4-2010

Team-based learning: Engagement and accountability with psychometric analysis of a new instrument

Heidi Ann Mennenga
University of Nevada, Las Vegas

TEAM-BASED LEARNING: ENGAGEMENT AND ACCOUNTABILITY

WITH PSYCHOMETRIC ANALYSIS OF A NEW INSTRUMENT

by

Heidi Ann Mennenga

Bachelor of Science
South Dakota State University
2001

Master of Science
South Dakota State University
2006

A dissertation submitted in partial fulfillment
of the requirements for the

Doctor of Philosophy in Nursing
School of Nursing
Division of Health Sciences

Graduate College
University of Nevada, Las Vegas
August 2010

UNLV
UNIVERSITY OF NEVADA LAS VEGAS

THE GRADUATE COLLEGE

We recommend that the dissertation prepared under our supervision by

Heidi Ann Mennenga

entitled

Team-Based Learning: Engagement and Accountability with Psychometric Analysis of a New Instrument

be accepted in partial fulfillment of the requirements for the degree of

Doctor of Philosophy in Nursing
School of Nursing

Tish Smyer, Committee Chair

Michele Clark, Committee Member

Nancy York, Committee Member

Chad Cross, Graduate Faculty Representative

Ronald Smith, Ph. D., Vice President for Research and Graduate Studies
and Dean of the Graduate College

August 2010

ABSTRACT

Team-Based Learning: Engagement and Accountability With Psychometric Analysis of a New Instrument

by

Heidi Ann Mennenga

Dr. Tish Smyer, Examination Committee Chair
Associate Dean for Academic Affairs
University of Nevada, Las Vegas

With calls for transformation, innovation, and excellence in nursing education from national bodies of nursing, nurse educators must determine the best possible teaching strategies to meet educational standards. Team-based learning, an innovative teaching strategy, offers educators a structured, student-centered learning environment and may be more effective than current teaching pedagogies in meeting the needs of nurse educators.

The purpose of this study was to (a) examine differences in student engagement between baccalaureate nursing students taught using team-based learning and those taught using traditional lecture, (b) examine how levels of engagement affected examination scores, (c) examine potential differences in student examination scores between baccalaureate nursing students taught using team-based learning and those taught using traditional lecture, (d) examine how accountability affects Readiness Assurance Test scores, and (e) determine whether a newly developed instrument accurately measured the three subscales.

This quasi-experimental study used a control group comprised of 74 students taught using traditional lecture and an experimental group comprised of 69 students taught using team-based learning. Students were asked to complete a demographic information form and the "Classroom Engagement Survey." The experimental group also completed the

"Team-Based Learning Student Assessment Instrument." Examination scores and Readiness Assurance Test scores were also obtained after consent.

Findings showed significant differences in student engagement ($p < .001$). Repeated measures analysis of variance was used to analyze examination scores and indicated a significant effect within subjects ($p < .001$). Mixed results were found regarding relationships between student engagement and examination scores and also accountability and scores on the Readiness Assurance Tests. Psychometric testing on the "Team-Based Learning Student Assessment Instrument" indicated it to be a valid and reliable instrument.

Although this study did not find team-based learning to be better than traditional lecture in some areas, the findings regarding examination scores do suggest that team-based learning is at minimum equally as effective as traditional lecture. Furthermore, this study proves that team-based learning provides a more engaging learning environment for students when compared to traditional lecture and, therefore, has the potential to enhance nursing education and provide a more positive teaching and learning environment for both nurse educators and students.

ACKNOWLEDGEMENTS

The author wishes to express appreciation to the following:

To Dr. Tish Smyer, my committee chair, academic advisor, and mentor for your guidance, patience, and overwhelming support. You have gone above and beyond to assist me in achieving my professional goals.

To Dr. Michele Clark, Dr. Nancy York, and Dr. Chad Cross, my committee members for your time, commitment, and respective areas of expertise. Your comments have been invaluable.

To Stephanie DeBoor, my dear friend, for all the conversations and support you have provided. We have taken this journey together and I could not have finished without you!

To Julie Abraham, my editor, for your time and patience. You have taught me to become a better writer.

To Sigma Theta Tau Phi Chapter for the grant to support my research.

To the University of Nevada, Las Vegas for awarding me the Yaffa Dahan Dissertation Award to support my research.

Finally, to my husband, Lance, for your patience, encouragement, support, and unconditional love. You are the reason I have been successful in this endeavor.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

Educators face covering large amounts of content, teaching students how to apply that content in the professional setting, and ensuring that students are able to collaborate effectively with others (Fink & Parmelee, 2008). Furthermore, nurse educators must confront the challenge of preparing students for the constantly changing health care environment and the increasing acuity of patients. These challenges, often intensified by the need to meet the needs of all students in large classes, have left nurse educators searching for teaching strategies to improve both student learning and preparation for real-life situations. Additionally, national bodies such as the American Association of Colleges of Nursing (AACN), the National Council of State Boards of Nursing (NCSBN), and the National League for Nursing (NLN) have begun to call for the reformation of nursing education in response to the demand for excellence in nursing education. This call for reformation has created a sense of urgency among nurse educators to determine the best possible strategies to meet educational standards and to create a rich, engaging learning environment for nursing students.

Team-based learning, an innovative teaching strategy that utilizes small-group interaction, may be more effective than current teaching pedagogies in teaching necessary concepts to nursing students and confronting the challenges faced by nurse educators (Fink & Parmelee, 2008). Additionally, according to Parmelee (2008), team-based learning is a student-centered, active learning strategy that truly engages students in their education. Parmelee (2008) also asserts that "for professional students to be engaged fully, challenged intellectually, and have the opportunity to develop interpersonal and

teamwork skills, the team-based learning strategy holds the greatest promise in curriculum development" (p. 6). Most teaching strategies currently used cannot create a level of engagement comparable to that offered in team-based learning.

Background of the Problem

Educators face daily challenges of teaching large amounts of necessary content and ensuring that students are able to apply that content in the professional setting (Fink & Parmelee, 2008). Particularly, in nursing education, educators must prepare students for real-life situations and the ever-changing health care environment. Because of the amount of content that needs to be covered in class, students often have few opportunities to apply their knowledge, resulting in a lack of deep learning (Jones, 2007). Parmelee (2008) points out, "it is rare that application of knowledge is the cornerstone of a curriculum's design" (p. 4). Effective teaching and learning requires students to be actively involved in discussing content, solving problems, and reflecting upon their learning (Barak, Lipson, & Lerman, 2006; Jones, 2007). However, traditional lecture, one of the most commonly used and most well-known teaching strategies, creates a passive learning environment and discourages student-faculty contact (Di Leonardi, 2007; Touchet & Coon, 2005). Students play a non-participatory role in the learning process, encouraging mere memorization of content rather than its application (Di Leonardi, 2007; Jones, 2007).

The AACN (2008a) revised the "Essentials of Baccalaureate Education for Professional Nursing Practice" document in an effort to transform not only nursing education but also health care delivery. Additionally, the NCSBN is currently considering revising the "Model Education Rules" "to foster innovative strategies while

continuing to regulate core education standards" (Mennenga & Smyer, 2010, p. 1). Currently, the NCSBN has developed eleven premises (see Table 1), which both necessitate and support innovative approaches in education (Odom, 2009).

Table 1

Eleven Premises of the NCSBN

1. The Boards of Nursing's mission is to protect the public.
2. Other factors, including Board of Nursing regulations, may constrain innovation.
3. New strategies in nursing education are a necessity as health care acuity and knowledge increase.
4. For innovation in nursing education, partnerships and collaboration are required.
5. Every level of nursing education can implement innovation.
6. In meeting nursing education outcomes, evidence-based innovation is recognized by nursing regulation.
7. During innovative changes, quality can still be maintained.
8. Each nursing program still maintains ultimate responsibility for and accountability of innovative changes.
9. Technological advances in nursing education may influence innovation.
10. Supervised clinical instruction is required in nursing.
11. Minimum requirements should be reflected in nursing program regulation criteria and be consistent with public protection.

Note. (Odom, 2009).

For many years, the NLN has advocated for innovation and excellence in nursing education (NLN, 2007). While the NLN acknowledges the challenges that nurse educators face, it also encourages nurse educators to raise their educational standards and base teaching strategies on evidence-based practice rather than merely relying on tradition (Ironside & Valiga, 2006). However, evidence-based teaching strategies must exist in order for nurse educators to accomplish this goal. Furthermore, the NLN has specifically called for "dramatic reform and innovation in nursing education to create and shape the future of nursing practice" (NLN, 2003, p. 1). Although nurse educators have previously focused on rearranging content to create changes, the NLN proposes that truly innovative changes will only occur when educators revise or expand the very pedagogy that guides their teaching practices: "Innovation implies dramatic reformation in how students are educated" (NLN, 2003, p. 2). To accomplish this reform, the NLN calls for nursing schools to "enact substantive innovation in schools, document the effects of the innovation being undertaken, and develop the science of nursing education upon which all practicing teachers can draw" (NLN, 2003, p. 3). The recommendation by national bodies to transform nursing education creates a mandate for nurse educators. Schools of nursing, and specifically nursing faculty members, are in an ideal position to foster and substantiate transformative and innovative educational strategies. The AACN's (2008b) call for the "intentional use of active, collaborative, and integrative learning strategies" (p. 3) supports a relatively new teaching and learning strategy--team-based learning--that can assist nurse educators in meeting the increasingly high demands of nursing education. Additionally, this active learning strategy can foster a spirit of inquiry and community of

scholars, which is also a component of the "Nurse Faculty Tool Kit for the Implementation of the Baccalaureate Essentials" (Mennenga & Smyer, 2010).

Although a relatively new practice in nursing education, team-based learning offers a structured, student-centered learning strategy that focuses on active learning strategies. Nurse educators have used many active learning strategies, such as group work, discussions, and the use of case studies, for decades in nursing education. However, while studies have indicated these active learning strategies enhance critical thinking skills, engage students, and encourage self-learning, limited use of these strategies still exist in current nursing education (Barak et al., 2006; Bowles, 2006). This limited use may be due to the numerous challenges faced by nurse educators. Active learning strategies are often challenging to create and require extensive time to prepare and implement in the classroom. In addition, traditional lecture allows coverage of large amounts of material, which is difficult to accomplish using active learning strategies (Di Leonardi, 2007). Coverage of material, as well as inadequate structure of these activities within the classroom, may create faculty member and student concerns about the use of active learning strategies (Bowles, 2006). On the contrary, the advantages of active learning strategies are captured with team-based learning such as enhancing critical thinking skills and student engagement as well as encouraging student self-learning, while offering nurse educators a structured, time efficient implementation model (Barak et al., 2006; Jeffries & Norton, 2005; Mennenga & Smyer, 2010; Sims, 2006).

Dr. Larry Michaelsen developed team-based learning in the late 1970s. At the time, he was a faculty member at the University of Oklahoma confronted with the challenge of teaching a business course to a class of 120 students. Although Michaelsen had used

group activities effectively in smaller classrooms, he was now facing classes that were triple the size. Instead of using traditional lecture, he decided to use the class time for group activities. During the first semester in which Michaelsen initiated team-based learning, three outcomes occurred: students found the learning strategy beneficial, the learning strategy created conditions that enhanced learning, and Michaelsen actually had fun teaching (Fink & Parmelee, 2008). Since that time, Michaelsen has refined the strategy, and other disciplines, including medicine and law, now increasingly use team-based learning in their classrooms (Dana, 2007; Thompson, Schneider, Haidet, Perkowski, & Richards, 2007). Although team-based learning has been used minimally in nursing education, research has shown that this strategy promotes critical thinking skills, interpersonal communication skills, and problem solving skills, all of which are necessary in the nursing profession (Clark, Nguyen, Bray, & Levine, 2008).

The calls for reform from the AACN, the NCSBN, and the NLN have prompted nurse educators to determine the best possible teaching strategies to meet educational standards and the needs of both students and nurse educators. As nurse educators review their teaching pedagogies, current strategies may fall short. Thus, team-based learning is a teaching and learning strategy that has the potential to enhance nursing education by providing a structured, student-centered learning environment, which may result in a more positive and engaging teaching and learning environment for both nurse educators and students.

Statement of Purpose

The purpose of this research is fivefold. First, it examines potential differences in student engagement between baccalaureate nursing students taught using team-based

learning and those taught using traditional lecture. Second, it examines how levels of engagement affect examination scores. Third, it examines potential differences in student examination scores between baccalaureate nursing students taught using team-based learning and those taught using traditional lecture. Fourth, it examines how accountability affects Readiness Assurance Test scores, and fifth, it determines whether a newly developed instrument accurately measures the three subscales: accountability, preference for lecture or team-based learning, and student satisfaction. Results from this study will provide important insight into teaching and learning strategies used in nursing classrooms and have the potential to transform the delivery of nursing education.

Research Questions and Hypotheses

Based on the purposes of this research, this study will attempt to answer five research questions. Research questions, often used in social science research, explore relationships among variables. Although often redundant, hypotheses may be used in conjunction with research questions when they build on each other or if recommended by a committee member (Creswell, 2008). The following format has been chosen for these two reasons and a subsequent hypothesis follows each research question. Since hypotheses usually are generated by reviewing the literature (Burns & Grove, 2001), and no literature exists regarding research question #5, no hypothesis follows.

Research question #1. Do significant differences exist in self-reported student engagement with the use of team-based learning or traditional lecture?

Hypothesis #1. Baccalaureate nursing students taught using the team-based learning strategy will report higher levels of engagement compared to students taught using traditional lecture.

Research question #2. Do significant differences exist in examination scores between baccalaureate nursing students using team-based learning versus traditional lecture?

Hypothesis #2. Baccalaureate nursing students taught using the team-based learning strategy will have higher examination scores compared to students taught using traditional lecture.

Research question #3. What is the relationship between student engagement and examination scores?

Hypothesis #3. Increased student engagement will positively correlate with increased examination scores.

Research question #4. What is the relationship between self-reported accountability and students' scores on the Readiness Assurance Tests?

Hypothesis #4. Increased self-reported accountability scores will positively correlate with performance on the Readiness Assurance Tests.

Research question #5. Does a newly developed instrument, the "Team-Based Learning Student Assessment Instrument," accurately measure the three subscales: accountability, preference for lecture or team-based learning, and student satisfaction?

Definition of Terms

Definitions of the terms used in this study follow.

Team-based learning is an instructional strategy involving multiple small groups in which learners must actively participate. The instructor acts as both facilitator and content expert as necessary (Team-Based Learning Collaborative, 2005).

Readiness Assurance Process refers to "the basic mechanism to ensure that students are exposed to course content" (Michaelsen & Sweet, 2008a, p. 22). The process consists of five elements: reading assignments, individual test, team test, appeals process, and instructor feedback.

Readiness Assurance Tests refer to a multiple-choice quiz taken first individually and then as a team (Michaelsen & Sweet, 2008b).

Traditional classroom lecture refers to a learning environment that focuses on the faculty member's verbal dissemination of information. The faculty member may supplement traditional lectures with handouts or visual aids. For this study, physical attendance of students is required (Rowles, 2005).

Learner engagement occurs when the student thinks about the content, resulting in a deep interaction with and knowledge of the information and may occur individually, with others, or on both levels (Haidet, Schneider, & Onady, 2008).

Accountability occurs when students demonstrate advance preparation for class or contribute to team activities (Michaelsen, 2002).

Student recall refers to the ability of students to retrieve stored knowledge for later use.

Attention levels refer to students' ability to maintain focus and concentration during both traditional lecture and team-based learning activities.

Student satisfaction includes generally positive feelings toward either team-based learning activities or traditional lecture.

Examination scores refer to the total points awarded on each of the three unit examinations and one final comprehensive examination taken during the course of the semester.

CHAPTER TWO

REVIEW OF THE LITERATURE

The review of the literature focuses on issues that relate to team-based learning; however, traditional lecture is also discussed as it is a key part of the "Team-Based Learning Student Assessment Instrument" used for data collection. This chapter discusses traditional lecture, team-based learning in nursing and other disciplines, an overview of the team-based learning strategy, and the conceptual model used for this study.

Traditional Lecture

In 1987, Chickering and Gamson (1987) published "Seven Principles for Good Practice in Undergraduate Education." Both were currently members of the board of the American Association for Higher Education (AAHE) and had concerns about the improvement of undergraduate education. Since the publication of the article, many faculty members across the nation use the seven principles as a guide for undergraduate education. However, traditional lecture fails to address many, if not all, of these principles:

- "encourages student-faculty contact,
- encourages cooperation among students,
- encourages active learning,
- gives prompt feedback,
- emphasizes time on task,
- communicates high expectations, [and]

- respects diverse talents and ways of learning" (Chickering & Gamson, 1999, p. 76).

Most faculty members agree that traditional lecture lacks student-faculty interaction (Adams & Gilman, 2002), which, according to Chickering and Gamson (1999), is an essential component of good undergraduate education. Furthermore, Chickering and Gamson (1999) encourage cooperation among students and active learning. Again, traditional lecture fails to meet the requirements of either of these principles (Di Leonardi, 2007). Additionally, one could argue that traditional lecture does not meet the four remaining principles either, therefore making it a poor choice for good practice in undergraduate education.

Traditional lecture, or didactic teaching, one of the most commonly used and most well-known teaching strategies, refers to a learning environment in which the faculty member is the focus of the student (Di Leonardi, 2007; Touchet & Coon, 2005). The faculty member provides information to students primarily through verbal dissemination and may include handouts or visual aids (Rowles, 2005). In this environment, faculty members control the course content and the pace of learning (Bowles, 2006). Since the pace of the lecture is limited only by how fast the faculty member can talk, students often feel overwhelmed with information (Di Leonardi, 2007).

Although useful in covering a large amount of material in a short period of time, traditional lecture does not allow for student engagement and often encourages simple memorization of the content rather than application (Di Leonardi, 2007; Janssen, Skeen, Schutt, & McMahon, 2008; Touchet & Coon, 2005). Students often have few opportunities to apply knowledge, resulting in a lack of deep learning (Jones, 2007).

"Effective learning is best achieved when it is actively constructed by the learner through experience, both individually and socially" (Jones, 2007, p. 400). Furthermore, traditional lecture can substantially hinder student learning. Because this teaching strategy merely transmits information unidirectionally to students, it produces only surface learning (Di Leonardi, 2007; Jones, 2007). Many students expect that the faculty member will cover all of the important and relevant information during traditional lecture, which will allow them to successfully complete the class. In addition, when class time is focused on continuous traditional lecture or use of PowerPoint® slides, students fail to recognize the importance of class preparation. Students often do not complete pre-class readings since the faculty member covers the important information in the traditional lecture (Bowles, 2006).

Likewise, Young (2009) argues that traditional lecture, including the use of PowerPoint®, is the most boring method of teaching. He challenges faculty members to utilize teaching strategies, such as debates, to make class time memorable to students for years to come. However, in promoting this style of teaching, Young (2009) initially met resistance from students trained simply to receive the important or necessary material. As one faculty member stated, "Students have been socialized to view the educational process as essentially passive" (Young, 2009, "Student Resistance," para. 2). This passive learning environment creates students who develop neither the interest nor the skills to learn and apply the information independently (McInerney & Fink, 2003; Touchet & Coon, 2005). In fact, didactic teaching "encourages complacency and replaces curiosity with the desire to achieve a higher grade instead of a higher level of knowledge" (Janssen et al., 2008, p. 76). When using traditional lecture, faculty

members offer students a non-participatory role in the learning process, encouraging simple memorization of the content rather than application (Di Leonardi, 2007; Jones, 2007). Particularly in large classroom settings when teachers face the daunting task of meeting the needs of every individual, students often revert to merely memorizing the material and discarding it when no longer needed (Jones, 2007).

Comparing Traditional Lecture and Other Teaching Strategies in Nursing Education

Researchers have conducted multiple studies comparing traditional lecture to other teaching strategies in nursing education, although some findings provide ambiguous results. Nevertheless, many studies do indicate that teaching strategies other than traditional lecture may benefit student outcomes (Brannan, White, & Bezanson, 2008; Goldrick, Appling-Stevens, & Larson, 1990; Jeffries, 2001; Johnson & Mighten, 2005; Kumrow, 2007; Salyers, 2007; Stiernborg, Zaldivar, & Santiago, 1996; Woo & Kimmick, 2000), student perceptions and attitudes (Jeffries, 2001; Kumrow, 2007; Pugsley & Clayton, 2003; Sinclair & Ferguson, 2009; Siu, Laschinger, & Vingilis, 2005; Williams, Anderson, & Day, 2007), and critical thinking (Tiwari, Lai, So, & Yuen, 2006). Out of seventeen studies that compared traditional lecture to other teaching modalities in nursing education, only three studies did not report any significant findings when using teaching strategies other than traditional lecture (Day & Payne, 1987; Jeffries, Woolf, & Linde, 2003; Miller, 2003). Furthermore, only one study indicated better results with the use of traditional lecture (Murray, 1982).

Student outcomes. Out of the seventeen previously mentioned nursing studies, ten studied student outcomes. Kumrow (2007) compared 20 graduate nursing students using

only traditional lecture and 18 graduate nursing students in a Web-based course using a 50% online component and a 50% lecture component. Results indicated that students in the combination Web-based and lecture course had significantly higher end-of-course grades than students in the traditional lecture-only course ($p = .029$). Similarly, Salyers (2007) compared traditional lecture and a Web-enhanced course ($n = 36$). Results from the post-test design suggested that undergraduate nursing students in the Web-enhanced group scored significantly higher on the final examination than students in the traditional lecture group ($p < .01$). The web-enhanced group also performed higher on the final skills examination, although this finding was not significant.

Using a different strategy, Jeffries (2001) used a pre-test and post-test design to compare traditional lecture with an interactive, multimedia CD-ROM. Using a sample size of 42 junior-level nursing students, she found that the CD-ROM group had significant cognitive gains ($p = .01$). Similar findings resulted from a study by Goldrick, Appling-Stevens, and Larson (1990), which used a pre-test and post-test design to compare traditional lecture and a programmed unit of instruction (self-directed learning) in a study of 108 undergraduate nursing students. Results indicated that students using a programmed unit of instruction scored higher on post-tests than students using traditional lecture ($p < .001$). A similar pre-test and post-test design by Brannan, White, and Bezanson (2008) compared traditional lecture and simulation using a sample of 107 junior-level nursing students. Results suggested that students in the simulation group had significantly higher post-test scores than students in the traditional lecture group ($p = .05$).

Johnson and Mighten (2005) compared a traditional lecture group and a group of students using notes and discussion. Using a post-test design and a sample of 169 undergraduate nursing students, they found significant differences between the mean examination scores of the groups ($p < .01$). Similar findings resulted from a study by Stiernborg, Zaldivar, and Santiago (1996), which compared traditional lecture and experiential learning using a pre-test and post-test design ($n = 562$). Again, the nursing students using experiential learning had significantly higher means on all three knowledge tests ($p < .05$).

Graduate nursing students have also had positive outcomes using teaching strategies other than traditional lecture. Woo and Kimmick (2000), comparing a traditional lecture group and an Internet group, looked at the examination scores of graduate nursing students taking a nursing research course. Although no significant differences in examination scores or overall course satisfaction ($p > .05$) were found, students in the Internet group reported a significantly higher stimulation of learning ($p = .04$).

Additionally, a study by Miller (2003) indicated no significant differences in examination scores. Comparing traditional lecture and problem-based learning in a graduate nursing pharmacology course ($n = 22$), the researcher found no significant differences when comparing midterm examination scores ($p > .7$), final examination scores ($p > .7$), and course averages ($p > .2$). However, the generalizability of this study is limited due to a small sample size, an obvious limitation of this study. Jeffries, Woolf, and Linde (2003) found similar results using a sample of 77 nursing students to compare traditional lecture and multimedia CD-ROMs. The researchers found no significant differences in post-test scores between groups. Another study by Day and Payne (1987)

used a sample of 99 nursing students to compare traditional lecture and computer-managed instruction in a health assessment course. Findings again indicated no significant differences in examination scores between the two groups. However, even though the researchers found no significant differences, results indicated similar levels of effectiveness using both the alternative teaching strategies and traditional lecture.

Only one study indicated better results for students receiving traditional lecture versus other teaching strategies. Murray (1982) compared a group using both lecture and discussion and a group of students using self-study only. Using a sample of 45 nurse practitioner students, she found the means of the lecture group significantly higher than the means of the self-study group ($p < .001$). However, this study is not current and, consequently, the study habits of students may have changed in the 28 years since this research was published. Furthermore, while results of this study negate the effectiveness of self-study when compared to a combination of lecture and discussion, student-centered teaching strategies with the facilitation of the faculty member may still prove effective.

Student perceptions and attitudes. Many studies have also looked at student perceptions and attitudes regarding teaching strategies other than traditional lecture; however, results are ambiguous. In an attempt to enhance student appreciation of nursing research, Pugsley and Clayton (2003) converted the traditional lecture course into an experiential learning course. After surveying 25 junior-level nursing students who took the experiential nursing research course and 19 senior-level nursing students who took the traditional lecture course, the researchers found that students in the experiential learning group had significantly more positive attitudes toward nursing research than students in the traditional lecture group ($p = .001$). Similarly, Williams, Anderson, and

Day (2007) also found positive changes in student attitudes in their study. The researchers performed a longitudinal study to investigate nursing students' knowledge of and attitudes toward older adults. Comparing traditional lecture and context-based learning and using a sample of 81 nursing students, they found that students in the context-based learning group had significantly positive increases in attitude toward personal aging ($p = .017$).

In another study by Siu, Laschinger, and Vingilis (2005), traditional lecture was compared with problem-based learning using a sample of 108 nursing students. Using a post-test design, they found that students in the problem-based learning group had significantly higher perceptions of empowerment than students in the traditional lecture group ($p = .001$).

Using a pre-test and post-test design, Sinclair and Ferguson (2009) used a sample of 250 undergraduate nursing students to assess students' perceptions of self-efficacy for nursing practice. When comparing a traditional lecture-only group and a group using simulation and lecture, they found that four out of the five simulations resulted in significant differences in mean self-efficacy scores ($p = .002, .218, .033, .031, .001$).

In the study by Kumrow (2007), results indicate that students in a Web-based and lecture course had significantly higher favorable ratings ($p = .018$). In a comparison of traditional lecture and multimedia CD-ROM, Jeffries (2001) also found that the CD-ROM group had significantly higher levels of student satisfaction ($p = .01$).

Conversely, a study by Miller (2003) indicated no significant differences in student satisfaction between nursing students in a traditional lecture group and those in a problem-based learning group in a graduate nursing pharmacology course ($p > .5$).

However, student satisfaction was still rather high with both teaching strategies. In addition, generalizability is limited due to an extremely small sample size, which is an obvious limitation of this study. Similarly, another study by Jeffries et al. (2003) found no significant differences in satisfaction between nursing students using traditional lecture and students using multimedia CD-ROMs. However, once again, student satisfaction was moderately high for both groups.

Critical thinking. Tiwari, Lai, So, and Yuen (2006) compared traditional lecture and problem-based learning using a sample of 79 nursing students. Using a pre-test and post-test design, they found that students in the problem-based learning group had significantly greater improvement in critical thinking than students in the traditional lecture group (p = .0048).

Although not an exhaustive list, the reviewed nursing research comparing other teaching strategies to traditional lecture indicate positive results related to student outcomes, student perceptions and attitudes, and critical thinking when using teaching strategies other than traditional lecture. These findings support the opinion of faculty members that traditional lecture may not be the most effective teaching strategy (Di Leonardi, 2007; Jones, 2007) and indicate the need for research in new pedagogical areas, such as team-based learning, and the promise that it may hold for nursing education. See Appendix A for a description of the reviewed studies.

