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The Development of a Faculty/Peer Mentoring Program for First Semester Baccalaureate Nursing Students

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Doctor of Nursing Practice Capstone Project

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The Development of a Faculty/Peer Mentoring Program for First Semester Baccalaureate Nursing Students

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Executive Summary

The Development of a Faculty/Peer Mentoring Program
for First Semester Baccalaureate Nursing Students

Problem

The employment of Bachelor of Science in Nursing (BSN)-prepared nurses at the bedside in clinical areas is necessary to realize improved care outcomes. Studies have suggested that an increase in the proportion of BSN-prepared nurses is associated with decreased patient mortality and morbidity (Aiken, Clarke, Sloane, & Silber, 2003; Estabrooks, Midodzi, Cummings, Ricker, & Giovannetti, 2005). The increased retention of BSN students will ultimately provide for an increased proportion and larger workforce of BSN-prepared nurses. One of the problems identified in a needs assessment of the chosen study population was the lack of dedicated resources targeted to increase the academic performance of "at risk" BSN students. Based upon this assessment, the following question about the population, intervention, comparison, and outcome (PICO) was developed: Will the use of an evidence-based (EBP) teaching intervention improve the learning outcomes and retention of BSN students "at risk" for academic failure?

Purpose

The purpose of the Capstone Project was to demonstrate nurse-sensitive outcomes in the educational setting. These outcomes have the potential to ultimately impact clinical practice and patient care outcomes.

Goals

The goals of the Capstone Project were to improve learning outcomes and increase retention of first-semester BSN students "at risk" for academic failure.

Objectives

The objectives of the Capstone Project included improvements in knowledge retention/application and academic/skills performance of first-semester BSN students.

Plan

The DNP Project Process Model (White & Zaccagnini, 2011) was used as the guideline for the Capstone Project. Steps I & II: Needs assessment was completed after identifying a need within the BSN student population to address academic performance; problem statement written; and systematic literature review completed. Step III: Goals/objectives/mission statement developed. Step IV: Theoretical underpinnings chosen to support the Capstone Project. Step V: Work planning was done including milestones/timeline/budget/writing of the project proposal. Step VI: Logic Model (Zaccagnini & White, 2011) developed and evaluation planning done. Step VII: IRB approval obtained from Regis University and the University chosen for the site of the study. Mentoring intervention was implemented and serial data collected.

Outcomes and Results

A total of 38 students completed the intervention. Seven "at-risk" students were identified within this population. Control Group 1 ("at risk" students from prior fall semester) and Control Group 2 ("at risk students from prior spring semester) were utilized for comparison. Data analysis revealed no significant differences in academic performance between intervention group and control groups ($p > .05$). However, data analysis within the intervention group revealed significant academic improvement in serial exam grades during- and post-intervention ($p < .05$). Students and peer mentors also expressed appreciation for the mentoring experience.

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The Development of a Faculty/Peer Mentoring Program for First Semester Baccalaureate Nursing Students

The Doctor of Nursing Practice (DNP) Capstone Project is the final scholarly project in the journey towards the DNP degree. The project should demonstrate synthesis of course content that includes research and theory (Magnan, 2010). According to Edwardson (2011), "Capstone projects are designed to solve practice problems or inform practice, with an emphasis on scholarly practice and outcome evaluation" (p. xxi). DNP students who are advanced practice nurses may choose an issue that focuses on their area of practice (Magnan, 2010). The area of practice informing the Capstone Project was undergraduate nursing education. The topic focus was baccalaureate nursing students at risk for academic failure.

Problem Recognition and Definition

The population chosen for the DNP Capstone Project was students enrolled in the Bachelor of Science in Nursing (BSN) program at a four-year university located in the south central portion of the United States. The University offers the only baccalaureate nursing program in their general area of the state. There is an overwhelming majority of registered nurses (RNs) with an associate's degree in the state where the study was conducted, and RNs with a baccalaureate degree are underrepresented.

The employment of BSN-prepared nurses at the bedside in clinical areas is necessary to realize improved care outcomes. Studies have suggested that an increase in the proportion of BSN-prepared nurses is associated with decreased patient mortality and morbidity (Aiken, Clarke, Cheung, Sloane, & Silber, 2003; Estabrooks, Midodzi, Cummings, Ricker, & Giovannetti, 2005). The increased retention of nursing students in the baccalaureate program will

ultimately provide for an increased proportion of BSN-prepared nurses in the area and provide for a larger workforce of BSN-prepared nurses in the state.

According to McGann and Thompson (2008), there is a lack of research focused on at-risk nursing students. The sub-group of interest in the BSN student population for the Capstone Project was defined as first semester BSN students "at-risk" for academic failure. One of the problems identified in a needs assessment was the lack of dedicated resources targeted to increase the academic performance of "at-risk" BSN students. Based upon the needs assessment of the chosen population, the following question about the population, intervention, comparison, and outcome (PICO) was developed:

Will the use of an evidence-based practice (EBP) teaching intervention improve the learning outcomes and retention of "at risk" nursing students in an undergraduate bachelor of science in nursing (BSN) program?

P – At risk nursing students in an undergraduate BSN program

I – EBP teaching intervention

C – Existing teaching/remediation methods

O – Improved learning outcomes and retention

In order to practice evidence-based nursing, a properly formulated PICO question must be developed (Schadewald, 2011).

The PICO question identified for the Capstone Project specifically relates to the DNP practice role of nurse educator. "Given the complexity of health care, it is clear that master's level education will no longer be sufficient to educate future nurses" (Riley, 2011, p. 404). According to Douglas (as cited in Riley, 2011), "advanced practice nurses who are doctorally

prepared and teach in baccalaureate and higher degree programs can help to transform the education of nurses who will be practicing at the highest level of practice" (p. 402-403).

The investigator for this project is a master's prepared DNP student with an advanced practice license who currently practices in the academic setting. The outcomes chosen for the problem statement were geared toward the context and practice setting of baccalaureate nursing education. This project successfully incorporated aspects of clinical practice, academics, and research for the DNP student as investigator with mentoring by doctorally-prepared DNP clinical mentor, DNP Capstone Chair, and DNP faculty. "It is essential that experts in clinical practice, academia, and research collaborate to facilitate changes in complex systems that lead to healthier outcomes for all of society" (Riley, 2011, p. 406). Theoretical frameworks chosen for the Capstone Project included Watson's Caring Theory (1979), Knowles' Theory of Andragogy (1980), and Bandura's Social Learning Theory (1977).

The outcomes chosen for the Capstone Project included improved learning outcomes as defined by knowledge retention and application of content on module exams, comprehensive final exam, performance exams, and successful completion of Health Assessment course, and retention of BSN students "at risk" for academic failure. The purpose of the Capstone project was to enable the investigator to demonstrate nurse-sensitive outcomes in the educational setting. These outcomes have the potential to ultimately impact clinical practice and patient care outcomes. According to the American Nurses Association (2011), "patient outcomes that are determined to be nursing sensitive are those that improve if there is a greater quantity or quality of nursing care" (para. 1).

Review of Evidence

A systematic review of the evidence (SRE) was done to ascertain supportive literature for an evidence-based intervention for the chosen population (see Appendix A). The literature was also used to identify theoretical frameworks, conceptual models, measurement tools, and methods to define study variables. A total of 31 articles were found to be relevant for inclusion in the SRE. Ferguson and Day (2005) conducted a review of the nursing literature on EBP and nursing education strategies. The review contained descriptive studies and demonstrated a lack of quantitative and qualitative evidence to support nursing education. The authors found that most knowledge was based upon experience and practice, and they recommended research that demonstrates effective teaching approaches and strategies for nursing education (Ferguson & Day, 2005).

Faculty perceptions of effective retention strategies are important to consider in relation to the chosen intervention for the Capstone project. Baker (2010) conducted a cross-sectional study of randomly sampled nursing programs to investigate types of retention strategies used in undergraduate nursing programs, assess faculty rating of effectiveness of strategies, and to determine if a relationship existed between specific strategies employed and type of nursing program (BSN or ADN). The author identified 14 retention strategies from the literature. Three strategies were rated as used consistently and "very effective" by the faculty respondents. These strategies included timely feedback on tests and clinical performance, and faculty availability. Two strategies were rated as least used but "effective" by the faculty respondents. These strategies were organized study groups and peer mentoring. Baker indicated strong evidence in the literature that supported study groups and peer mentoring.

Several of the articles reviewed in the SRE supported the use of mentoring as a tool for the recruitment, remediation, and retention of nursing students. Dorsey and Baker (2004) conducted a quantitative integrative review of the literature for evidence regarding the use of mentoring for undergraduate nursing students. The authors' search yielded 16 articles relevant to research on mentoring in undergraduate nursing programs. Dorsey and Baker found that mentoring was positively related to student academic success and retention. Findings in all 16 studies supported the use of mentoring to improve student retention rates and satisfaction (Dorsey & Baker, 2004).

Robinson and Niemer (2010) conducted a quantitative, non-randomized, prospective cohort study on the use of peer mentoring with the aim of improved retention and academic outcomes in BSN students at risk for failure. Using course grades to determine outcome differences, the authors found that students in the intervention group scored significantly higher than the control group on summative and final grades. The study findings supported the implementation of a peer mentor tutor program (Robinson & Niemer, 2010). Higgins (2004) conducted a similar study to determine if a relationship existed between the use of a peer-tutoring program and academic performance and retention of at-risk nursing students. Higgins found a statistically significant relationship between academic performance and retention and participation in the peer-tutoring program. The study findings supported the implementation of a peer-tutoring program (Higgins, 2004). The author concluded that early assessment and effective interventions can help at-risk students succeed and help to decrease the attrition that contributes to the nursing shortage.

Gilchrist and Rector (2007) conducted a systematic review of the literature to identify best practice strategies to maximize outcomes for diverse and disadvantaged nursing students. The authors identified several strategies leading to improved retention and graduation rates including: Nurse tutors, study groups, faculty development in cultural competence, peer support groups, racial and ethnic role models, and services related to study and reading skills, time management, test and note-taking, and NCLEX review. Gilchrest and Rector found the use of support groups and peer mentors indispensable. The authors cite the need for nursing programs to attract diverse students through early recruitment. These authors concluded that universities should make a commitment to retention and graduation of students upon their entrance to the nursing program (Gilchrest & Rector, 2007).

Four of the articles from the SRE were found to include theoretical frameworks, conceptual models, and/or methodologies that were useful for the Capstone Project. All, Huycke, and Fisher (2003) conducted a qualitative descriptive study on the use of concept maps as an instructional tool for nursing education. Strengths of the study included the use of concept maps as a teaching/learning strategy and the use of behavioral change and learning theory (Bandura's Social Cognitive Theory). Concept maps were found to be useful as a strategy to develop student interaction and critical thinking and as a remediation strategy as part of a multi-faceted approach (All et al., 2003).

March and Ambrose (2010) conducted a retrospective descriptive study of undergraduate BSN students. The authors utilized a multi-faceted approach with General Systems Theory as the conceptual framework. Methodology included computerized exams, remediation, and study plans. Study findings indicated improved measurable outcomes from the multi-faceted approach.

Pullen, Murray, and McGee (2007) conducted a qualitative descriptive study to discuss the use of care groups and the faculty role as mentor. Care groups included novice nursing students in their first semester of ADN nursing program and faculty mentors. The primary outcome measure sought was to decrease student anxiety and demonstrate improvement in acquisition of psychomotor skills. The authors found that care groups and the Care Group Model may be beneficial to promote skills acquisition in novice nursing students. The authors utilized theoretical frameworks by Watson (1979), Knowles (1980), and Bandura (1977). These frameworks were chosen as a basis for the theory-driven EBP implementation of the Capstone Project.

Morrison, Free, and Newman (2002) conducted a qualitative study to interview nursing school administrators who implemented a progression and remediation policy based on standardized exam scores. The authors found that the use of a benchmark that pinpoints students' subject content weaknesses was an invaluable asset in designing remediation programs. This study was useful for exploration of methodology for measuring outcomes of policy implementation.

Two of the articles from the SRE were found to be useful for the Capstone Project with regard to statistical measurement methodology and/or indicators for "at risk" student population. Stuenkel (2006) conducted a descriptive study to explore predictive value of standardized exams and performance to identify students "at risk" for failure. Stuenkel performed discriminant analyses to examine indicators at various points in the curriculum. The strengths of this study were the statistical analysis of data at three points in the nursing curriculum and indicators for "at-risk" students.

Colalillo (2007) conducted a quasi-experimental design study to develop and evaluate a formal, structured, faculty-directed mentoring program to promote retention of nursing students in their first clinical nursing course. Outcomes were measured by attendance in the mentoring program, student satisfaction, and academic performance. Study findings indicated improvement in retention rates. Strengths of the study included methodology and demonstrated outcomes that were consistent with previous studies.

Review of the literature demonstrated strong evidence in favor of faculty/peer mentoring programs for improvement of academic outcomes and retention of "at risk" nursing students. (Baker, 2010; Colalillo, 2007; Dorsey & Baker, 2004; Gilchrist & Rector, 2007; Higgins, 2004; Pullen, Murray, & McGee, 2007; Robinson & Niemer, 2010). The literature supported the introduction of retention efforts early in the nursing program (Colalillo, 2007; Gilchrist & Rector, 2007; Higgins, 2004). Nursing education strategies found to be useful were programs related to study skills, time management, test-taking skills, and the use of concept maps as a part of a multi-faceted approach to improve academic outcomes (All, Huycke, & Fisher, 2003; Gilchrist & Rector, 2007; March & Ambrose, 2010). Theoretical frameworks found in the literature that supported the chosen evidence-based intervention were Watson's Caring Theory (1979), Knowles' Theory of Andragogy (1980), and Bandura's Social Learning Theory (1977) (as cited in Pullen, Murray, & McGee, 2007).

Project Plan and Evaluation

Market/Risk Analyses

An analysis of the strengths, weaknesses, opportunities, and threats (SWOT), as shown in Table 1, was conducted in regards to the Capstone Project. The factors which might have

impacted successful completion of the Capstone Project included the following constraints: Stakeholder buy-in, budget, timeframe, classroom space, existing culture, faculty workload, and Institutional Review Board (IRB) approval. Strategies to increase the likelihood of completion of the Capstone Project included discussing the project proposal with administrative personnel at the chosen site of implementation early in the process of project development, use of existing classroom space and faculty, collaboration with stakeholders, and timely submission of IRB applications.

