a detail list of weaknesses
NUR 113 (8 wk)	**Nurse Logic** Knowledge & Clinical Judgment Nursing Concepts	**Learning System RN Practice** Medical Surgical: Cardiovascular & Hematology (Review) Pharmacology (Review) Maternal Newborn 1 Nursing Care of Children 1 Maternal Newborn 2	Medical Surgical Online Practice B (Pull information forward) Rationales off 78% Score Required	Maternal-Newborn Pharmacology Students not meeting the Level 2 proficiency must complete remediation which consists of a practice assessment – rationales off with a score of 90% and a detailed plan for remediation in a word document along with copy of results placed in ADN Portfolio by the student	Moodle dropbox for course transcript Syllabus 0.5% of course grade Report issues and proctored assessment group results in team meeting minutes and end-of-course evaluation minutes, include a detail list of weaknesses
NUR 212 (8 wk)	**Nurse Logic** Priority Setting	**Learning System RN Practice**	Pharmacology B	Nursing Care of Children	Moodle dropbox for course

	Frameworks Testing & remediation	Medical Surgical Oncology Leadership Nursing Care of Children 2 Community Health Medical Surgical: Dermatological	Rationales off 78% Score Required	Leadership Students not meeting the Level 2 proficiency must complete remediation which consists of a practice assessment – rationales off with a score of 90% and a detailed plan for remediation in a word document along with copy of results placed in ADN Portfolio by the student	transcript Syllabus 0.5% of course grade Report issues and proctored assessment group results in team meeting minutes and end-of-course evaluation minutes, include a detail list of weaknesses
NUR 213 (16 wk)		**Learning System RN <u>Final</u>** NCLEX Final Communication Final Leadership Final Maternal Newborn Final Nursing Care of Children Final Medical Surgical Final Community Health Final Mental Health Final Pharmacology Final	Targeted Medical Surgical Cardiovascular Targeted Medical-Surgical: Respiratory Targeted Medical-Surgical: Renal & Urinary Targeted Medical-Surgical: Gastrointestinal Targeted Medical-Surgical Neurosensory and Musculoskeletal Targeted	Medical-Surgical Critical Thinking Exit (no remediation required) RN Comprehensive Predictor Students not meeting the Level 2 proficiency must complete remediation which consists of a practice assessment – rationales off with a score of 90% and a detailed plan for remediation	Moodle dropbox for course transcript Syllabus 2.5% of course grade (Major requirement and investment of time for remediation) Report issues and proctored assessment group results in team meeting minutes and end-of-course evaluation minutes, include a detail list of weaknesses

(List of review assessments provided at the end of NUR 212 for students to use over the break if they choose)	Medical-Surgical Immune Targeted Medical Surgical Endocrine Targeted Medical Surgical Fluid, Electrolytes & Acid Base *Align with course content for review Rationales off 78% score required (List of review assessments provided at the end of NUR 212 for students to use over the break if they choose)	in a word document along with copy of results placed in ADN Portfolio by the student The RN Comprehensive Predictor requires a predictability score of 90%; a repeat assessment is required for anything below 90% (no rounding accepted) And a detailed, written study/NCLEX-RN success plan submitted via word document by the student

Evaluation

SCAFA Seminar

Date:

Please evaluate the quality of the seminar by completing this evaluation. For each question circle the number that best represents your view:

1 = No 2 = Somewhat 3 = Yes, definitely

Your specific comments and suggestions for improvement are most appreciated, especially for those items you marked "No" or "Somewhat".

Part 1: Seminar Content

1. Were the learning outcomes clear and realistic? 1 2 3

   Comments/suggestions:

2. Were the learning objectives clear and realistic? 1 2 3

   Comments/suggestions:

3. Was the material relevant and valuable to you? 1 2 3

   Comments/suggestions:

4. Was the material presented in an organized manner? 1 2 3

   Comments/suggestions:

5. Was there an adequate amount of time allotted to each topic? 1 2 3

   Comments/suggestions:

6. Were the interactive sessions throughout the seminar helpful? 1 2 3

Comments/suggestions:

7. Did the instructional materials and aids used enhance the the learning process? 1 2 3

   Comments/suggestions:

Part 2: Presenter Skills

1. Was the presenter professional in appearance and speech? 1 2 3

   Comments/suggestions:

2. Did the presenter have expert knowledge of the topic? 1 2 3

   Suggestions/comments:

3. Did the presenter cover the content adequately in the allotted time? 1 2 3

   Suggestions/comments:

Part 3: Overall Seminar

1. Was the program agenda well planned (for example, allowing enough time for breaks and lunch)? 1 2 3

   Suggestions/comments:

2. Will you be able to apply what you have learned in your role as a nurse educator? 1 2 3

3. How do you rate the seminar overall? 1 2 3

Suggestions/comments:

Thank you for completing the evaluation!

Appendix B: Permission Request

I am writing to request permission to conduct research involving document review and a face-to-face interview of nurse educators in the associate degree nursing program. The purpose of this research project is to explore nurse educators' perceptions regarding supplemental computer-assisted formative assessment. This is a research project that is being conducted through Walden University for the purpose of completion of my doctoral degree.

Participation in this study is voluntary. The participants may choose not to participate and may withdraw at any time.

The data collection procedure involves document review and face-to-face interviews. A consent acknowledgement will be provided in an email to all nursing faculty. Appointments will be made at the nurse educators' convenience. The responses will be anonymous and confidential. No identifying information such as an IP address or email address will be collected for distribution. The results of this study will be used for scholarly purposes only and may be shared with Walden University representatives.