Use of Team-Based Learning in Other Disciplines

Team-based learning is successfully used in a variety of educational settings including marketing (Hernandez, 2002; Thackeray & Wheeler, 2006), law (Dana, 2007), psychiatry (Touchet & Coon, 2005), accounting (Lancaster & Strand, 2001), business

(Baldwin, Bedell, & Johnson, 1997; Fink & Parmelee, 2008), and engineering (Froese, 2005; Hodgson, Ostafichuk, & Sibley, 2005; Yost & Lane, 2007). Medical education has also extensively used team-based learning (Parmelee, DeStephen, & Borges, 2009; Vasan, DeFouw, & Compton, 2009; Vasan, DeFouw, & Holland, 2008; Dunaway, 2005; Haidet & Fecile, 2006; Haidet, O'Malley, & Richards, 2002; Hunt, Haidet, Coverdale, & Richards, 2003; Koles, Nelson, Stolfi, Parmelee, & DeStephen, 2005; Koles, Stolfi, Nelson, & Parmelee, n.d.; Levine et al., 2004; Nieder, Parmelee, Stolfi, & Hudes, 2005; Ortega, Stanley, & Snavely, 2006; Seidel & Richards, 2001). In the professional setting, team-based learning encourages interprofessional collaboration. Rider, Brashers, and Costanza (2008) utilized team-based learning to develop health care policies with a group of health care professionals (n = 101). The resulting work was presented to members of Congress in a public policy position paper.

Still, much of the available literature is expository only, therefore offering little statistical evidence regarding the use of team-based learning. An extensive search of the literature yielded 17 studies regarding the efficacy of team-based learning in educational settings other than nursing. Additionally, three studies addressed the use of team-based learning with health care professionals (Haidet, Morgan, O'Malley, Moran, & Richards, 2004; Kühne-Eversmann, Eversmann, & Fischer, 2008; Sharkey & Sharples, 2003). Team-based learning was even utilized in a high school setting to improve sight-singing in a choral music class (Parker, 2007). Overwhelmingly, a majority of the studies conducted in other disciplines report positive student outcomes and student attitudes toward team-based learning (Haberyan, 2007; Haidet et al., 2002; Koles et al., 2005; Koles et al., n.d.; Levine et al., 2004; McInerney & Fink, 2003; Nieder et al., 2005;

Touchet & Coon, 2005). Additionally, the use of team-based learning also results in higher levels of student engagement (Haidet et al., 2002; Dana, 2007; Levine et al., 2004; Seidel & Richards, 2001). These positive findings encourage the use of team-based learning in other disciplines, including nursing.

However, almost half of the team-based learning studies that were conducted in other disciplines used a survey format and thus, offer limited statistical evidence regarding the efficacy of team-based learning in the classroom. Even so, only one study by Lancaster and Strand (2001) found no significant results when comparing team-based learning and traditional lecture. Using a post-test design and a sample of 163 students in a managerial accounting course, the researchers analyzed examination scores and student perceptions of the course. Results indicated no significant differences between the two teaching strategies. However, the researchers recognized the impact that differences in course content among disciplines may have on the success of team-based learning. Additionally, the lack of faculty member training in the use of team-based learning may have contributed to these results.

Consequently, researchers must further study the efficacy of team-based learning, particularly in disciplines with limited use, such as nursing education. Further discussion of the research conducted in disciplines other than nursing follows. For a description of team-based learning research conducted in disciplines other than nursing, see Appendix B.

Comparison of team-based learning and traditional lecture. Levine et al. (2004) utilized a post-test design to look at both student engagement and educational outcomes with the use of team-based learning. Replacing eight of 16 traditional lectures in a

psychiatry clerkship, Levine et al. (2004) found that students (n = 133) in the team-based learning group performed significantly higher on the National Board of Medical Examiners psychiatry subject test than students in the traditional lecture group ($p < .05$). Students also had significantly higher levels of engagement ($p \leq .001$) and satisfaction ($p < .001$) when compared to students in the traditional lecture group. One possible reason for the increased performance on the National Board of Medical Examiners test is the requirement in team-based learning that students must keep up with the readings rather than trying to study all of the course content at the end of the class. However, many other variables not measured may have affected this increased performance other than the team-based learning strategy. Still, since nursing students taking the National Council Licensure Examination (NCLEX), which is a comparative test to the National Board of Medical Examiners test, the results of the study by Levine et al. (2004) encourage the use of and hold promise for team-based learning as an available pedagogical alternative to traditional lecture in nursing education.

When comparing team-based learning and traditional lecture in a class session for medical residents (n = 82), Haidet, Morgan, O'Malley, Moran, and Richards (2004) observed higher levels of engagement among the team-based learning group ($p = .001$). Additionally, residents in the team-based learning group also valued the session significantly more than residents in the traditional lecture group ($p = .03$).

Furthermore, in a psychology course, Haberyan (2007) compared final course grades of students in two separate semesters, one group receiving traditional lecture and one group participating in team-based learning. Overall grades were significantly higher for the team-based learning group ($p < .001$) when compared with the traditional lecture

group. Although one should interpret these results cautiously since the groups were composed of different students in different semesters, these findings are similar to those from other studies, which also indicate increases in examination scores with the use of team-based learning.

Examination scores. To analyze examination performance of second-year medical students (n = 178), Koles, Stolfi, Nelson, and Parmelee (n.d.) conducted a retrospective study. Results found that students in the team-based learning group performed significantly higher on examinations when the content was covered in a team-based learning session than when it was not ($p < .001$). A similar study by Vasan, DeFouw, and Holland (2008) found that students did better on unit examinations when taught using team-based learning compared to traditional lecture ($p < .01$). Haberyan (2007) also found post-test answers significantly improved ($p < .01$) when using team-based learning. An interesting study by Nieder, Parmelee, Stolfi, and Hudes (2005) demonstrated a significantly positive correlation between Individual Readiness Assurance Test scores and examination scores ($p < .0001$). Therefore, Individual Readiness Assurance Tests may be a good predictor of examination performance and perhaps may even assist the faculty member in identifying at-risk students earlier in the semester.

Benefits for struggling students. Two studies in the literature review indicate positive student outcomes, particularly for students who struggle academically, when using team-based learning. Koles, Nelson, Stolfi, Parmelee, and DeStephen (2005) used a prospective crossover design to compare second-year medical students (n = 83) taught using either case-based group discussion or team-based learning. Although the researchers found no significant differences in performance of the whole group, research

indicated that students with low academic performance had significantly better examination scores after experiencing team-based learning when compared to similar students experiencing case-based group discussion (p = .035). However, a limitation of this study is the lack of a control group, which makes it impossible to determine whether both teaching strategies actually enhance academic performance for all students. Similarly, Nieder et al. (2005) performed correlational analyses of team-based learning and examination performance in a medical gross anatomy and embryology course. Using 95 first-year medical students, the researchers found that team-based learning might benefit students with low academic performances most. Results of these studies indicate that while other teaching strategies are equally effective among average and above-average students, the use of team-based learning may especially aid students who struggle academically.

Peer interactions. Pioneering the research regarding the use of team-based learning in the business classroom, Baldwin, Bedell, and Johnson (1997) utilized a survey questionnaire (response rate 250/304). Results indicated that team relationships positively affected student perceptions of both team effectiveness and team performance. Although this study has limited generalizability, it does prompt faculty members to recognize the effects of and encourage peer interactions in the team-based learning classroom.

Student responses. Little statistical evidence exists regarding student responses to team-based learning. However, the studies that have examined this variable indicate generally positive student responses. A study by Vasan, DeFouw, and Compton (2009) assessed student perceptions of team-based learning in a first year medical gross anatomy

course. The researchers used a sample of 317 students and found overall favorable perceptions of team-based learning unrelated to course grades. Although all students had favorable perceptions of team-based learning, it was found that perceptions were greater among high-achieving students compared to low-achieving students. In a first-year medical physiology course, Seidel and Richards (2001) used focus groups and found that students had generally favorable responses to team-based learning. Similar findings resulted from an informal survey by Dana (2007) who surveyed 95 law students after implementing team-based learning in her introductory law course and found positive responses to team-based learning and informal observations of higher levels of engagement. Hernandez (2002) used a survey format and found that students (n = 32) in a marketing principles course enjoyed team-based learning and reported that it had a positive impact on their learning. Another survey used by Haidet, O'Malley, and Richards (2002) to determine medical residents' attitudes toward team-based learning (n = 27) found similar results. Following two team-based learning sessions, the researchers found significant results regarding resident attitudes before and after the sessions ($p <$ .02). However, obvious limitations of this study include the small sample size and the limited student exposure to team-based learning. Similar findings resulted from a study by Dunaway (2005), who found that students regarded team-based learning as beneficial to their learning. However, the article fails to provide readers with important details such as the number of students that participated in the survey, which makes critique difficult. Parmelee, DeStephen, and Borges (2009) also examined attitudes of 180 medical students. Using a 19-item questionnaire, significant changes in attitude were found in three areas: professional development, satisfaction with team experience, and satisfaction

with peer evaluation. No significant changes were found in team impact on quality of learning and team impaction on clinical reasoning ability. However, it is important to recognize that this study occurred during the first years in which team-based learning was implemented which may have affected students' attitudes since the strategy was new and the faculty members may have faced unforeseen challenges.

In the professional setting, team-based learning has also resulted in positive responses. A study by Kühne-Eversmann, Eversmann, and Fischer (2008) utilized team-based learning in a continuing medical education course consisting of 159 physicians. A post-course questionnaire indicated the physicians felt team-based learning enhanced their learning and would positively affect their professional performance. Additionally, another professional setting for clinical risk management among mental health teams utilized team-based learning. A significant decrease in work-related stress occurred in a number of areas following the use of team-based learning (Sharkey & Sharples, 2003).

Conversely, a study by Hunt, Haidet, Coverdale, and Richards (2003) revealed slightly negative results using team-based learning. Using external observations and focus groups consisting of second-year medical students (n = 168), observations revealed a high level of engagement with students using team-based learning. Even so, the student focus groups revealed that students generally devalued the use of the teaching strategy, which may have resulted from the high level of student comfort with traditional lectures. Additionally, this study utilized only a seven-week course which may not have allowed adequate time for students to become accustomed to team-based learning.

Course evaluations. Another potential benefit from the use of team-based learning includes improved ratings for both faculty members and course evaluations. Froese

(2005) taught a construction engineering and management course to 106 fourth-year students. An end-of-the-course survey indicated that students enjoyed team-based learning, and the faculty member's teaching evaluations improved for the course. Similar findings resulted in a mechanical design course in which Hodgson, Ostafichuk, and Sibley (2005) also found that course evaluations improved with the use of team-based learning. Both student enjoyment of the course as well as the faculty member's enjoyment in teaching the course using team-based learning may influence the results of these studies.

Use of Team-Based Learning in Nursing Education

Because nursing education has only recently begun to use team-based learning, very few studies exist regarding team-based learning in nursing education. However, the current, completed studies indicate positive results and encourage the use of team-based learning in nursing education.

Participation and enjoyment. A study by Sandor (2008) compared team-based learning and traditional lecture within an interdisciplinary course about spirituality and clinical care. Using a sample of 342 students, when compared with medical students, nursing students had a significantly higher learner participation ($p < .001$) and enjoyment of class ($p < .001$). Clark, Nguyen, Bray, and Levine (2008) found similar results after implementing team-based learning in two undergraduate nursing courses. The researchers found a statistically significant increase in participation ($p < .03$) and enjoyment ($p < .001$) among students using team-based learning. Results of these two studies also indicate that students who enjoy what they are doing may choose to participate more in the class.

Student engagement. In a qualitative study by Feingold et al. (2008), six team-based learning sessions replaced six of 14 traditional lectures. The researchers observed 48 first-semester nursing students and interviewed 10 student volunteers to collect their data. Findings demonstrated that team-based learning enhanced student engagement; in addition, students recognized the positive impact of teamwork on the learning process.

While these three studies indicate positive results with the use of team-based learning in the nursing classroom, the critical need for further research in nursing education is also apparent. Nevertheless, team-based learning has the potential to transform the delivery of nursing education.

Student Advantages of Team-Based Learning

Preparation. To achieve success in team-based learning courses, out-of-class preparation is necessary for and maximizes individual learning (Clark et al., 2008; Dana, 2007; Ortega et al., 2006). In team-based learning classes, students are motivated to prepare prior to coming to class and thus develop a deeper understanding of the course content due to the impact of the Readiness Assurance Tests on their final course grade (McInerney & Fink, 2003). In a study by Clark et al. (2008), students reported they did more to actively prepare for their classes that used team-based learning than they did for classes that primarily used the traditional lecture format. Students cited the desire to do well on the Readiness Assurance Tests as their primary reason for preparing. Two students in a study by Dunaway (2005) improved their examination score and class average after using team-based learning. Their rationale for the improved scores included the development of good study habits that evolved from preparing for class.

Additionally, pre-class preparation also results in enhanced and deeper discussion during class time (Thompson, Schneider, Haidet, Levine et al., 2007). Dunaway (2005) found that "students felt obligated to prepare before class to do their best in intragroup and intergroup discussion" (p. 60). Another benefit of team-based learning is the incentive for students to study consistently throughout the semester rather than "cramming" at the end of the semester (Nieder et al., 2005).

Student engagement. In addition to increased student preparation, studies also indicate that team-based learning enhances student engagement (Bastick, 1999; Clark et al., 2008; Thompson, Schneider, Haidet, Perkowski et al., 2007). A study by Levine et al. (2004) found significantly higher levels of student engagement for students within the team-based learning classroom when compared to those learning in a traditional lecture environment ($p \leq .001$). Similarly, Dana (2007) found that students reported high levels of engagement. Haidet et al. (2002) and Seidel and Richards (2001) also found that students appeared more engaged when participating in team-based learning activities in the classroom. Since passive learning does not exist in team-based learning, students must be actively involved in the application of knowledge (Dunaway, 2005). Furthermore, the transition from a passive learner to an active learner in team-based learning also fosters student engagement (Thackeray & Wheeler, 2006). Additionally, Nieder et al. (2005) found another benefit of team-based learning in that students engaged in discussion and debate on three separate levels: with team members, with other teams, and with faculty members.

Accountability. Team-based learning also requires students to be responsible, motivated, and accountable for their own learning. The Readiness Assurance Tests

ensure both individual and group accountability (McInerney & Fink, 2003). A study by Nieder et al. (2005) illustrates the importance of student accountability to team members. In a medical gross anatomy and embryology course, attendance was almost perfect as students realized that grades on the Group Readiness Assurance Tests improved when all members of the team were present.

Teamwork. Teamwork and learning among students improve with team-based learning (Clark et al., 2008). Not only are students accountable to their fellow team members, but also working in groups allows students exposure to multiple viewpoints and ideas, therefore gaining additional insight from each other (McInerney & Fink, 2003; Paswan & Gollakota, 2004). As Tombari and Borich (1999) state, group learning:

> forces learners to adjust their thinking to that of others. When students have to think about the alternative viewpoints of group members, they have to elaborate [on] and defend their own ideas and debate the merits of their opinions to others. This promotes a deeper organization and understanding of their own knowledge. (p. 100)

Additionally, in the team-based learning classroom, students learn how to work as a team to solve problems, which creates a learning environment in which students learn from and teach each other, maximizing group learning (Bastick, 1999; Dana, 2007; McInerney & Fink, 2003). Furthermore, findings from a study by Baldwin et al. (1997) suggest that peer interaction positively influences students' mastery of course content.

Interpersonal communication skills. Team collaboration and interaction also teach practical interpersonal skills that are helpful later in the work environment, particularly in the health care setting (Rider, Brashers, & Costanza, 2008). Additionally, small group learning promotes both interpersonal communication skills and teamwork skills (Clark et

al., 2008; Paswan & Gollakota, 2004). In a study by Baldwin et al. (1997), the increased level of communication within a team was strongly associated with the effectiveness of the team as well as the likelihood of achieving positive outcomes. Especially in the health care field, individuals must possess strong interpersonal communication skills which are imperative to providing safe, high-quality, patient-centered care (AACN, 2008a; Rider & Brashers, 2006). Communication errors among health care professionals can cause life-threatening mistakes in patient care, thus making interpersonal communication skills an essential component of nursing education (Rider & Brashers, 2006). Fittingly, team-based learning offers a solution for teaching necessary interpersonal communication skills to students, including those in the nursing field.

Student satisfaction. Many studies in disciplines other than nursing have found favorable student responses to team-based learning (Dana, 2007; Levine et al., 2004; Seidel & Richards, 2001; Touchet & Coon, 2005). A central component of team-based learning--small group activities--also increases students' enthusiasm for team-based learning courses (McInerney & Fink, 2003). Additionally, Haberyan (2007) found that students using team-based learning in an undergraduate psychology course reported that they learned more with team-based learning and that they would like to take another course using the teaching strategy. A larger study that included ten medical schools throughout the country also found positive student responses to the use of team-based learning (Thompson, Schneider, Haidet, Levine et al., 2007).

Team-based learning was utilized in a psychodynamic psychotherapy course for psychiatric residents and included a modified five-week segment. At the conclusion of the five weeks, the residents rated the team-based learning format as excellent and

provided positive comments regarding the experience (Touchet & Coon, 2005). Another study by Dunaway (2005) found students felt that team-based learning was a positive experience, particularly in terms of reinforcing of knowledge through self-directed learning.

Student outcomes. Students who use team-based learning tend to assimilate course content better than students who are not using team-based learning (Clark et al., 2008; Thompson, Schneider, Haidet, Levine et al., 2007). Although few studies exist on the effect of team-based learning on the comprehension and recall of course material, preliminary studies indicate that these variables improve in courses employing team-based learning (McInerney & Fink, 2003; Touchet & Coon, 2005). In a study by Touchet and Coon (2005), faculty members teaching the course noticed that medical residents integrated the concepts into their casework more effectively than in previous classes. Furthermore, McInerney and Fink (2003) used final examination scores as indicators of comprehension and recall of material and found significantly higher scores on the final examination ($p < .05$). However, due to the limited amount of research on the effect of team-based learning on the comprehension and recall of material, this is an area for further research.

Furthermore, an area of concern for most faculty members is the impact that teaching strategies may have on student outcomes. Research conducted on outcomes of students using team-based learning is overwhelmingly positive (Haberyan, 2007; Koles et al., 2005; Koles et al., n.d.; Nieder et al., 2005). Additionally, two studies found that team-based learning may offer the most benefit to students with low academic performances

(Koles et al., 2005; Nieder et al., 2005). Although further research is necessary, team-based learning appears to hold much promise for positive student outcomes.

Critical thinking. The effect on critical thinking is another student advantage of the use of team-based learning. The group application activities in team-based learning encourage students to connect theory with practical applications, essentially "building a bridge between theory and practice" (Touchet & Coon, 2005, p. 295). This connection results in enhanced critical thinking skills and problem solving skills (Clark et al., 2008; Thompson, Schneider, Haidet, Levine et al., 2007). Additionally, Nieder et al. (2005) found that students felt team-based learning encouraged them to use critical thinking skills to solve clinical problems. As nursing education increasingly focuses on critical thinking skills and the ability of students to apply theoretical underpinnings to realistic situations, team-based learning may be an exemplary teaching strategy to utilize.

Effects of Team-Based Learning on Faculty Members

Alleviating faculty member burden. Team-based learning allows small groups to interact without requiring more than one faculty member, unlike other teaching strategies. Even with large classes of up to 200 students, one instructor can effectively use team-based learning (Clark et al., 2008). The shift towards placing the responsibility of learning onto the student also alleviates faculty burden and allows the faculty member's role to transition to a facilitator of learning (Touchet & Coon, 2005).

Time commitment. Initially, a greater time commitment is necessary from faculty members who are implementing team-based learning in their course (Ortega et al., 2006). A study by Thompson, Schneider, Haidet, Perkowski, and Richards (2007) looked at variables that influence successful implementation of team-based learning by sending a

16-item questionnaire (response rate 297/594) to health science faculty members who had attended either workshops or presentations on team-based learning. Thirty-six percent of faculty members identified the time commitment required in team-based learning as a concern, particularly with the initial time required to develop the Readiness Assurance Tests and the application exercises. However, the faculty members also noted that students responded well to team-based learning and that it is an effective pedagogy. Additionally, Goodson (2002), a faculty member teaching health promotion, acknowledged the time commitment required to implement team-based learning in the classroom. However, she asserts, "I strongly doubt . . . that it takes more than the normal preparation expected for a new course" (p. 123). Undoubtedly, faculty members will have to commit time when implementing team-based learning in their classrooms, especially the first time the strategy is utilized. However, the numerous benefits for both students and faculty members resulting from the use of team-based learning, make this initial investment worth the potential returns.

Student attendance and preparation. Faculty members report fewer problems with class attendance and lack of preparation by students when using team-based learning in their courses (Thompson, Schneider, Haidet, Levine et al., 2007). Since students must attend class to take the Readiness Assurance Tests, students are usually motivated to attend class as their grade depends on their attendance (Michaelsen & Sweet, 2008a). Furthermore, when conducting an informal evaluation, Dinan (2002) found that 93% of his students in a chemistry class felt responsible to the members of their team to attend class every day. Nieder et al. (2005) also found that students were well prepared when

attending class. This increased preparation by students also may enhance faculty-student interactions, resulting in more fulfilling relationships (Michaelsen & Sweet, 2008a).

Faculty satisfaction. Although faculty members may hesitate to adopt team-based learning in their courses (Parmelee, 2008), many studies have shown that faculty members experience greater professional, and perhaps therefore greater personal, satisfaction using this teaching strategy (Clark et al., 2008; Thompson, Schneider, Haidet, Perkowski et al., 2007). In a large study by Thompson, Schneider, Haidet, Levine et al. (2007), researchers conducted interviews at 10 medical schools which had implemented team-based learning two years earlier in an effort to review the use of team-based learning. Findings indicated that team-based learning was continued at nine out of the 10 schools, added to 18 courses, continued in 19 courses, and discontinued in 13 courses. Researchers also found positive faculty responses to using team-based learning. Clark et al. (2008) found that faculty members reported satisfaction with the use of team-based learning because pre-class preparation and in-class teamwork shifted the burden of learning from the faculty member to the student. In addition, students' increased preparation for class, improved attendance, and enhanced academic performance also influenced faculty members' decision to use team-based learning. According to faculty members that utilized team-based learning, students' critical thinking skills increased and in-class discussion improved (Thompson, Schneider, Haidet, Levine et al., 2007).

General Overview of Team-Based Learning

Team-based learning requires radical changes from traditional lecture. Modifications must occur in the focus of the learning objectives, classroom activities designed to meet these objectives, and the roles of both the faculty member and the students. Team-based

learning is an innovative teaching and learning strategy that utilizes a combination of pre-class preparation, individual and team tests, and simple and complex group work during class time. In the team-based learning classroom, students spend a majority of time on applying the course content. Therefore, in the team-based learning classroom, students utilize class time engaging in course content, applying the course concepts to professional situations, and solving real-life problems. The team-based learning cycle (see Figure 1) begins with assigned readings, which students complete prior to class. Once class begins, the Readiness Assurance Process occurs, which consists of a multiple-choice quiz taken first individually and then as a team. Teams receive feedback and can appeal wrong questions by providing written, valid arguments to the faculty member. Following the Readiness Assurance Process, the faculty member can clarify student misconceptions to the entire class. After the class completes these steps, students spend time on application exercises for the remainder of the unit, which may consist of numerous class periods, depending on the length of class time. The faculty member repeats this cycle of team-based learning for each unit of instruction, usually five to seven times per semester (Michaelsen & Sweet, 2008b).

Essential Principles of Team-Based Learning

According to Michaelsen and Sweet (2008a), team-based learning has four main principles to follow: "Groups must be properly formed and managed, students must be accountable for the quality of their individual and group work, students must have frequent and timely feedback, and team assignments must promote both learning and team development" (p. 10). These principles will assist the faculty member in

successfully implementing team-based learning and assist the students in forming cohesive learning teams.

(Repeated for each major unit- 5-7 per course)

Preparation	Readiness Assurance	Application of Course Concepts
(Pre-class)	45-75 minutes of class time	1-4 hours of class time
	Individual Test & Team Test	Application Oriented Activities

Figure 1. Team-based learning instructional activity sequence. From "Fundamental Principles and Practices of Team-Based Learning," by L. Michaelsen & M. Sweet, 2008a, In L. Michaelsen, D. Parmelee, K. McMahon, & R. Levine (Eds.), *Team-Based Learning for Health Professions Education: A Guide to Using Small Groups for Improving Learning*, p. 21. Copyright 2008 by Stylus Publishing. Reprinted with permission (see Appendix C).

Role of Faculty Member and Students

The role of both the faculty member and the student changes dramatically in the team-based learning classroom. Veering from the traditional role of a lecturer who primarily provides information, in team-based learning, the faculty member is a guide, a manager, a facilitator, and a content expert (Lane, 2008; Pelley & McMahon, 2008). The

student's role requires a transformation from passivity to active participation in the learning environment and demonstrating accountability for his or her own learning (Lane, 2008). Indeed, while it may be initially difficult to adapt, these role changes may enhance the teaching and learning experience for both faculty members and students.

Implementing Team-Based Learning

In order to effectively utilize team-based learning in the classroom, the faculty member must completely change the course. The process of redesigning the course should begin prior to the start of the semester and involves decision-making about the activities that will take place before class, on the first day of class, for each unit of instruction, and at the end of the course (Michaelsen & Sweet, 2008b).

Before class begins. A successful team-based learning course requires decision-making well before the course begins. The faculty member must identify course goals and objectives, divide the course into units, and design the grading system for the course (Michaelsen & Sweet, 2008a). Each of these steps is discussed in the following paragraphs.

Identifying course goals and objectives. When designing a course using team-based learning, the faculty member must first determine the course goals and objectives before the class begins. Traditionally, faculty members decide what their students need to know, provide students with the information, and then test students on that information. Instead, team-based learning utilizes a "backwards design" (Michaelsen & Sweet, 2008a, p. 17). Initially, the faculty member must determine how to assess whether or not students have mastered the course goals and objectives by asking the following question: "What are the students who really understand the material doing that shows you they get it?"

(Michaelsen & Sweet, 2008a, p 17). Once the faculty member determines what mastery looks like, he or she can then decide what information that students need to know to demonstrate the evidence of understanding the course concepts, what knowledge allows students to make decisions, and what makes the correct decision better than the other options (Michaelsen & Sweet, 2008a).

Dividing the course into units. After the faculty member identifies the course goals and objectives, he or she divides the content into major units of instruction, usually five to seven units per semester (Michaelsen & Sweet, 2008a). Accordingly, the faculty member should attempt to identify five to seven major topics important for the student to learn. Next, the faculty member can decide how much time to allot for each topic, which become the major units of instruction. Finally, the faculty member designs a Readiness Assurance Test and various application exercises for each unit (Michaelsen, n.d.).