Table 1

SWOT Analysis

Strengths
• Evidence-based intervention • Educational setting • Faculty driven • Peer input included • All students receive intervention • Use of existing classroom space • Additional funding not required • Successful implementation could improve academic outcomes • Successful implementation could potentially improve care outcomes • Stakeholders include: University, administration, faculty, staff, students, local health care organizations, nursing workforce, patients in health care setting • Project team includes: DNP student, DNP clinical mentor, DNP Capstone Chair, DNP faculty advisor, DNP course faculty, statistician • Collaboration and development of supportive network

Weaknesses	**Strategies to Overcome Weaknesses**
• Limited time for intervention	Obtain IRB approval by October 2011
• Limited availability of peer mentors	Engage interest of potential mentors
• Unable to generalize study findings	Apply EBP intervention to specific setting
• Existing culture	Collaborate with stakeholders to elicit interest, support, and cooperation
Opportunities	
• Expand existing baccalaureate nursing program • Student conducted research opportunities • Contracts with health care organizations • Funded by university and health care organizations in the service area • Consultation with local health care organizations interested in obtaining magnet status	
Threats	**Strategies to Overcome Threats**
• Limited student participation	Conduct intervention during lecture
• Stakeholder buy-in	Collaborate with stakeholders
• Lack of administrative support	Collaborate with administration
• Lack of funding to sustain future interventions	Obtain grant monies

The stakeholders included the Project Team, BSN students, nursing faculty, the School of Nursing at the study site, and the Study University. The project team was led by the study investigator (DNP student) with input from DNP Clinical Mentor, DNP Capstone Chair, and DNP Capstone Faculty. Other members of the project team included the peer mentors, statistician, and office support personnel.

Cost/Benefit Analysis

Costs related to the implementation of the Capstone Project were determined based upon existing faculty workload and requirements of the course faculty to obtain doctoral degree for future contract renewal. The costs were determined to be minimal due to use of existing classroom space, faculty, and designated lecture time for implementation of intervention (pedagogical strategies). The benefits of the Capstone Project included collaboration and development of supportive network in the educational setting for faculty and nursing students.

Benefits due to the increased presence of BSN-prepared bedside nurses include potential cost savings in relation to decreases in poor outcomes related to “failure to rescue” and nosocomial infections. Additional potential benefits include ability of organizations to obtain magnet status with increased amount of BSN-prepared nurses in the workforce, increased amount of qualified nursing faculty, increased enrollment of BSN students, and the ability to impact care outcomes through health promotion/disease prevention efforts aimed at individuals, families, groups, and communities. These benefits by far outweigh the costs.

Risk/Benefit Analysis

Risks of the study.

There will be minimal perceived risk to the students who participated in the study intervention. The intervention occurred during regular classroom instruction time, after course faculty's delivery of planned lecture content. To prevent the risk for exposure of personal information, course faculty (study investigator) was solely responsible for coding the data to ensure anonymity of study participants. Study data was stored on a password encrypted computer and backed up to a flash drive that was kept in a locked cabinet with the investigator having the only access. To protect against deductive disclosure, the specific location of the study was documented in general terms in the written capstone report prepared for dissemination of results.

Benefits of the study.

According to the American Association of Colleges of Nursing (AACN) (2006), "schools of nursing provide the research environment for faculty and the next generation of nursing scientists" (p. 8). The Capstone Project occurred in the undergraduate educational setting with the intent to implement an EBP intervention to improve learning outcomes for BSN nursing students. The benefits to the students included being able to contribute to the development of nursing science by participation in the study and allowing publication of the study data. According to the National League for Nursing Accrediting Commission's (NLNAC) Standard 4.6, "the curriculum and instructional processes reflect educational theory, interdisciplinary collaboration, research, and best practice standards while allowing for innovation, flexibility, and technological advances" (2008, p. 4). The nursing program where the intervention occurred is accredited by the NLNAC.

Project Objectives

Mission/Vision of the Capstone Project.

The mission was to implement evidence-based interventions in the undergraduate educational setting in order to improve academic outcomes for baccalaureate nursing students. The vision was to decrease attrition and improve retention of baccalaureate nursing students in order to increase the amount of baccalaureate-degreed nurses in the health care system and ultimately improve patient care outcomes. The core values of the Capstone Project included the promotion of caring, compassion, respect, dignity, collaboration, and health care service excellence.

Goals.

The benchmark targets and advanced practice nursing outcome measures for the Capstone Project included the following goals: Improvement of learning outcomes in first semester baccalaureate nursing students, and increased retention of first semester baccalaureate nursing students. The outcomes that were chosen were based upon a collaborative effort with course faculty, DNP clinical mentor, and DNP Capstone Chair. The focus was to identify measurable outcomes for the chosen study population (sub-group of first semester baccalaureate nursing students "at risk" for academic failure) and study intervention.

The study outcomes, as shown in Table 2, were quantified and measured by the following:

1. Improvement of Knowledge Retention and Application – Measured by knowledge retention and application of content on module exams as compared to similar content on comprehensive final exam (Comparison of earned scores)

2. Improvement in Academic Performance – Serial measurements of Module exam scores and Final Exam scores
3. Improvement in Performance (Skills) – Measured by skill acquisition on Competency Performance Exams
4. Participation in Mentored Sessions – Measured by rates of participation of both "at-risk" students and peers in Health Assessment course
5. Increased Retention – Measured by number of "at-risk" students that successfully completed Health Assessment course as compared to "at-risk" students from previous semesters (Students must achieve an overall grade of 77% or greater to pass the course)
6. Decreased Attrition – Measured by number of students that remained in the Health Assessment course during their first semester in the BSN nursing program as compared to previous semesters

According to Kane and Radosevich (2011), questions regarding sensibility, reliability, validity, responsiveness, burden, and design of the outcomes measures being considered should be done prior to beginning the study. The outcome measures chosen for the Capstone Project met the criteria outlined by these authors.

Table 2

Study Outcomes and Types

Outcomes	Type of Outcome
Improvement on Knowledge Retention and Application (Cognitive)	Short-Term
Improvement in Academic Performance (Grades)	Short-Term
Improvement in Performance (Skills)	Short-Term
Participation in Mentored Sessions	Short-Term
Increased Retention	Long-Term
Decreased Attrition	Long-Term

Evaluation Plan

Logic model.

The conceptual model chosen for the Capstone Project was an adapted form of the Logic Model (Zaccagnini & White, 2011) (see Appendix B). The Logic Model is the required format for the DNP students' Capstone projects at Regis University. Using the DNP Process Model (White & Zaccagnini, 2011) as the guideline for the Capstone Project, the development of the Logic Model occurred during the planning for evaluation (Step VI). The Logic Model contains the components necessary for linking the different parts of the project together and diagrams the sequencing of the project (White & Zaccagnini, 2011). According to Taylor-Powell and Henert (as cited in White & Zaccagnini, 2011), "Logic models all have similar components: inputs, outputs, and outcomes" (p. 479).

Study methodology.

The Capstone Project was a quantitative, non-randomized, prospective descriptive study with a time-series design of outcome measurement from fall 2011 semester and retrospective

data correlation from previous semesters. The study population was sophomore-level nursing students in their first semester of the BSN program at a four-year university located in the south central portion of the United States. The study was conducted during the fall 2011 semester after receiving IRB approval from Regis University and the study university. The study sample size was a convenience sample determined by the number of students enrolled in the Health Assessment course. There were 38 students in the study sample. Using a sample calculator, a sample of 28 students would yield a Confidence Interval of 10.0 with a 95% Confidence Level (Creative Research Systems, 2010). In order to reduce type II error in the Capstone study, sample size was calculated using information by Cohen (1992) and determined to be a minimum of 26-28 students for a power of .80, $a = .05$, and a medium effect size.

The study protocol included the implementation of three faculty/peer mentoring sessions. The first session occurred during class lecture time after module exam #2 and prior to module exam #3; the second session occurred during class lecture time after module exam #3 and prior to module exam #4; and the third session occurred during class lecture time after module exam #4 and prior to comprehensive final exam. These sessions included group study sessions on the following topics: Time management, study habits, and test-taking skills; concept mapping; and critical thinking and knowledge application. The study sessions were faculty-directed and included peer input from upper-level nursing students who demonstrated successful completion of Health Assessment course with grade of "A" in prior semesters.

The study variables, as shown in Table 3, were operationally defined as the following:

1. Faculty/Peer Mentoring Sessions (Intervention included three faculty-directed group study sessions in didactic and clinical lab content for Health Assessment course. Each

session was conducted for 50 minutes at a pre-arranged time with the student cohort. Educational activities integral to these sessions included strategies for time management, study habits, and test-taking skills (first session); concept-mapping (second session); and critical thinking and knowledge application (third session). Each session was preceded by planned lecture content delivered by course faculty.)

2. Improvement in Learning Outcomes and Retention of BSN students in Health Assessment Course (Measured by knowledge retention and application of content on module exams (grades), final exam (grades), performance exams (skill acquisition), and successful completion of Health Assessment course)
3. Participation of "at-risk" students in Proposed Intervention (Measured by number of "at-risk students identified and rate of participation)
4. "At-Risk" Students (BSN students "at-risk" for academic failure as evidenced by module exam scores $\leq$ 80% after completion of first two module exams in first semester Health Assessment course)
5. Previous exposure to course content (BSN students that are repeating the Health Assessment Course due to failure in previous semesters)

Table 3

Study Variables and Types

Study Variables	Type of Variable
Proposed Intervention: Faculty/Peer Mentoring Sessions (guided study sessions in didactic and clinical lab content)	Independent
Improved Learning Outcomes and Retention	Dependent
Participation in Proposed Intervention	Dependent
Previous Exposure to Course Content (Repeating Students)	Confounding

Study intervention.

The study intervention occurred during Health Assessment class on 10/11/2011, 10/25/2011, and 11/29/2011. Each intervention session took place in a classroom setting in the School of Nursing and lasted 50 minutes.

10/11/2011 – Intervention: Faculty/Peer Mentoring Session (50 minutes) – Strategies for time management, study habits, and test-taking skills – Health Assessment Content related to the Cardiovascular and Peripheral Vascular Systems.

10/25/11 – Intervention: Faculty/Peer Mentoring Session – Concept-mapping strategies - Health Assessment Content related to the Musculoskeletal System.

11/29/11 – Intervention: Faculty/Peer Mentoring Session – Critical thinking skills with knowledge application - Health Assessment Content related to the Complete Health Assessment.

Plan for data analysis.

A survey instrument was not used in the Capstone Project. A context-specific database draft was constructed for all data points to be assessed in the Capstone Project (see Appendix C). Study data, as shown in Table 4, was considered in the plan for data analysis.

The chosen statistical measures must be appropriate for the data collected in order to minimize error (Kane & Radosevich, 2011). Study measures and statistical methods for data analysis, as shown in Table 5, included simple descriptive statistics for the nominal data collected. Time-series quantitative data was collected at various intervals during the intervention period, and the statistical tests employed were *t* tests and ANOVA. Retrospective nominal and quantitative data from students in the same class (Health Assessment) from previous semesters

Table 4

Study Data

Study Data
Number of Mentoring Sessions (Intervention)
Number of Participants
Characteristics of Participants (Demographic Data)
Identification of "at risk" students (population sub-group)
Module Exam(s) Scores (sub-group of "at risk" students)
Final Exam Scores (sub-group of "at risk" students)
Performance Exam Scores (sub-group of "at risk" students)
Data from Previous Semester (s) (Characteristics of student population, "at risk" students, exam scores, attrition rate)

(Fall 2010 – Control Group 1 and Spring 2011 – Control Group 2) were included in the data analysis and statistical tests of correlation were employed. The Statistical Software Package

(SPSS) was used for data analyses and reporting was done in aggregate form. Visual displays/representation of study data were constructed through the use of SPSS and included bar graphs and tables.

Table 5

Study Measures and Statistical Methods for Data Analysis

Study Measures	**Statistical Methods for Data Analysis**
Number of Participants and Characteristics of Participants (Demographic Data)	Simple statistical methods for frequency data; Coding for nominal and ordinal data (Code Book)
Serial Measurements of Earned Scores on Module Exams and Final Exam; Performance Exam Scores	Descriptive Statistics for each exam; ANOVA or *t-test* for comparison data; Correlation Analysis
Comparison of Scores related to Content from Module Exams as compared to Similar Content on Comprehensive Final Exam	Statistical methods such as ANOVA or *t-test*; Correlation analysis
Data from Previous Semester(s)	Statistical methods concurrent with same type of data collected from intervention

Several potential threats to validity and reliability, as shown in Table 6, were identified in relation to the Capstone Project. The intervention occurred during regular classroom instruction time, after course faculty's delivery of planned lecture content, to help decrease the attrition rate related to participation in the project. According to Kane and Radosevich (2011), acceptable methods need to be employed to handle missing data. In order to attempt to control for measurement errors related to missing or incomplete data, this data was coded as "missing" and

recorded as such when reporting study results. Data entry, coding, and transcription were done by the study investigator in order to help decrease errors.

Table 6

Potential Threats to Validity and Reliability

Potential Threats to Validity		**Potential Threats to Reliability**
Internal	**External**	
History	Generalizability (Convenience Sample)	Missing data
Maturation	Time	Data entry errors
Subject Selection	History	Coding errors
Experimental Mortality (Attrition)		Transcription errors

There were some anticipated threats to the Capstone Project. These included inability to generalize findings due to choice of convenience sample and small sample size, absence of participants during scheduled mentoring sessions, and time limitations of chosen peer mentors. Reported data accounted for all students enrolled in the course, including those lost to analysis. Anticipated limitations also included remarkable demographic data differences between interventional cohort and retrospective cohorts. The limitations that occurred during the study were addressed and documented as such.

Timeframe

The timeframe for the Capstone Project was depicted in calendar view (see Appendix D). The length of tasks in the DNP Project Process Model (White & Zaccagnini, 2011) included Capstone Project tasks beginning in fall 2010 and ending in spring 2012. The timeframe for completion of the Capstone Project was dependent upon IRB approval and the investigator strived for "exempt" status in order to receive timely IRB approval.

Budget and Resources

Budget and resources were considered for the Capstone Project. Existing faculty and faculty workload as well as existing classroom and laboratory space were utilized for the Capstone Project. By using existing faculty and faculty workload assignments, budgetary concerns were not increased. Study investigator was employed full-time as a faculty member in the BSN program at the study university. This position is contracted with a salary based upon 9 months employment. It is a requirement of the faculty contract to obtain a doctoral degree within four years in order for future contract renewal. With this in mind, budgetary considerations in regards to faculty (study investigator) participation in the Capstone Project are contained within the requirements of the faculty contract. Student mentors participated voluntarily without additional financial compensation. No additional funding sources were required. However, consideration was given in regards to budget and resources necessary to continue and/or replicate the study, including financial compensation for faculty and peer mentors (see Appendix E).