If you have any questions regarding this study please contact me via email [redacted] or by phone [redacted]. Before conducting research and contacting faculty members this research proposal will be approved by Walden University and the Institutional Review Board.

Sincerely,

Jennifer Buehler Sugg

Appendix C: Interview Protocol

Time:
Date:
Place:
Interviewer: Interviewee:
Position of Interviewee:

Review previously (electronically) signed consent form. The interview will take approximately one-and-a-half hours.

Purpose: This is a research study designed to explore nurse educators' perceptions of supplement computer-assisted formative assessment as a strategy for NCLEX-RN success within one ADN program.

Data and Sources: Data will be obtained from course documents, program documents, and face-to-face interviews.

Confidentiality: The data obtained from each participant will be labeled "Participant A", etc. No personal information will be disclosed. All data will be kept confidential and secure for five years.

Interview Questions, Observations, and Reflections

1. Do you currently utilize supplemental computer-assisted formative assessment in your courses as a strategy for NCLEX-RN preparation? If the answer is yes, identify the course and the assessments utilized.

2. How long have you been utilizing supplemental computer-assisted formative assessment for NCLEX-RN preparation in your courses?

3. What do you perceive are the challenges associated with the use of supplemental computer-assisted formative assessments for NCLEX-RN preparation?

4. What do you perceive are the benefits associated with the use of supplement computer-assisted formative assessments for NCLEX-RN preparation?

5. How do you assess and evaluate student use of supplemental computer-assisted formative assessment and remediation?

6. Based on your experiences, do you perceive student remediation related to supplemental computer-assisted formative assessment to be effective? Why or why not?

Please note that remediation currently consists of review of the "Individual Performance Profile" for any proctored assessment with a score below a "Level 2 Profiency" and an assigned practice assessment with a score of 90% or greater within 1 week.

7. What types of data are obtained from the use of supplemental computer-assisted formative assessment and how are these data utilized?

8. Do you perceive that supplemental computer-assisted formative assessments are an effective strategy for NCLEX-RN preparation? For NCLEX-RN success?

Optional: Please add any additional information regarding supplemental computer-assisted formative assessments as a strategy for NCLEX-RN preparation that was not addressed in the questions above.

Thank participant for cooperation and participation in this interview. Assure the participant of confidentiality of responses and the potential for future interviews and appointments to discuss preliminary findings (follow up questions via email).

Appendix D: Themes

Theme		Comment	Location
Lack of Consistency	Throughout	Visible throughout responses and documents	I.Q. 3 I.Q. 4 I.Q. 5 I.Q. 6 I.Q. 7 I.Q. 8 Optional Course Evaluation End of Course Evaluation Faculty Meeting Minutes
Attitudes	Student/Faculty Positive Negative	Do not take seriously Understand importance Accountability Lack of effort/motivation (Time stamp) Online, accessible Remediation: Ineffective – frustration (Time stamp) No buy –in (engagement) from students/faculty No effort to use unless directed by policy/course	I.Q. 3 I.Q. 4 I.Q. 5 I.Q. 6 I.Q. 8 Course Evaluation (Chart) End of Course Evaluation Minutes (Chart)

		requirement	
Process	Student/Faculty Buy–in Consistency Knowledge	Per Policy only No formal process for use of all available tools and student driven remediation with faculty oversight Review of transcript for completion Group Analysis vs individual Remediation: Ineffective Is not student driven or overseen by faculty Data collection: varies course to course, no overall program process Data reviewed retrospectively	I.Q. 1 I.Q. 2 I.Q. 5 I.Q. 7 I.Q. 8 Optional Question Course Evaluation (Chart) End of Course Evaluation Minutes (Chart)
Resource Allocation	Room Computers Electrical outlets	Availability of computer rooms for lengthy proctored assessments (1.5 -3 hours) Lack of electrical outlets available in nursing classrooms for laptop use.	I. Q. 3
Training & Preparation	Student/Faculty	Orientation (NUR 111) Student training and	I.Q. 1 I.Q. 2 Course

		orientation documents available online Initial Faculty training in 2008, no formal process for faculty training currently (in writing). New employees have learned 'on the job' Online training resources available	Meeting Minutes
Data-Driven Decision Making	Student Course Curriculum Program	Students receive individual reports to use for remediation Group scores and individual scores are available to faculty members Data is used to identify course/curriculum strengths and weaknesses – increase rigor Benchmarking Individual, program, national Data reviewed retrospectively; decisions made retrospectively which will impact the next cohort	I.Q. 1 I.Q. 7 End of Course Evaluation Course Evaluations

Appendix E: Non-Participant Peer Review

University of MOUNT OLIVE

January 5, 2015

RE: Ms. Jennifer Sugg
Peer-Debriefing of Dissertation Data

To Whom It May Concern:

I have been oriented to and extensively reviewed all the data collected by Ms. Sugg. We have discussed the guiding principles and theoretical assumptions in her qualitative research proposal, and upon reviewing her qualitative data, I find that her collected data exposed several themes that answered her research questions. Moreover, I concur with her preliminary findings that the associate degree nursing faculty will need a delineated policy or protocol in place in order to be compliant, and implement her proposed curriculum plan for the use of supplemental computer-assistive assessment tool.

It was a pleasure to review Ms. Suggs' qualitative data as a fellow nursing education colleague – there was no compensation for my review. If you have any further questions, feel free to contact me.

Kind Regards,

Joy Kieffer, PhD, RN, CCTN
Division Chair and Assistant Professor of Nursing
Chair – Institutional Review Board
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