Grading system. When designing the grading system, the faculty member must ensure that the system rewards the correct behaviors. An effective grading system should provide motivation for individual contributions as well as effective teamwork. However, the grading system also needs to address concerns regarding fairness between group and individual grades. Students, especially higher-achieving ones, generally have concerns regarding their grade when it includes group work. These student concerns may result from past group experiences in which the poor performance of lower-achieving group members resulted in a lower grade for the entire group (Michaelsen & Sweet, 2008a). Additionally, higher-achieving students may also fear that lower-achieving students will take advantage of them (Su, 2007). For this reason Michaelsen and Sweet (2008a) recommend alleviating these concerns by using "a grading system in which a significant

proportion of the grade is based on (a) individual performance, (b) team performance, and (c) each member's contributions to the success of their teams" (p. 19). When considering these factors, the faculty member must determine the relative weight of each portion of the grade acceptable to both students and the faculty member (Michaelsen & Sweet, 2008a).

One method of designing the grading system proposed by Michaelsen, Cragin, and Watson (1981) allows students to actively participate in the weighting process. During the initial class period, students form their teams and the faculty member allows approximately 10 minutes for each team to decide how to weight each of the following categories: individual performance, team performance, and individual member's contributions to the team. Each team then elects one member to participate on the task force, formed in the middle of the room. The faculty member provides the task force with a set of predetermined guidelines to follow and allows time for the task force to discuss the weights of each portion of the grade until they reach a consensus. The rest of the class observes the task force discussion. According to Michaelsen and Sweet (2008a), "The most effective way to alleviate student concerns about grades is to directly involve students in customizing the grading system to this class" (p. 21). However, in an effort to enhance group cohesion and the quality of group work and effort, experts recommend that team performance is weighted at least between 20 to 40 percent of the final course grade ("Appendix", 2008; Michaelsen & Sweet, 2008a).

First day of class. Specific activities that occur on the first day of class will aid in the successful implementation of team-based learning in the classroom. On the first day, the faculty member introduces students to team-based learning and typically forms

groups in class. Additionally, students may participate in the grade weighting activity at the faculty member's discretion (Michaelsen & Sweet, 2008b).

Introducing students to team-based learning. On the first day of class, an introduction to team-based learning also occurs, which should include the rationale for the teaching strategy and the organization of the class. Furthermore, the faculty member should educate students on the steps of team-based learning, the roles of the faculty member and the student, and the benefits they may experience during team-based learning. The faculty member may also find it helpful to include this information in the syllabus as well as providing a verbal explanation to the students. Additionally, conducting a team-based learning cycle may assist the students in understanding and practicing the steps of the process (Michaelsen & Sweet, 2008b).

Group formation. The faculty member facilitates the formation of groups at the beginning of the semester. Groups usually consist of five to seven students and remain intact for the entire semester. Faculty members can either allow students to self-select their groups or the faculty member can assign groups. One disadvantage of allowing students to select their own groups is that students tend to pick homogenous groups, therefore limiting exposure to alternative thoughts and ideas (Wolfe, Lee, Wu, & Gould, 2003). However, a study by Wolfe, Lee, Wu, and Gould (2003) found no significant differences in student attitudes between self-selected teams and instructor-assigned teams. Still, instructor-assigned teams are generally used in team-based learning to allow for distribution of team member characteristics (Michaelsen, n.d.).

While many different methods to creating groups exist, the recommended method is to form them in class with the students present. Students can line up around the room

based on similar characteristics and then number off to emerge as heterogeneous groups. For example, the faculty member may have students line up based on gender, job experiences, or similar likes or dislikes. However, the faculty member can also have students complete a short questionnaire about themselves that the faculty member can use to pre-assign groups in order to ensure an appropriate mix of skills and academic levels in each group to promote development of students (Michaelsen & Sweet, 2008a).

Readiness assurance process. The faculty member conducts the Readiness Assurance Process at the beginning of each unit of instruction. This process consists of five main steps: assigned readings, individual test, team test, appeals process, and instructor feedback (Michaelsen & Sweet, 2008b).

Assigned readings. During the pre-class preparation phase, students complete readings or other assignments selected by the faculty member. Reading assignments should reflect the unit topic and may include text readings and other assignments. After completing the readings, the students should have an in-depth understanding of the concepts prior to coming to class (Michaelsen & Sweet, 2008a).

Individual and team tests. Readiness Assurance Tests include both the Individual Readiness Assurance Test (IRAT) and the Group Readiness Assurance Test (GRAT). The faculty member creates one Readiness Assurance Test for each unit of instruction, which develops into both an IRAT and a GRAT. The Readiness Assurance Test is a multiple-choice quiz based on the assigned unit readings, taken without the use of textbooks or notes. The number of questions may vary based on both the amount of information in each unit and the length of class time. The Readiness Assurance Test should ensure student understanding by testing the key concepts from the readings

(Michaelsen & Sweet, 2008a).

Each student takes an IRAT at the beginning of each unit of instruction, which the faculty member grades, weights appropriately, and records for each individual student after class. After completing the IRAT, students form their groups and take the GRAT, working together to select the best answer. The GRAT consists of the same questions as the IRAT, only with the answer choices scrambled. During this group activity, teams commonly use the Immediate Feedback-Assessment Technique (IF-AT) self-scoring sheet, available from Epstein Education. Similar to scratching off a lottery ticket, the IF-AT form offers multiple-choice options for each question. Once the groups determine their answer, they scratch off the appropriate box. If the box does not have a star present, the group has chosen an incorrect answer, and they must continue scratching off boxes until they find the correct answer. The benefit of using the IF-AT forms is that the students have immediate feedback and it "is the single most powerful tool one can use to promote learning and cohesiveness in classroom learning teams" (Michaelsen & Sweet, 2008a, p. 24). Teams award themselves full or partial credit based on the number of boxes the group had to scratch before revealing the correct answer. For example, if the faculty member gives a 10-question test and each answer has four possible choices, the students could receive five points for getting the answer right on the first try, two points for the second try, one point for the third try, and no points for the fourth try. After completing the GRAT, each team calculates their score and submits it to the faculty member who weights it appropriately and records the score for each student (Michaelsen & Sweet, 2008a).

Appeals process. Following the completion of the GRAT, the faculty member may

provide a specified amount of time for teams to appeal any missed questions by providing rationale based on the assigned readings. Discussion among team members occurs as students develop their rationale (Michaelsen & Sweet, 2008b). Afterward, the faculty member addresses the appeals to the entire class, which offers the opportunity for clarification and deeper understanding of the course content. The faculty member may choose to award credit for the question if the team provided sufficient rationale. The appeals process allows for a review of the assigned readings and clarification of content confusing to students (Michaelsen & Sweet, 2008a; Michaelsen & Sweet, 2008b).

Feedback from faculty member. The final step in the Readiness Assurance Process includes feedback from the faculty member. This immediate feedback allows the faculty member the opportunity to provide clarification of material as necessary to students. Feedback may occur both formally, through the grading of the IRATs, and informally. Informal feedback by the faculty member occurs throughout the Readiness Assurance Process as he or she offers suggestions or poses questions to teams as they work on the GRATs and the application exercises (Michaelsen & Sweet, 2008a).

Application oriented activities. The third phase of team-based learning is to apply course concepts through activities designed by the faculty member to enhance student understanding of course content and increase group cohesion. Students work in class as a group to solve challenging problems created by the faculty member. Although the faculty member may develop a variety of activities, four main criteria need consideration when creating group application assignments: (a) Students should find the problem significant to the course; (b) All groups should work on the same problem; (c) Groups should have to make a specific choice in the assignment; and (d) Groups should report

their answers simultaneously. Each unit of instruction may consist of multiple group activities (Michaelsen & Sweet, 2008a).

Simultaneous reporting. Upon completion of any application exercises, teams present their answers to the entire class. If teams had to choose a multiple-choice answer, groups may simultaneously hold up a color-coded card to represent their choice. Additionally, the team members may also verbally provide their rationale to the class. If the team members had to develop a short-answer, they may record their response on a large sheet of paper. The faculty member then has one person from each team come to the front of the class to present the team's answers. After the team's answers are displayed, the teams can then debate their responses as a class (Clark et al., 2008).

"Simultaneous reporting is a simple and effective discussion structure for drawing everyone in the room into rich, productive, enjoyable discussions" (Sweet, Michaelsen, & Wright, 2008, p. 483). Thus, after each team has simultaneously reported, the faculty member can lead a discussion with the entire class focused on the rationales for the choices each group has made. One major benefit of simultaneous reporting is the prevention of "answer drift," which often occurs when students report their answers sequentially and face the temptation to change their answer to match the majority, regardless of the correct answer. By using simultaneous reporting, energy in the classroom focuses on the discussion, resulting in increased student engagement (Sweet et al., 2008).

End of course. The faculty member may provide opportunities for students to reflect on their team-based learning experience toward the end of the course. This reflection can occur through an evaluation of team interactions and peers.

Evaluation of team interaction. At the end of the course, the faculty member can provide an opportunity to increase students' awareness of the impact of their team interactions. One method of enhancing student awareness is to use an individual assignment. Through reflection, students individually create a list of team member actions that have influenced the team as a whole. Students share the list with their other team members and provide a written group summary to the faculty member regarding some of the perceived barriers to the effectiveness of the team and how they overcame those barriers. Students can also begin this list at the beginning of the semester, periodically adding and updating the information (Michaelsen & Sweet, 2008b).

Peer evaluations. Peer evaluation is a necessary component of team-based learning and helps to ensure both individual and group accountability. In the peer evaluation, each student assesses the other members of the team regarding their overall contributions. This evaluation influences the student's course grade. The faculty member may choose to conduct peer evaluations at midterm as well as at the end of the course. The peer evaluation process is a valuable tool in providing feedback to students who may need assistance with interpersonal skills (Levine, 2008).

Two main methods are used to calculate the peer evaluation score: the percentage method and the separate "team maintenance" score method. Using the percentage method, students fill out the peer evaluation form, distributing 100 points among the group members, excluding themselves, based on their contribution. The faculty member then adds up the points given to each person. High-achieving students will receive more than 100 points; low-achieving students will receive fewer than 100 points. The points are then converted into a percentage, which is the student's peer evaluation score. For

example, if the student receives a total of 110 points, his or her peer evaluation score is 110%. The percentage is then calculated into the student's grade for group work (Team-Based Learning, n.d.). Although slightly more complicated, using the percentage method has a significant impact on students' overall grade, which may cause students to take the evaluation method more seriously (Levine, 2008).

Using the separate "team maintenance score" method, students fill out the peer evaluation form for each of their group members, excluding themselves. Each team is assigned a specified number of points based on the number of members, but scores must include some differentiation. For example, if a student evaluates four students, scores for each student may consist of 8, 10, 10, and 12 for a total of 40 points. The average score for each student is calculated and contributes to the student's final grade (Team-Based Learning, n.d.). However, the obvious disadvantage of the separate "team maintenance score" method is the requirement to discriminate against group members by not allowing students to assign every group member a perfect score of 10 (Levine, 2008).

Regardless of which method the faculty member chooses to use for peer evaluation, he or she should also offer suggestions to students on how to provide constructive feedback to peers. The faculty member can provide suggestions by including information on the peer evaluation form as well as giving verbal instruction prior to administering the peer evaluation form. Qualitative feedback from the students can also help in reflection (Levine, 2008).

Conceptual Model

Conceptual model for team-based learning. The conceptual model is newly developed by Haidet, Schneider, and Onady (2008) and is specific for team-based

learning (see Figure 2). The central component of this model is learner engagement, a critical concept in team-based learning (Parmelee, 2008) and in this study. According to the conceptual model for team-based learning, engagement occurs in two interrelated, mutually strengthening areas: within course content and within teams. Learner engagement within the course content occurs first individually through advance preparation and studying of the material. Additionally, this individual level of engagement occurs both during pre-class preparation and during class as the student thinks about the content, resulting in a deep interaction with and knowledge of the information. A student may also use past knowledge to connect with the course content he or she is currently learning. Learner engagement also occurs within teams, deepening as teams develop into cohesive groups. High-performing teams utilize each team member's strengths to accomplish the team goals, therefore creating increased engagement within the team (Haidet et al., 2008).

Learner engagement is encompassed by other concepts that may affect both the degree and quality of engagement. The surrounding concepts, although not exhaustive, suggest some of the more influential concepts and include: teacher decision regarding the design of the course, such as the significance of the topic to the student and the use of simultaneous reporting; individual characteristics, such as the faculty member's and the students' attitudes toward the content and learner traits; contextual factors, such as physical space, number of credit hours, and comfort of the classroom; and team characteristics, such as student attitudes and personality traits of the team (Haidet et al., 2008).

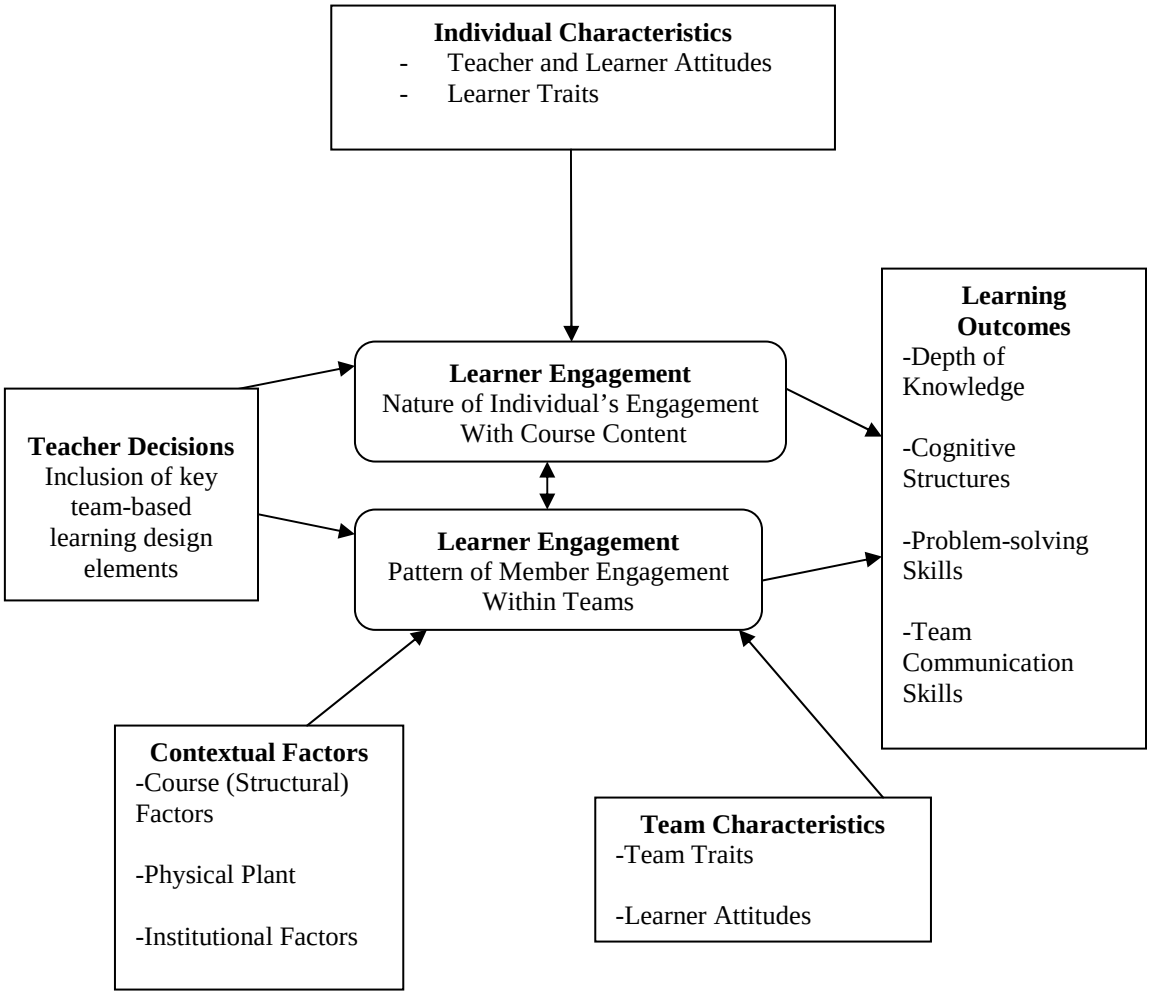


Figure 2. Conceptual model for team-based learning. Adapted from "Research and Scholarship: Team-Based Learning in Health Professions Education," by P. Haidet, V. Schneider, & G. Onady, 2008, In L. Michaelsen, D. Parmelee, K. McMahon, & R. Levine (Eds.), *Team-Based Learning for Health Professions Education: A Guide to Using Small Groups for Improving Learning*, p. 124. Copyright 2008 by Stylus Publishing. Reprinted with permission (see Appendix D).

Several learning outcomes result from learner engagement both within the course content and within teams: depth of knowledge, cognitive structures, problem-solving skills, team communication skills, and leadership skills. Haidet et al. (2008) asserts, "Greater degrees of and higher-quality engagement both with content and other learners are expected to favorably affect a variety of learning outcomes, such as knowledge . . ." (p. 125). According to Michaelsen and Sweet (2008a), knowledge is useful only when transferred to long-term memory and retrieved when needed. Individuals have the ability to learn because of the storage of information in their memory. These cognitive structures allow individuals to relate new information to what is already known.

Guidance of research. Figure 3 provides an illustration of how the conceptual model for team-based learning guides this study. Key concepts from the original model, which are the focus of this study, include learner engagement, depth of knowledge, and cognitive structures. These key concepts appear in bold in Figure 3. Each key concept is connected to a box indicating how each concept will be measured in this study. Additionally, the associated research question appears in italics.

This researcher proposes that the model should include accountability as it occurs simultaneously with learner engagement. Accordingly, this researcher has added an interrelationship between accountability and learner engagement to the model and will measure both in this study. The literature provides the rationale for this assumption, as Haidet et al. (2008) points out that learner engagement within course content occurs "by individual study and advance preparation . . . a deep interaction with the subject as the student ponders, hypothesizes, searches for related information, and connects course content" (p. 124). Likewise, according to Michaelsen & Sweet (2008a), accountability in

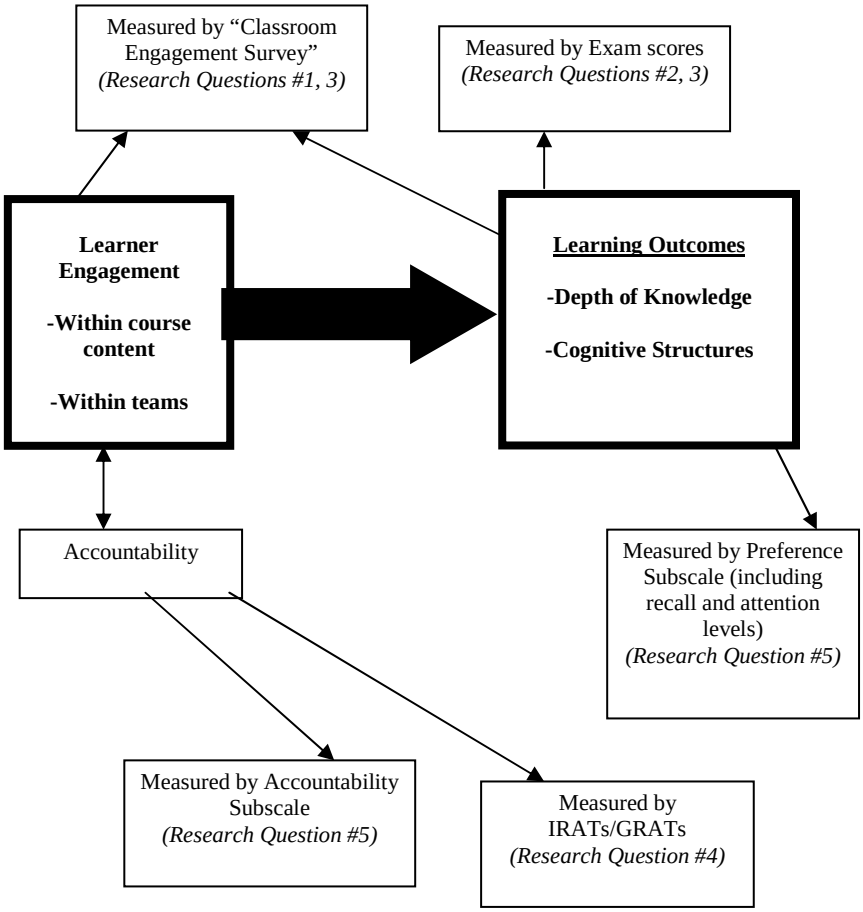


Figure 3. Depiction of how conceptual model for team-based learning guides this research study.

team-based learning occurs through individual preparation, including spending time before class preparing for the course and immersion in the understanding of the material, and through team contribution, including engagement in the development of a high-quality team. As a result, engagement and accountability will undoubtedly occur

simultaneously. This rationale provides the basis for an interrelationship between accountability and engagement in the model.

Definition of concepts. This researcher provides definitions for the following concepts: learner engagement, accountability, depth of knowledge, and cognitive structures.

Learner engagement, including within course content and within teams, occurs as the student thinks about the content, resulting in a deep interaction with and knowledge of the information. The student may also use past knowledge to connect with the course content. In teams, learner engagement occurs when students interact with each other and participate in the discussion and course activities to evolve into a high-performing team, utilizing each team member's strengths to accomplish the team goals (Michaelsen & Sweet, 2008a). Learner engagement is operationally defined by the "Classroom Engagement Survey." A higher score indicates a higher level of engagement.

Accountability occurs when students demonstrate advance preparation for class or contribute to the team through participation in discussion and course activities (Michaelsen, 2002). Parmelee (2008) states that students demonstrate accountability for both their individual work and their group work. Accountability is operationally defined by the accountability subscale on the 'Team-Based Learning Student Assessment Instrument." A higher score indicates an increased level of accountability.

Depth of knowledge is defined as the amount of understanding a student has related to the course content (Hirsch, 2001). As new information is added, depth of knowledge occurs as students utilize and apply their own knowledge to create a thorough

understanding of the course content (Tsai & Huang, 2002). Depth of knowledge is operationally defined by scores on the IRATs, the GRATs, or the examinations.

Cognitive structures are defined as the ability to build new knowledge on old concepts, allowing students to create a thorough understanding of the course content (Tsai & Huang, 2002). Cognitive structures are operationally defined by scores on the IRATs, the GRATs, or the examinations.

Supportive model by Slavin. Although not used for this study, an important supporting model by Slavin (1996), an integrative model of small group learning (see Figure 4), sets the framework for the conceptual model for team-based learning. Slavin's model lends credibility to the conceptual model for team-based learning and is included here as an important foundation. Based on four major theoretical perspectives, including motivational perspectives, social cohesion perspectives, cognitive perspectives, and development perspectives, Slavin's (1996) model depicts the positive impact that group goals can have on the learning process (Slavin, 1996; Sweet & Michaelsen, 2007).

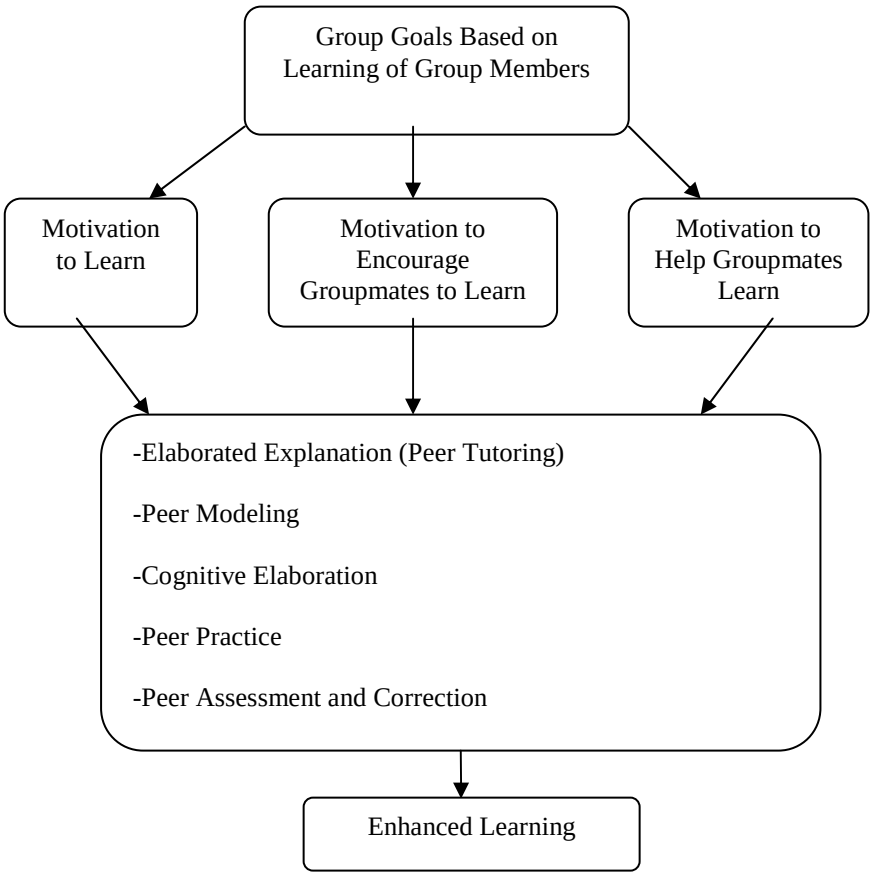


Figure 4. Slavin's integrative model of small group learning processes. Adapted from "Research on Cooperative Learning and Achievement: What We Know, What We Need to Know," by R. Slavin, 1996, *Contemporary Educational Psychology*, *19*, p. 52. Copyright 1996 by Springer. Reprinted with permission (see Appendix E).

Summary

"Academic environments that best support student success create high expectations for student learning . . . . Students express accountability for their own learning . . . students are actively engaged in learning and are encouraged to question and seek answers . . ." (AACNb, 2008, p. 12). While positive findings regarding team-based

learning encourage educators to use the teaching strategy in other disciplines--including nursing--the review of the literature consists of few studies with strong statistical evidence regarding the efficacy of team-based learning. Although important to share experiences with team-based learning, much of the literature is anecdotal or expository. Consequently, the review of the literature indicates further research is necessary to determine the efficacy of team-based learning in other educational disciplines. Nevertheless, team-based learning holds much promise for nursing education and may have a positive impact on the teaching and learning experience for both students and faculty members. However, with very limited research done in nursing education, faculty members may be hesitant to adopt team-based learning in their classrooms. Therefore, further research on team-based learning in nursing education is critical.

CHAPTER THREE

METHODOLOGY

Since positive findings regarding the use of team-based learning in other disciplines exist yet very limited research is available on team-based learning in nursing, research on the effects of team-based learning in nursing education must occur. To that end, this chapter describes the research design and procedure, sample selection, protection of human subjects, instrument development, data collection methods and procedures, and data analysis procedures for this study.

Research Design and Procedure

Because this study utilized a quasi-experimental design, an intervention was introduced--team-based learning-- in the absence of randomization (Polit & Beck, 2008). Quasi-experimental designs are useful in determining "causality between an intervention and an outcome" (Harris et al., 2006, p. 17). Furthermore, the use of a quasi-experimental design is advantageous because this study occurred in a real-life setting. Since a truly experimental design in the nursing classroom is nearly impossible to utilize, a quasi-experimental design was practical for this research (Polit & Beck, 2008).

This researcher explained the purpose and rationale of the study to baccalaureate nursing students enrolled in a community health nursing course in fall 2009 and spring 2010. The fall 2009 group comprised the control group with traditional lecture as the primary method of instruction. The spring 2010 group comprised the experimental group with team-based learning as the primary teaching strategy. To compare levels of engagement, both the control group and the experimental group completed the "Classroom Engagement Survey" (see Appendix F). This survey consists of eight items

and intends to measure student engagement during class time (Fund for the Improvement of Postsecondary Education, 2003). Additionally, only students in the experimental group completed an instrument developed by this researcher. The "Team-Based Learning Student Assessment Instrument," which consists of 34 items organized into three subscales: accountability (including student preparation for class and contribution to the team); preference for lecture or team-based learning (including the student's ability to recall material and student attention level); and student satisfaction. A final section allowed for general comments regarding students' experiences with team-based learning (see Appendix G).