Protection of Human Rights

IRB approval in the form of an expedited review was received from the study university in September 2011 (see Appendix F). IRB approval as "exempt" status was received from Regis University in early October 2011 (See Appendix G). Study investigator (DNP student) received ethics certification after successful completion of the Collaborative Institutional Training Initative (CITI) human research curriculum for social behavioral research investigators. This training was completed prior to initiation of the Capstone Project. Proof of completion in the form of a CITI certificate was submitted to DNP faculty and the IRB committees at Regis University and the study university (see Appendix H).

Provision for informed consent.

Clark and McCann (2005) discuss ethical concerns, such as a lack of meaningful informed consent, which should be addressed when conducting research on students. Although the intervention was a curricular modification (addition), it was necessary to obtain informed consent in order to receive IRB approval from the study university. A script of oral protocols was read to all potential study participants in the presence of the investigator's faculty mentor and DNP clinical mentor at the study university. A debriefing form was given to the students after completion of the project intervention.

Confidentiality of data.

In order to prevent the risk for exposure of personal information, course faculty (study investigator) was solely responsible for coding the data (de-identifying) to ensure anonymity of study participants. Study data was reported in aggregate form. Study data was stored on a password encrypted computer and backed up to a flash drive that was kept in a locked cabinet

with the investigator having the only access. To protect against deductive disclosure, the specific location of the study was documented in general terms (a four-year university located in the south central U.S.) in the written report prepared for dissemination of results.

Additional ethical considerations.

One of the responsibilities related to the protection of human subjects is the principle of Autonomy. Since the study investigator was also the course faculty, students must be treated fairly and without undue influence or "implied" influence. All students in attendance during class lecture time were included in the intervention in order to control for this issue. Existing teaching/remediation methods employed in previous semesters continued to be offered to the students including development of a learning contract with development of learning objectives for the "at-risk" students.

Project Findings and Results

Project Findings by Objectives

1. Improvement of Knowledge Retention and Application – Measured by knowledge retention and application of content on module exams as compared to similar content on comprehensive final exam (Comparison of earned scores)

   A paired-samples *t* test was calculated for the intervention group using SPSS software, as shown in Table 7, to compare the mean exam score of each module exam to the mean exam score of similar content from each module exam contained within the comprehensive final exam. The mean of exam 1 was 74.86 (*sd* = 8.63), and the mean on the exam 1 content contained within the comprehensive final exam was 95.24 (*sd* = 4.64). A significant increase from exam 1 to comprehensive final exam was found ($t = -7.310$, $df = 6$, $p < .01$).The mean of

exam 2 was 70.29 (*sd* = 10.61), and the mean on the exam 2 content contained within the comprehensive final exam was 81.95 (*sd* = 10.01). A significant increase from exam 2 to comprehensive final exam was found (t = -2.632, df = 6, p=.039). The mean of exam 3 was 78.86 (*sd* =7.01), and the mean of the exam content contained within the comprehensive final exam was 86.64 (*sd* = 7.07). A significant increase from exam 3 to comprehensive final exam was found (t = -2.769, df = 6, p = .032). The mean of exam 4 was 81.14 (*sd* =5.01), and the mean of the exam content contained within the comprehensive final exam was 90.68 (*sd* = 3.91). A significant increase from exam 4 to comprehensive final exam was found (t = -3.284, df = 6, p = .017). There was no missing data.

Table 7

SPSS Output: T-Test (Paired Samples: Intervention Group)
Comparison of Module Exam Scores to Final Exam Scores of Similar Content

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Exam_1	.7486	7	.08630	.03262
	FinalExam_Exam1Content	.9524	7	.04643	.01755
Pair 2	Exam_2	.7029	7	.10610	.04010
	FinalExam_Exam2Content	.8195	7	.10013	.03784
Pair 3	Exam_3	.7886	7	.07010	.02650
	FinalExam_Exam3Content	.8664	7	.07074	.02674
Pair 4	Exam_4	.8114	7	.05014	.01895
	FinalExam_Exam4Content	.9068	7	.03912	.01479

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Exam_1 & FinalExam_Exam1Content	7	.519	.232
Pair 2	Exam_2 & FinalExam_Exam2Content	7	.354	.436
Pair 3	Exam_3 & FinalExam_Exam3Conten	7	.443	.320
Pair 4	Exam_4 & FinalExam_Exam4Content	7	-.475	.281

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Exam_1 - FinalExam_Exam1Content	-.20381	.07376	.02788	-.27203	-.13559	-7.310	6	.000
Pair 2	Exam_2 - FinalExam_Exam2Content	-.11669	.11732	.04434	-.22519	-.00819	-2.632	6	.039
Pair 3	Exam_3 - FinalExam_Exam3Conten	-.07779	.07434	.02810	-.14654	-.00904	-2.769	6	.032
Pair 4	Exam_4 - FinalExam_Exam4Content	-.09540	.07686	.02905	-.16649	-.02432	-3.284	6	.017

2. Improvement in Academic Performance – Serial measurements of Module exam scores and Final Exam scores

A comparison of mean exam scores of the intervention group was calculated using SPSS software, as shown in Table 8, to measure improvement in academic performance over time. The intervention sessions occurred after exams 1 and 2 were administered and were completed prior to the comprehensive final exam. Mean exam scores of the intervention group demonstrated improvement with each serial measurement taken after the intervention sessions were begun. There was no missing data.

Table 8

SPSS Output: Comparison of Mean Exam Scores (Intervention Group)

Exams	Mean	N	Std. Deviation	Std. Error Mean	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Exam1	.7486	7	.08630	.03262	.6688	.8284	.60	.84
Exam 2	.7029	7	.10610	.04010	.6047	.8010	.54	.80
Exam 3	.7886	7	.07010	.02650	.7237	.8534	.66	.88
Exam 4	.8114	7	.05014	.01895	.7651	.8578	.76	.90
Final Exam	.8900	7	.03109	.01175	.8612	.9188	.83	.92

An independent-samples *t* test was calculated using SPSS software, as shown in Table 9, to compare the mean exam scores between the intervention group and both control groups combined. No significant difference was found for each of the exam scores: Exam 1 ($t = .904$, $df = 28$, $p > .05$), exam 2 ($t = 1.094$, $df = 28$, $p > .05$), exam 3 ($t = -1.362$, $df = 28$, $p > .05$), exam 4 ($t = -.634$, $df = 28$, $p > .05$), and final exam ($t = 1.162$, $df = 28$, $p > .05$). The means of the intervention group (exam 1: $m = 74.86$, $sd = 8.63$; exam 2: $m = 70.29$, $sd = 10.61$; exam 3: $m = 78.86$, $sd = 7.01$; exam 4: $m = 81.14$, $sd = 5.01$; and final exam: $m = 89.00$, $sd = 3.10$) were not significantly different than the means of the control groups (exam 1: $m = 77.65$, $sd = 6.70$; exam 2: $m = 74.00$, $sd = 6.92$; exam 3: $m = 72.70$, $sd = 11.24$; exam 4: $m = 78.04$, $sd = 12.51$; and final

exam: $m = 91.74$, $sd = 5.94$). A comparison of mean exam scores between the intervention group and both control groups is depicted in a simple bar chart (see Figure 1). There was no missing data.

Table 9

SPSS Output: T-Test (Independent Samples)
Comparison of Exam Scores between Intervention and Both Control Groups

Group Statistics

	Capstone_Intervention	N	Mean	Std. Deviation	Std. Error Mean
Exam_1	No	23	.7765	.06706	.01398
	Yes	7	.7486	.08630	.03262
Exam_2	No	23	.7400	.06928	.01445
	Yes	7	.7029	.10610	.04010
Exam_3	No	23	.7270	.11243	.02344
	Yes	7	.7886	.07010	.02650
Exam_4	No	23	.7804	.12514	.02609
	Yes	7	.8114	.05014	.01895
FinalExam_AllContent	No	23	.9174	.05941	.01239
	Yes	7	.8900	.03109	.01175

Table 9 (continued)

Independent Samples Test (Intervention and Control Groups)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Exam_1	Equal variances assumed	.893	.353	.904	28	.374	.02795	.03091	-.03537	.09128
	Equal variances not assumed			.788	8.331	.453	.02795	.03549	-.05332	.10922
Exam_2	Equal variances assumed	3.311	.080	1.094	28	.283	.03714	.03394	-.03239	.10668
	Equal variances not assumed			.871	7.623	.410	.03714	.04262	-.06200	.13629
Exam_3	Equal variances assumed	1.221	.279	-1.362	28	.184	-.06161	.04524	-.15429	.03106
	Equal variances not assumed			-1.742	16.340	.100	-.06161	.03538	-.13649	.01326
Exam_4	Equal variances assumed	2.992	.095	-.634	28	.531	-.03099	.04892	-.13120	.06921
	Equal variances not assumed			-.961	25.407	.346	-.03099	.03225	-.09736	.03537
FinalExam_AllContent	Equal variances assumed	3.056	.091	1.162	28	.255	.02739	.02356	-.02088	.07566
	Equal variances not assumed			1.604	20.005	.124	.02739	.01707	-.00822	.06301

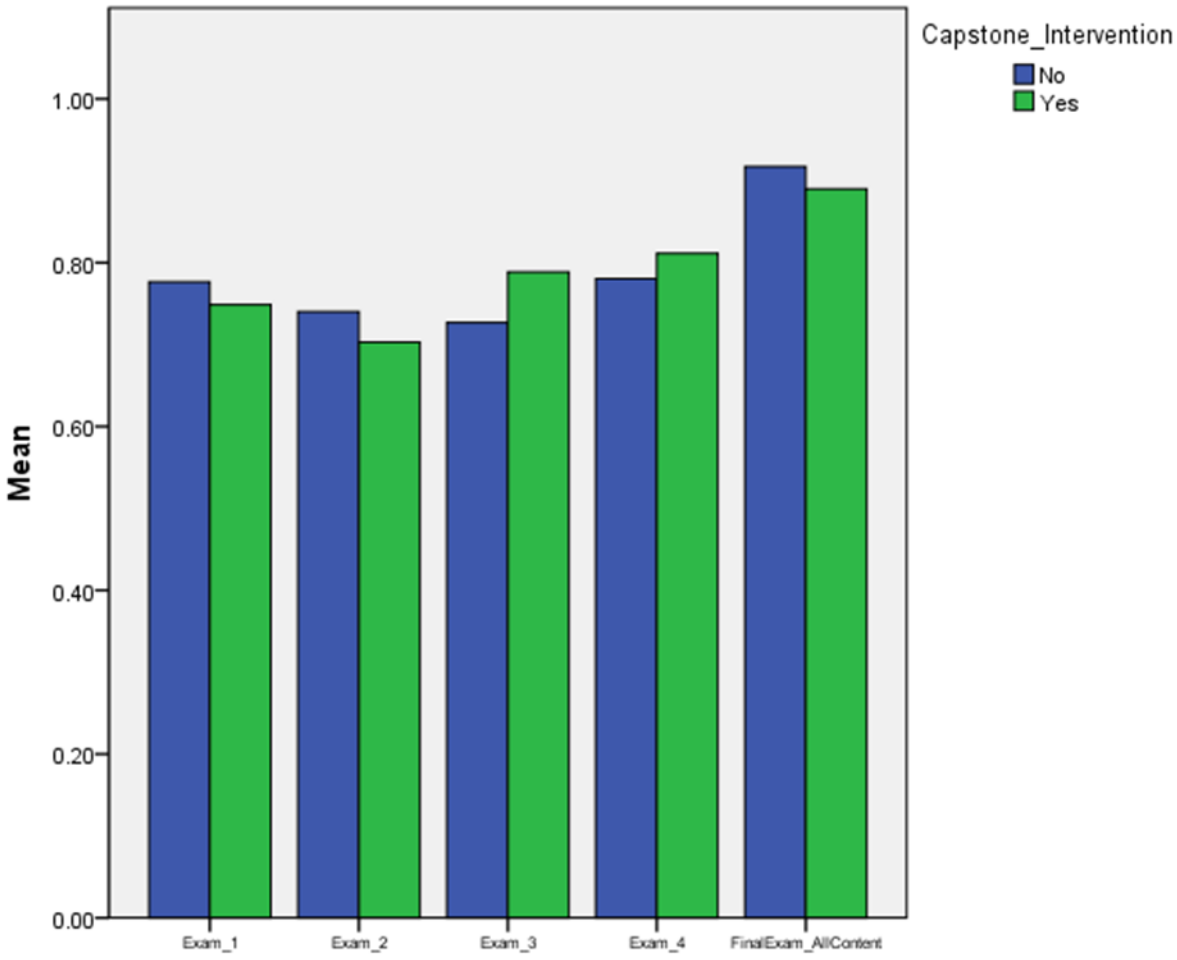

Figure 1: Comparison of Mean Exam Scores between Intervention and Control Groups

An independent-samples *t* test was calculated using SPSS software, as shown in Table 10, to compare the mean exam scores between the intervention group and control group 1. No significant difference was found between the means of the two groups for each of the module exam scores: Exam 1 (t = -1.939, df = 20, p >.05), exam 2 (t = -.381, df = 20, p >.05), exam 3 (t = 1.201, df = 20, p >.05), and exam 4 (t = .002, df = 20, p >.05). The means of the intervention

group (exam 1: *m* = 74.86, *sd* = 8.63; exam 2: *m* = 70.29, *sd* = 10.61; exam 3: *m* = 78.86, *sd* = 7.01; and exam 4: *m* = 81.14, *sd* = 5.01) were not significantly different than the means of control group 1 (exam 1: *m* = 80.13, *sd* = 4.30; exam 2: *m* = 71.60, *sd* = 5.71; exam 3: *m* = 72.80, *sd* = 12.34; and exam 4: *m* = 81.13, *sd* = 13.60). However, there was a significant difference between the means of the two groups for the final exam score (*t* = -3.579, *df* = 20, *p* = .002). The mean of the intervention group was significantly lower (*m* = 89.00, *sd* = 3.10) than the mean of control group 1 (*m* = 94.73, *sd* = 3.65). There was no missing data.

Table 10

SPSS Output: T-Test (Independent Samples)
Comparison of Exam Scores between Intervention and Control Group 1

Group Statistics

	Control_Group	N	Mean	Std. Deviation	Std. Error Mean
Exam_1	Intervention Group	7	.7486	.08630	.03262
	201005_Control Group1	15	.8013	.04307	.01112
Exam_2	Intervention Group	7	.7029	.10610	.04010
	201005_Control Group1	15	.7160	.05717	.01476
Exam_3	Intervention Group	7	.7886	.07010	.02650
	201005_Control Group1	15	.7280	.12347	.03188
Exam_4	Intervention Group	7	.8114	.05014	.01895
	201005_Control Group1	15	.8113	.13601	.03512
FinalExam_AllContent	Intervention Group	7	.8900	.03109	.01175
	201005_Control Group1	15	.9473	.03654	.00943

Table 10 (continued)

Independent Samples Test (Intervention and Control Group 1

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Exam_1	Equal variances assumed	5.354	.031	-1.939	20	.067	-.05276	.02721	-.10952	.00399
	Equal variances not assumed			-1.531	7.433	.167	-.05276	.03446	-.13330	.02778
Exam_2	Equal variances assumed	6.277	.021	-.381	20	.707	-.01314	.03445	-.08501	.05872
	Equal variances not assumed			-.308	7.676	.767	-.01314	.04273	-.11241	.08613
Exam_3	Equal variances assumed	1.176	.291	1.201	20	.244	.06057	.05045	-.04466	.16580
	Equal variances not assumed			1.461	18.938	.160	.06057	.04145	-.02621	.14735
Exam_4	Equal variances assumed	2.222	.152	.002	20	.999	.00010	.05358	-.11168	.11187
	Equal variances not assumed			.002	19.486	.998	.00010	.03990	-.08329	.08348
FinalExam_AllContent	Equal variances assumed	.266	.611	-3.579	20	.002	-.05733	.01602	-.09075	-.02392
	Equal variances not assumed			-3.804	13.775	.002	-.05733	.01507	-.08971	-.02496

An independent-samples *t* test was calculated using SPSS software, as shown in Table 11, to compare the mean exam scores between the intervention group and control group 2. No significant difference was found between the means of the two groups for each of the first three module exam scores and the final exam score: Exam 1 ($t = .429$, $df = 13$, $p > .05$), exam 2 ($t = -1.787$, $df = 13$, $p > .05$), exam 3 ($t = 1.444$, $df = 13$, $p > .05$), and final exam ($t = 1.240$, $df = 13$, $p > .05$). The means of the intervention group (exam 1: $m = 74.86$, $sd = 8.63$; exam 2: $m = 70.29$, $sd = 10.61$; exam 3: $m = 78.86$, $sd = 7.01$; and final exam: $m = 89.00$, $sd = 3.10$) were not significantly different than the means of control group 2 (exam 1: $m = 73.00$, $sd = 8.14$; exam 2: $m = 78.50$, $sd = 7.07$; exam 3: $m = 72.50$, $sd = 9.60$; and final exam: $m = 86.13$, $sd = 5.38$). However, there was a significant difference between the means of the two groups for exam 4 ($t = 2.541$, $df = 13$, $p = .025$). The mean of the intervention group was significantly higher ($m = 81.14$, $sd = 5.01$) than the mean of control group 2 ($m = 72.25$, $sd = 7.96$). There was no missing data.

Table 11

SPSS Output: t-Test (Independent Samples)
Comparison of Exam Scores between Intervention and Control Group 2

Group Statistics

	Control_Group	N	Mean	Std. Deviation	Std. Error Mean
Exam_1	Intervention Group	7	.7486	.08630	.03262
	201101_Control Group2	8	.7300	.08142	.02878
Exam_2	Intervention Group	7	.7029	.10610	.04010
	201101_Control Group2	8	.7850	.07071	.02500
Exam_3	Intervention Group	7	.7886	.07010	.02650
	201101_Control Group2	8	.7250	.09607	.03396
Exam_4	Intervention Group	7	.8114	.05014	.01895
	201101_Control Group2	8	.7225	.07960	.02814
FinalExam_AllContent	Intervention Group	7	.8900	.03109	.01175
	201101_Control Group2	8	.8613	.05384	.01903

Table 11 (continued)

Independent Samples Test (Intervention and Control Group 2)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Exam_1	Equal variances assumed	.048	.829	.429	13	.675	.01857	.04332	-.07502	.11216
	Equal variances not assumed			.427	12.491	.677	.01857	.04350	-.07580	.11294
Exam_2	Equal variances assumed	2.046	.176	-1.787	13	.097	-.08214	.04597	-.18145	.01716
	Equal variances not assumed			-1.738	10.244	.112	-.08214	.04726	-.18710	.02281
Exam_3	Equal variances assumed	.927	.353	1.444	13	.172	.06357	.04403	-.03155	.15869
	Equal variances not assumed			1.476	12.648	.164	.06357	.04308	-.02975	.15690
Exam_4	Equal variances assumed	3.180	.098	2.541	13	.025	.08893	.03499	.01333	.16453
	Equal variances not assumed			2.621	11.927	.022	.08893	.03393	.01495	.16290
FinalExam_AllContent	Equal variances assumed	2.802	.118	1.240	13	.237	.02875	.02318	-.02134	.07884
	Equal variances not assumed			1.285	11.418	.224	.02875	.02237	-.02026	.07776

A comparison of mean exam scores between the intervention group and each of the control groups is depicted in a simple bar chart (see Figure 2).

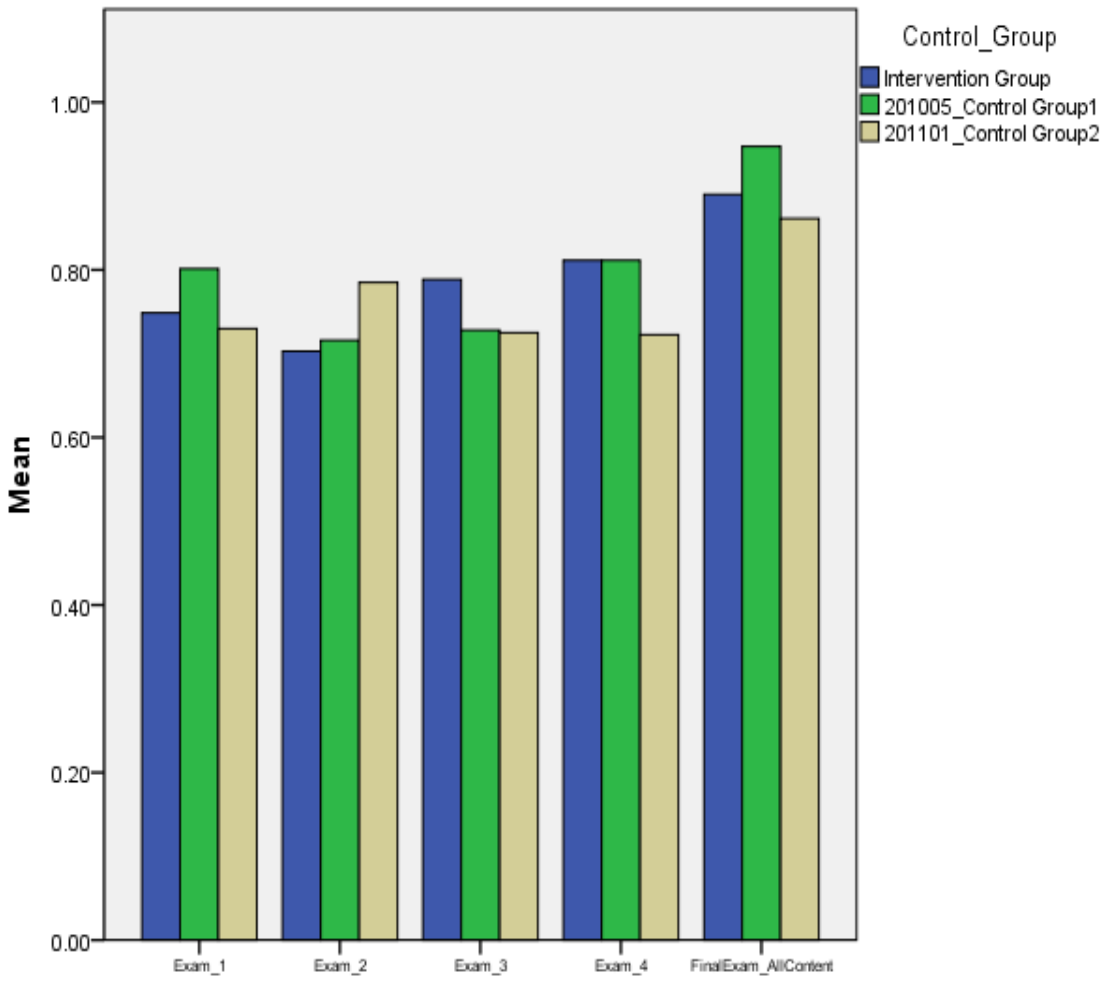

Figure 2: Comparison of Mean Exam Scores between All Groups

A one-way analysis of variance (ANOVA) was computed using SPSS software, as shown in Table 12, to compare the mean exam scores between all groups. A significant difference was found among the groups for the mean scores of exam 1 (F (2, 27) = 3.54, p = .043) and the final

Table 12

SPSS Output: One-Way ANOVA
Comparison of Mean Exam Scores between All Groups

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Exam_1	Intervention Group	7	.7486	.08630	.03262	.6688	.8284	.60	.84
	201005_Control Group1	15	.8013	.04307	.01112	.7775	.8252	.72	.88
	201101_Control Group2	8	.7300	.08142	.02878	.6619	.7981	.58	.84
	Total	30	.7700	.07139	.01303	.7433	.7967	.58	.88
Exam_2	Intervention Group	7	.7029	.10610	.04010	.6047	.8010	.54	.80
	201005_Control Group1	15	.7160	.05717	.01476	.6843	.7477	.62	.80
	201101_Control Group2	8	.7850	.07071	.02500	.7259	.8441	.68	.86
	Total	30	.7313	.07890	.01441	.7019	.7608	.54	.86
Exam_3	Intervention Group	7	.7886	.07010	.02650	.7237	.8534	.66	.88
	201005_Control Group1	15	.7280	.12347	.03188	.6596	.7964	.46	.88
	201101_Control Group2	8	.7250	.09607	.03396	.6447	.8053	.56	.86
	Total	30	.7413	.10634	.01942	.7016	.7810	.46	.88
Exam_4	Intervention Group	7	.8114	.05014	.01895	.7651	.8578	.76	.90
	201005_Control Group1	15	.8113	.13601	.03512	.7360	.8867	.41	.94
	201101_Control Group2	8	.7225	.07960	.02814	.6560	.7890	.60	.82
	Total	30	.7877	.11215	.02048	.7458	.8295	.41	.94
FinalExam_AllContent	Intervention Group	7	.8900	.03109	.01175	.8612	.9188	.83	.92
	201005_Control Group1	15	.9473	.03654	.00943	.9271	.9676	.88	1.00
	201101_Control Group2	8	.8613	.05384	.01903	.8162	.9063	.76	.92
	Total	30	.9110	.05492	.01003	.8905	.9315	.76	1.00

Table 12 (continued)

One-Way ANOVA
Comparison of Mean Exam Scores (All Groups)

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Exam 1	Between Groups	.031	2	.015	3.545	.043
	Within Groups	.117	27	.004		
	Total	.148	29			
Exam 2	Between Groups	.032	2	.016	2.935	.070
	Within Groups	.148	27	.005		
	Total	.181	29			
Exam 3	Between Groups	.020	2	.010	.896	.420
	Within Groups	.308	27	.011		
	Total	.328	29			
Exam 4	Between Groups	.046	2	.023	1.964	.160
	Within Groups	.318	27	.012		
	Total	.365	29			
Final Exam	Between Groups	.043	2	.021	12.869	.000
	Within Groups	.045	27	.002		
	Total	.087	29			

exam (F (2, 27) = 12.86, $p < .01$). Post hoc comparison testing via Tukey's HSD was computed using SPSS software, as shown in Table 13, to determine the nature of the differences among the groups. This analysis revealed the mean exam scores of control group 1 (Exam 1: m = 80.13, sd = 4.30; and final exam: m = 94.73, sd = 3.65) were higher than the intervention group (Exam 1: m = 74.86, sd = 8.63; and final exam: m = 89.00, sd = 3.10) and control group 2 (Exam 1: m = 73.00, sd = 8.14; and final exam: m = 86.13, sd = 5.38). The mean exam scores of the intervention group were not significantly different than control group 2. Subsequent testing of homogeneous subsets, as shown in Table 14, revealed no significant differences among the groups (p >.05). There was no missing data.

Table 13

SPSS Output: Post Hoc Tests (Multiple Comparisons)

Tukey HSD

Dependent Variable	(I) Control_Group	(J) Control_Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Exam_1	Intervention Group	201005_Control Group1	-.05276	.03014	.205	-.1275	.0220
		201101_Control Group2	.01857	.03408	.850	-.0659	.1031
	201005_Control Group1	Intervention Group	.05276	.03014	.205	-.0220	.1275
		201101_Control Group2	.07133	.02883	.051	-.0001	.1428
	201101_Control Group2	Intervention Group	-.01857	.03408	.850	-.1031	.0659
		201005_Control Group1	-.07133	.02883	.051	-.1428	.0001
Exam_2	Intervention Group	201005_Control Group1	-.01314	.03392	.921	-.0973	.0710
		201101_Control Group2	-.08214	.03836	.100	-.1772	.0130
	201005_Control Group1	Intervention Group	.01314	.03392	.921	-.0710	.0973
		201101_Control Group2	-.06900	.03245	.103	-.1494	.0114
	201101_Control Group2	Intervention Group	.08214	.03836	.100	-.0130	.1772
		201005_Control Group1	.06900	.03245	.103	-.0114	.1494
Exam_3	Intervention Group	201005_Control Group1	.06057	.04885	.441	-.0606	.1817
		201101_Control Group2	.06357	.05523	.492	-.0734	.2005
	201005_Control Group1	Intervention Group	-.06057	.04885	.441	-.1817	.0606
		201101_Control Group2	.00300	.04672	.998	-.1128	.1188
	201101_Control Group2	Intervention Group	-.06357	.05523	.492	-.2005	.0734
		201005_Control Group1	-.00300	.04672	.998	-.1188	.1128
Exam_4	Intervention Group	201005_Control Group1	.00010	.04971	1.000	-.1232	.1233
		201101_Control Group2	.08893	.05620	.270	-.0504	.2283
	201005_Control Group1	Intervention Group	-.00010	.04971	1.000	-.1233	.1232
		201101_Control Group2	.08883	.04754	.167	-.0290	.2067
	201101_Control Group2	Intervention Group	-.08893	.05620	.270	-.2283	.0504
		201005_Control Group1	-.08883	.04754	.167	-.2067	.0290
FinalExam_AllContent	Intervention Group	201005_Control Group1	-.05733*	.01864	.013	-.1036	-.0111
		201101_Control Group2	.02875	.02108	.373	-.0235	.0810
	201005_Control Group1	Intervention Group	.05733*	.01864	.013	.0111	.1036
		201101_Control Group2	.08608*	.01783	.000	.0419	.1303
	201101_Control Group2	Intervention Group	-.02875	.02108	.373	-.0810	.0235
		201005_Control Group1	-.08608*	.01783	.000	-.1303	-.0419

*. The mean difference is significant at the 0.05 level.