Course description. This study utilized a weekly, three-credit hour community health nursing course. The course included nine objectives (see Table 2) and consisted of six modules. Table 3 contains a topical outline of the course modules, and Appendix H includes the objectives for each module. Module outlines, including module objectives, related course objectives, key concepts, context of the module, and assigned readings, appear in Appendix I. Over the course of the semester, students took three unit examinations (two worth 50 points and one worth 40 points) and one final comprehensive examination (worth 60 points). The course was web-enhanced using Desire to Learn (D2L). Students could access the syllabus, the calendar, the module outlines, the module study guides, the course content, and their grades using D2L. The course is routinely co-taught by three instructors, including this researcher.

Table 2

Nursing 310 Community Health Nursing Course Objectives

The student will

1. Demonstrate caring behaviors, focusing on the value of autonomy by respecting the client's right to self-determination;
2. Describe concepts basic to public health and population-based nursing;
3. Differentiate organizations that deliver and finance public health, community-based, and population-based health services at the local, state, national, and international level;
4. Demonstrate competency in critical thinking, communication, assessment, and technical skills at the beginning nursing student level with population-based clients;
5. Demonstrate core knowledge of health promotion, risk reduction, and disease prevention at the beginning nursing student level;
6. Apply evidence-based guidelines to the nursing care of population-based clients;
7. Distinguish health promotion interventions that meet the health needs of children, women, men, and older adults;
8. Perform developmentally appropriate public health interventions including health teaching, screening, referral, and follow-up; and
9. Examine cultural influences on health for diverse populations, with particular emphasis on the Native American people and rural populations of South Dakota.

Table 3

Nursing 310 Module Topics

Module 1: Introduction to Public Health and Population-Based Nursing
Module 2: Public Health Concepts and Tools
Module 3: Care for Culturally Diverse Populations in Public Health
Module 4: Health Care Organizations
Module 5: Application of Public Health Principles and Population-Based Nursing
Module 6: Application of Public Health Nursing in Selected Populations

Control group. The students enrolled in the course during the fall of 2009 comprised the control group and attended traditional lecture throughout the course of the semester (see Appendix J for the course syllabus for fall 2009). The faculty member used case studies, discussions, and small-group activities intermittently throughout the semester. However, traditional lecture served as the primary method of instruction and included the use of PowerPoint® (see Appendix K for an example of one traditional lecture). In addition, the web-enhanced course used D2L and provided students access to the syllabus, the calendar, the module outlines, module study guides, and their grades. Three faculty members, including this researcher, co-taught this course. The practice of co-teaching courses is routine at the university where this study occurred and is also common in nursing education (Michaelsen & Richards, 2005).

Experimental group. The students enrolled in the course during the spring of 2010 comprised the experimental group and used team-based learning exclusively throughout the semester (see Appendix L for the course syllabus for spring 2010). This researcher actively participated as an instructor in a previous course using team-based learning and therefore provided the sole instruction of the course throughout the semester. As with the control group, D2L provided students access to the syllabus, the calendar, the module outlines, module study guides, and their grades. The course also consisted of the same six modules, three unit examinations, and one final comprehensive examination as utilized for the control group.

First day of class. On the first day of class, this researcher provided an explanation of team-based learning to the students and divided them into heterogeneous teams of five to six students each using various characteristics such as health care experience and interest in community health nursing. Once divided into teams, students selected a name for their team, and this researcher recorded the name of the team and the names of each team member. Students remained in these groups for the duration of the course. During the initial class meeting, this researcher also provided an explanation of the peer evaluation process to the students. Along with peer evaluation of preparedness, contribution, and respect for others, each team also decided on two additional evaluation items they would like to add to their peer evaluation form. Each team submitted these items, and this researcher added them to each team's peer evaluation form for completion at midterm and at the end of the semester (see Appendix M).

Following these activities, student orientation to the team-based learning process occurred. Since this was the first class meeting of the semester, students used

approximately 10 minutes of class time to read the syllabus to model the out-of-class preparation phase of the team-based learning process. Following the reading, the students participated in a practice IRAT, GRAT, and application exercise based on the syllabus.

Grading system. The theory portion of the course consisted of a total of 290 points, including the four examinations worth 200 points. However, students collectively determined the weight of the remaining graded items, including six IRATs, six GRATs, three group examinations, and a peer evaluation completed at both midterm and at the end of the semester. During the first class period and using the grading system described in the review of the literature, students actively participated in determining the percentage of the final course grade allotted for the IRATs, the GRATs, the group examinations, and the peer evaluation forms. Each group initially developed a grading scheme and elected a representative to present to the class. Through discussion and negotiation, the entire class then reached a consensus to divide the 90 points amongst these areas. The students determined the IRATs would be worth 12 points, the GRATs worth 60 points, the group examinations worth 6 points, and the peer evaluations worth 12 points.

Protocol. When conducting quasi-experimental research, Polit and Beck (2008) emphasize the importance of developing specific protocols regarding the intervention. Therefore, this researcher developed IRATs, GRATs, and application exercises for each module. Because this course met once per week for three hours, this researcher determined an adequate length of the Readiness Assurance Tests to consist of 25 multiple-choice questions for each module. Students formed their teams following the completion of the IRATs. This researcher provided teams with the GRATs, IF-AT

forms, and appeals forms for missed questions (see Appendix N). Depending on the amount of time allotted for each module, this researcher also developed multiple application exercises for each module to allow adequate time for student application. Following the completion of the GRATs, this researcher provided each team with large sheets of paper and color-coded answer cards to facilitate simultaneous reporting in class. An example of an IRAT, GRAT, and application exercises for one module appear in Appendix O.

Sample Selection

The target population for this study was undergraduate baccalaureate nursing students in the United States. The accessible population and sample for this study was a convenience sample of second semester nursing students in the fall 2009 and spring 2010 semesters at the university where this researcher is employed and lectures in a community health nursing course.

To obtain the minimum acceptable power of 0.8 and to obtain an effect size of at least 0.4, an appropriate sample size was 98 participants. However, quasi-experimental designs are one of the designs most susceptible to attrition. Additionally, attrition in this study may have occurred because it took place over a nine-month period, students may have chosen not to participate, or students may have dropped out of the course. Although attrition rates are generally very low when the researcher has an ongoing relationship with the study participants, 10 to 20% participant attrition was expected (Polit & Beck, 2008). Therefore, this study had a sample size of 143 students. A convenience sample of 74 baccalaureate nursing students enrolled in a three-hour community health nursing course in the fall 2009 semester comprised the control group. The experimental group

consisted of a convenience sample of 69 baccalaureate students enrolled in a three-hour community health nursing course in the spring 2010 semester.

The study inclusion criteria included registration for community health nursing course in fall 2009 or spring 2010. No exclusion criteria existed. Recruitment of this convenience sample occurred if students meet the inclusion criterion.

Human Subjects Protection

The principle investigator obtained Institutional Review Board (IRB) approval (see Appendix P).

Team-Based Learning Instrument Development

Since very few instruments related to team-based learning exist and no instruments measuring accountability, preference for team-based learning or lecture, and student satisfaction exist, this researcher developed the "Team-Based Learning Student Assessment Instrument" for this study (see Appendix Q).

Definition of concepts. The main concepts chosen for the "Team-Based Learning Student Assessment Instrument" included accountability (including student preparation for class and contribution to the team); preference for lecture or team-based learning (including the student's ability to recall material and student attention level); and student satisfaction. These concepts are conceptually and operationally defined.

Accountability occurs when students demonstrate advance preparation for class or contribute to other members of the team (Michaelsen, 2002). Accountability is operationally defined by the accountability subscale on the "Team-Based Learning Student Assessment Instrument." A higher score indicates an increased level of accountability.

Student recall refers to the ability of students to retrieve stored knowledge for later use. The concept of student recall is operationally defined by items #20-#29 on the "Team-Based Learning Student Assessment Instrument" preference for lecture or team-based learning subscale. A higher score indicates an increased level of student recall following team-based learning activities.

Attention levels refer to students' ability to maintain focus and concentration during both traditional lecture and team-based learning activities. The concept of attention levels is operationally defined by items #14-#19 on the "Team-Based Learning Student Assessment Instrument" preference for lecture or team-based learning subscale. A higher score indicates a higher attention level in team-based learning activities.

Student satisfaction includes generally positive feelings toward either team-based learning activities or traditional lecture. The concept of student satisfaction is operationally defined as a score of greater than 30 on the "Team-Based Learning Student Assessment Instrument" satisfaction subscale.

Item development. Initially, this researcher developed a 45-item instrument based on the literature to measure these concepts. In an attempt to avoid agreement bias, which occurs when participants agree with items regardless of content, the instrument included both positively and negatively worded items (DeVellis, 2003). A panel of four experts on team-based learning, including Dr. Larry Michaelsen, Dr. Ruth Levine, Dr. Michele Clark, and Dr. Nancy Menzel, determined content validity of the initial 45-item instrument (see Appendix R for further information on experts). According to Polit and Beck (2008), three to five experts may determine content validity. Additionally, Polit, Beck, and Owen (2007) recommend instrument developers conduct a content validity

index for new scales with a minimum acceptable criterion of .80 for a scale's content validity. The initial 45-item instrument had an acceptable scale content validity index of .85 (see Appendix S). However, based on content validity index values for each item and based on comments and suggestions by the expert review panel, this researcher deleted seven items and added one item. The 39-item instrument yielded a scale content validity of .89. Each of the three subscales also yielded acceptable scale content validity index values: accountability (.90), preference for lecture or team-based learning (.89), and student satisfaction (.89) (see Appendix T).

Measurement format. This researcher chose a five-point Likert scale, with possible responses of strongly disagree, disagree, neither disagree or agree (neutral), agree, or strongly agree, to use for the instrument. Instruments consisting of declarative items frequently use a Likert scale, which also commonly measures beliefs, opinions, or attitudes. Ultimately, a five-point scale allows for neutrality rather than forcing participants to make a decision on whether they disagree or agree, as does a scale with an even number of responses (DeVellis, 2003). In this study, participants may express feelings of neutrality in their experiences with team-based learning; thus, a five-point scale allows students to express their true feelings (Polit & Beck, 2008). This researcher conducted interval scoring of the instrument by assignment of 1, 2, 3, 4, or 5 to the positive items and 5, 4, 3, 2, or 1 for the reversed items. The possible ranges for each subscale score are as follows, accountability subscale, 13-65; preference for lecture or team-based learning subscale, 16-80, and student satisfaction subscale, 10-50. Possible total scores for the instrument range from 39-195. A higher total instrument score indicates a more positive assessment of the use of team-based learning.

Pilot testing. When developing an instrument, Rust and Golombok (2009) recommend conducting a pilot test, using individuals similar to the intended audience, to assist in determining the final version of the instrument. This researcher obtained IRB approval (see Appendix U) to conduct psychometric testing on this instrument, which began in June 2009. Participants included undergraduate nursing students enrolled in two courses that utilized team-based learning at one southwestern university. Instrument administration occurred in one of the final weeks of each semester. This researcher conducted factor analysis, using Predictive Analytics Software (PASW) version 17.0 in April 2010 using 186 participants. Confirmatory factor analysis is hypothesis-driven and commonly used during instrument development (Brown, 2006). Results were used to compile the final 34-item version of the "Team-Based Learning Student Assessment Instrument" (see Appendix G).

Polit and Beck (2008) recommend that instrument developers conduct internal consistency reliability of each subscale and for the total scale if the instrument involves summing the item scores. A Cronbach's alpha of greater than .80 is desirable for each subscale and the total scale (Polit & Beck, 2008). Furthermore, Polit and Beck (2008) assert that improved construct validity occurs when "the instrument developer has taken strong steps to enhance the content validity of an instrument" (Polit & Beck, 2008, p. 461). To that end, content validity of the "Team-Based Learning Student Assessment Instrument" yielded acceptable results (see Appendix S and Appendix T). This researcher determined construct validity, including convergent and discriminant validity, by using hypothesis testing and factor analysis, an approach often utilized to assess construct validity (Polit & Beck, 2008; Waltz, Strickland, & Lenz, 2005). Factor

analysis, using principal axis factoring with varimax rotation was conducted on each subscale. Items with loadings of less than .40 were removed from the instrument. Further details are provided in Chapter Four.

Engagement Instrument

The "Classroom Engagement Survey" consists of eight items and uses a five-point Likert scale (see Appendix F). Possible responses include strongly disagree, disagree, neither disagree or agree (neutral), agree, or strongly agree. This survey, developed by members of the Fund for the Improvement of Postsecondary Education (FIPSE), has been used in three studies involving team-based learning (Clark et al., 2008; FIPSE, 2003; Levine et al., 2004). Furthermore, the initial pilot of the instrument determined adequate validity (FIPSE, 2003). Levine et al. (2004) utilized the "Classroom Engagement Survey" in a psychiatry clerkship and obtained a Cronbach's alpha of .81. Additionally, using undergraduate nursing students, Clark et al. (2008) obtained Cronbach alphas of .80 and .89 at two separate points in the study. These three studies indicate that the "Classroom Engagement Survey" is a reliable and valid tool for measuring student engagement. The study by Clark et al. (2008) is especially relevant because it employed a sample similar to the one in this study and obtained adequate reliability of the "Classroom Engagement Survey." This researcher reassessed the reliability of this tool using the data from this study. Details are provided in Chapter Four.

Data Collection Method

Demographic data. During one of the final weeks of each semester, students in both the control group and the experimental group voluntarily completed a demographic information form. This nine-item form included age, gender, ethnicity, employment

status, experience in health care, marital status, parental status, entering grade point average, and grade point average at the end of the first semester of nursing (see Appendix V). The demographic information form describes the sample characteristics.

Student engagement. Students in both the control group and the experimental group voluntarily completed the "Classroom Engagement Survey" (see Appendix F) during one of the final weeks of each semester. After obtaining consent (see Appendix W), the students filled out the eight-item form. This researcher offered students assurance that the instrument results would remain confidential.

Student assessment. During one of the final weeks of the spring 2010 semester, only students in the experimental group voluntarily completed the "Team-Based Learning Student Assessment Instrument" (see Appendix G) after providing written consent (see Appendix W). This researcher offered students assurance that the instrument results would remain confidential.

Response rate of instruments. A response rate of less than 50% will seriously alter the representativeness of the sample (Burns & Grove, 2001); therefore, in an attempt to increase response rate, the consent form had a perforated section at the bottom where students could fill in their names. If they wished to complete the instrument, students signed the consent form, filled out and removed the perforated section, and placed their names into a drawing. This researcher entered students in the control group into a drawing for a chance to win one of five $10 gift certificates to a local coffee shop or bookstore. Since students in the experimental group completed two instruments, their names were entered into a drawing for a chance to win one of five $20 gift certificates to a local coffee shop or bookstore.

Examination scores. During one of the final weeks of each semester and after obtaining student consent (see Appendix W), this researcher collected examination scores, consisting of three unit examinations and one final comprehensive examination, from both the control group and the experimental group. This researcher provided assurance to students that they would not be penalized if they choose not to participate in this study.

Readiness Assurance Test scores. During one of the final weeks of the spring 2010 semester and after obtaining student consent (see Appendix W), this researcher collected Readiness Assurance Test scores, including six IRAT scores and six GRAT scores. This researcher provided assurance to students that they would not be penalized if they choose not to participate in this study.

Table 4

Data Collection Timeline

Method of Measurement	Timing of Measures
Demographic Information Form	End of fall 2009 and spring 2010 semesters
"Classroom Engagement Survey"	End of fall 2009 and spring 2010 semesters
"Team-Based Learning Student Assessment Instrument"	End of spring 2010
Examination scores	End of fall 2009 and spring 2010 semesters
Readiness Assurance Test scores	End of spring 2010

Data Analysis

This researcher analyzed data using Predictive Analytics Software (PASW) version 17.0 software. Descriptive statistics describe sample characteristics and instrument scores, including total and subscale scores.

Research question #1. Do significant differences exist in self-reported student engagement with the use of team-based learning or traditional lecture?

Hypothesis #1. Baccalaureate nursing students taught using the team-based learning strategy will report higher levels of engagement compared to students taught using traditional lecture.

Statistical analysis. To compare levels of engagement between students using the team-based learning strategy and students taught using the traditional lecture method, this researcher used the *t*-test for independent groups.

Research question #2. Do significant differences exist in examination scores between baccalaureate nursing students using team-based learning versus traditional lecture?

Hypothesis #2. Baccalaureate nursing students taught using the team-based learning strategy will have higher examination scores compared to students taught using traditional lecture.

Statistical analysis. This researcher used repeated measures analysis of variance (RM-ANOVA) to analyze examination scores for the control group and the experimental group. Examination scores were collected and compared at each of the four points throughout each semester for each group. Overall mean examination scores were also compared. An *F*-statistic was calculated to determine a between-subjects effect and a

within-subjects effect. Descriptive statistics determined the mean, mode, and standard deviation for the examination scores for each group.

Research question #3. What is the relationship between student engagement and examination scores?

Hypothesis #3. Increased student engagement will positively correlate with increased examination scores.

Statistical analysis. After summing the "Classroom Engagement Survey," Pearson's *r* will determine the degree and direction of the relationship between student engagement and examination scores.

Research question #4. What is the relationship between self-reported accountability and students' scores on the Readiness Assurance Tests?

Hypothesis #4. Increased self-reported accountability scores will positively correlate with performance on the Readiness Assurance Tests.

Statistical analysis. After summing the accountability subscale, this researcher used Pearson's *r* to determine the degree and direction of the relationship between accountability scores and Readiness Assurance Tests.

Research question #5. Does a newly developed instrument, the "Team-Based Learning Student Assessment Instrument," accurately measure the three subscales: accountability, preference for lecture or team-based learning, and student satisfaction?

Statistical analysis. Psychometric testing, including factor analysis, item analysis, reliability, and validity, was conducted.

Qualitative data. A section at the end of the "Team-Based Learning Student Assessment Instrument" asked students to provide comments regarding their experiences

with team-based learning. This researcher completed coding of individual comments included on the instrument and used content analysis to organize individual comments from study participants (Polit & Beck, 2008). Identification of common themes provides a basis for the discussion of the study.

Threats to Internal Validity

Because internal validity is a threat, especially in quasi-experimental studies, this researcher developed methods to deal with these possible threats. Since the interventions were introduced and evaluated over the course of two semesters and since the instructor had taught the class prior to the initiation of the research, minimal maturation occurred. Additionally, a major threat to internal validity is the degree to which the groups were comparable prior to the study. This researcher compared demographic information to control for differences between the control group and the experimental group. If findings suggested a significant difference in groups, this researcher could have utilized either of two strategies. This researcher could have removed significantly different subjects, as long as an appropriate sample size still existed, or this researcher could have randomly selected from the sample based on specific characteristics.

Conclusion

This quasi-experimental study utilized a control group taught with the traditional lecture method and an experimental group which used team-based learning. Both the control group and the experimental group completed a survey to measure student engagement. Additionally, students in the experimental group completed the "Team-Based Learning Student Assessment Instrument." This researcher collected examination scores from both groups. The purposes of this research are multifold. This study

examined potential differences in student engagement, potential differences in examination scores, how engagement affects examination scores, how accountability affects Readiness Assurance Test scores, and determined whether a newly developed instrument accurately measured the three subscales.

As national bodies of nursing education continue to call for excellence in nursing education through creating and using student-centered teaching strategies, team-based learning may offer an answer for nurse educators. Although a limited number of studies related to the efficacy of team-based learning exist in disciplines other than nursing, current findings do indicate positive student and faculty member outcomes. However, since very few studies regarding team-based learning exist in nursing education, further research, such as this study, is imperative. Thus, the availability of evidence-based approaches is necessary to not only transform but ultimately improve the delivery of nursing education.

CHAPTER FOUR

FINDINGS OF THE STUDY

The purpose of this research was fivefold. First, it examined potential differences in student engagement between baccalaureate nursing students taught using team-based learning and those taught using traditional lecture. Second, it examined how levels of engagement affect examination scores. Third, it examined potential differences in student examination scores between baccalaureate nursing students taught using team-based learning and those taught using traditional lecture. Fourth, it examined how accountability affects Readiness Assurance Test scores. Last, it determined whether a newly developed instrument accurately measures the three subscales: accountability, preference for lecture or team-based learning, and student satisfaction. This chapter is organized by research question and describes the findings of this study. Each section provides the statistical analysis of data which was obtained in this study.

Analysis of Data

Data were analyzed using Predictive Analytics Software (PASW) version 17.0 software. Descriptive statistics describe the sample characteristics and instrument scores (including total and subscale scores).

Descriptive Statistics

Demographic information. The study sample consisted of a total of 143 participants, 74 students (51.7%) comprised the control group and received traditional lecture, and 69 students (48.3%) comprised the experimental group and participated in team-based learning. Demographic characteristics were compared for students in the control group and students in the experimental group. The *t*-test for independent groups

was used for parametric data and chi-square was used for non-parametric data. Although statistically significant differences were found for several demographic characteristics, these differences were not remarkable between the two groups. If a larger sample had been used, this researcher would have controlled for these differences. Students in the control group consisted of fewer students with children ($\chi^2 = 5.330$, $df = 1$, $p = .021$). Students in the experimental group had an increased age ($t = -3.210$, $df = 78.76$, $p = .002$) and had a decreased number of females and an increased number of males ($\chi^2 = 4.739$, $df = 1$, $p = .029$). Students in the control group also had a higher grade point average prior to entering the nursing major ($t = 5.41$, $df = 140$, $p < .001$) but a lower grade point average after completing the first semester of nursing ($t = 4.401$, $df = 138$, $p < .001$). No significant differences were found in ethnicity, employment status, health care experience, hours worked per week, and marital status. Table 5 depicts the demographic characteristics of each group and the level of significance for each characteristic.

Table 5

Demographic Information for Control and Experimental Group

Characteristic	Control (*n*=74)	Experimental (*n*=69)	Significance
Age	*M* = 20.7 years *SD* = 0.89	*M* = 22 years *SD* = 3.06	.002*
Gender			.029*
Female	69	56	
Male	5	13	
Ethnicity			.536
Caucasian	73	66	
African-American		1	
Asian American or Pacific Islander		1	
Other	1	1	
Employment			.174
Yes	53	42	
No	21	27	
Hours per week	3-30 *SD* = 7.97	3-40 *SD* = 10.76	.275
Health Care Experience			.054
Yes	58	44	
No	16	25	
Marital Status			.651
Single	70	64	
Married	4	5	
Children			.021*
Yes	1	7	
No	73	61	
GPA prior to entering major	3.0 – 4.0 *SD* = 0.26	2.8 – 4.0 *SD* = 0.27	< .001*
GPA after 1st nursing semester	2.5 – 4.0 *SD* = 0.31	2.8 – 4.0 *SD* = 0.29	< .001*

Note. Significant *p*-values are marked with an asterisk.

"Team-Based Learning Student Assessment Instrument." Only students in the experimental group completed the "Team-Based Learning Student Assessment Instrument." Each subscale score and a total score were determined. On the accountability subscale, possible scores ranged from 9-45. A higher score indicated a higher level of accountability. The accountability subscale scores ranged from 23-44, with a mean of 35.5 (*SD* = 3.87; see Figure 5). Based on a score of 27 as neutral, participants had a high level of accountability with team-based learning.

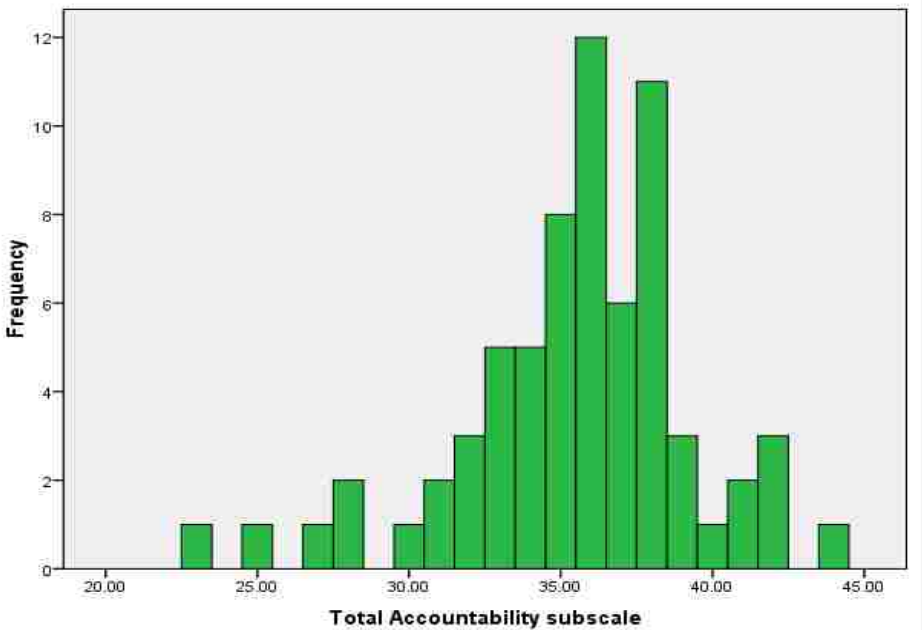


Figure 5. Total accountability subscale score.

On the preference for lecture or team-based learning subscale, possible scores ranged from 16-80. A higher score indicated a preference for team-based learning. The

preference for lecture or team-based learning subscale scores of the participants ranged from 27-67, with a mean of 47.84 (*SD* = 9.63; see Figure 6). Based on a score of 48 as neutral, participants were almost neutral in their preference for lecture or team-based learning.

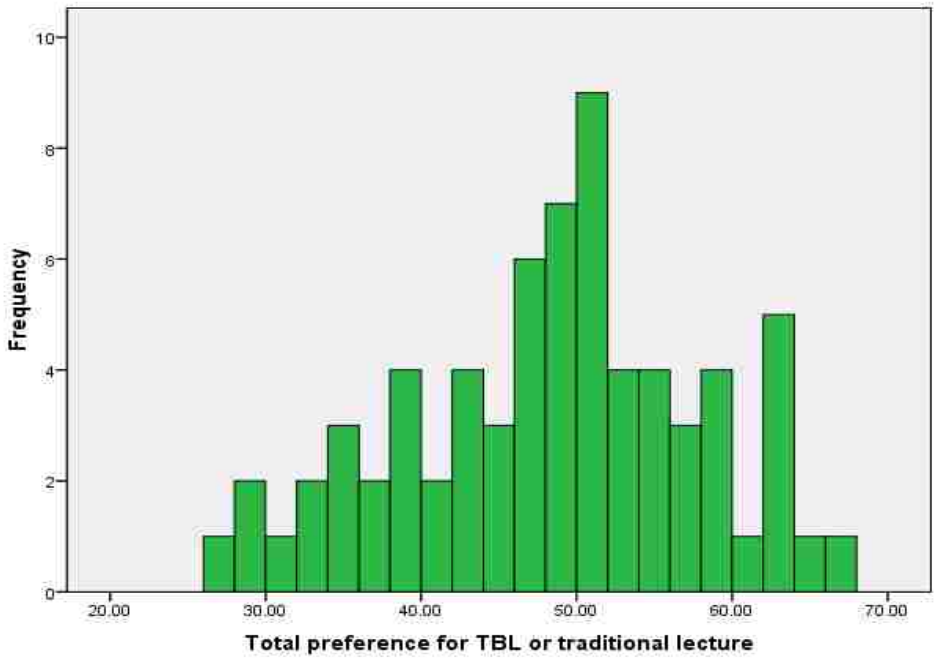


Figure 6. Total preference for team-based learning or traditional lecture subscale score.