Table 14

Homogeneous Subsets

Exam_1

Tukey HSD[a,b]

Control_Group	N	Subset for alpha = 0.05
		1
201101_Control Group2	8	.7300
Intervention Group	7	.7486
201005_Control Group1	15	.8013
Sig.		.074

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 8.968.
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Exam_2

Tukey HSD[a,b]

Control_Group	N	Subset for alpha = 0.05
		1
Intervention Group	7	.7029
201005_Control Group1	15	.7160
201101_Control Group2	8	.7850
Sig.		.066

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 8.968.
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Exam_3

Tukey HSD[a,b]

Control_Group	N	Subset for alpha = 0.05
		1
201101_Control Group2	8	.7250
201005_Control Group1	15	.7280
Intervention Group	7	.7886
Sig.		.429

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 8.968.
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 14 (continued)

Exam_4

Tukey HSD[a,b]

Control_Group	N	Subset for alpha = 0.05
		1
201101_Control Group2	8	.7225
201005_Control Group1	15	.8113
Intervention Group	7	.8114
Sig.		.211

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 8.968.
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

FinalExam -AllContent

Tukey HSD[a,b]

Control_Group	N	Subset for alpha = 0.05	
		1	2
201101_Control Group2	8	.8613	
Intervention Group	7	.8900	
201005_Control Group1	15		.9473
Sig.		.309	1.000

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 8.968.
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

3. Improvement in Performance (Skills) – Measured by skill acquisition on Competency Performance Exams (CPE). CPE scores are pass/fail.

   All students in Health Assessment course successfully passed the Final CPE at the end of the course demonstrating acquisition of performance skills. Serial measurements during the course using Mock CPEs demonstrated acquisition of individual skill sets among all students. These findings were similar in both control groups as well. There was no missing data.

4. Participation in Mentored Sessions – Measured by rates of participation of both "at-risk" students and peers in Health Assessment course

   Participation rate was 100% by all students in the Health Assessment course. There were no missing data points related to experimental mortality. There were also peer mentors available during each mentoring session. There was no missing data.

5. Increased Retention – Measured by number of "at-risk" students that successfully complete Health Assessment course as compared to "at-risk" students from previous semesters (Students must achieve an overall grade of 77% or greater to pass the course)

   The retention rate of the intervention group as compared to the control groups is shown in Table 15. The retention rate of control group 1 was greater than the intervention group. However, the retention rate of the intervention group was greater than the retention rate of control group 2. There was no missing data.

Table 15

Intervention vs. Control Groups – Retention Rates

Study Groups	Number of "At-Risk" Students that Successfully Completed Course	Retention Rates of "At-Risk" Students
Intervention Group	6 out of 7 students	85.7%
Control Group 1	14 out of 15 students	93.3%
Control Group 2	6 out of 10 students	60%

6. Decreased Attrition – Measured by number of students that remain in the Health Assessment course during their first semester in the BSN nursing program as compared to previous semesters

The attrition rate of the intervention group as compared to the control groups is shown in Table 16. There was no difference in the attrition rates between any of the groups. There was no missing data.

Table 16

Intervention vs. Control Groups – Attrition Rates

Study Groups	Number of Students that Remained in Health Assessment Course	Attrition Rates of Health Assessment Students
Intervention Group	38 out of 40 students (95%)	5%
Control Group 1	38 out of 40 students (95%)	5%
Control Group 2	38 out of 40 students (95%)	5%

Project Results

Data was compiled to evaluate the effectiveness of the faculty/peer mentoring program in terms of knowledge retention/application, academic performance, clinical skills performance and retention as measures of academic success in "at risk" BSN students. A total of 38 students completed the intervention. Seven "at-risk" students were identified within this population. Control Group 1 (15 "at risk" students from prior fall semester) and Control Group 2 (10 "at risk" students from prior spring semester) were utilized for comparison. Data analysis revealed no significant differences in academic performance between intervention group and control groups ($p > .05$). There was no difference in clinical skills performance between the groups as well. However, data analysis within the intervention group revealed significant academic improvement in terms of knowledge retention/application measured by serial exam grades during- and post-intervention ($p < .05$). Retention rates of the "at risk" students in the intervention group were 85.7% as compared to 93.3% of control group 1 and 60% of control group 2. However, when taking into consideration the small numbers of the "at risk" groups, both the intervention group (N=7) and control group 1 (N=15) lost a single student to academic failure as compared to the loss of four students in control group 2 (N=10).

Although the Capstone study did not demonstrate statistical significant differences in academic performance between the "at risk" students in the intervention group and both control groups, clinical significance should be given equal consideration. Student feedback throughout the process was ongoing and often unsolicited by faculty. Student feedback indicated positive responses to the mentoring experience regarding both the faculty and peer mentors. Students in the "at risk" group as well as the other students in the course expressed

appreciation for the study aids, test-taking tips, and other strategies aimed at increasing academic performance. Some students commented on the need to provide this information earlier in the semester. Many students commented on the helpfulness of the peer mentors in the campus lab setting and valued their assistance and critical feedback on their skills performance. Peer mentors also provided positive feedback regarding the mentoring experience. Many of the peer mentors expressed a desire to mentor other students in the future, and stated that the experience also provided them a chance to update their assessment skills in the lab environment, and to share their own learning experiences in the nursing program.

Limitations, Recommendations, Implications for Change

Limitations identified for the Capstone Project included small sample size of students in the intervention group and both control groups which limited generalizability to other settings. The use of a convenience sample also severely restricted generalizability to other settings. There could also have been remarkable demographic differences (amount of work hours, family obligations, admission grade point average (GPA), etc.) between the groups which were not measured in this study but could impact the measured results.

Recommendations include continued evidence-based application of research findings in the educational and practice settings. Nursing faculty should strive to maintain an awareness of the latest research findings that could impact the learning outcomes and retention of the students in their charge. The application of these findings has the potential to significantly impact patient outcomes in terms of quality of care and amount of qualified nursing staff available to provide care. These implications indicate a need for early recognition of academic concerns by faculty with ongoing follow-up with “at risk” students. The safe and competent

provision of patient care is learned through the educational experiences provided to each nursing student by qualified nursing faculty. A caring attitude towards patient care is role modeled to the nursing students by caring faculty. According to McGann and Thompson (2008), "Faculty mentoring support delivered with a sense of caring may be one of the keys to opening the door to academic success" (p. 13-14). Suggestions for future study include further research into the role of faculty and/or peer mentoring in the academic success of nursing students. The academic success of undergraduate nursing students has the potential to impact the future of the nursing profession.

Conclusion

According to Houser (2011), "regardless of the system within which the clinician practices, there is a systematic approach to finding and documenting the best possible evidence for practice. The process involves defining a clinical question, identifying and appraising the best possible evidence, and drawing conclusions about best practice" (p. 13). According to the AACN (as cited in White & Zaccagnini, 2011), the DNP project "should reflect a synthesis of all of the knowledge and skills gained by the DNP student in the course of studies" (p. 490). "It should also establish the basis for the student's future scholarly work – the scholarship of integration and application" (White & Zaccagnini, 2011, p. 490). The Capstone Project provided an opportunity for the DNP student to integrate knowledge and apply EBP interventions in the practice setting in anticipation of fulfilling the requirements of the DNP role upon graduation. The project also fueled a desire in the DNP student to explore future opportunities to include research activities and the application of evidence-based practice in the education and practice settings after graduation.

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Appendix A

Systematic Review of the Literature

Article Title and Journal	**Author/ Year**	**Database and Keywords**	**Research Design**	**Level of Evidence**	**Study Aim/ Purpose**	**Population Studied/ Sample Size/Criteria/ Power**	**Methods/Study Appraisal/ Synthesis Methods**	**Primary Outcome Measures and Results**	**Author Conclusions / Implications of Key Findings**	**Strengths/ Limitations**	**Funding Source**	**Comments**
Results of a remediation program for students at risk for failure on the NCLEX exam. Nursing Education Perspectives, 28(1), 34-36.	Sifford, S., & McDaniel, D.M. (2007).	CINAHL. Keywords - Undergraduate nursing students, at risk, and remediation	Quantitative, Non-Randomized	Level VI	Comparison of results of student scores on exit exam before and after remediation program.	47 nursing students at risk for failure identified by scores on exit exam.	Exit exam was administered to senior-level BSN students prior to remediation program and again after a 15-week remediation program. Scores were compared.	Comparison of exit exam scores indicated that student performance improved after intervention ($p<.001$).	Remediation interventions (test-taking strategies, reducing test anxiety, time management) effective for enhancing student success. Earlier intervention, increased student input, longer hours suggested for future approaches.	Strengths: Use of commercially available exit exam. Limitations: Single study with small sample size.	Not identified.	Use of pre and post test scores could be utilized in my Capstone to measure outcomes. Pre-test scores could be utilized to identify at-risk students.

Using a mentorship program to recruit and retain student nurses. Journal of Nursing Administration, 34(12), 551-553.	Nelson, D., Godfrey, L., Purdy, J. (2004)	OVID Keywords - nursing students and retention	Qualitative, Descriptive	Level VII	Describe the use of a student nurse mentorship program to recruit and retain nurses. Goal of program to assist students in adapting to professional environment.	Baccalaureate nursing students at the University of South Florida who were 2 semesters from graduation.	Application and review process, students become nurse techs. Students work with mentors 16 hours/2 week pay period last 2 semesters. Ongoing formative assessment & feedback between mentee and mentor. Summative evaluation performed by both mentee and mentor.	Turnover rates improved. Student evaluations of program were positive. Nursing Director reported easier transitioning into RN role, & shorter orientation period.	Mentorship programs are successful in recruiting and retaining brightest graduate nurses. Cost limited and produces benefits for the student, mentor, & hospital.	Strengths: Demonstrates benefits of enhancing clinical experiences with mentor in clinical facility. Limitations: Single study, small sample size.	Tampa General Hospital	Mentors from clinical facilities could be utilized to enhance retention of nursing students.
A peer mentor tutor program for academic success in nursing. Nursing Education	Robinson, E., & Niemer, L. (2010).	EBSCOhost-Academic Search Premier. Keywords	Quantitative, Non-Randomized, Prospect	Level IV	Improve retention and academic outcomes in BSN students at risk for failure.	97 at-risk nursing students in traditional baccalaureate program.	Implementation of Peer Mentor Tutor Program (PMTP) in all clinically-focused	Course grades used to determine outcome difference	Positive academic results. At-risk students supported by their peers.	Strengths: 80% completion rate. Limitations: Single	Grant-funded and fundin g suppor	PMTP could be the interve ntion for my

Perspectives, 31(5), 286-289.		- nursing students and success	ive Cohort Study			Selection criteria for sample included one or more of following: previous nursing course failure, previous biological course failure, GPA 2.3-2.8, and/or nursing adviser or faculty recommendation.	didactic nursing courses in first four semesters of nursing curriculum. Courses were selected based upon attrition rates within first 2 yrs of program.	s between groups. Students in the intervention group scored significantly higher than control group on summative and final grades.	Passion for education emerged among student mentors. Some faculty expressed concern that participation in PMTP might postpone attrition and lead to later program attrition. Implications: PMTP can be used to improve academic performance in nursing students.	study. Funding source needed for the Scholarship incentives applied toward tuition for mentees earning A or B. Mentor-Tutors paid @ rates competitive with hospital salaries for time spent in orientation and tutoring students.	t from Office of Associate Provost for Student Success	Capstone Project. Would need to explore funding options at the University level and also potential grant funding.
Reducing student anxiety by using clinical peer mentoring with beginning nursing students. Nurse Educator,	Sprengel, A.D., & Job, L. (2004).	OVID Keywords - Undergraduate nursing students, retention	Qualitative	Level VI	Reduce anxiety and lessen stress in the initial clinical experience for BSN students.	30 baccalaureate nursing students in foundations course in rural Midwest state university.	BSN foundation students were paired with Peer Mentors enrolled in medical-surgical nursing course. Surveys done prior to first clinical	Reported overwhelming positive response from mentees and mentors.	Assignment of peer mentoring for clinical experiences could have short-term and long-term benefits. Preparation	Strengths: Peer mentoring proved to be mutually beneficial for mentees and mentors.	Not identified.	Peer mentoring intervention used for clinical experiences. Qualita

29(6), 246-250.							experience and after the clinical experience. Used the *Clinical Experience Assessment Form* (Kleehammer, Hart, & Keck, 1990) - a 16-item Likert scale.		prior to clinical experience improved, student interaction at various levels in the curriculum increased, mentoring fosters collegial relationships. Efficient and effective strategy to address learning needs of students.	Limitations: Single study, small convenience sample.		tive measurements could be useful in my Capstone Project to measure student attitudes. Tool used in this study could be useful in my Capstone Project.
Mentoring undergraduate nursing students: Assessing the state of the science. Nurse Educator, 29(6), 260-265.	Dorsey, L.E., & Baker, C.M. (2004).	OVID Keywords - Undergraduate nursing students, retention	Quantitative, Integrative Review	Level V	Review of evidence leading to a conceptual framework for study of mentoring in nursing.	Review of data-based research on nursing mentorship between 1992-2002. Literature search yielded 90 citations. 34 data-based articles yielded 16 presenting	Articles were critiqued to discern association of mentoring program characteristics with program dynamics and outcomes. Results of data-based studies	Overall conclusion: mentoring is positively related to student academic success, psychosocial	Findings in all 16 studies support the use of mentoring to improve student retention rate and satisfaction. Nurse educators	Strengths: Five studies indicated that mentoring programs increased retention and NLCEX success	Not identified.	Positive outcomes from peer mentoring. Linear structure-process-*model*

						research on mentoring in undergraduate nursing programs.	were synthesized within a benefit-cost framework according to stakeholders.	development, and contributes to retention and graduation.	can provide evidence-based education by implementing mentoring strategies for undergraduate nursing students, partnering with other nursing programs to compare outcomes, and disseminate findings.	rate. Costs varied but mentoring programs reported accomplishment of goals. Limitations: Studies used for the integrative review are >5 years old.		as conceptual framework. Theoretical frameworks identified: Bean & Metzner's model of nontraditional undergraduate student attrition; humanistic paradigm of adult learning, model of student centered collaborative learning, and

												emancipatory paradigm of feminist theory.
Predictors of academic success in first semester baccalaureate nursing students. Social Behavior & Personality: An International Journal, 37(3), 411-417.	Peterson, V. (2009).	EBSCOhost- Academic Search Premier. Keywords - nursing students and success	Descriptive correlational design	Level VI	Determine if self-esteem, self-efficacy, and environmental variables are predictors of student attrition in first semester BSN students.	Non-probability convenience sample of 66 first semester BSN students. Effect size of .50 used. Power analysis revealed need for 50 study participants.	Conducted in urban university in northeastern US on most ethnically and culturally diverse campus. Participants recruited during 1st 2 weeks of class. Limited to full-time BSN students. Used Students' GPA; Rosenberg Self-Esteem Scale; General Self-Efficacy Scale.	At end of 1st semester only 15% maintained GPA. 29/66 participants were unable to continue; 72% reported high self-esteem; 62% reported high self-efficacy. No statistically significant relationship between variables and student attrition.	Self-esteem and self-efficacy data was collected at beginning of program & could be inflated. Past academic performance significantly correlated with academic success. Evaluating admission criteria and counseling at risk students to register part-time may be beneficial. Multivariate approach may be necessary.	Strengths: Effect size - medium. Limitations: Single study, convenience sample.	Not identified.	Did not demonstrate correlation between study variables and student attrition. At-risk students need to be identified early in the program (1st semester).

Relationship between retention and peer tutoring for at-risk students. Journal of Nursing Education, 43(7), 319-21.	Higgins, B. (2004).	CINAHL Keywords - Undergraduate nursing students, at risk, and remediation	Quantitative, Non-randomized, prospective cohort study.	Level IV	Determine if relationship exists between academic performance & retention, and participation in peer-tutoring program for at-risk nursing students.	26 nursing students identified as at-risk. Divided into 2 groups (20 participants and 6 non-participants). Level of significance chosen was .05.	Students paired with tutors based upon theory unit of study, similar cultural backgrounds, language, proximity, clinical section, and gender (when possible). Student tutors chosen based upon academic performance and time commitment (1-2 hr/wk).	Statistical analysis done by constructing variables of academic success and participation in peer-tutoring program. Fisher's exact test indicated a significant relationship between academic performance and retention and participation in peer-tutoring program. Attrition rate in med-surg course decreased from 12%	Attrition contributes to nursing shortage; early assessment and effective interventions can help at-risk students succeed. Study results support use of peer-tutoring program.	Strengths: Findings similar to other studies on peer mentoring. Limitations: Single study with non-randomized small sample size. Limits generalizations.	Not identified.	Positive outcome from peer-tutoring program although unable to generalize findings to other student nurse populations. Possibility to duplicate findings in other nursing programs

								to 3%.				
Peer mentoring program pop-up model for regional nursing students. Journal of University Teaching and Learning, 3(2), 124-135.	Penman, J., & White, F. (2006).	Directory of Open Access Journals Keywords - Baccalaureate nursing students and peer mentoring.	Qualitative, Descriptive	Level VI	Aimed at assisting the transition of new nursing students to university life and enhancing academic performance.	Letters sent to invite possible mentors. Mentees recruited via email. Mentors met face-to-face with all new students during orientation week. 80 mentees and 16 mentors.	Induction program for mentors. Mentors were 2nd and 3rd year students. Flexible, student-driven model. Mentee initiated contact with mentor as needed during the semester "pop up".	Questionnaires, interviews, and anecdotal notes were used to collect data. 8 mentees and 10 mentors evaluated the program. Results are limited due to small response rate of evaluations. Those responded indicated positive experience with peer mentoring.	Peer mentoring program can provide benefits to students. Dissemination of information is a consideration for future implementation.	Strengths: Findings similar to other studies on peer mentoring. Limitations: Single study, small sample size, non-randomized.	Not identified.	Limited use for Capstone due to limitations of study size and response rates. Consider implications of implementing tutoring program during first year of college experience.
The Nurse Center: A peer mentor-tutor project	Ramsey, P., Blowers, S., Merriman, C., Glenn,	OVID Keywords - Baccalaure	Qualitative, Quantita	Level VI	Aimed at assisting disadvantaged Appalachian	Convenience sample of nursing students at East	Surveys, contact logs, participant exit interviews	Most students who participate	Peer mentoring program can provide	Strengths: Findings similar to other	Grant-funded by the Divisi	Positive outcomes from

for disadvantaged nursing students in Appalachia. Nurse Educator, 25(6), 277-281.	L.L., & Terry, L. (2000).	ate nursing students and peer mentoring.	tive		nursing students. Improve academic achievement, retention, progression, and NCLEX pass rates of participants.	Tennessee State University. Socioeconomic status questionnaire used to determine disadvantaged status. During program, 17 students tutored 69 students.	analyzed for recurrent themes. GPA used to compare peer mentoring or tutoring effectiveness. Pre and post tests given for content comprehension of training sessions and seminars. Participants tracked throughout program for retention, progression, and NCLEX pass rates.	d were academically successful. All but 2 received a C or better in tutored courses. Exit interviews indicated positive results of peer mentoring program for both mentees and mentors.	benefits for mentees and mentors. Compliance with program should be monitored including: documentation, contract stipulations, and purpose of stipend (if applicable). Earlier identification of at risk students for program implementation.	studies on peer mentoring. Limitations: Descriptive single study, limited in sample size. Unable to generalize to other student nurse populations.	on of Nursing, Bureau of Health Professions, Health Resource Service Administration.	peer mentoring aimed at disadvantaged students. Combination of qualitative and quantitative data could be used to measure outcomes in Capstone population.
Peer mentoring for multiple levels of nursing students. Nursing Education Perspectives, 31(6), 394-	Giordana, S., & Wedin, B. (2010).	CINAHL. Keywords - Baccalaureate nursing students and peer mentoring.	Exploratory Research: Descriptive, phenomenological design	Level VI	To uncover the experiences of peer mentoring in a baccalaureate nursing program.	Convenience sample of 20 senior nursing students randomly paired with beginning nursing students for a 2 hr period at	Four focus group discussions were taped, transcribed, and reviewed for accuracy. Researchers read transcripts for description	Initial descriptions of peer mentoring experiences were positive. Limitations inherent with	Reports of decreased anxiety among mentees are consistent with previous studies. Mentors	Strengths: Focus on faculty perspective on ratings of retention strategies. 75% of sample had	Not identified.	Qualitative methods may prove useful in gathering data for

396.						beginning of first clinical experience. Informed consent was obtained after the mentoring activity if students were interested in participating in focus group activities.	of experience in words of participants. Data analyzed by Giorgi & Giorgi (2003) method. Similar content meanings were grouped and summative narrative descriptions were determined.	descriptive research.	reported improved leadership skills as benefit of experience which is consistent with findings from previous studies.	>12yrs teaching experience and all worked with minority students. Limitations: possible selection bias in relation to administrator selection of faculty participants. Sample small and limited to one geographical area.		Capstone Project.
Faculty ratings of retention strategies for minority nursing students. Nursing Education Perspectives, 31(4), 216-220.	Baker, B.H. (2010).	CINAHL. Keywords - Baccalaureate nursing students and peer mentoring.	Cross-sectional study design of randomly sampled nursing programs in 16 southeastern states and the	Level IV	Investigate types of retention strategies used in undergraduate nursing programs for purposes of retention, rate effectiveness of strategies (identified by faculty), whether there is a relationship between type of	BSN and ADN nursing programs in 16 southeastern states and DC. Sample size of 200 faculty (100 from each program). Medium effect size of 0.30, alpha -0.01, power - 0.80, confidence	Administrator-identified faculty with at least 5 yrs experience. Email message to qualifying faculty contained link to online survey. Estimated time of completion was 15 minutes.	149 respondents (34% response rate). All or all but one program used 3 strategies rated as "very effective": timely	All 14 strategies were rated "effective" by most respondents. Most used and most effective strategies entailed faculty involvement and faculty	Strengths: Strategies aimed at retention of diverse nursing students. Limitations: Small sample size, limited generaliza	Not identified.	Faculty perceptions of effective retention strategies are important to consider in relation

			District of Columbia.		strategy and type of nursing program (BSN or ADN).	level of 99%.	Questionnaire contained 36 items addressing demographic data and retention variables. 14 retention strategies were identified in literature and faculty were asked to indicate if strategies were used in their programs.	feedback on tests, faculty availability, and timely feedback on clinical performance. Organized study groups and peer mentoring used least but rated as "effective" by all but 2 respondents.	input into retention programs is necessary. Need to study retention strategies for minority nursing students is priority for increasing diversity in workforce.	bility.		to proposed intervention for Capstone Project. Author indicates strong evidence in literature that supports study groups and peer mentoring.
Growth and access increase for nursing students: A retention and progression project. Journal of Cultural Diversity, 12(1), 18-25.	Valencia-Go, G. (2005).	EBSCOhost-Academic Search Premier. Keywords - nursing students and success. CINAHL. Keywords - Baccalaure	Quantitative, non-randomized	Level VI	Program of support and resources for students' successful completion of BSN program. Implement faculty resources to meet needs of disadvantaged students.	Over 3 years, 65 participants were in program. 11 were dismissed for academic reasons.	Strategies: Peer-tutoring, mentoring, advisement, pre-nursing experience seminars, faculty development.	Success rates for completion of freshmen year >70%. Successful graduates were below 70%. Deletions	Follow-up surveys indicated positive response to peer-tutoring, advisement, pre-nursing seminars, resources, services, & meetings with Project	Strengths: Reviewed several articles for best practice strategies. Limitations: Limited generalizability of studies cited.	Federally-funded initiative.	Several strategies addressed for retention of BSN students. Consider for intervention in

		ate nursing students and peer mentoring.						of attrition due to transfer or withdrawal yields 73.2% completion and 26.8% academic dismissal rates.	team. All but one graduate passed NCLEX on first attempt. 70% currently employed in medically underserved areas. All have plans to pursue advanced degrees.			Capstone Project.
Can you keep them? Strategies to attract and retain nursing students from diverse populations: Best practices in nursing education. Journal of Transcultural Nursing, 18(3), 277-285.	Gilchrist, K., & Rector, C. (2007).	EBSCOhost-Academic Search Premier. Keywords - nursing students and success.	Systematic Review of Literature	Level V	Review best practices concerning diverse and disadvantaged nursing student populations to maximize outcomes.	Review of quantitative and qualitative literature regarding strategies for retention of diverse nursing student populations.	Strategies: Nurse tutors, study groups, faculty development in cultural competence, peer support groups, racial and ethnic role models, services related to study & reading skills, time management, test & note-taking, and NCLEX review.	Improved retention and graduation rates. Improved NCLEX pass rates for diverse student groups.	Nursing programs need to attract diverse students and promote nursing early in order to recruit, retain, and graduate nurses from these populations. Universities should make commitment to students upon entering nursing program.	Strengths: Demonstrated outcomes consistent with previous studies. Limitations: Voluntary enrollment; did not take into account mean GPA of group; and difficult to measure psychological	Not identified.	Conceptual model central to mentoring identified (Pathways Model). Several strategies addressed for retention of diverse nursing student

									Support groups and peer mentors are indispensable.	outcomes.		s. Consider for intervention in Capstone Project.
Mentoring as a retention strategy in a diverse, multicultural, urban associate degree nursing program. Teaching and Learning in Nursing, 2(2), 28-33.	Colalillo, G. (2007).	Science Direct	Quasi-experimental Design	Level III	Explore solutions and develop and evaluate a formal, structured mentoring program to promote retention of nursing students.	Program offered to all students in first clinical nursing course.	Formal, structured faculty-directed, student mentoring program.	Students who completed program were asked to complete questionnaire at end of semester. Outcomes measured by attendance at orientation and mentoring program, student satisfaction, and academic performance. Retention rates improved by 5-11%	Improved retention rates and psychological outcomes of first semester nursing students were demonstrated through the use of structured mentoring.	Strengths: Demonstrated outcomes consistent with previous studies. Limitations: Findings not statistically significant.	Grant-funded through "The Promise of Nursing for NY" Nursing School Grant Program.	Structured mentoring program demonstrated positive outcomes. Will need to consider this as possible intervention for my Capstone project.

								overall.				
A systematic review of peer teaching and learning in clinical education. Journal of Clinical Education, 17(6), 703-716.	Secomb, J. (2008).	OVID	Systematic Review	Level V	Provide a framework for peer teaching and learning for undergraduate health science students.	Review of literature in health science and educational electronic databases using terms peer, clinical education, and undergraduate. Limitations on publication date after 1980 - 2005, English language, and research papers. 12 articles met inclusion criteria.	Peer teaching and learning programs in clinical setting.	Findings were mostly positive for use of peer teaching and learning - increases student confidence and improve learning in psychomotor and cognitive domains. Negative findings related to poor student learning if personalities or learning styles incompatible and students spending less time with clinical	Pragmatic implications for clinical practice: increase clinical placement for undergraduate students, assist clinical staff, increase clinician time with patient, and further development of student knowledge.	Strengths: Results similar to previous studies. Limitations: Single study, small sample size. Further research needed on validity and reliability of instrument.	Not identified.	Implications for application of peer teaching in clinical setting. Limited use in proposed Capstone Project.

								instructor.				
Students' perceptions of variables influencing retention: A pretest and posttest approach. Nurse Educator, 27(1), 16-19.	Jeffreys, M.R. (2002).	OVID Keywords - nursing students and retention.	Qualitative, Descriptive exploratory	Level VI	Describe student perceptions concerning perceived variable related to retention prospectively and retrospectively.	Targeted students who participated in study groups led by peer mentor/tutors (PMTs). 80 cases identified.	Participants asked to complete questionnaires during first study group meeting and last study group meeting. 63 students completed pretest. 13 students withdrew from course (ineligible for post-test completion). 14 students did not provide SS# on tests. Matching data sets yielded 28 sample cases.	Environmental variables had great influence on retention. Restrictive variables - finances, family, employment. Supportive variables - study skills, study hours, faculty advisement, friends in class, enrichment program, tutoring service.	Adverse influence of family and employment responsibilities. Positive influence of faculty interactions/ mentoring. PMTs and study groups are effective strategies for promoting academic outcomes. At-risk students may underestimate student support services and overestimate their academic strengths and environmental supports.	Strengths: Findings similar to previous research. Limitations: exploratory study, small sample size, short-term limited, limitations related to tracking of students, lack of consist cohort group.	Partially funded by New York State Education Department Vocational and Technical Education Act (VATEA) and Research Foundation of the City University of New York.	Conceptual framework - environmental variables greatly influence retention (supported by findings). Consider qualitative analysis of student perceptions as an outcome measurement of Capstone Project.