On the student satisfaction subscale, possible scores ranged from 9-45. A higher score indicated a higher level of satisfaction with team-based learning. Scores ranged from 14-41, with a mean of 30.29 (*SD* = 6.52; see Figure 7). Based on a score of 27 as neutral, participants were generally satisfied with team-based learning.

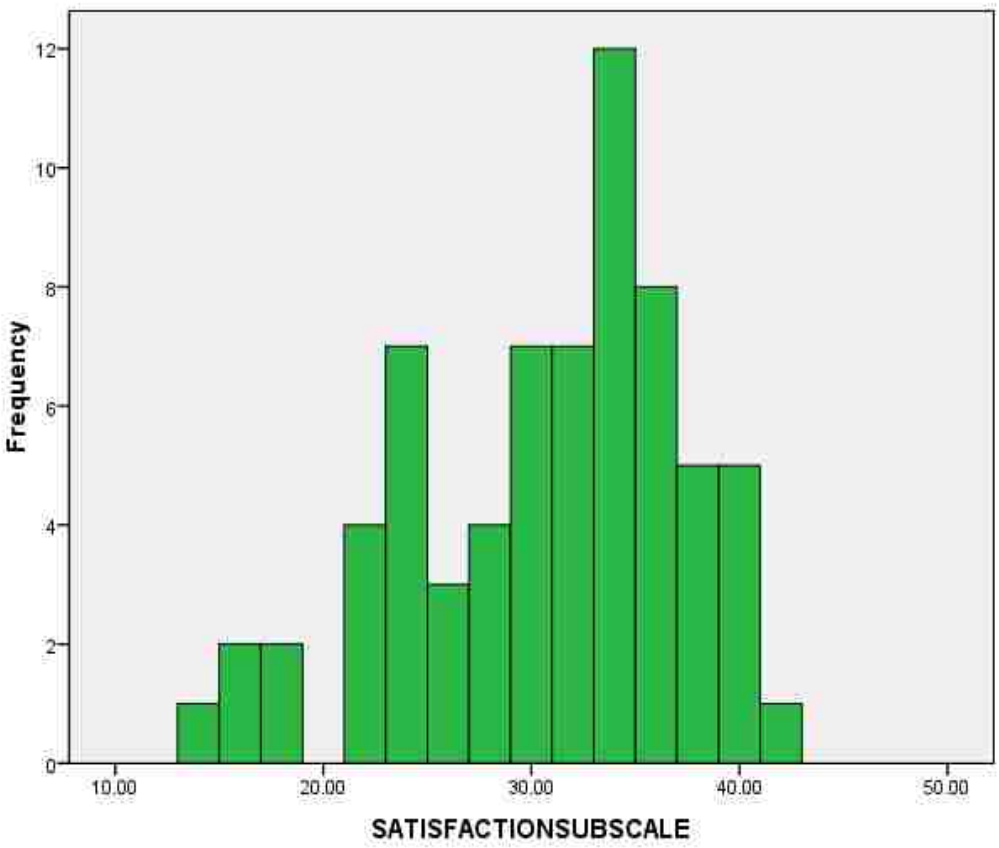


Figure 7. Total satisfaction subscale score.

A total instrument score was also calculated with possible scores ranging from 34-170. A higher score indicated a more favorable experience with team-based learning. The scores of the participants in the experimental group ranged from 72-144, with a mean score of 113.2 (*SD* = 17.35; see Figure 8). Based on a score of 102 as neutral, participants had a generally favorable experience with team-based learning.

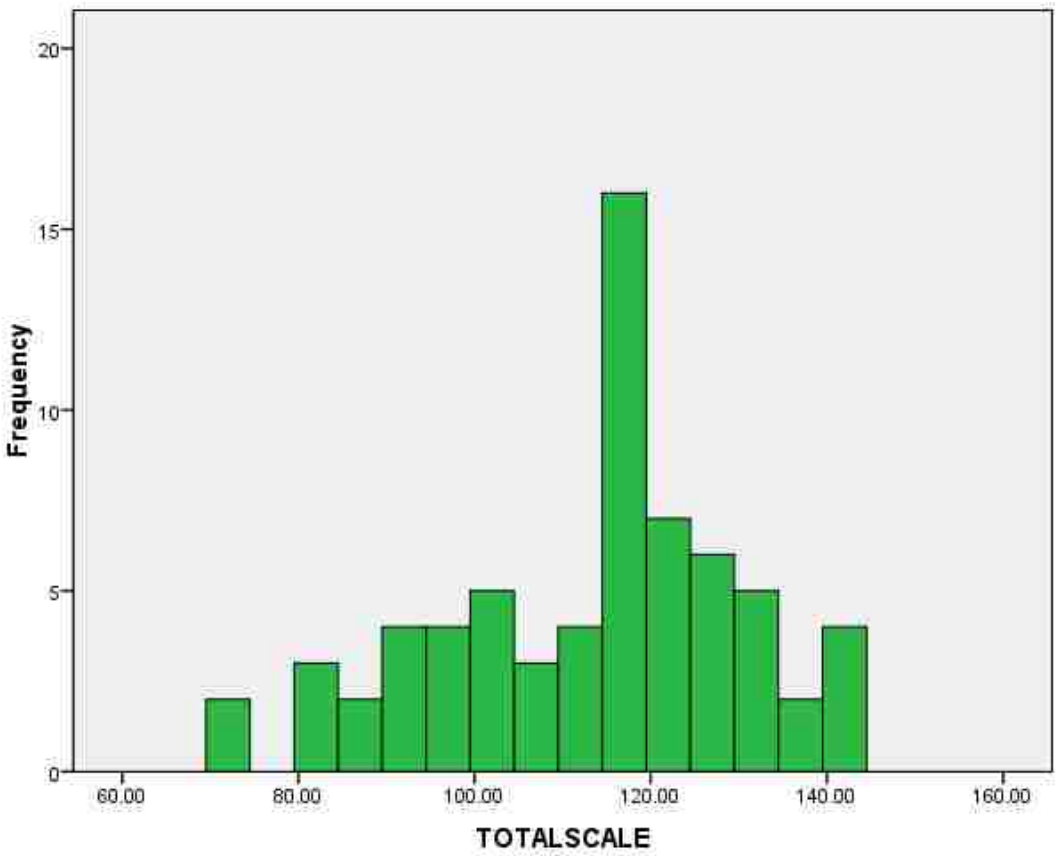


Figure 8. Total "Team-Based Learning Student Assessment Instrument" score.

Statistical Analysis of Research Questions

Research question #1. Do significant differences exist in self-reported student engagement with the use of team-based learning or traditional lecture?

Hypothesis #1. Baccalaureate nursing students taught using the team-based learning strategy will report higher levels of engagement compared to students taught using traditional lecture.

Statistical analysis. A total engagement score was determined for each "Classroom Engagement Survey." Possible scores ranged from 8-40. A higher score indicated a

higher level of engagement. In the control group, the participants' scores ranged from 11-32, with a mean score of 21.3 (*SD* = 3.97). In the experimental group, the participants' scores ranged from 16-39, with a mean score of 30.03 (*SD* = 4.43; see Figure 9). Based on a score of 24 as neutrality, the control group did not feel engaged in the classroom while the experimental group did feel significantly more engaged.

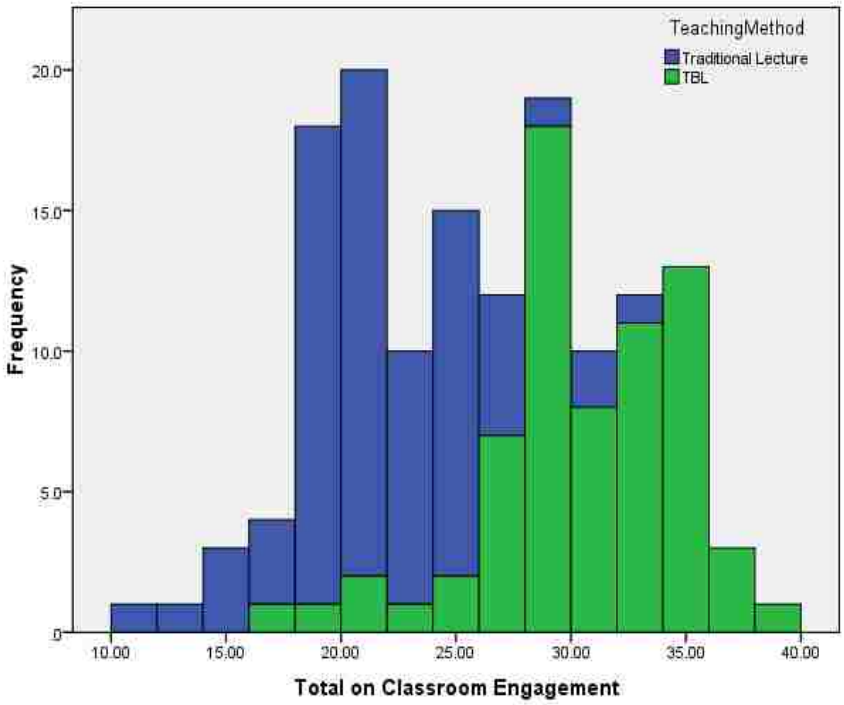


Figure 9. Classroom engagement scores for control and experimental groups.

To compare levels of engagement between students using the team-based learning strategy and students taught using the traditional lecture method, this researcher used the *t*-test for independent groups. Students using the team-based learning strategy reported

higher levels of engagement (M = 30.03, SD = 4.43) compared to students taught using traditional lecture (M = 21.31, SD = 3.97). This difference was significant (t = -12.36, df = 140, $p < .001$).

Research question #2. Do significant differences exist in examination scores between baccalaureate nursing students using team-based learning versus traditional lecture?

Hypothesis #2. Baccalaureate nursing students taught using the team-based learning strategy will have higher examination scores compared to students taught using traditional lecture.

Statistical analysis. Examination scores, including three unit examinations and one final comprehensive examination, were collected for both the control group and the experimental group. Table 6 illustrates this information.

Table 6

Examination Means for Control and Experimental Group

Examination	Control Group	Experimental Group
Exam 1 (50 points)	40.99	41.32
Exam 2 (50 points)	39.07	42.26
Exam 3 (40 points)	34.85	31.39
Exam 4 (60 points)	49.66	49.72

Repeated measures analysis of variance (RM-ANOVA) was used to analyze examination scores for the control group and the experimental group. Examination scores were collected and compared at each of the four points throughout each semester for each group. A significant effect was found within subjects ($F = 943.15$; $p < .001$); however, results were not significant for between subjects ($F = .009$; $p = .923$).

Research Question #3. What is the relationship between student engagement and examination scores?

Hypothesis #3. Increased student engagement will positively correlate with increased examination scores.

Statistical analysis. After summing the "Classroom Engagement Survey," a Pearson correlation was calculated examining the relationship between student engagement and examination scores. Weak correlations that were not significant were found with exam one and exam four. A moderate positive correlation that was significant was found with exam two and a moderate negative correlation was found with exam three (see Table 7). These results indicate mixed findings regarding the relationship between student engagement and examination scores.

Table 7

Relationship Between Student Engagement and Examination Scores

Examination	Pearson's *r*	Significance
Exam 1	.108	.201
Exam 2	.303	< .001*
Exam 3	-.279	.001*
Exam 4	.029	.735
Total Exam	.077	.364

Note. Significant *p*-values are marked with an asterisk.

Research Question #4. What is the relationship between self-reported accountability and students' scores on the Readiness Assurance Tests?

Hypothesis #4. Increased self-reported accountability scores will positively correlate with performance on the Readiness Assurance Tests.

Statistical analysis. The accountability subscale scores ranged from 23-44, with a mean of 35.5 (*SD* = 3.87). After summing the accountability subscale, this researcher calculated a Pearson correlation to examine the relationship between accountability scores and Readiness Assurance Tests. Table 8 illustrates these results.

Table 8

Relationship Between Accountability and Readiness Assurance Tests

Readiness Assurance Tests	Pearson's *r*	Significance
IRAT #1	.108	.379
IRAT #2	-.002	.986
IRAT #3	.228	.061
IRAT #4	.061	.622
IRAT #5	.071	.566
IRAT #6	.303	.012*
Total IRAT	.240	.048*
GRAT #1	.264	.029*
GRAT #2	-.033	.789
GRAT #3	-.224	.067
GRAT #4	-.071	.563
GRAT #5	.136	.267
GRAT #6	.116	.344
Total GRAT	.162	.186

Note. Significant *p*-values are marked with an asterisk.

Only two of the twelve Readiness Assurance Tests indicated moderate positive relationships, which are denoted by asterisks. However, after calculating a Pearson correlation for the total IRATs and the total GRATs, a significant correlation was found

between accountability and IRATs (p = .048). Overall, these findings indicate mixed results regarding the relationship between self-reported accountability and Readiness Assurance Tests. However, the relationship, although only moderate, between accountability and IRATs does indicate that students feel they are responsible for their performance on the IRATs and therefore may prepare more to do well.

Research Question #5. Does a newly developed instrument, the "Team-Based Learning Student Assessment Instrument," accurately measure the three subscales: accountability, preference for lecture or team-based learning, and student satisfaction?

Statistical analysis. Psychometric testing, including factor analysis, item analysis, reliability, and validity, was conducted using a separate sample.

Demographic information. The study sample for the pilot testing of the "Team-Based Learning Student Assessment Instrument" consisted of 186 undergraduate nursing students from one southwestern university enrolled during the 2009-2010 academic year. None of these students were included in the control or the experimental groups. Each participant completed the 39-item "Team-Based Learning Student Assessment Instrument" and a five-item demographic information form. The demographic information form included age, gender, ethnicity, level in nursing school, and grade point average. The participants consisted of 33 males (17.7%) and 151 females (81.2%). The age of the participants ranged from 19 to 51 years old. Table 9 depicts the age distribution of the participants.

Table 9

Age Distribution of Participants

Age	*f*	*P*
19-29 years	170	79.1
30-39 years	36	16.7
40-49 years	8	3.7
50-59 years	1	0.5

Table 10 depicts the ethnicity of study participants.

Table 10

Ethnicity of Participants

Ethnicity	*f*	*P*
Caucasian	92	49.5
African-American	6	3.2
Asian American/Pacific Islander	64	34.4
Hispanic/Latino	16	8.6
Other	7	3.8

Additionally, study participants were asked to provide their current grade point average (GPA). The participants had a GPA of between 2.5 and 4.0 with a mean of 3.4.

Factor analysis. When designing the "Team-Based Learning Student Assessment Instrument," this researcher proposed that it would consist of three sub-scales: Accountability (Q1-Q13), Preference for Lecture or Team-Based Learning (Q14-Q29), and Student Satisfaction (Q30-Q39). A separate factor analysis was conducted on each subscale using principal axis factoring with varimax rotation.

Sampling adequacy. Factor analysis was performed to determine if these three subscales could be substantiated. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was greater than .60 for each subscale, indicating that factor analysis could be performed (Tabachnick & Fidell, 2007). See Table 11 for details.

Table 11

Sampling Adequacy

Scale	KMO
Accountability	.819
Preference for Lecture or TBL	.892
Student Satisfaction	.933
Total Scale	.949

Accountability subscale. Four factors with eigenvalues of greater than one were identified on the accountability subscale. However, the scree plot indicated an elbow between factor 2 and 3, suggesting that a two-factor solution would be most parsimonious. Therefore, two factors were extracted on the accountability subscale using principal axis factoring with varimax rotation (see Table 12). All 13 questions loaded at .40 or above on Factor 1. However, questions one, two, and three loaded on a separate factor as well. Although items which load on two separate factors generally indicate redundancy (Tabachnick & Fidell, 2007), this researcher determined these three questions to be important and therefore retained them. Still, it is important to note that future factor analysis with a larger sample is planned in order to further refine this instrument. Factor 2 referred to preparation, which is included in the description of the subscale and, therefore, is appropriate. Factor loadings were between .296 and .789. Out of the 13 questions, two had a factor loading of less than .40. Question four obtained a loading of .296 and question 11 had a loading of .354, indicating that these questions should be removed.

Preference for lecture or team-based learning subscale. Three factors had eigenvalues of greater than one on the preference for lecture or team-based learning subscale. However, once again, the scree plot indicated an elbow between two and three factors. Therefore, two factors were extracted using principal axis factoring with varimax rotation. Factor 1 was named "team-based learning" and Factor 2 was named "lecture." Since this subscale is described as assessing "student ability to recall material and student attention level in lecture and team-based learning," this scale is substantiated. All questions achieved loadings of greater than .40 (see Table 13).

Table 12

Factor Loadings for Accountability Subscale With Varimax Rotation

Question	Factor 1	Factor 2
Q1: I spend more time studying before class in order to be more prepared.	**.512**	**.575**
Q2: I read most of the assigned material before class.	**.441**	**.676**
Q3: I feel I have to prepared for this class in order to do well.	**.590**	**.401**
Q4: I feel that I should be accountable for my own learning.	.296	.069
Q5: Team-based learning makes me accountable.	**.677**	-.051
Q6: Because we work in teams, I spend more time preparing for class than I would otherwise.	**.426**	-.013
Q7: I contribute to my team members' learning.	**.646**	-.029
Q8: My contribution to the team is not important.	**.544**	-.223
Q9: My team members expect me to assist them in their learning.	**.563**	-.209
Q10: I am accountable for my team's learning.	**.630**	-.101
Q11: I do not need to help my team learn the material.	.354	-.251
Q12: I am proud of my ability to assist my team in their learning.	**.735**	-.251
Q13: I need to contribute to the team's learning.	**.789**	-.284

Note. Factor loadings > .40 are in boldface.

Table 13

Factor Loadings for Preference for Lecture or Team-Based Learning Subscale With Varimax Rotation

Question	Factor 1	Factor 2
Q14: During traditional lecture, I often find myself thinking of non-related things.	.139	**.777**
Q15: I am easily distracted during traditional lecture.	.121	**.865**
Q16: I am easily distracted during team-based learning activities.	**.642**	.151
Q17: I am more likely to fall asleep during lecture than during classes that use team-based learning activities.	.224	**.602**
Q18: I get bored during team-based learning activities.	**.772**	.257
Q19: I talk about non-related things during team-based learning activities.	**.556**	.129
Q20: I easily remember what I learn when working in a team.	**.673**	.227
Q21: I remember material better when the instructor lectures over it.	.309	**.602**
Q22: Team-based learning activities help me recall past information.	**.784**	.216
Q23: It is easier to study for tests when the instructor has lectured over the material.	.187	**.519**
Q24: I remember information longer when I go over it with team members during the GRATS used in team-based learning.	**.788**	.219
Q25: I remember material better after the application exercises used in team-based learning.	**.771**	.304
Q26: I can easily remember material from lecture.	.196	**.596**

Q27: After working with my team members, I find it difficult to remember what we talked about during class.	**.609**	.126
Q28: I do better on exams when we used team-based learning to cover the material.	**.643**	.404
Q29: After listening to lecture, I find it difficult to remember what the instructor talked about during class.	.204	**.612**

Note. Factor loadings > .40 are in boldface.

Student satisfaction subscale. One factor was extracted on the student satisfaction subscale. Question 32 had a factor loading of .268, indicating it should be removed from the subscale (see Table 14).

Total instrument. Once factor analysis of each subscale was complete, this researcher performed factor analysis on the entire 39-item instrument to determine any redundant questions. Although, seven factors had eigenvalues of greater than one, the scree plot indicated three factors would be most parsimonious. Therefore, three factors were extracted using principal axis factoring using varimax rotation. Questions 2, 4, 6, 11, and 32 had factor loadings of less than .40 (see Table 15). Factor analysis of each subscale validated the removal of questions 4, 11, and 32 already. Based on the factor analysis results of each subscale and the total instrument, the final instrument will consist of 34 questions, excluding 2, 4, 6, 11, and 32.

Table 14

Factor Loadings for Student Satisfaction Subscale With Varimax Rotation

Question	Factor 1
Q30: I enjoy team-based learning activities.	**.920**
Q31: I learn better in a team setting.	**.804**
Q32: I think lectures are an effective approach for learning.	.268
Q33: I think team-based learning activities are an effective approach to learning.	**.849**
Q34: I do not like to work in teams.	**.671**
Q35: Team-based learning activities are fun.	**.852**
Q36: Team-based learning activities are a waste of time.	**.790**
Q37: I think team-based learning helped me improve my grade.	**.758**
Q38: I have a positive attitude towards team-based learning activities.	**.891**
Q39: I have had a good experience with team-based learning.	**.891**

Note. Factor loadings > .40 are in boldface.

Table 15

Factor Loadings for "Team-Based Learning Student Assessment Instrument" With Varimax Rotation

Question	Factor 1	Factor 2	Factor 3
Q1: I spend more time studying before class in order to be more prepared.	.046	-.105	**.509**
Q2: I read most of the assigned material before class.	.150	-.140	.394
Q3: I feel I have to prepared for this class in order to do well.	.193	-.049	**.541**
Q4: I feel that I should be accountable for my own learning.	-.113	.150	.375
Q5: Team-based learning makes me accountable.	**.550**	.238	**.488**
Q6: Because we work in teams, I spend more time preparing for class than I would otherwise.	.389	.243	.279
Q7: I contribute to my team members' learning.	.296	.012	**.557**
Q8: My contribution to the team is not important.	.339	-.080	**.404**
Q9: My team members expect me to assist them in their learning.	.160	.065	**.580**
Q10: I am accountable for my team's learning.	.131	-.004	**.683**
Q11: I do not need to help my team learn the material.	.181	-.164	.319
Q12: I am proud of my ability to assist my team in their learning.	.362	.119	**.630**

Q13: I need to contribute to the team's learning.	.313	.090	**.699**
Q14: During traditional lecture, I often find myself thinking of non-related things.	.122	**.803**	.106
Q15: I am easily distracted during traditional lecture.	.129	**.872**	.103
Q16: I am easily distracted during team-based learning activities.	**.675**	.084	.165
Q17: I am more likely to fall asleep during lecture than during classes that use team-based learning activities.	.242	**.609**	.027
Q18: I get bored during team-based learning activities.	**.828**	.208	.119
Q19: I talk about non-related things during team-based learning activities.	**.565**	.078	.176
Q20: I easily remember what I learn when working in a team.	**.574**	.261	.322
Q21: I remember material better when the instructor lectures over it.	**.419**	**.552**	-.160
Q22: Team-based learning activities help me recall past information.	**.668**	.242	.250
Q23: It is easier to study for tests when the instructor has lectured over the material.	.275	**.465**	-.108
Q24: I remember information longer when I go over it with team members during the GRATS used in team-based learning.	**.703**	.239	.253
Q25: I remember material better after the application exercises used in team-based learning.	**.716**	.304	.183
Q26: I can easily remember material from lecture.	.238	**.570**	-.132

Q27: After working with my team members, I find it difficult to remember what we talked about during class.	**.598**	.075	.143
Q28: I do better on exams when we used team-based learning to cover the material.	**.666**	.388	.120
Q29: After listening to lecture, I find it difficult to remember what the instructor talked about during class.	.238	**.613**	.067
Q30: I enjoy team-based learning activities.	**.831**	.268	.212
Q31: I learn better in a team setting.	**.751**	.282	.146
Q32: I think lectures are an effective approach for learning.	.228	.372	-.137
Q33: I think team-based learning activities are an effective approach to learning.	**.808**	.242	.183
Q34: I do not like to work in teams.	**.652**	.126	.091
Q35: Team-based learning activities are fun.	**.771**	.152	.261
Q36: Team-based learning activities are a waste of time.	**.728**	.147	.315
Q37: I think team-based learning helped me improve my grade.	**.693**	.244	.202
Q38: I have a positive attitude towards team-based learning activities.	**.791**	.257	.225
Q39: I have had a good experience with team-based learning.	**.785**	.260	.232

Note. Factor loadings > .40 are in boldface.

Reliability. Further internal consistency assessments were performed on each of the factors, subscales, and the total scale to verify reliability (see Table 16). Based on the recommendation by Polit and Beck (2008) that a Cronbach's alpha of greater than .70 is acceptable for a new instrument and a Cronbach's alpha of greater than .80 is desirable, the "Team-Based Learning Student Assessment Instrument" meets and exceeds expectations for a newly developed instrument.

Table 16

Reliability Findings

Factor/Scale	39-question instrument	34-question instrument
Accountability Subscale	.842	.845
Factor 1	.835	.847
Factor 2	.780	
Preference Subscale	.909	.909
Factor 1	.908	.908
Factor 2	.858	.858
Satisfaction Subscale	.936	.949
Factor 1	.936	.949
Total Scale	.949	.952
Factor 1	.962	.964
Factor 2	.859	.858
Factor 3	.840	.845

Reliability of "Classroom Engagement Survey"

Past studies have indicated that the "Classroom Engagement Survey" is a reliable and valid tool for measuring student engagement. Using the sample in this study, this researcher reassessed the reliability of the instrument. A Cronbach's alpha of .881 was found. The two subscales, participation (five items) and enjoyment (three items), each yielded Cronbach alphas of .807 and .873, respectively. These results indicate high reliability for this sample as well.

Qualitative Data

A section at the end of the "Team-Based Learning Student Assessment Instrument" asked study participants to provide comments regarding their experiences with team-based learning. This researcher completed coding of individual comments included on the instrument and used content analysis to organize individual comments from study participants (Polit & Beck, 2008). Five major categories emerged from the analysis of the comments: student accountability, retainment of material, positive reactions, lack of lecture, and distractions in the classroom. Each of these categories will be discussed individually.

Student accountability. Several participants provided comments which supported the increased accountability required with team-based learning. One participant commented, "I enjoyed the class. You really need to prepare by reading or you will not do well. I liked the fact we were held accountable." Another commented, "I think most of the learning in this class came from preparing ahead of time. . . . We were responsible for our own learning." Another participant stated, "I had to do a lot more work to prepare for class and study for exams." One participant who recognized the challenge of team-

based learning stated, “Although team-based learning seemed like it would be challenging during the first IRAT/GRAT, it did make me more accountable to my studies for this class.” Another commented, “I think this holds us much more accountable, and overall I believe we did learn a lot.” A participant stated, “The activities didn’t cover all the main points of the chapters so when studying and preparing for tests I felt I depended on myself more[,] rather than [on] the team exercises.”

Retainment of material. One student commented, “I feel like I retain more in this class than in my two lecture classes (and I also have the highest grade in this class too)!” Another provided the following comment, “I think team-based learning is a good experience and is helpful in remembering information.”

Positive reactions. Many study participants responded positively to team-based learning. One participant stated, “I liked the GRATs and the ability to talk answers over with other students and hear their reasoning behind their answer.” A similar comment from another participant stated, “This class was fun to come to every week because we had the opportunity to talk with other classmates about the information we were learning about.” Another commented, “It was fun and exciting to come to class and know that I was actually going to have fun and learn today.” Another provided the following insight: “I really liked the way the course was organized. I also think team-based learning would be appropriate for material that is ‘boring.’ The material we covered in this class would have been boring and my grades more than likely would have suffered if this had been a traditional lecture.” Some general comments included: “I like team-based learning,” “Overall it was a new interesting way to learn,” “I enjoyed team-based learning,” and “Team-based learning was a new, interesting approach for me.” Another participant

demonstrated self-awareness and insight by stating, “I really enjoyed team-based learning . . . . I don’t do as well on the quizzes/tests but it has more to do with the material and the critical thinking questions (sometimes I overthink) and less to do with the method of teaching.”