Evaluating enrichment program study groups: academic outcomes, psychological outcomes, and variables influencing retention. Nurse Educator, 26(3), 142-149.	Jeffreys, M.R. (2001).	OVID Keywords - nursing students and retention.	Qualitative, Descriptive exploratory	Level VI	Describe and evaluate aspects of an enrichment program (EP) for students who participated in peer mentor/tutor led study groups.	Convenience sample from population of associate degree nursing students enrolled in required clinical course. Intervention group - students who consistently participated in regularly scheduled PMT-led study groups. Control group - students enrolled in nursing course who did not meet above requirements of intervention group. Intervention group- 257 cases, Control group - 851 cases.	Participants asked to complete questionnaires during first and last study groups. Two instruments used: Student perception Appraisal-1 (SPA-1) and the Satisfaction Questionnaire (SQ). Both tools were investigator-developed. Content validity established by expert panel review.	Better academic and psychological outcomes demonstrated in intervention group.	Results supported anticipated outcomes. Intervention group achieved higher pass rates, lower failure rates, and lower withdrawal rates than control group. Future studies may consider study sample of beginning students tracked throughout program.	Strengths: Findings similar to previous research. Limitations: Exploratory study, small sample size, low response of questionnaires.	Partially funded by New York State Education Department Vocational and Technical Education Act (VATEA) and Research Foundation of the City University of New York.	Conceptual framework and instruments could be useful for Capstone project. Consider qualitative analysis of student perceptions as an outcome measurement of Capstone Project.
Predicting nontraditional student retention and academic achievement.	Jeffreys, M.R. (1998).	OVID Keywords - nursing students and	Descriptive Study	Level VI	Determine relation of self-efficacy and select variables on academic achievement and	Convenience sample of associate degree nursing students (97 cases met	Participants asked to complete survey tool.	Moderate correlations among study variables related to	Study results contributed to empiric evidence on nontraditional nursing	Strengths: Strategies aimed at retention of nontraditio	Not identified	Conceptual framework and tools identifi

Nurse Educator, 23(1), 42-48.		retention.			retention among nontraditional students.	inclusion criteria)		academics and academic achievement. Results not significant related to retention.	students.	nal nursing students. Limitations: Exploratory study, small sample size, low response of questionnaires.		ed in study may be useful for Capstone project.
The ethnic mentor undergraduate program: A brief description and preliminary findings. Journal of Multicultural Counseling & Development, 23(2), 116-126.	Thile, E.L., & Matt, G.E. (1995).	EBSCOhost- Academic Search Premier. Keywords - nursing students and success	Descriptive Study	Level VI	Aims at fostering skills and attitudes necessary to persist to graduation.	Targeted at students from traditionally under represented ethnic backgrounds. Convenience sample population included 27 women and 5 men entering college.	Participants paired with student mentors with similar ethnicity and academic major. Also faculty mentors were assigned. Battery of pre (beginning of Fall) and post (end of Spring) surveys/scales.	Findings indicated that the students in EMU program performed better than university wide freshmen in fall semester and similar in spring semester. Participants more likely to return for 2nd year and achieved better	Results suggest improved academic outcomes with intervention. Implications for future studies regarding student perceptions.	Strengths: Findings similar to previous research. Limitations: Small sample size, limited generalizability, Short-term, non-randomized.	Not identified	Limited use in Capstone project, although implications regarding student perceptions of necessity of programs to enhance success should be considered.

								grades.				
Developing a team mentoring model. Nursing Standard, 23(7), 35-59.	Caldwell, J., Dodd, K., & Wilkes, C. (2008).	EBSCOhost- Academic Search Premier. Keywords - nursing students and success	Descriptive study	Level VI	Describe team mentoring program for student nurses in clinical placements.	Offer strategies to consider when offering support to mentors in clinical setting.	Review of literature for strategies to support clinical mentors of nursing students. Focus on team mentoring.	Findings indicate that a team mentoring approach can allow diversity of team members to help student meet their learning needs. Students benefit from a range of mentoring experiences.	Model of team mentoring provides a framework used to support students in clinical practice.	Strengths: Provides framework for mentoring in clinical practice. Limitations: Students may not benefit from variety of mentors and Attention to communication is important.	Not identified	Implications for communication concerns related to mentoring of student by variety of mentors. Limited use in Capstone project since intervention will occur in didactic setting.
A comprehensive approach to NCLEX-	Davenport, N.C. (2007).	Health Source: Nursing / Academic	Descriptive study	Level VI	Describe strategies used to promote nursing students success	Small Midwestern university, ADN program	4 semester NCLEX-RN Success Plan. Strategies to	Students required to complete	Email survey to 26 other ADN schools	Strengths: Use of commercially	Not identified	Use of standardized testing

RN success. Nursing Education Perspectives, 28(1), 30-33.		Edition. Keywords - Nursing students and remediation			on NCLEX-RN	with 300 students	promote success include: Content-specific computerized assessment exams, test-taking seminars, learning style inventory, match test items with NCLEX-RN format, practice NCLEX-RN test items, shared NCLEX-RN resources via BLS online, study guide questions, study groups, national review course, NCLEX-RN advising check-off form	nonproctored tests at mastery of 90% then given proctored exam. Benchmark at 60th percentile on proctored exam earns students additional points towards course grade (no negative consequences for failure to achieve benchmark).	regarding best practices for NCLEX-RN success with 9 respondents. Identified as most effective strategies were practicing NCLEX-RN questions, using NCLEX-RN prep books, review courses, 2 cr hr course to prepare students. ATI test package or component was commonly used. 2 programs required successful completion of exit exam, and 3 reported that students must achieve benchmark	available testing and remediation package. Students assigned faculty advisor upon enrollment. Limitations: Single study. Non-generalizable to other student nurse populations		package with remediation package. Strategies for success are potential interventions for Capstone project although Remediation not mandatory in this study population.

									scores for progression.			
A systematic review of the effectiveness of remediation interventions to improve NCLEX-RN pass rates. Journal of Nursing Education, 49(9), 485-492.	Pennington, T.D., & Spurlock, D. (2010).	CINAHL with Full Text. Keywords - nursing students, systematic review or clinical trial or controlled trial or meta-analysis or practice guidelines or evidence-based, and remediation	Systematic Review	Level V	To evaluate research studies that report on the effectiveness of remediation interventions in improving NCLEX-RN outcomes.	40 research studies found in literature review; 8 studies met inclusion criteria for systematic review.	Literature review: Search terms NCLEX and remediation, Databases - CINAHL, Medline, Health Source Nursing and Academic Edition, Academic Search Complete, ERIC, Education Research Complete, and Professional Development Collection using EBSCOhost reference system. Yielded 40 studies, 8 met inclusion criteria of remediation for NCLEX-RN and undergrad nursing programs, after 1994.	Rated level of evidence according to study components and pre-determined criteria. All were Level VI studies. All but 1 were retrospective descriptive reports; most were single-site designs, with small samples, no power analyses, effect sizes, or confidence intervals; limited generalizability; none addressed confoundi	Remediation prescription for improving NCLEX-RN pass rates does not have strong evidence base to support use. Although some evidence exists to support the use of remediation it is unclear which interventions have positive effects. Needs to be further research in more rigorous, systematic way with use of control group in experimental or quasi-experimental	Strengths: systematic review, use of quality categories for ranking studies in review. Limitations: limited to review of studies addressing remediation efforts with primary outcome measure of NCLEX-RN pass rates.	Not identified	Useful to Capstone Project for identifying studies with use of remediation efforts although outcome measure of improvement on NCLEX-RN pass rates is not outcome measure identified in PICO questio

								ng variables. All reported NCLEX-RN pass rates as primary outcome measure.	studies.			n.
Strategies to promote success on the NCLEX-RN: An evidence-based approach using the ACE STAR MODEL OF KNOWLEDGE TRANSFORMATION. Nursing Education Perspectives, 28(2), 82-87.	Bonis, S., Taft, L., & Wendler, C. (2007).	OVID Keywords - nursing students and success	Retrospective Descriptive	Level VI	Describe evidence-based project to develop and implement educational strategies to improve NCLEX-RN scores in a BSN program and the process knowledge transformation in EBP.	BSN program at University of Wisconsin-Eau Claire with nursing student body (sophomore-senior) of 315.	ACE STAR Model of Knowledge Transformation used to describe project. Incorporation of change, based upon strategies identified from literature review, into practice. RN Assessment test at end of 1st semester, independent study module in last semester, simulated NCLEX exam within last 6 weeks of senior year. Also faculty-developed survey of	Compared scores on NCLEX-RN prior to implementation, after partial implementation, and full implementation of strategies. Results revealed improved individual and group success on NCLEX-RN compared to previous cohorts. Increased	ACE Star Model of Knowledge Transformation was useful tool. Improvements in pass rates may be attributed to strategies initiated in partial implementation phase, and/or other course and curricular changes that occurred during period of data collection, or possible student differences. Further	Strengths: Evidence-based approach to adoption of educational strategies. Use of model to guide process. Limitations: Single study, descriptive. Limited generalizability.	Not identified	Useful information for Capstone Project regarding EBP strategy and tool used for process implementation.

							graduates following NCLEX-exam.	pass rate on NCLEX-RN following implementation of strategies statistically significant ($p < .01$). Students reported variety of individualized, self-identified prep, and stress management strategies contributed to success.	research needed to identify which strategies are most effective.			
Evidence-based nursing education: Myth or reality? Journal of Nursing education, 44(3), 107-115.	Ferguson, L., & Day, R.A. (2005).	EBSCOhost-CINAHL	Review of Descriptive Studies	Level V	Explore the concept of Evidence-based nursing education with focus on nursing's' research agenda and the science of nursing education.	Review of Nursing Literature on EBP and nursing education strategies.	Review of Literature to consider evidence and/or lack of evidence related to evidence-based nursing education.	Discussed current state of nursing evidence in relation to educational strategies. There is a lack of	The science of nursing is inadequate with a lack of emphasis on nursing education research and lack of funding. Rigorous research is	Strengths: Reviewed nursing literature for evidence on nursing education. Limitations: Authors did not discuss	Not identified	Useful for Capstone Project in exploring state of nursing science in

								quantitative and qualitative evidence to support nursing education s' body of knowledge. Most is based upon experiential knowledge and practice.	necessary to demonstrate the effectiveness of teaching approaches and strategies in nursing education.	reliability of individual studies cited in review.		relation to evidence-based nursing education.
RX for NCLEX-RN success: Reflections on development of an effective preparation process for senior baccalaureate students. Nursing Education Perspectives, 31(4), 230-232.	March, K.S., & Ambrose, J.M. (2010).	OVID	Retrospective Descriptive	Level VI	Describe a proactive approach to support and facilitate NCLEX-RN success.	Private four-year college in Pennsylvania with nursing student population of 550. 92% are undergraduates working towards baccalaureate degree.	Multifaceted approach utilizing General Systems Theory as Conceptual Framework. Utilized computerized end-of-program exam, remediation, and study plans.	Primary outcome measure was first-time pass rate on NCLEX-RN exam. Authors reported improved outcomes on first-time pass rates over 4 year period.	Improved measurable outcomes from multi-faceted approach. Further research needed to support changing needs of nursing education based upon best practice.	Strengths: Use of conceptual model as framework for study. Reported results over 4 year period. Limitations: Limited generalizability, lack of statistical evidence.	Not identified	Useful for Capstone Project in relation to conceptual framework. Consider multi-faceted approach as intervention.

Do progression and remediation policies improve NCLEX-RN pass rates? Nurse Educator, 27(2), 94-96.	Morrison, S., Free, K.W., & Newman, M. (2002).	OVID	Qualitative study	Level VI	Evaluate evidence of progression and remediation policies used to improve NCLEX-RN pass rates.	Interviewed administrators at 5 schools of nursing who implemented progression and remediation policy based on HESI exam E^2 scores.	Obtained NCLEX-RN pass rates before and after implementation of policies and description of remediation program utilized.	NCLEX-RN pass rate was primary outcome measure. Results indicated improvement of pass rates in all programs by 9-41% and ranged from 88-97% within 2 years. Findings determined to be statistically significant (p=.002). Lack of consistency in remediation strategies used among programs was identified.	Findings indicated NCLEX-RN pass rates improved in all programs. E^2 provided a benchmark for schools to improve pass rates. Use of a benchmark that pinpoints students' subject content weaknesses is an invaluable asset in designing remediation programs.	Strengths: Use of statistical methods for significance of data. Limitations: Small subject size. Lack of generalizability. Unable to address methodologies related to remediation.	Not identified	Useful for exploration of methodology for measuring outcomes of policy implementation. Not useful for identifying remediation strategies related to Capstone Project.

Best practices in NCLEX-RN readiness preparation for baccalaureate student success. Nurse Educator, 23(6), 46S-53S.	Frith, K., Sewell, J.P., & Clark, D.J. (2008).	OVID	Descriptive Study	Level VI	Disseminate a baccalaureate program's efforts to improve NCLEX-RN pass rates.	BSN Nursing program in Southeastern US. Initial cohort of 67 students. 51 passed NCLEX-RN on 1st attempt and 16 failed (2 groups). Different cohorts followed over 4 year period.	NCLEX-RN pass rates pre and post intervention. Mean cumulative GPAs and scores on Mosby Assess Test and NLN exams compared between groups. Standardized testing changed to HESI Exit Exam after pilot program with remediation strategies from HESI and implementation of review course in last semester of program.	HESI Exit Exam scores and NCLEX-RN pass rates were primary outcome measures. Results indicated statistically significant differences in exam scores post intervention with increased pass rates.	Findings indicate a data-based, analytical approach to test preparation has enhanced student opportunities for success. Authors identified best practices, based upon cohort academic achievement, student evals, faculty observations, and evidence from nursing literature, for use in last semester review course.	Strengths: Statistical analysis of data. Results reported over 4 year period. Limitations: Single site; limited generalizability.	Not identified	Useful for Capstone Project for literature related to "best practices" identified in study.
At-risk students: do theory grades + standardized examinations = success? Nurse Educator,	Stuenkel, D.L. (2006).	CINAHL with Full Text – Key words: at-risk nursing students	Descriptive Study; Archival, correlational design	Level VI	Explore predictive value of standardized exams and achievement measures for NCLEX performance to identify students	Records examined from 6 graduating BSN classes between 1997-2001. 312 students were identified.	Data collected: Demographic data, GPA, preadmission test scores, standardized exam scores, grades in nursing theory	NCLEX-RN pass rate was primary outcome measure. Best predictors were	Entrance criteria, progression variables, and standardized tests may be used to predict	Strengths: Statistical analysis of data at 3 points in nursing curriculum. Limitation	Not identified	Useful for Capstone Project for statistical measur

31(5), 207-212.					"at-risk" for failure.		courses, and NCLEX pass rates. Descriptive statistics were calculated. Discriminant analyses performed to examine predictive ability of program indicators at various points in curriculum.	standardized exams, nursing theory course grades, and entrance criteria.	NCLEX success for diverse student sample. Ongoing research is needed in this area.	s: Single study, diverse student population, limited generalizability.		ement methodology, and indicators for "at-risk" student population.
Instructional Tools for nursing education: Concept maps. Nursing Education Perspectives, 24(6), 311-317.	All, A.C., Huycke, L.I., & Fisher, M.J. (2003).	Health Source: Nursing / Academic Edition. Key words: Nursing students and remediation	Qualitative, Descriptive Study	Level VI	Discuss process of cognitive/concept mapping and use in nursing education and educational research.	Participants were upper division undergraduate and graduate nursing students at a health science campus in south central US university.	Maps used as teaching strategy. Map examples, discussion points, analysis and interpretation of mapping, and procedures for map construction were discussed.	Outcome measure was evolution of student knowledge via series of concept maps.	Research is needed related to use of concept mapping as teaching tool, including use to assess critical thinking. Authors present several potential research questions to explore for further knowledge development	Strengths: Discussed behavior change and learning theory; pictorial presentation of concept maps. Limitations: No statistical data, single study.	Not identified	Concept map may be useful as strategy to develop student interaction and critical thinking, and as a remediation strategy as part of multi-

												faceted approach. Limited use as single intervention for Capstone Project. Consider theory for Capstone Project related to behavior change and learning theory; Bandera's social cognitive theory.
Care groups: A model to mentor	Pullen, R. L., Murray, P.H., &	OVID Key words: Nursing	Qualitative, Descripti	Level VI	Discuss structure and process of Care Groups and	Associate degree first semester novice	Initial meeting with students, establishment	Primary outcome measure	Care Groups have created a caring	Strengths: Theoretical framework	Not identif	Theoretical framew

novice nursing students. Nurse Educator, 26(6), 283-288.	McGee, K.S. (2001).	students and mentoring	ve Study		faculty role as mentor.	nursing students and faculty mentors in basic nursing skills lab. Pilot study - 5 voluntary faculty mentors with 10-15 students each. Care Group implementation in following semester as part of teaching load with 18 faculty mentors and 4-7 novice students each.	of goals and objectives, faculty demonstration of nursing skill with group practice of Care Group members, and eval of students' performance. Students surveyed to determine satisfaction in pilot study and formally each year. Faculty mentors surveyed also.	was decreased anxiety and successful completion of nursing skills. Pass/fail rates compared pre and post intervention and demonstrated improvement in acquisition of psychomotor skills.	learning environment and decreased anxiety associated with skill demonstration. May be useful to integrate intervention throughout curriculum. Care Group Model may be beneficial to promote skills acquisition in novice students.	and Conceptual Model. Limitations: Single study, limited generalizability, limited statistical data.	ied	orks (Watson, Knowles, and Bandura) and conceptual model (Care Group Model) may be useful in Capstone Project.
An effective strategy for improvement of program outcomes in a higher education setting. Nursing Education Perspectives, 29(4), 205-211.	Brown, J.F., & Marshall, B.L. (2008).	Health Source: Nursing / Academic Edition. Key words: Nursing students and remediation	Descriptive Study	Level VI	Description of continuous quality improvement approach to improve program outcomes.	Department of Nursing at Norfolk State University, a historically black university In Virginia. Associate degree nursing students, diverse student population.	Use of Deming's four-phase process for implementation of CQI program in nursing dept. First step was consideration of dept. mission - high quality educational preparation of nurses as major	Primary outcome measures identified were NCLEX-RN pass rates, graduation rates, student satisfaction, and employer	QEP process involved review of best practices in order to improve program outcomes. Change involves a series of steps to produce	Strengths: Review of best practices, CQI efforts, Systems and process change theory. Limitations: Single study,	Not identified	CQI process change theory may be useful in Capstone Project.

							focus. Development of quality enhancement plan (QEP) and identification of tools for implementation (CQI tool kit).	satisfaction. Variety of teaching and learning strategies used to engage students. Significant improvements in NCLEX-RN pass rates after first year of QEP. Insufficient data to determine employer satisfaction.	improvement and institutionalize best practices.	limited statistical data, limited generalizability.		

Appendix B

Logic Model Tabular Representation

THE DEVELOPMENT OF A FACULTY/PEER MENTORING PROGRAM FOR FIRST SEMESTER BACCALAUREATE NURSING STUDENTS
Felicia G. Pendleton, MSN, RN, NP-C, APN (DNP Student)

Problem Identification:
· Admission to Baccalaureate Nursing (BSN) Program
· Academic Rigor of BSN Program
· Cultural Diversity Issues
· Lack of Financial/Economic Resources
· Lack of Family/Social Support
· BSN Students "At Risk" for Academic Failure

Resources -Inputs	**Constraints**	**Activities**	**Outputs**	**Outcomes Short Term**	**Outcomes Long Term**	**Impact**
Personnel	Budget	Events (Mentoring Sessions)	Number of participants (at-risk students)	Knowledge (Cognitive) Improvement	Retention Rates (Increased)	BSN Graduation Rates (Increased)
Financial	Physical Space	Training (Faculty/Peers)	Amount of Education Delivered	Skill (Performance) Improvement	Attrition Rates (Decreased)	Increased number of BSN nurses employed in the community
Time	Timeframe	Education (First Semester BSN Students)	Number of Hours of Service (Faculty/Peers)	Improved Academic Performance	Increased Diversity of Graduate Pool	Increased diversity of nursing workforce in the community
Materials	Existing Culture	Media/ Technology	Participation Rates (at-risk students and peers)	Increased Social Support		
Equipment	Stakeholder Buy-In	Meetings				
Facilities	IRB Approval	Development of Processes				

Adapted from "Logic Model for Actual DNP Project" by M.E. Zaccagnini, 2007, and "Template for Logic Model of Project" by K.W. White and M.E. Zaccagnini, 2009, (as cited in Zaccagnini, M. E., & White, K.W. (Eds.), *The doctor of nursing practice essentials: A new model for advanced practice nursing*. Copyright 2011 by Jones and Bartlett Publishers).

Appendix C

Database Draft

Data Capture Form
Number of Mentoring Sessions (Intervention)
Timing of Mentoring Sessions during the Fall 2011 Semester
Content of Mentoring Sessions (Health Assessment related-content)
Hours of Involvement per Session (Faculty and Peers)
Number of Participants ("at risk" students)
Participation Rates of "at-risk" students and peers
Characteristics of Participants (Demographic Data)
Scores on Module Exams #1 and #2 (Identification of "at risk" students)
Scores on Module Exams #3 and #4 (sub-group of "at risk" students)
Comprehensive Final Exam Scores (sub-group of "at risk" students)
Performance Exam Scores (sub-group of "at risk" students)
Number of Students Successfully Completing Health Assessment Course (sub-group of "at risk" students)
Data from Previous Semester (s) in Health Assessment Course (Characteristics of student populations, "at risk" students, exam scores, attrition rates, retention rates)

Appendix D

DNP Project Process Model: Calendar View

DNP PROJECT PROCESS MODEL STEPS	FALL 2010 Semester (August-December)	SPRING 2011 Semester (January-May)	SUMMER 2011 Semester (May-August)	FALL 2011 Semester (August-December)	SPRING 2012 Semester (January-May)
Step I – Problem Recognition Identified Need, Problem Statement, Literature Review	Identified Need, Problem Statement	Literature Review			
Step II – Needs Assessment Identify population/community, Identify sponsor & stakeholders, Organizational assessment, Assess available resources, Desired outcomes Team selection, Cost/Benefit Analysis, Define scope of project	Identify population/ community	Identify sponsor & stakeholders, Organizational assessment, Assess available resources, Desired outcomes	Team selection, Cost/Benefit Analysis, Define scope of project		
Step III – Goals, Objectives, & Mission Statement Goals, Process/Outcome objectives, Develop Mission Statement			Goals, Process/Outcome objectives, Develop Mission Statement		
Step IV – Theoretical Underpinnings Theories of Change, Theories to support project framework	Theories of Change, Theories to support project framework	Theories of Change, Theories to support project framework			
Step V – Work Planning Project proposal, Project management Tools: Milestones, Timeline, Budget			Project proposal, Project management Tools: Milestones, Timeline, Budget		
Step VI – Planning for Evaluation Development Evaluation plan, Logic Model development			Development Evaluation plan, Logic Model development		
Step VII – Implementation IRB approval, Threats and barriers, Monitoring implementation phase, Project closure				IRB approval, Threats and barriers, Monitoring implementation phase, Project closure	
Step VIII – Giving Meaning to the Data Qualitative Data, Quantitative Data				Qualitative Data, Quantitative Data	Qualitative Data, Quantitative Data
Step IX – Utilizing & reporting Results Written Dissemination, Oral Dissemination, Electronic Dissemination					Written Dissemination, Oral Dissemination, Electronic Dissemination

Appendix E

Project Budget and Resources

Project Resources	**Cost of Resources**	**Total Budget**
Faculty Mentor(s)	$40.00/hour per faculty mentor (minimum of 8 hours/week for 15 week semester)	$4800.00 per mentor
Student Mentor(s)	$10.00/hour per mentor (minimum of 3 hours/week for 15 week semester)	$450.00 per mentor
Administrative/Office Assistant (Excel Spreadsheets)	$12.00/hour (12 hours)	$144.00
Statistical Assistance (Statistician)	$40.00/hour (12 hours)	$480.00
Classroom Space/Use of Facilities (Labs)	Use of existing class/lab ($0.00) Rent ($50.00/day)	$0.00 to $750.00
Equipment: Computer, Overhead Projector, Printer, Toner, Paper	$1000.00 – 2000.00	$1000.00 – 2000.00

Appendix F

IRB Approval Letter – UAFS

University of Arkansas - Fort Smith

Institutional Review Board
Response to Request for Review

UA Fort Smith IRB	Registration 11-002 Date September 15, 2011	
Principal Investigator	Name Felicia Pendleton Telephone 479-788-7922	E-mail felicia.pendleton@uafs.edu
Project Title or Description	The Development of a Faculty/Peer Mentoring Program for First Semester Baccalaureate Nursing Students	

The items checked need to be completed for further review

- ☐ Add advisor/student contact information
- ☐ Add a statement that the participant is at least 18 years of age. (Under 18 require parental/guardian permission.)
- ☐ Add a statement that participation is voluntary and that participation can be withdrawn at any time without penalty.
- ☐ Provide a signature and date line for participants on the consent form.
- ☐ Add a space on the Parental Permission form for the child's name.
- ☐ Develop a simple assent form for review
- ☐ Add statement regarding video/audio tapes must include where they will be kept, for how long, when or if they will be destroyed, who will have access to them, etc.
- ☐ A statement from the school, institution, facility, etc., granting permission to conduct research is needed
- ☐ A cover letter for mail surveys is needed.
- ☐ A copy of the survey instrument is needed.
- ☐ A copy of the consent form is needed.
- ☐ A copy of the assent form is needed.
- ☐ A statement of how the data will be kept confidential is needed.
- ☐ What is the expected duration of the study?
- ☐ How will you protect the privacy of the subjects?
- ☐ How will you recruit subjects?
- ☐ Address debriefing or attach form
- ☐ References are needed.

Comments: _____

Recommendations:

☐ **Exempt from Review**

Signed _____ Date _____

☑ **Expedited Review**

- ☑ Approved as submitted
- ☐ Approved with conditions which must be met prior to initiation of research.
- ☐ Not approved

Signed Dr. Sydney Fulbright Date 9/13/2011

☐ **Full Board Review**

- ☐ Approved as submitted
- ☐ Approved with conditions noted which must be met prior to initiation of research.
- ☐ Not approved

Signed _____ Date _____

Note: Approval expires one (1) year from the date above. If significant changes are made to this protocol, prior approval from the IRB must be obtained. If you disagree with the final IRB recommendation you may appeal the decision

Appendix G

IRB Approval Letter – Regis University

REGIS UNIVERSITY

Academic Affairs
Academic Grants

3333 Regis Boulevard, H-4
Denver, Colorado 80221-1099

303-458-4206
303-964-3647 FAX
www.regis.edu

IRB – REGIS UNIVERSITY

October 13, 2011

Felicia Pendleton
823 Live Oak Way
Alma, AR 72921

RE: IRB #: 11-245

Dear Felicia:

Your application to the Regis IRB for your project "The Development of a Faculty/Peer Mentoring Program for First Semester Baccalaureate Nursing Students" was approved as exempt on October 10, 2011.

Supporting reference information from the chair: "...as an exempt study under 45CFR46.101(b)(1) (educational strategies).

The designation of "exempt," means no further IRB review of this project, as it is currently designed, is needed.

If changes are made in the research plan that significantly alter the involvement of human subjects from that which was approved in the named application, the new research plan must be resubmitted to the Regis IRB for approval.

Sincerely,

Daniel Roysden, Ph.D.
Chair, Institutional Review Board

cc: Dr. Phyllis Graham-Dickerson

Appendix H

CITI Training Certificate

CITI Collaborative Institutional Training Initiative

Human Research Curriculum Completion Report
Printed on 6/11/2011

Learner: Felicia Pendleton (username: pendl168)
Institution: Regis University
Contact Information: 823 Live Oak Way
Alma, AR 72921 U.S.A.
Department: Graduate Nursing - DNP program
Phone: (504) 554-1224
Email: pendl168@regis.edu
Social Behavioral Research Investigators and Key Personnel:

Stage 1. Basic Course Passed on 06/11/11 (Ref # 6150247)

Required Modules	**Date Completed**	
Introduction	06/08/11	no quiz
History and Ethical Principles - SBR	06/08/11	4/4 (100%)
The Regulations and The Social and Behavioral Sciences - SBR	06/11/11	5/5 (100%)
Assessing Risk in Social and Behavioral Sciences - SBR	06/11/11	5/5 (100%)
Informed Consent - SBR	06/11/11	5/5 (100%)
Privacy and Confidentiality - SBR	06/11/11	5/5 (100%)
Regis University	06/11/11	no quiz

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Course Coordinator