Lack of lecture. Many study participants voiced opinions regarding the lack of lecture. One participant offered the following insight: “We have grown up learning with lecture and it was very difficult for me to switch to no lecture--which my test grades represent.” Another participant stated, “I honestly just feel that I learn more from traditional lecture. It’s not that I hated or disliked team-based learning, I just feel I get more from lecture.” Many other comments regarding the lack of lecture included: “Lectures just work better for me,” “I think I would have done better if we did a little more lecture,” and “I would like a little bit more lecture to help absorb the information.” Another participant commented, “I really do learn better by lectures because I feel like I have better notes to study off of.” Another comment included, “My grades in this course are significantly lower than in my difficult lecture course.” Other comments included: “The only thing I didn’t like was no lecture, our knowledge was strictly from the reading,” “I liked working in groups to learn but I also think lecture is a necessity for class to help better prepare us for exams,” “I think team-based learning would have been more effective with some sort of lecture to get the class started,” “I didn’t like that we never got any form of lecture over the material . . . . I really like getting lectured to more than trying to teach myself,” and “I think it would be helpful to include these activities with lecture so we have something to base off of [*sic*]. It is difficult to teach yourself

everything." A final comment related to the amount of preparation stated, "There is significant time added to amount of work toward class with all the reading."

Distractions. Although many students did recognize the benefits of team-based learning, some study participants still recognized the temptation to discuss topics unrelated to the subject. One participant stated, "I think team-based learning is a good experience . . . . At the same time, it was easy to get off subject and there was a lot of time spent chatting/wasted between exercises." Another shared, "I do not feel that team-based learning is an effective way for me to learn . . . . It was a great way to get to know some of my classmates better. To be honest, we spent more time socializing than anything else." Another commented, "It was easy to go off topic when in our groups."

Summary

This chapter summarized the findings of the analysis of this study. A discussion of the conclusions of this study, the limitations of this study, the recommendations for further research, and a summary will be presented in Chapter Five.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was fivefold. First, it examined potential differences in student engagement between baccalaureate nursing students taught using team-based learning and those taught using traditional lecture. Second, it examined how levels of engagement affect examination scores. Third, it examined potential differences in student examination scores between baccalaureate nursing students taught using team-based learning and those taught using traditional lecture. Fourth, it examined how accountability affects Readiness Assurance Test scores, and fifth, it determined whether a newly developed instrument accurately measures the three subscales: accountability, preference for lecture or team-based learning, and student satisfaction. In this chapter, findings related to the five research questions are summarized, conclusions are stated, study limitations are discussed, and recommendations for future research are provided. The five research questions that were answered in this study are discussed. Following each question is a summary of the results.

Research Question #1: Differences in Engagement

The first research question stated, "Do significant differences exist in self-reported student engagement with the use of team-based learning or traditional lecture?" Students using the team-based learning strategy reported statistically significant higher levels of engagement than students taught using traditional lecture. This finding is consistent with the literature (Bastick, 1999; Clark et al., 2008; Dana, 2007; Haidet et al., 2002; Levine et al., 2004; Seidel & Richards, 2001; Thackeray & Wheeler, 2006; Thompson, Schneider,

Haidet, Perkowski et al., 2007) and encourages the use of team-based learning in the classroom.

Research Question #2: Differences in Examination Scores

The second research question stated, "Do significant differences exist in examination scores between baccalaureate nursing students using team-based learning versus traditional lecture?" Although a significant effect was found within subjects ($F = 943.15$; $p < .001$), results were not significant for between subjects ($F = .009$; $p = .923$). Unfortunately, few comparable studies exist in the review of the literature that examine differences in examination score. Therefore, this is an area where further research would be useful before making final conclusions.

Research Question #3: Relationship Between Engagement and Examination Scores

The third research question stated, "What is the relationship between student engagement and examination scores?" Weak correlations were found with exam one and exam four. Although moderate correlations that were statistically significant were found with exam two and exam three, it must be stated that these were very moderate correlations. Although these results indicate mixed findings regarding the relationship between student engagement and examination scores, again, theses results do encourage the use of team-based learning. Even so, since this specific correlation has not been studied in a review of the literature and therefore, is not supported, it is difficult to make assumptions based on the results of this one study.

Research Question #4: Relationship Between Accountability and RATs

The fourth research question stated, "What is the relationship between self-reported accountability and students' scores on the Readiness Assurance Tests?" Only two of the

twelve Readiness Assurance Tests indicated positive relationships which were statistically significant. However, total IRAT scores were correlated with self-reported accountability. These findings suggest that students feel responsible to prepare in order to perform well on the IRATs. Nonetheless, overall findings indicate mixed results regarding self-reported accountability and Readiness Assurance Test grades.

Research Question #5: Psychometric Testing

Research question five states, "Does a newly developed instrument, the "Team-Based Learning Student Assessment Instrument," accurately measure the three subscales: accountability, preference for lecture or team-based learning, and student satisfaction?" Using a sample size of 186 participants for the pilot study, results indicated that the newly developed "Team-Based Learning Student Assessment Instrument" did indeed accurately measure the three subscales. Based on the factor analysis, five items were eliminated, creating a final 34-item instrument. The total scale and each of the three subscales yielded acceptable reliability results.

Conclusions and Related Discussion

The first conclusion drawn from the findings of this study is that students using team-based learning are more engaged in the classroom setting. This finding is consistent with the literature (Bastick, 1999; Clark et al., 2008; Dana, 2007; Haidet et al., 2002; Levine et al., 2004; Seidel & Richards, 2001; Thackeray & Wheeler, 2006; Thompson, Schneider, Haidet, Perkowski et al., 2007) and reinforces the need for student-centered learning. Interestingly, however, even though students utilizing team-based learning reported higher levels of engagement, the majority of students also did not want to see the use of team-based learning in future classes. On the "Classroom Engagement Survey," the last

item stated, “I would like more classes to be like this one.” Only 20 out of the 69 students in the team-based learning group answered either “agree” or “strongly agree.” However, when compared to the students in the traditional lecture group, only one student out of 74 answered “agree” when asked if they would like more classes to be like the traditional lecture class. Interestingly, in a study by Haidet et al. (2004), students were also found to be engaged when using team-based learning but also had lower perceptions of the value of the course. Hunt et al. (2003) reported similar findings. Although high levels of engagement were observed, students devalued the use of team-based learning in the classroom. Although these findings illustrate students’ hesitance to adopt team-based learning as a learning strategy, it also reinforces how unengaged students are in the traditional lecture classroom, therefore creating passivity in learning. Furthermore, these findings may also indicate how entrenched traditional pedagogies are in education, consequently creating students who expect to learn passively.

Two of the four examinations indicated significant relationships with engagement. Again, a review of the literature has indicated increased examination scores with the use of team-based learning (Haberyan, 2007; Koles et al., n.d). Although mixed findings resulted in this study, it is still important to note the qualitative comments from students regarding their ability to retain information longer when taught using team-based learning. As one student stated, “I feel like I retain more in this class than in my two lecture classes (and I also have the highest grade in this class too)!” The effect of team-based learning on student outcomes, including retention of material, is another area that is lacking in the literature, and therefore, should be studied further.

Even though few correlations were identified regarding accountability and scores on the Readiness Assurance Tests, students did recognize the need to be prepared for class in order to perform well. Furthermore, an interesting significant relationship was found between total IRATs and accountability. A related finding by Nieder et al. (2005) suggested that the IRATs may be a good predictor of performance on examinations. As one student stated, "You really need to prepare by reading or you will not do well. I liked the fact we were held accountable." This statement is supported by findings in the literature. In a study by Clark et al. (2008), students reported that "they actively prepared for their team-based learning classes more than they did for their lecture classes because of their desire to do well on the Readiness Assurance Tests" (p. 116). Similarly, students in this study recognized the importance of pre-class preparation.

Furthermore, another conclusion of this study is that students had fun in the team-based learning class. One item on the "Classroom Engagement Survey" stated, "I had fun in class." Fifty out of the 69 students in the team-based learning group answered "agree" or "strongly agree" compared to three out of the 74 students who answered "agree" in the traditional lecture group. As one student in the team-based learning group stated, "It was fun and exciting to come to class and know that I was actually going to have fun and learn today." As previously stated, many of the existing studies regarding team-based learning were expository in nature although student enjoyment of team-based learning was a frequent theme in the literature, and many studies found that students enjoyed courses using team-based learning (Dana, 2007; Froese, 2005; Hernandez, 2002; Levine et al., 2004; Seidel & Richards, 2001; Touchet & Coon, 2005). Ironically, in this study, after summing the preference for lecture or team-based learning subscale on the

"Team-Based Learning Student Assessment Instrument," results suggested that students did not necessarily prefer team-based learning to traditional lecture, even though they indicated they had fun and were engaged in the team-based learning classroom.

Furthermore, numerous students voiced opinions regarding the lack of lecture. While some of this negativity regarding the lack of lecture may be attributed to the fact that this was the students first exposure to team-based learning, which may have impacted student responses, this research also recognizes that most students have been taught throughout their educational careers to learn passively (Young, 2009). One student summarized this sentiment perfectly: "We have grown up learning with lecture and it was very difficult for me to switch to no lecture. . . ." Although students perceive traditional lecture to be a better method of learning, findings from three of the items on the "Team-Based Learning Student Assessment Instrument" contradict these opinions. One item on the instrument stated, "I remember material better when the instructor lectures about it." Thirty-nine out of the 69 students in the experimental group replied either "strongly disagree" or "disagree." Twenty were neutral. Another item stated, "It is easier to study for tests when the instructor has lectured over the material." Fifty-nine students responded either "strongly disagree" or "disagree." In response to the statement, "I can easily remember material from lecture," 34 students responded either "strongly disagree" or "disagree" and 29 students were neutral. These conflicting results indicate further need for research regarding the recall and retainment of material.

Students expressed concern regarding the lack of lecture and the possibility of missing important information, the lack of PowerPoint® presentations to assist them in studying, and the inability of knowing the key concepts to focus on. Similar comments

regarding lecture were elicited from students in a study by Clark et al. (2008) and further support the fact that students have been taught to learn passively and rely on the instructor as the source of information rather than a facilitator of learning.

Another conclusion that can be drawn from this study is that while some findings did not suggest team-based learning to be better than traditional lecture, the findings regarding examination scores do suggest that team-based learning is at minimum equally as effective as traditional lecture. However, the conflicting results of this study may actually be a result of inaccurate measures of depth of knowledge and cognitive structures, two key outcomes from the conceptual model. While examination scores, often consisting of knowledge and comprehension questions, may be adequate methods of measurement when using traditional lecture, examination scores may not be appropriate to measure the effectiveness of team-based learning. Since team-based learning is focused on application of course content and key concepts, perhaps more appropriate methods of measurement would be student performance on a simulation scenario, clinical performance, or clinical ability as a registered nurse following graduation. These performance evaluation methods directly relate to the student's ability to apply material learned in a course, therefore providing a more accurate picture of the effect of team-based learning on student outcomes. While this is a completely alternative viewpoint from current emphasis on examination scores and grade point averages, team-based learning is a transformative teaching strategy that may require transformation of the student evaluation process as well. Additionally, the results of this study may have been impacted by the content of the course. This community health nursing course has been notoriously viewed as unfavorable by students. Since it occurs early in their nursing

program, many students fail to recognize the importance of the concepts of community health nursing, instead preferring to focus on their acute care course and clinical experience. Due to the lack of interest in the course content itself, students' feelings toward team-based learning may also have been impacted.

In addition, another important conclusion of this study includes the development of the "Team-Based Learning Student Assessment Instrument." Since very few instruments related to team-based learning exist, the development of a reliable and valid instrument is crucial to the future research of team-based learning. The results of the psychometric testing of this instrument suggest it to be a valid and reliable tool. Nonetheless, this researcher has committed to continuing data collection for the pilot study to further refine this instrument.

Finally, to go back to the conceptual model for team-based learning developed by Haidet et al. (2008) which guided this research study. The key concepts from the original model, which were the focus of this study, included learner engagement, depth of knowledge, and cognitive structures. The results of this study support this model and the relationships of these main concepts. Particularly, learner engagement, which is the central component of the model, was strongly supported. In this study, students in the team-based learning classroom were significantly more engaged than students in the traditional lecture classroom. Research question three also partially supported the relationship between engagement and examination scores. Although significant differences were only found in two of the four examinations, the results indicate that engagement may affect learning outcomes. Other key concepts related to the learning outcomes of the model include depth of knowledge and cognitive structures. Again, the

indication that engagement is related to examination scores as well as the correlation that was found between accountability and the total Individual Readiness Assurance Test scores support the model. However, as previously stated, examination scores may not have been the appropriate method of measuring the learning outcomes of the conceptual model. Still, these findings support this researcher's proposal that accountability, which is not included in the original model, and engagement are interrelated and may occur simultaneously. Furthermore, the relationship between accountability and student engagement is supported by a statistically significant Pearson's r ($r = .467$, $p < .001$) which indicates a positive correlation between the two concepts. Although this relationship was proposed by this researcher, it was not a main focus of this study, and therefore, should be considered for future research.

Study Limitations

Limitations of this study do exist. First, this study took place at one college of nursing and had a small sample size of 143 study participants. The lack of representation of a larger, less homogenous population is an obvious limitation and limits generalizability.

Second, although this researcher had some previous experience with team-based learning, it was limited. This researcher was new to the development phase of team-based learning, including the creation of Readiness Assurance Tests and application exercises. Both the novice level of this researcher in teaching team-based learning and the newness of the teaching strategy to students may have impacted student responses.

Third, significant differences existed between the control group and the experimental group. However, these differences were not remarkable although it is important to note

that they may have impacted the results of this study. If a larger sample had been used in this study, this researcher would have controlled for these differences.

Finally, the "Team-Based Learning Student Assessment Instrument" is a newly developed instrument. It is important to further refine the tool as more data is collected in the pilot study and to continually reassess both its reliability and validity.

Recommendations for Future Research

As previously stated, the AACN, the NCSBN, and the NLN have called for the transformation and reformation of nursing education (AACN, 2008a; NLN, 2003; Odom, 2009). Team-based learning has the potential to revolutionize nursing education in a structured, student-centered learning environment. Even though this study will contribute to the limited literature regarding the use of team-based learning in nursing education, more research is necessary to establish this evidence-based, innovative pedagogy. The results obtained from this study have led to the following recommendations for future study.

- A lack of research continues to exist regarding the use of team-based learning in nursing education.
- Further research needs to explore student outcomes of team-based learning. Particularly relevant in nursing education is student performance on the NCLEX.
- In the review of the literature and in response to the results of this study, the effects of team-based learning on comprehension of the subject matter, recall of material, and retainment of material are all important areas for further research.
- The relationship between accountability and student engagement should be further explored.

- Team-based learning may also affect other aspects of nursing education including communication, teamwork, and professionalism. These are all areas to consider when conducting further research.
- Finally, the newly created "Team-Based Learning Student Assessment Instrument" requires further psychometric testing. According to Rust and Golombok (2009), an adequate amount of participants for a pilot study is one more than the number of items. Although this recommendation indicates an adequate number of participants for the pilot study, a recommendation by Tabachnick and Fidell (2007), indicate that more than 200 participants should be used in order to have a good sample size.

Conclusion

This study has contributed to the body of research needed regarding the use of team-based learning in nursing education. The results of this study indicate that students using team-based learning are significantly more engaged than students using traditional lecture. This is a crucial finding at a time when national bodies of nursing are calling for dramatic reforms in nursing education in an effort to create rich, engaging learning environments for students. Although students using team-based learning reported higher levels of engagement than students using traditional lecture, other results were inconclusive. Again, it is important to bring attention to the appropriateness of using examination scores to measure student outcomes with team-based learning. In order to truly transform nursing education, nurse researchers must look at other, perhaps more appropriate, methods of measuring student outcomes. Perhaps rather than focusing strictly on grade point average and examination scores, faculty members need to find

alternative methods of measurement such as student performance in a simulation scenario, clinical performance, or clinical ability as a registered nurse. Nonetheless, a major contribution to the existing research related to team-based learning included the development of the "Team-Based Learning Student Assessment Instrument." As this instrument is further refined, it can be used to assess and evaluate student experiences with team-based learning.

APPENEDIX A

TRADITIONAL LECTURE AND NURSING EDUCATION

Research Studies Comparing Traditional Lecture and Other Teaching Strategies in Nursing Education

Reference	Sample/Design	Results
Lecture vs. Lecture/Simulation		
Sinclair & Ferguson (2009)	*n* = 250 Pre-test/Post-test	Four out of five simulations resulted in statistically significant differences in mean self-efficacy scores (*p* = .002, .218, .033, .031, .001)
Lecture vs. Simulation		
Brannan, White, & Bezanson (2008)	*n* = 107 Pre-test/Post-test	Students using simulation had significantly higher post-test scores than those in lecture (*p* = .05)
Lecture vs. Web-Based/Lecture		
Kumrow (2007)	*n* = 38 Pre-test/Post-test	Students in the Web-based/lecture course had significantly higher favorable ratings (*p* = .018) and end-of-course grades (*p* = .029)
Lecture vs. Web-Enhanced		
Salyers (2007)	*n* = 36 Post-test	Students in web-enhanced group scored significantly higher on final exam than those in lecture group (*p* < .01); web-enhanced group performed better on final skills exam but not significantly
Lecture vs. Internet		
Woo & Kimmick (2000)	*n* = 97 Post-test	No significant differences in test scores or satisfaction; Internet students- significantly higher stimulation of learning (*p* = .04)
Lecture vs. Context-Based Learning		
Williams, Anderson, & Day (2007)	*n* = 81 Longitudinal	Students in context-based learning group had significantly positive increase in attitude toward personal aging (*p* = .017)
Lecture vs. Problem-Based Learning		
Tiwari, Lai, So, & Yuen (2006)	*n* = 79 Pre-test/Post-test; Interviews	Students in problem-based learning group had significantly greater improvement in critical thinking than students using lecture (*p* = .0048)

Siu, Laschinger, & Vingilis (2005)	*n* = 108 Post-test	Students in the problem-based learning group had significantly higher perceptions of empowerment than students using lecture ($p = .001$)
Miller (2003)	*n* = 22 Post-test	No significant differences between groups
Lecture vs. Notes/Discussion		
Johnson & Mighten (2005)	*n* = 169 Post-test	Statistically significant difference between mean exam scores of groups ($p < .01$)
Lecture vs. Experiential Learning		
Pugsley & Clayton (2003)	*n* = 44 Survey	Students using experiential learning had significantly more positive attitudes toward nursing research than the students using lecture ($p = .001$)
Stiernborg, Zaldivar, & Santiago (1996)	*n* = 562 Pre-test/Post-test	Experiential group had significantly higher means than lecture group ($p < .05$)
Lecture vs. Multimedia CD-ROM		
Jeffries, Woolf, & Linde (2003)	*n* = 77 Pre-test/Post-test	No significant differences between groups
Jeffries (2001)	*n* = 42 Pre-test/Post-test	Computer group had significant cognitive gains and student satisfaction ($p = .01$)
Lecture vs. Programmed Unit of Instruction		
Goldrick, Appling-Stevens & Larson (1990)	*n* = 108 Pre-test/Post-test	Students using programmed unit of instruction scored higher on post-tests than lecture group ($p < .001$)
Lecture vs. Computer-Managed		
Day & Payne (1987)	*n* = 99 Pre-test/Post-test	No significant differences between groups
Lecture/Discussion vs. Self-Study		
Murray (1982)	*n* = 45 Post-test only	Means of lecture group were significantly higher than self-study group ($p < .001$)

APPENDIX B

TEAM-BASED LEARNING IN OTHER DISCIPLINES

Reference	Sample/Design	Results
Medicine		
Parmelee, DeStephen, & Borges	*n* = 180 Survey	Significant changes in attitudes in three areas ($p < .01$), no significant changes in two areas
Shellenberger et al. (2009)	*n* = 42 Survey	Medical residents reports increased levels of confidence and a preference for TBL
Vasan, DeFouw, & Compton (2009)	*n* = 317 Survey	Students reported favorable perceptions of TBL
Vasan, DeFouw, & Holland (2008)	*n* = 169-178 Post-test	Students performed better on all exams ($p < .01$)
Koles, Nelson, Stolfi, Parmelee, & DeStephen (2005)	*n* = 83 Crossover	Students with low academic performance significantly improve after TBL ($p = .035$); Students perceived peer learning to be more helpful during TBL ($p = .003$)
Nieder, Parmelee, Stolfi, & Hudes (2005)	*n* = 95 Correlation	IRAT good predictor of performance on exams; TBL may most benefit students with low academic performance
Levine et al. (2004)	*n* = 133 Post-test	Students using TBL showed improved performance ($p < .05$), engagement ($p \leq .001$), and satisfaction ($p < .001$)
Hunt, Haidet, Coverdale, & Richards (2003)	*n* = 168 Focus groups	Students generally devalued the use of TBL; Observed high levels of engagement
Haidet, O'Malley, & Richards (2002)	*n* = 27 Survey	Students reported high levels of engagement and improved attitudes about the content
Seidel & Richards (2001)	*n* = 200 Focus groups	Students indicate favorable responses to TBL; Observed high levels of engagement
Koles, Stolfi, Nelson, & Parmelee (n.d)	*n* = 178 Retrospective analysis	Students in TBL group perform significantly higher on exam ($p < .001$)

Accounting		
Lancaster & Strand (2001)	*n* = 163 Post-test	No significant differences between control group and TBL group
Business		
Baldwin, Bedell, & Johnson (1997)	*n* = 304 Survey	Team relationships affected student perceptions of effectiveness and performance of team
Engineering		
Froese (2005)	*n* = 106 Survey	Students enjoyed TBL course more; teaching evaluations improved
Hodgson, Ostafichuk, & Sibley (2005)	*n* = 113 Survey	Course evaluations improved; majority of TBL students rated the approach effective
Law		
Dana (2007)	*n* = 95 Informal survey	Students using TBL reported positive responses and appeared more engaged
Marketing		
Hernandez (2002)	*n* = 32 Survey	Students enjoyed TBL course; reported a positive impact on learning
Pharmacology		
Dunaway (2005)	*n* = Not specified Survey	Students felt TBL was beneficial to learning
Physiology		
McInerney & Fink (2003)	*n* = Not specified Post-test	Students using TBL had improved comprehension, retention of material, critical thinking, and course attitudes
Psychiatry		
Touchet & Coon (2005)	*n* = Not specified Survey	Students using TBL reported positive experiences
Psychology		
Haberyan (2007)	*n* = 40 Pre-test/Post-test	Post-test answers significantly improved ($p < .001$); students reported preference for TBL, felt they learned more, and would take another course using TBL
Professional		
Kühne-Eversmann, Eversmann, & Fischer	*n* = 159 Pre-test/Post-test	Post-course questionnaire indicated the physicians felt that TBL enhanced learning and would impact their professional performance

Haidet, Morgan, O'Malley, Moran, & Richards (2004)	*n* = 82 Controlled trial	Observed higher levels of engagement among TBL group (p = .001); TBL group valued the session significantly more than traditional lecture group (p = .03).
Sharkey & Sharples (2003)	*n* = 41 Pre-test/Post-test	A significant decrease in work-related stress occurred in a number of areas following the use of TBL
High School		
Parker (2007)	*n* = 29 Post-test	Significant increase in sight-seeing skill and musical knowledge ($p \leq .01$)

APPENDIX C

COPYRIGHT PERMISSION FOR ACTIVITY SEQUENCE

Heidi Memmenga, MS, RN
46374 188th Street
Castlewood, South Dakota 57223

August 20, 2009

Dear Ms. Shapiro:

I am completing a doctoral dissertation at the University of Nevada, Las Vegas entitled "Using Team-Based Learning in an Undergraduate Nursing Course." I would like your permission to adapt the following figures (see attached depictions) in my dissertation:

1. Illustration on page 21 adapted from Team-Based Learning for Health Profession Education, edited by Larry K. Michaelsen, Dean X. Parmelee, Kathryn K. McMahon Ruth E. Levine, Foreword by Diane M. Billings, Sterling, VA: Stylus Publishing, LLC.

2. Illustration on page 124 adapted from Team-Based Learning for Health Profession Education, edited by Larry K. Michaelsen, Dean X. Parmelee, Kathryn K. McMahon Ruth E. Levine, Foreword by Diane M. Billings, Sterling, VA: Stylus Publishing, LLC.

The requested permission extends to any future revisions and editions of my dissertation, including non-exclusive world rights in all languages, and to the prospective publication of my dissertation by UMI. These rights will in no way restrict republication of the material in any other form by you or by others authorized by you. Your signing of this letter will also confirm that your company owns the copyright to the above-described material.

If these arrangements meet with your approval, please sign this letter where indicated below and return it to me. Thank you very much.

Sincerely,

Heidi Memmenga

PERMISSION GRANTED FOR THE
USE REQUESTED ABOVE:

Stylus Publishing

By: _____

Title: PRESIDENT

Date: Sept 1 '09

APPENDIX D

COPYRIGHT PERMISSION FOR CONCEPTUAL MODEL

Heidi Memmenga, MS, RN
46374 188th Street
Castlewood, South Dakota 57223

August 20, 2009

Dear Ms. Shapiro:

I am completing a doctoral dissertation at the University of Nevada, Las Vegas entitled "Using Team-Based Learning in an Undergraduate Nursing Course." I would like your permission to adapt the following figures (see attached depictions) in my dissertation:

1. Illustration on page 21 adapted from Team-Based Learning for Health Profession Education, edited by Larry K. Michaelsen, Dean X. Parmelee, Kathryn K. McMahon Ruth E. Levine, Foreword by Diane M. Billings. Sterling, VA: Stylus Publishing, LLC.

2. Illustration on page 124 adapted from Team-Based Learning for Health Profession Education, edited by Larry K. Michaelsen, Dean X. Parmelee, Kathryn K. McMahon Ruth E. Levine, Foreword by Diane M. Billings. Sterling, VA: Stylus Publishing, LLC.

The requested permission extends to any future revisions and editions of my dissertation, including non-exclusive world rights in all languages, and to the prospective publication of my dissertation by UMI. These rights will in no way restrict republication of the material in any other form by you or by others authorized by you. Your signing of this letter will also confirm that your company owns the copyright to the above-described material.

If these arrangements meet with your approval, please sign this letter where indicated below and return it to me. Thank you very much.

Sincerely,

Heidi Memmenga

PERMISSION GRANTED FOR THE
USE REQUESTED ABOVE:

Stylus Publishing

By: _____

Title: PRESIDENT

Date: Sept 1 '09

APPENDIX E

COPYRIGHT PERMISSION FOR SLAVIN'S MODEL

ELSEVIER LICENSE
TERMS AND CONDITIONS

Aug 21, 2009

Supplier	Elsevier Limited The Boulevard,Langford Lane Kidlington,Oxford,OX5 1GB,UK
Registered Company Number	1982084
Customer name	Heidi Mennenga
License Number	2253681458613
License date	Aug 21, 2009
Licensed content publisher	Elsevier
Licensed content publication	Contemporary Educational Psychology
Licensed content title	Research on Cooperative Learning and Achievement: What We Know, What We Need to Know
Licensed content author	Robert E. Slavin
Licensed content date	January 1996
Volume number	21
Issue number	1
Pages	27
Type of Use	Thesis / Dissertation
Portion	Figures/table/illustration/abstracts
Portion Quantity	1
Format	Both print and electronic
Elsevier VAT number	GB 494 6272 12

APPENDIX F

"CLASSROOM ENGAGEMENT SURVEY'

Classroom Engagement Survey

Date:

Please circle the number under the phrase that best describes the extent to which you agree with the following statements about today's class.	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1. Most students were actively involved.	1	2	3	4	5
2. I had fun in class today.	1	2	3	4	5
3. I contributed meaningfully to class discussions.	1	2	3	4	5
4. Most students were not paying attention.	1	2	3	4	5
5. I paid attention most of the time.	1	2	3	4	5
6. I did not enjoy class today.	1	2	3	4	5
7. I participated in the class most of the time.	1	2	3	4	5
8. I would like more class sessions to be like this one.	1	2	3	4	5

APPENDIX G

"TEAM-BASED LEARNING-STUDENT ASSESSMENT INSTRUMENT' (34-ITEM)

Student ID # _____

Team-Based Learning Student Assessment Instrument (TBL-SAI)

This instrument asks you about your experience with team-based learning. There are no right or wrong answers. Please be honest and report your true reaction to each question by circling the number for the response that best describes your answer.

Accountability Subscale

This subscale assesses student preparation for class and contribution to the team. The scale for the items is as follows:

1= Strongly Disagree
2= Disagree
3= Neither Disagree or Agree (Neutral)
4= Agree
5= Strongly Agree

1. I spend time studying before class in order to be more prepared.	1	2	3	4	5
2. I feel I have to prepare for this class in order to do well.	1	2	3	4	5
3. Team-based learning makes me accountable.	1	2	3	4	5
4. I contribute to my team members' learning.	1	2	3	4	5
5. My contribution to the team is not important.	1	2	3	4	5
6. My team members expect me to assist them in their learning.	1	2	3	4	5
7. I am accountable for my team's learning.	1	2	3	4	5
8. I am proud of my ability to assist my team in their learning.	1	2	3	4	5
9. I need to contribute to the team's learning.	1	2	3	4	5

PLEASE GO TO NEXT PAGE

Preference for Lecture or Team-Based Learning Subscale

This subscale assesses student ability to recall material and student attention level in lecture and team-based learning.

The scale for the items is as follows:

1= Strongly Disagree
2= Disagree
3= Neither Disagree or Agree (Neutral)
4= Agree
5= Strongly Agree

10. During traditional lecture, I often find myself thinking of non-related things.	1	2	3	4	5
11. I am easily distracted during traditional lecture.	1	2	3	4	5
12. I am easily distracted during team-based learning activities.	1	2	3	4	5
13. I am more likely to fall asleep during lecture than during classes that use team-based learning activities.	1	2	3	4	5
14. I get bored during team-based learning activities.	1	2	3	4	5
15. I talk about non-related things during team-based learning activities.	1	2	3	4	5
16. I easily remember what I learn when working in a team.	1	2	3	4	5
17. I remember material better when the instructor lectures about it.	1	2	3	4	5
18. Team-based learning activities help me recall past information.	1	2	3	4	5
19. It is easier to study for tests when the instructor has lectured over the material.	1	2	3	4	5
20. I remember information longer when I go over it with team members during the GRATS used in team-based learning.	1	2	3	4	5

PLEASE GO TO NEXT PAGE

21. I remember material better after the application exercises used in team-based learning.	1	2	3	4	5
22. I can easily remember material from lecture.	1	2	3	4	5
23. After working with my team members, I find it difficult to remember what we talked about during class.	1	2	3	4	5
24. I do better on exams when we used team-based learning to cover the material.	1	2	3	4	5
25. After listening to lecture, I find it difficult to remember what the instructor talked about during class.	1	2	3	4	5

PLEASE GO TO NEXT PAGE

Student Satisfaction Subscale

This subscale assesses student satisfaction with team-based learning.

The scale for the items is as follows:

1= Strongly Disagree
2= Disagree
3= Neither Disagree or Agree (Neutral)
4= Agree
5= Strongly Agree

26. I enjoy team-based learning activities.	1	2	3	4	5
27. I learn better in a team setting.	1	2	3	4	5
28. I think team-based learning activities are an effective approach to learning.	1	2	3	4	5
29. I do not like to work in teams.	1	2	3	4	5
30. Team-based learning activities are fun.	1	2	3	4	5
31. Team-based learning activities are a waste of time.	1	2	3	4	5
32. I think team-based learning helped me improve my grade.	1	2	3	4	5
33. I have a positive attitude towards team-based learning activities.	1	2	3	4	5
34. I have had a good experience with team-based learning.	1	2	3	4	5

Please add any comments you may have about your experience with team-based learning.

APPENDIX H

COURSE MODULE OBJECTIVES

Module 1: Introduction to Public Health and Population-Based Nursing

1. Analyze definitions of public health and public health nursing.
2. Discuss the tools of public health science.
3. Discuss the role of nurses in public health and public health nursing.
4. Summarize historical influences on public health from global and national perspectives.

Module 2: Public Health Concepts and Tools

1. Identify and apply the core functions and essential services of public health.
2. Identify the determinants of health and analyze the effect of the determinants of health on health of populations.
3. Identify the relationship between the Wheel of Public Health Nursing and core functions and essential services of public health.
4. Identify basic concepts and principles of epidemiology and its application in public health.
5. State the purposes of epidemiology and how its knowledge and use influences the way community health nurses practice public health nursing.
6. Discuss what epidemiologic models and tools can be used to investigate health and disease-related events and the advantages and disadvantages of each.
7. Identify the benefits of using a model to collect and organize health-related data and plan interventions to improve a population's health.

Module 3: Care for Culturally Diverse Populations in Public Health

1. Define what culture is and how it is determined.
2. Identify and discuss poverty as the major determinant of health.
3. Identify resources related to minority health in the United States.
4. Identify health status indicators for various under-served cultures.
5. Discuss principles of cultural assessment.
6. Examine three different cultures (community, school, individual).
7. Perform a personal cultural assessment.
8. Identify how the dimensions of rural vs. urban settings impact health.

Module 4: Health Care Organizations

1. Identify the six core goals for effective health care systems.
2. Identify ten essential public health services.
3. Analyze the difference between public health and medical care.
4. Differentiate between personal and population health care sectors.
5. Describe the differences between voluntary and official organizations for public health.
6. Discuss the financing of health care and what influences cost.
7. Examine the feasibility of a national health care system.

8. Discuss how globalization impacts health and identify positive and negative influences of globalization on people's health.

Module 5: Application of Public Health Principles and Population-Based Nursing

1. Identify the 13 standards of public health nursing recognized by the American Nurses Association.
2. Describe at least two barriers to effective health education.
3. Apply the principles of health education to developing a health teaching plan.
4. Apply the principles of health screening, referral, and follow-up during school health screening clinical experience.
5. Apply the principles of client advocacy/counseling during client encounters in various community settings and clinical experiences.
6. Discuss the role of the community health nurse in disaster situations.

Module 6: Application of Public Health Nursing in Selected Populations

1. Identify factors in the six dimensions of health as they related to each age group.
2. Identify major considerations for each age group concerning primary prevention.
3. Describe secondary prevention considerations as they relate to each age group.
4. Identify areas of emphasis in tertiary prevention as they relate to each age group.
5. Apply dimensions of health and health promotion strategies to life applications.

APPENDIX I

COURSE MODULE OUTLINES

N310 Introduction to Public Health and Population-Based Nursing
Module 1
Introduction to Public Health and Population-Based Nursing

Module Learning Outcomes:

1. Analyze definitions of public health and public health nursing.
2. Discuss the tools of public health science.
3. Discuss the role of nurses in public health and public health nursing.
4. Summarize historical influences on public health from global and national perspectives.

Related Course Objective #2: Describe concepts basic to public health and population-based nursing.

Key Concepts in this Module:

- Definition of public health nursing and community health nursing
- Community
- Levels of prevention
- History of public health
- Public health today and future challenges

Context of the Module:
The purpose of this module is to introduce you to core public health and community health principles. This information will provide a foundation for practice in community health nursing. Understanding the historical context of public health and community nursing helps guide practice today. Key concepts and terms are introduced and discussed.

Assigned Readings:

1. Clark- Chapters 1-3
2. Review the primary goals and objectives of Healthy People 2010: www.healthypeople.gov.

N310 Introduction to Public Health and Population-Based Nursing
Module 2
Public Health Concepts & Tools

Module Learning Outcomes:

1. Identify and apply the core functions and essential services of public health.
2. Identify the determinants of health and analyze the effect of the determinants of health on health of populations.
3. Identify the relationship between the Wheel of Public Health Nursing and core functions and essential services of public health.
4. Identify basic concepts and principles of epidemiology and its application in public health.
5. State the purposes of epidemiology and how its knowledge and use influences the way community health nurses practice public health nursing.
6. Discuss what epidemiologic models and tools can be used to investigate health and disease-related events and the advantages and disadvantages of each.
7. Identify the benefits of using a model to collect and organize health-related data and plan interventions to improve a population's health.

Related Course Objectives #2, #3, & #5: Describe concepts basic to public health and population-based nursing; Differentiate organizations that deliver and finance public health, community-based and population-based health services at the local, state, national, and international level; Demonstrate core knowledge of the theoretical foundations of community health nursing, health promotion, epidemiology, risk reduction, and disease prevention at the beginning nursing student level.

Key Concepts in this Module:

- Public health goals: Health for All, Healthy People 2010
- Public health functions
- Dimensions of health
- Role of the public health nurse
- Epidemiology and epidemiologic prevention model
- Risk reduction
- Environmental health
- Health promotion model
- Public health nursing intervention model
- Wheel of Public Health Nursing

Context of the Module:

The purpose of this module is to expand on core public health and community nursing principles and to introduce you to various public health tools used to assess or plan health events and strategies from a broad, public health viewpoint. This module examines the dimensions (or determinants) of health. These dimensions help public health and community health nurses identify health needs of populations and develop interventions to address those health needs. Public health professionals, including nurses, often use a "road map" to guide data collection during an assessment of a population. These are

known as models. When one is collecting and reporting various sorts of community health data using different tools, models can be very helpful in organizing your approach to the population as a client, as well as interpreting the findings related to the population's health.

Assigned Readings:

1. Clark- Chapter 4
2. Review the primary goals and objectives of Healthy People 2010: www.healthypeople.gov.

N310 Introduction to Public Health and Population-Based Nursing
Module 3
Care for Culturally Diverse Populations in Public Health

Module Learning Outcomes:

1. Define what culture is and how it is determined.
2. Identify and discuss poverty as the major determinant of health.
3. Identify resources related to minority health in the United States.
4. Identify health status indicators for various under-served cultures.
5. Discuss principles of cultural assessment.
6. Examine three different cultures (community, school, individual).
7. Perform a personal cultural assessment.
8. Identify how the dimensions of rural vs. urban settings impact health.

Related Course Objective #9: Examine cultural influences on health for diverse populations, with particular emphasis on the American Indian, under-served populations, as well as rural dwellers of South Dakota.

Key Concepts in this Module:

- Culture
- Cultural shock
- Cultural imposition
- Cultural blindness
- Cultural universals
- Ethnocentrism
- Race and racism
- Stereotype
- Prejudice
- Ethnicity
- Cultural competence
- Health indicators
- Transcultural nursing

Context of the Module:
The purpose of this module is to help learn about culture and how one's culture and client's culture are determined. This module will look at various minorities and their health beliefs and practices as well as their health indicators and health status. A personal cultural assessment and an environmental profile will be completed. This module will examine the relationship between poverty and health as well as how settings of rural versus urban impact community health. Transcultural nursing will also be introduced.

Assigned Readings:

1. Clark- Chapter 9, Chapter 25

N310 Introduction to Public Health and Population-Based Nursing
Module 4
Health Care Organizations

Module Learning Outcomes:

1. Identify the 6 core goals for effective health care systems.
2. Identify 10 essential public health services.
3. Analyze the difference between public health and medical care.
4. Differentiate between personal and population health care sectors.
5. Describe the differences between voluntary and official organizations for public health.
6. Discuss the financing of health care and what influences cost.
7. Examine the feasibility of a national health care system.
8. Discuss how globalization impacts health and identify positive and negative influences of globalization on people's health.

Related Course Objective #3: Differentiate organizations that deliver and finance public health, community-based and population-based health services at the local, state, national, and international level.

Key Concepts in this Module:

- Legal authority
- Local public health departments
- State health departments
- Federal health department
- National health service
- Special populations health care financing programs
- Voluntary and philanthropic organizations
- Reimbursement mechanisms

Context of the Module:
The purpose of this module is to examine the organization of the health care delivery system and the financing of the system.

Assigned Readings:

1. Clark- Chapter 5, Chapter 6, Chapter 8

N310 Introduction to Public Health and Population-Based Nursing
Module 5
Application of Public Health Principles and Population-Based Nursing

Module Learning Outcomes:

1. Identify the 13 standards of public health nursing recognized by the American Nurses Association.
2. Describe at least two barriers to effective health education.
3. Apply the principles of health education to developing a health teaching plan.
4. Apply the principles of health screening, referral, and follow-up during school health screening clinical experience.
5. Apply the principles of client advocacy/counseling during client encounters in various community settings and clinical experiences.
6. Discuss the role of the community health nurse in disaster situations.

Related Course Objectives #1, 4, 5, 8: Demonstrate caring behaviors with a focus on the value of autonomy by respecting the client's right to self determination; Demonstrate competency and critical thinking, communication, assessment, and technical skills at the beginning nursing student level with population-based clients; Demonstrate core knowledge of health promotion, risk reduction, and disease prevention at the beginning nursing student level; Perform developmentally appropriate public health interventions including health teaching, screening, referral, and follow-up.

Key Concepts in this Module:

- Community health standards of nursing practice
- Health promotion
- Role of community health nurse
- Disaster preparedness

Context of the Module:
The purpose of this module is to identify community health nursing standards of care through observation and participation in caring for clients in clinical and community settings.

Assigned Readings:

1. Clark- Chapter 11, p. 262-274; Chapter 12; Chapter 15; Chapter 23; Chapter 27

N310 Introduction to Public Health and Population-Based Nursing
Module 6
Application of Public Health Nursing in Selected Populations

Module Learning Outcomes:

1. Identify factors in the 6 dimensions of health as they relate to each age group.
2. Identify major considerations for each age group concerning primary prevention.
3. Describe secondary prevention considerations as they relate to each age group.
4. Identify areas of emphasis in tertiary prevention as they relate to each age group.
5. Apply dimensions of health and health promotion strategies to life applications.

Related Course Objectives #1, 5, 6, 7: Demonstrate caring behaviors with a focus on the value of autonomy by respecting the client's right to self-determination; Demonstrate core knowledge of health promotion, risk reduction, and disease prevention at the beginning nursing student level; Apply evidence-based guidelines to the nursing care of population-based clients; Distinguish health promotion interventions that meet the health needs of children, women, men, and older adults.

Key Concepts in this Module:

- Dimensions of health
- Levels of prevention
- Childhood issues
- Adolescent issues
- Men and women issues
- Older adult issues

Context of the Module:

The purpose of this module is to introduce you to the application of the dimensions of health. Several age groups will be discussed in the context of the dimensions of health and the levels of prevention.

Assigned Readings:

1. Clark- Chapters 16-19
2. Hockenberry- Community Focus Boxes on pages 552, 681, 696, 700, 721, 723, 742, 745-748, 781, 835, 875, 904, 906, 915, 993, 999, 1036; Family Home Care Boxes on pages 515, 530, 560, 617, 629, 633, 639, 640, 660, 707, 733, 845, 861, 945

APPENDIX J

FALL 2009 SYLLABUS

South Dakota State University
College of Nursing
Department of Undergraduate Nursing
Fall 2009

COURSE NUMBER: NURS 310

COURSE NAME: Introduction to Public Health and Population-based Nursing

CREDITS: Theory 3 credits; Clinical 1 credit

PREREQUISITIES: Nurs 215, 264, 280; Concurrent with Nurs 325, Pha 321

THEORY LOCATION/TIME: Thursdays, 9-11:50; SNF 344

FACULTY CONTACT INFORMATION:

NAME	OFFICE	WORK PHONE	PERSONAL PHONE	EMAIL
Heidi Mennenga, MS, RN- Theory	SNF 147	688-6924	605-881-7954	D2L
Amy Forbes, MS, RN-Theory	SNF 139	688-6534	605-690-7563	D2L
Janine Bassett, MS, RN-Theory & Clinical	SNF 143	688-6770	605-693-4006	D2L

COURSE DESCRIPTION:
This course focuses on an introduction to public health and population-based nursing care. Public health principles as applied to the health promotion, risk reduction and disease prevention needs of clients. Clinical application occurs with children and adults in community settings.

COURSE OBJECTIVES:

1. Demonstrate caring behaviors, focusing on the value of autonomy by respecting the client's right to self-determination.

2. Describe concepts basic to public health and population-based nursing.

3. Differentiate organizations that deliver and finance public health, community-based, and population-based health services at the local, state, national, and international level.

4. Demonstrate competency in critical thinking, communication, assessment, and technical skills at the beginning nursing student level with population-based clients.

5. Demonstrate core knowledge of health promotion, risk reduction, and disease prevention at the beginning nursing student level.

6. Apply evidence-based guidelines to the nursing care of population-based clients.

7. Distinguish health promotion interventions that meet the health needs of children, women, men, and older adults.

8. Perform developmentally appropriate public health interventions including health teaching, screening, referral, and follow-up.

9. Examine cultural influences on health for diverse populations, with particular emphasis on the Native American people and rural populations of South Dakota.

REQUIRED TEXTBOOKS:

Clark, M. J. (2008). *Nursing in the community* (5th ed.). New Jersey: Prentice Hall.

Hockenberry, M. J. (2003). *Wong's nursing care of infants and children*. St. Louis: Mosby.

Minnesota Department of Health, Division of Community Services, Section of Public Health Nursing. (2001). *Public health interventions; applications for public health nursing practice*. Minneapolis, MN: Author.
(This is available in the course content area.)

TEACHING STRATEGIES

This course will be taught using lecture, discussion, world-wide-web-resources, guest speakers, web-based discussions, email interactions, student presentations, required readings, quizzes/examinations, independent study, library/internet searches, and structured clinical projects.

LEARNING EXPERIENCES

Learning experiences include: Group activities as part of clinical experiences or in-class assignments, student directed learning experiences, readings, research, library and internet searches, and professional presentations.

COURSE REQUIREMENTS, GRADE COMPUTATION, AND EVALUATION METHODS

The College of Nursing, Department of Undergraduate Nursing grading scale will be used as the performance standard to calculate the final grade in this class.

A = 92-100%
B = 84-91%
C = 76-83%
D = 68-75%
F = below 68

Completion of NURS 310 requires successful completion of **BOTH** the clinical and theory components of the course.

GRADE COMPUTATION

I.	Theory Evaluation- 70% of final grade	Possible Points
	a. Exams (4)	200 pts
	b. Quizzes and/or assignments	40 pts
	c. Current Public Health Issue (1)	10 pts
	d. PowerPoint Public Health Issue Presentation	40 pts

II.	Clinical Evaluation- 30% of final grade	Possible Points
	a. Community Resource	15 pts
	b. Cultural Windshield Survey	15 pts
	c. School Environment Assessment	10 pts
	d. Immunization On-line Preparation	10 pts
	e. Immunization Prep WKST	10 pts
	f. School Health WKST	10 pts
	g. Health Promotion WKST	10 pts
	h. Health Teaching WKST	10 pts
	i. Implementation and Evaluation of Teaching Plan	10 pts

1. To obtain final grade, take total theory points divided by number of possible points x 70%. Then take total clinical points divided by number of possible points x 30%. Add together to obtain final grade.
   Ex: [(your theory points/290) x 0.7] + [(your clinical points/100) x 0.3)]= final grade

2. The average of all four theory examinations **must be 76% or higher** in order to pass the course. If the average of the theory examinations is not 76% or higher, the course grade (as reported on the SDSU transcript) is the average of the exams only (i.e. "D" or "F", depending upon the percentage grade).

3. The student **must pass both theory and clinical (with a 76% or higher)** in order to pass Nurs 310. If the clinical grade is not 76% or higher, the course grade is the clinical grade only (i.e., "D" or "F"). You must receive a "C" in both theory and clinical components of this course in order to proceed in the nursing major.

4. University policy for filing delinquent slips for less than "C" grades at midterm will be followed.

5. All course requirements must be completed in order to pass the course, including any pass/fail assignments.

6. Unsafe or unacceptable performance in a clinical experience setting is any action that places a client/family/student at risk. It is the absence of professional accountability that is identified below. Following the first unsafe or unacceptable performance day, the student will sign a Learning Contract that will identify needed changes in performance. Two or more unsafe or unacceptable performance days will result in failure of the course. Faculty members will apply the statements regarding Progression in a Course, as described in the Nursing Student Handbook.

ACCOUNTABILITY

Accountability is an expectation in the course. All students are expected to meet each criterion for accountability at all times. The **final grade is influenced up to 25%** for lack of accountability (in either theory/clinical or both).

Accountability includes, but is not limited to:

- Attends every class and clinical experience on time.
- Demonstrates both a professional attitude and professional behavior.
- Completes assignments in a timely fashion.
- Works cooperatively in groups.
- Prepares theoretically, physically, and mentally for class.
- Demonstrates evidence of critical thinking in class and clinical assignments.
- Demonstrates professional communication in all interactions, including e-mail correspondence.
- Follows dress code guidelines.
- Participates actively and consistently in discussions of clinical experiences and theory issues.
- Keeps faculty informed of absences, etc.

EVALUATION POLICY

Students will be evaluated by the academic and professional judgment of the individual faculty members assigned to teach this course, based on requirements and performance standards approved by the College of Nursing.

"The Code for Nurses communicates a standard of professional behavior expected throughout the total program and in each individual nursing course. In addition to dismissal for academic failure, the faculty and administration of the department of nursing reserve the right to dismiss any student enrolled in the undergraduate program for unethical, dishonest, or illegal conduct that is inconsistent with the Code for Professional Nurses." (SDSU Nursing Student Handbook, p 3).

COURSE ATTENDANCE

Attendance at all classes and clinical experiences is a university expectation. All students are held accountable for attaining the course outcome criteria despite absences. Students are required to notify the course faculty member of all absences prior to the absence or immediately thereafter in the case of an emergency. Students hold the responsibility for

making up missed content. Students will not be allowed to make-up quizzes or in-class assignments for unexcused absences.

For more information students may refer to: Policy #U3120 – Absence from Class. Students missing lecture are responsible for obtaining information and assignments. If a quiz or exam is missed related to an excused absence, an alternative quiz or exam will be completed on the arranged date and time. If a quiz or exam is missed related to an unexcused absence, the grade for the exam will be recorded as a zero.

Written assignments must be turned in on time unless an extension has been obtained from the faculty prior to the due date and time. Written assignments that are turned in after the due date and time will receive a one letter grade reduction per day beginning 10 minutes after the assigned due date and time. Any written assignment turned in 3 working days after the due date and time will receive a zero. Accountability Points may also be deducted from the final grade.

GENERAL CLASSROOM ETIQUETTE

During class turn off and refrain from using cell phones, pagers, and any other communication device except for your laptop computer.

Students are not allowed to audiotape or videotape any part of this course without the expressed permission of the instructor.

CLASSROOM ETIQUETTE FOR LAPTOP COMPUTERS

With new technology and a new way of learning in a mobile atmosphere come special considerations. Below you will see the behavior that is acceptable and unacceptable within the classroom and throughout the college. The classroom environment must be conducive to learning for all students. Distractions made possible by advances in technology undermine the goal. Accordingly, during class, in addition to usual courtesies, please do the following:

- Refrain from connecting to the internet unless instructed to do so
- Refrain from displaying wallpaper, screen savers, or other material on your laptop computer that you can reasonably expect to be offensive to others in class
- when a teacher has requested that your laptops be closed, please close them
- Refrain from using ICQ, MSN, MySpace, FaceBook, or other similar programs during class
- When a guest speaker comes into the class, please give the person your full attention and close your laptops
- Refrain from sending documents to the printer or to other students during a lecture presentation
- After completing an exam, please leave laptop where it is, whether put away in a bag or on the desktop. The noise is distracting to others.

POLICIES AND PROCEDURES

BLOODBORNE PATHOGENS: All students of the College of Nursing must be aware that the College of Nursing has a policy and procedure for students who are infected with a blood borne pathogen such as hepatitis B virus, hepatitis C virus, and human immunodeficiency virus and other infectious diseases. The student may review this policy at the office of any department head. All students who have been diagnosed with a blood borne pathogen should inform the Semester Coordinator in person. This is medical information and will be kept confidential while informing only those who need to know. This information is needed to protect the health of patients, the public, and to remain in compliance with the clinical facilities that the student may attend.

SDSU ACADEMIC DISHONESTY POLICY: South Dakota State University has taken a strong and clear stand regarding Academic Dishonesty. The consequence of Academic Dishonesty ranges from Disciplinary Probation to Expulsion. The full policies are found in chapter 1 of the Student Code (01:10:23:10 – 1:10:23:04) within the Student Policy Manual. A student charged with Academic Dishonesty who wishes to appeal that charge may follow the appeals Procedure outlined in Chapter 2 of the student Policy Manual (Academic Appeals and Classroom Standards) or contact the Vice President for Academic Affairs Office, AD 230, 688-4173.

Any evidence of cheating or dishonesty will result in a zero for the test and may also result in an "F" for the course, according to the discretion of the professor.

STUDENT'S WITH DISABILITIES: Any student who feels s/he may need an accommodation based on the impact of a disability should contact me (Nancy Hartenhoff-Crooks) privately to discuss your specific needs. Please contact the Office of Disability Services at (605) 688-4504 in room 145 Binnewies Hall to coordinate reasonable accommodations for students with documented disabilities.
Thank you.
Nancy Hartenhoff-Crooks,
Coordinator of Disability Services
Ph: 605-688-4503
Fax: 605-688-4987

ACADEMIC FREEDOM AND RESPONSIBILITIES: Freedom in learning. Under Board of Regents and University policy student academic performance may be evaluated solely on an academic basis, not on opinions or conduct in matters unrelated to academic standards. Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled. Students who believe that an academic evaluation reflects prejudiced or capricious consideration of student opinions or conduct unrelated to academic standards should first contact the instructor of the course to initiate a review of the evaluation. If the student remains unsatisfied, the student may contact the department head and/or dean of the college which offers the class to initiate a review of the evaluation.

APPENDIX K

EXAMPLE OF TRADITIONAL LECTURE

The Economic Context

Relationships Between Health and Economic Factors

- Ability to afford health care
- Ability to obtain necessities
- Availability of a tax base to support health care funding
- Unemployment and access to health insurance

Health-related Economic Trends

- Rising health care costs
- Shift to a for-profit emphasis
- Inadequate public health funding
- Welfare reform
- Increased globalization

Causes of Rising Health Care Costs

- Population growth
- Aging population
- Technological development
- Health care specialization
- Increased prescription use
- Emphasis on cure rather than prevention
- Availability and lack of health insurance
- Cost-shifting
- Fraudulent reimbursement claims

http://www.youtube.com/watch?v=kXTpZqER-WE

For-Profit Emphasis Shift

- Absorption of many non-profit health care organizations by large for-profit companies
- Effects of this shift:
  - Emphasis on profit over quality of care
  - Reduction of research and development expenditures to increase profit margins
  - Inequitable pricing for some buyers of services
  - Potential for under-treatment of clients

Inadequate Public Health Funding

- Lack of funds for health promotion and protection and illness prevention activities
- Potential for further decrease in revenue due to movement of Medicare and Medicaid populations into the private managed care sector
- Potential loss of safety net services to clients with no other source of health care

Welfare Reform

- Diminished eligibility for Medicaid coverage, but unable to afford private insurance
- Movement into low-paying jobs without health insurance benefits
- Difficulty of employment for single parents of children with special needs

Increased Globalization

- Strive to create health and prevent disease
- Increased mobility, interdependence, and interaction of people in the world
- Effects on health
  - Increased spread of disease
  - Increased communication and resources
  - Increased trade

Effects of Poverty on Health

- Inability to afford necessities to promote health
- Less education and self-care knowledge
- Inability to afford health care services
- All effects lead to a generally poorer health status among the non-poor

Which of the following is one of the biggest concerns influencing the economic health status in the US?

1. Increase in chronic childhood illnesses
2. Baby boom generation
3. Decreasing birth rate
4. Increase in adolescent drug abuse

Barriers to Care

- Diminished access to care for groups with special needs (often due to poverty)
- Inability of the system to meet the overall care needs of the population
- Disproportionate burden of waiting for care, time off work, etc for the poor

Reimbursement Mechanisms

- Retrospective reimbursement
- Prospective reimbursement

Retrospective Reimbursement

- Types:
  - Fee-for-service payment
  - Discounted fee-for-service payment
  - Per diem payment
- Effects:
  - Promotes overuse of services and provision of unnecessary services

Prospective Reimbursement

- Types:
  - Diagnosis Related Groups (DRGs)
  - Resource-based Relative Value Scale (RBRVS)
- Effects:
  - Removes the incentive to over-treat
  - Creates the temptation to deny care to save money
  - May promote tendencies to recruit only the healthiest people to minimize spending
  - May result in too early discharge
  - May impede client-provider relationships

Modes of Financing Health Care

- Direct client payment (two-party)
- Third-party payment

Direct Client Payment

- Direct payment to providers
- Insurance premiums
- Cost sharing
- Other out-of-pocket expenses

Third-Party Payment

- Types of insurance
  - Indemnity plans
  - Managed care plans

Indemnity Plans

- Designed to protect against losses due to serious health conditions
- Rely on retrospective reimbursement
- Pay for services, does not provide them

Managed Care Organizations (MCOs)

- Both pay for and provide services
- Provide a comprehensive array of services
- Provide services to pre-enrolled population
- Types:
  - Health Maintenance Organizations
  - Preferred Provider Organization
  - Point of Service plans
  - Independent Practice Associations

Health Maintenance Organizations (HMOs)

- Organized health care deliver system that provides a wide range of health services to a voluntarily enrolled population for a fixed prepaid fee
- Characterized by:
  - Organized system to provide health care in a particular geographic area
  - An agreed-on set of services for health maintenance and treatment
  - A voluntarily enrolled membership
  - Rates based on those for similar services in surrounding communities
- Models: Staff, Group, Network, Independent practice associations, & Direct contract

Preferred Provider Organizations (PPOs)

- Negotiated associations between a funding source (an employer or insurance company) and health care providers
- Providers give discounted services to a defined group of people

Point of Service Plans (POSs)

- Combinations of HMO and traditional insurance coverage
- Client chooses whether to use an in-plan provider or another provider

Advantages of MCOs

- Decreased incentive for over-treatment
- Comprehensive care
- Better patient information systems
- Better access to aggregate data for program evaluation
- Emphasis on primary versus specialty care
- Emphasis on prevention and promotion
- Greater emphasis on cost-effectiveness
- Use of ancillary personnel to decrease the cost of care
- An impetus for strategic planning
- Availability of data regarding quality of care and client satisfaction

Disadvantages of MCOs

- Incentives to under-treat clients to save money
- Incentives to recruit the healthiest clients
- Constraints on providers and client access to specialty services
- Longer waits for appointments
- Less individual attention from a provider
- Increased paper work for providers

Sources of Health Insurance

- Privately purchased insurance
- Employment-based insurance
- Publicly funded insurance

Publicly-Funded Insurance

- Medicare
- Medicaid
- CHAMPUS
- Tricare
- CHIP

Medicare

- Part A:
  - Hospitalization insurance
  - Available to all Social Security recipients
- Part B:
  - Covers physician and other expenses
  - Requires an additional premium
- Part C:
  - Managed care option
  - Requires an additional premium

Medicaid

- Inpatient and outpatient hospital services
- Prenatal care (including nurse midwifery services)
- Childhood immunizations
- Primary provider services (from physicians or family or pediatric nurse practitioners)
- Nursing home care

Medicaid

- Family planning services and supplies
- Rural health services
- Home health care for those eligible for skilled nursing care
- Laboratory and X-ray services
- Early and Periodic Screening, Diagnosis, and Treatment (EPSDT)

Medicaid-Eligible Groups

- Pregnant women, infants, and children in families with incomes less than 133% of the federal poverty level
- Children aged 6-15 in families with incomes less than 100% of the poverty level
- Adults and children in families who would have met certain eligibility guidelines

Medicaid-Eligible Groups

- Adoptive or foster care children receiving Title IV Social Security assistance
- Transitional coverage for children and adults who lose cash assistance due to increased incomes
- Medicare beneficiaries with incomes less than 100% of the poverty level

CHAMPUS

- Civilian Health and Medical Program for the Uniformed Services
- Provides care to military personnel, retirees, and dependents through private sector providers

TRICARE

- Care options for military personnel, retirees, and dependents
- Offers members three options
  - A low-cost HMO-like program
  - A provider network with low cost-sharing but no enrollment requirement
  - Program similar to CHAMPUS program

Children's Health Insurance Program (CHIP)

- Designed to provide health care for uninsured children who are not eligible for Medicaid or other forms of insurance

Future Implications

- Cost control
- New means to pay for health care
- Reduce use of health care goods and services

http://www.youtube.com/watch?v=-O1Woc145F8

APPENDIX L

SPRING 2010 SYLLABUS

South Dakota State University
College of Nursing
Department of Undergraduate Nursing
Spring 2010

COURSE NUMBER: NURS 310

COURSE NAME: Introduction to Public Health and Population-based Nursing

CREDITS: Theory 3 credits; Clinical 1 credit

PREREQUISITIES: Nurs 215, 264, 280; Concurrent with Nurs 325, Pha 321

THEORY LOCATION/TIME: Thursdays, 9-11:50; SNF 344

FACULTY CONTACT INFORMATION:

NAME	OFFICE	WORK PHONE	PERSONAL PHONE	EMAIL
Heidi Mennenga, MS, RN- Theory	SNF 147	688-6924	605-881-7954	D2L

COURSE DESCRIPTION:
This course focuses on an introduction to public health and population-based nursing care. Public health principles as applied to the health promotion, risk reduction and disease prevention needs of clients. Clinical application occurs with children and adults in community settings.

COURSE OBJECTIVES:

1. Demonstrate caring behaviors, focusing on the value of autonomy by respecting the client's right to self-determination.

2. Describe concepts basic to public health and population-based nursing.

3. Differentiate organizations that deliver and finance public health, community-based, and population-based health services at the local, state, national, and international level.

4. Demonstrate competency in critical thinking, communication, assessment, and technical skills at the beginning nursing student level with population-based clients.

5. Demonstrate core knowledge of health promotion, risk reduction, and disease prevention at the beginning nursing student level.

6. Apply evidence-based guidelines to the nursing care of population-based clients.

7. Distinguish health promotion interventions that meet the health needs of children, women, men, and older adults.

8. Perform developmentally appropriate public health interventions including health teaching, screening, referral, and follow-up.

9. Examine cultural influences on health for diverse populations, with particular emphasis on the Native American people and rural populations of South Dakota.

REQUIRED TEXTBOOKS:

Clark, M. J. (2008). *Nursing in the community* (5th ed.). New Jersey: Prentice Hall.

Hockenberry, M. J. (2003). *Wong's nursing care of infants and children*. St. Louis: Mosby.

Minnesota Department of Health, Division of Community Services, Section of Public Health Nursing. (2001). *Public health interventions; applications for public health nursing practice*. Minneapolis, MN: Author.
(This is available in the course content area.)

TEACHING STRATEGIES

This course will be taught exclusively using Team-Based Learning (TBL). TBL utilizes active learning through small group interactions. This teaching strategy will assist the student to understand, apply, and synthesize the information in this course.

LEARNING EXPERIENCES

Learning experiences include: Group activities as part of clinical experiences or in-class assignments, student directed learning experiences, readings, research, library and internet searches, and professional presentations.

COURSE REQUIREMENTS, GRADE COMPUTATION, AND EVALUATION METHODS

The College of Nursing, Department of Undergraduate Nursing grading scale will be used as the performance standard to calculate the final grade in this class.

A = 92-100%
B = 84-91%
C = 76-83%
D = 68-75%
F = below 68

Completion of NURS 310 requires successful completion of **BOTH** the clinical and theory components of the course.

GRADE COMPUTATION

III.	Theory Evaluation- 70% of final grade	Possible Points
	a. Exams (4)	200 pts
	b. IRATs (6)	
	c. GRATs (6)	
	d. Group Exams (3)	
	e. Peer evaluations	

IV.	Clinical Evaluation- 30% of final grade	Possible Points
	a. Community Resource	15 pts
	b. Cultural Windshield Survey	15 pts
	c. School Environment Assessment	10 pts
	d. Immunization On-line Preparation	10 pts
	e. Immunization Prep WKST	10 pts
	f. School Health WKST	10 pts
	g. Health Promotion WKST	10 pts
	h. Health Teaching WKST	10 pts
	i. Implementation and Evaluation of Teaching Plan	10 pts

1. Individual Readiness Assurance Tests (IRATs) and Group Readiness Assurance Tests (GRATs) will be given **at the beginning of each module at the beginning of class.**

2. To obtain final grade, take total theory points divided by number of possible points x 70%. Then take total clinical points divided by number of possible points x 30%. Add together to obtain final grade.

   Ex: [(your theory points/290) x 0.7] + [(your clinical points/100) x 0.3)]= final grade

3. The average of all four individual theory examinations **must be 76% or higher** in order to pass the course. This does NOT include the IRATs or GRATs. If the average of the theory examinations is not 76% or higher, the course grade (as reported on the SDSU transcript) is the average of the exams only (i.e. "D" or "F", depending upon the percentage grade).

4. The student **must pass both theory and clinical (with a 76% or higher)** in order to pass Nurs 310. If the clinical grade is not 76% or higher, the course grade is the clinical grade only (i.e., "D" or "F"). You must receive a "C" in both theory and clinical components of this course in order to proceed in the nursing major.

5. University policy for filing delinquent slips for less than "C" grades at midterm will be followed.

6. All course requirements must be completed in order to pass the course, including any pass/fail assignments.

7. Unsafe or unacceptable performance in a clinical experience setting is any action that places a client/family/student at risk. It is the absence of professional accountability that is identified below. Following the first unsafe or unacceptable performance day, the student will sign a Learning Contract that will identify needed changes in performance. Two or more unsafe or unacceptable performance days will result in failure of the course. Faculty members will apply the statements regarding Progression in a Course, as described in the Nursing Student Handbook.

ACCOUNTABILITY
Accountability is an expectation in the course. All students are expected to meet each criterion for accountability at all times. The **final grade is influenced up to 25%** for lack of accountability (in either theory/clinical or both).

Accountability includes, but is not limited to:

- Attends every class and clinical experience on time.
- Demonstrates both a professional attitude and professional behavior.
- Completes assignments in a timely fashion.
- Works cooperatively in groups.
- Prepares theoretically, physically, and mentally for class.
- Demonstrates evidence of critical thinking in class and clinical assignments.
- Demonstrates professional communication in all interactions, including e-mail correspondence.
- Follows dress code guidelines.
- Participates actively and consistently in discussions of clinical experiences and theory issues.
- Keeps faculty informed of absences, etc.

EVALUATION POLICY
Students will be evaluated by the academic and professional judgment of the individual faculty members assigned to teach this course, based on requirements and performance standards approved by the College of Nursing.

"The Code for Nurses communicates a standard of professional behavior expected throughout the total program and in each individual nursing course. In addition to dismissal for academic failure, the faculty and administration of the department of nursing reserve the right to dismiss any student enrolled in the undergraduate program for unethical, dishonest, or illegal conduct that is inconsistent with the Code for Professional Nurses." (SDSU Nursing Student Handbook, p 3).

COURSE ATTENDANCE
Attendance at all classes and clinical experiences is a university expectation. All students are held accountable for attaining the course outcome criteria despite absences. Students

are required to notify the course faculty member of all absences prior to the absence or immediately thereafter in the case of an emergency. Students hold the responsibility for making up missed content. Students will not be allowed to make-up quizzes or in-class assignments for unexcused absences.

For more information students may refer to: Policy #U3120 – Absence from Class. Students missing lecture are responsible for obtaining information and assignments. If a quiz or exam is missed related to an excused absence, an alternative quiz or exam will be completed on the arranged date and time. If a quiz or exam is missed related to an unexcused absence, the grade for the exam will be recorded as a zero.

Written assignments must be turned in on time unless an extension has been obtained from the faculty prior to the due date and time. Written assignments that are turned in after the due date and time will receive a one letter grade reduction per day beginning 10 minutes after the assigned due date and time. Any written assignment turned in 3 working days after the due date and time will receive a zero. Accountability Points may also be deducted from the final grade.

GENERAL CLASSROOM ETIQUETTE

During class turn off and refrain from using cell phones, pagers, and any other communication device except for your laptop computer.

Students are not allowed to audiotape or videotape any part of this course without the expressed permission of the instructor.

CLASSROOM ETIQUETTE FOR LAPTOP COMPUTERS

With new technology and a new way of learning in a mobile atmosphere come special considerations. Below you will see the behavior that is acceptable and unacceptable within the classroom and throughout the college. The classroom environment must be conducive to learning for all students. Distractions made possible by advances in technology undermine the goal. Accordingly, during class, in addition to usual courtesies, please do the following:

- Refrain from connecting to the internet unless instructed to do so
- Refrain from displaying wallpaper, screen savers, or other material on your laptop computer that you can reasonably expect to be offensive to others in class
- when a teacher has requested that your laptops be closed, please close them
- Refrain from using ICQ, MSN, MySpace, FaceBook, or other similar programs during class
- When a guest speaker comes into the class, please give the person your full attention and close your laptops
- Refrain from sending documents to the printer or to other students during a lecture presentation
- After completing an exam, please leave laptop where it is, whether put away in a bag or on the desktop. The noise is distracting to others.

POLICIES AND PROCEDURES

BLOODBORNE PATHOGENS: All students of the College of Nursing must be aware that the College of Nursing has a policy and procedure for students who are infected with a blood borne pathogen such as hepatitis B virus, hepatitis C virus, and human immunodeficiency virus and other infectious diseases. The student may review this policy at the office of any department head. All students who have been diagnosed with a blood borne pathogen should inform the Semester Coordinator in person. This is medical information and will be kept confidential while informing only those who need to know. This information is needed to protect the health of patients, the public, and to remain in compliance with the clinical facilities that the student may attend.

SDSU ACADEMIC DISHONESTY POLICY: South Dakota State University has taken a strong and clear stand regarding Academic Dishonesty. The consequence of Academic Dishonesty ranges from Disciplinary Probation to Expulsion. The full policies are found in chapter 1 of the Student Code (01:10:23:10 – 1:10:23:04) within the Student Policy Manual. A student charged with Academic Dishonesty who wishes to appeal that charge may follow the appeals Procedure outlined in Chapter 2 of the student Policy Manual (Academic Appeals and Classroom Standards) or contact the Vice President for Academic Affairs Office, AD 230, 688-4173.

Any evidence of cheating or dishonesty will result in a zero for the test and may also result in an "F" for the course, according to the discretion of the professor.

STUDENT'S WITH DISABILITIES: Any student who feels s/he may need an accommodation based on the impact of a disability should contact me (Nancy Hartenhoff-Crooks) privately to discuss your specific needs. Please contact the Office of Disability Services at (605) 688-4504 in room 145 Binnewies Hall to coordinate reasonable accommodations for students with documented disabilities.
Thank you.
Nancy Hartenhoff-Crooks,
Coordinator of Disability Services
Ph: 605-688-4503
Fax: 605-688-4987

ACADEMIC FREEDOM AND RESPONSIBILITIES: Freedom in learning. Under Board of Regents and University policy student academic performance may be evaluated solely on an academic basis, not on opinions or conduct in matters unrelated to academic standards. Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled. Students who believe that an academic evaluation reflects prejudiced or capricious consideration of student opinions or conduct unrelated to academic standards should first contact the instructor of the course to initiate a review of the evaluation. If the student remains unsatisfied, the student may contact the department head and/or dean of the college which offers the class to initiate a review of the evaluation.

APPENDIX M

PEER EVALUATION FORM

N310 Team-Based Learning Peer Evaluation Form

Name of Person Completing Form_____ Team #_____

Please write the name of each team member, excluding yourself, in the space below. Each team member may receive up to 25 points total. Assign scores to each of your team members that truly reflect their performance. Results will not be shared with the team member you are evaluating.

Team Member Name	Preparedness	Contribution	Respect for Others		

Rankings:
1= Strongly Disagree
2= Disagree
3= Agree
4= Mostly Agree
5= Strongly Agree

Preparedness: Presented to class prepared for team discussion and activities.

Contribution: Contributed to team discussions and activities.

Respect for Others: Encouraged other team members to contribute ideas; treated all members of the team respectfully, even when disagreeing.

APPENDIX N

APPEALS FORM

N310 Appeals Form

Team Name/Number: _____ Date: _____

Quiz Number: _____ Question Number: _____

Group Answer: _____

Rationale:

Support from Assigned Readings:

APPENDIX O

EXAMPLE OF IRAT, GRAT, AND APPLICATION

N310 Module 3: Chapters 9, 25
Individual Readiness Assurance Test #3

Name:_____ Date:_____
Choose the best answer for each question.

1. The local clinic employs a Hispanic receptionist, who is also used as an interpreter for the many non-English speaking Latino clients who use the clinic. Members of the staff believe the clients should learn English, and they have refused offers from the receptionist to learn some basic phrases. They are hindering culturally competent care through:
    a. Cultural destructiveness.
    b. Cultural blindness.
    c. Cultural pre-competence.
    d. Cultural incapacity.

2. The nurse is assessing a client and identifies in the chart that the client is white/non-Hispanic. The nurse is addressing which aspect of the client?
    a. Culture
    b. Race
    c. Nationality
    d. Ethnicity

3. A psychiatric nurse is working with a new admission, a client from another culture. During the admission interview, this culturally competent nurse asks questions that go beyond the bio-medical realm. This nurse is assessing for:
    a. Homeopathic practices.
    b. Culture-bound syndromes.
    c. Disease causation.
    d. Psychological problems.

4. It is determined that an interpreter is necessary to communicate information about a client's illness. The best method for interpreting is the use of:
    a. Gestures and signs.
    b. Family members.
    c. Bilingual staff.
    d. Telephone interpretation.

5. The most important facet of developing cultural competence is for a nurse to:
    a. Gain proficiency in another language beyond English.
    b. Identify the goals for culturally competent care.
    c. Understand the culture of the client.
    d. Understand and recognize the nurse's own cultural background.

6. An organization that is delivering culturally competent care is characterized by:
    a. Treating all who utilize its services in the same manner.
    b. Providing services that are accepting and respectful of diverse populations.
    c. Having conscious adaptation of care to the cultural context.
    d. Being aware of personal perspectives.

7. Which is a characteristic of culture?
    a. A shared pattern of communication
    b. Varying religious beliefs
    c. Common biologic features
    d. Competence when working with others

8. What is the difference between race and ethnicity?
    a. Race refers to sharing biologic features; ethnicity refers to how values develop over time.
    b. Race refers to sharing common biologic features and culture; ethnicity refers to the biologic features.
    c. Race refers to a shared culture and way of life; ethnicity refers to the country where an individual was born.
    d. Race refers to sharing common biologic features; ethnicity refers to a shared culture and way of life.

9. What is the main purpose of the CLAS Standards?
    a. To ensure a culturally competent workplace and workforce.
    b. To reduce the number of health disparities experienced by minority populations.
    c. To encourage Americans to learn more about other cultures.
    d. To help organizations build cultural and linguistic competence in their workforce.

10. Cultural competence:
    a. Can be achieved quickly.
    b. Can occur without a self-assessment.
    c. Can only occur among individuals.
    d. Is an ongoing process.

11. A nurse demonstrates cultural desire by:
    a. Volunteering to work with a group of refugees from Somalia.
    b. Understanding how the African American culture varies from the white culture.
    c. Completing a cultural self-assessment.
    d. Teaching members of a Hispanic community about diabetes.

12. What is the first step in performing a cultural assessment?
    a. Tell the client about your culture.
    b. Ask the client to tell you why her extended family lives with her.
    c. Establish rapport and trust.
    d. Explain to the client why it is important you learn about her culture.

13. While people in the United States are Americans, many citizens may refer to themselves as a hyphenated American ("Irish-American, African-American", etc). This term would refer to one's:
    a. Ethnicity.
    b. Race.
    c. Nationality.
    d. Culture.

14. When compared to urban Americans, rural people have lower rates of:
    a. Infant and maternal morbidity.
    b. Mental illness.
    c. Chronic illness.
    d. Health insurance coverage that includes pharmacy plans.

15. Professional isolation occurs when rural nurses:
    a. Find little to do in a rural community/public health agency.
    b. Have easy access to the few health care providers in the area.
    c. Travel a distance to visit their clients.
    d. Are uncomfortable making independent nursing decisions.

16. Many rural residents may delay seeking health care until a condition worsens to an extent that more intensive treatment is needed, or a condition that could have been prevented is now chronic. One explanation for this is that rural residents:
    a. Do not like to access health care.
    b. Equate health with the ability to work and the inability to work may trigger seeking needed health care.
    c. Are not knowledgeable of basic health care they should receive.
    d. Are not willing to pay for health services.

17. A metropolitan area has developed a state-of-the-art, comprehensive public health clinic in the next county that is easily accessible off the local expressway; however, the number of inner-city urban residents who access the services is low. A possible reason for this lower number could be:
    a. The inner city urban residents do not like to travel that distance.
    b. There may be no public transportation service to the area where the clinic is located.
    c. The services provided at the clinic are not needed by the inner city urban population.
    d. There are sufficient health clinics located in the inner city.

18. Mental health services in rural areas are less adequate than in urban areas. One of the most important aspects that compounds this deficit is the:
    a. Type and location of services offered.
    b. Lack of funding for additional mental health services.
    c. Failure of rural health providers to provide information to the community about mental health services.
    d. Underdiagnosis and stigma of mental health problems in rural areas.

19. Rural communities are sustained by informal support networks and decreased mobility; whereas, in urban communities:
    a. Informal support networks sustain the neighborhoods in communities.
    b. Mobility of populations and complex interpersonal interactions can lead to decreased social support.
    c. Fear of becoming close to neighbors inhibits development of support systems.
    d. Diversity of populations encourages close interpersonal interactions.

20. While rural health departments provide a broader array of services than urban health departments, what is also true of rural health departments?
    a. There are better immunization rates among rural residents than urban residents.
    b. Rural health care providers do not have as much specialized community health education as their urban counterparts.
    c. Rural health departments generally are more poorly funded and have fewer medical specialists than their urban counterparts.
    d. The scope of care is more comprehensive in rural health departments than urban health departments.

21. A positive aspect of government funding for medically underserved areas, both rural and urban, has been to:
    a. Provide better accessibility to health services in both areas.
    b. Increase Medicaid eligibility for access to services.
    c. Shorten the response times for emergency medical services (EMS).
    d. Increase the use of nurse practitioners as providers of care.

22. The best strategy for the nurse to achieve a positive intervention outcome to improve lower income housing conditions in the community is to partner with:
    a. The Urban League.
    b. Habitat for Humanity.
    c. Local home builders.
    d. The Department of Housing and Urban Development (HUD)

23. The local health unit in a rural county has operation hours from 9 AM to 5 PM Monday through Friday. County health statistics reveal that health indicators for this population lag behind the state mean. Strategies to improve these health indicators could involve:
    a. Having a publicity campaign to make the population aware of the services that are provided at the health unit.
    b. Combining the health unit services with another county's health unit.
    c. Having flexible hours of operation and providing care in mobile health units throughout the county.
    d. Coordinating health services with national health awareness months.

24. A nursing student makes this comment to the nurse educator: "I'm planning to find a nursing position in an urban area because rural nursing care would probably be very boring." An appropriate response by the nurse educator would be:
    a. You're right. You'd never see the interesting things in a rural setting as in a large hospital setting."
    b. "Rural nursing actually requires much more expertise in a variety of areas."
    c. "The rural population is generally healthier, so you would certainly have more experiences in a larger hospital."
    d. "Rural health care is mostly low technology and not as cutting-edge as urban health care."

25. A community health nurse is working in an urban setting and focusing on how to alter social factors that affect health. An evaluation measure of this might be:
    a. The number of police calls to intervene in domestic violence cases was decreased.
    b. Clients had fewer episodes of asthma attacks.
    c. Clients were able to identify locations of women's shelters within a geographic are of the city.
    d. The number of clients reporting inadequate housing decreased.

N310 Module 3: Chapters 9, 25
Group Readiness Assurance Test #3

Name:_____ Date:_____
Choose the best answer for each question.

1. The local clinic employs a Hispanic receptionist, who is also used as an interpreter for the many non-English speaking Latino clients who use the clinic. Members of the staff believe the clients should learn English, and they have refused offers from the receptionist to learn some basic phrases. They are hindering culturally competent care through:
    a. Cultural blindness.
    b. Cultural pre-competence.
    c. Cultural incapacity.
    d. Cultural destructiveness.

2. The nurse is assessing a client and identifies in the chart that the client is white/non-Hispanic. The nurse is addressing which aspect of the client?
    a. Race
    b. Ethnicity
    c. Culture
    d. Nationality

3. A psychiatric nurse is working with a new admission, a client from another culture. During the admission interview, this culturally competent nurse asks questions that go beyond the bio-medical realm. This nurse is assessing for:
    a. Disease causation.
    b. Homeopathic practices.
    c. Psychological problems.
    d. Culture-bound syndromes.

4. It is determined that an interpreter is necessary to communicate information about a client's illness. The best method for interpreting is the use of:
    a. Family members.
    b. Bilingual staff.
    c. Gestures and signs.
    d. Telephone interpretation.

5. The most important facet of developing cultural competence is for a nurse to:
    a. Identify the goals for culturally competent care.
    b. Understand and recognize the nurse's own cultural background.
    c. Understand the culture of the client.
    d. Gain proficiency in another language beyond English.

6. An organization that is delivering culturally competent care is characterized by:
    a. Providing services that are accepting and respectful of diverse populations.
    b. Treating all who utilize its services in the same manner.
    c. Being aware of personal perspectives.
    d. Having conscious adaptation of care to the cultural context.

7. Which is a characteristic of culture?
    a. Varying religious beliefs
    b. Competence when working with others
    c. A shared pattern of communication
    d. Common biologic features

8. What is the difference between race and ethnicity?
    a. Race refers to sharing common biologic features and culture; ethnicity refers to the biologic features.
    b. Race refers to sharing biologic features; ethnicity refers to how values develop over time.
    c. Race refers to sharing common biologic features; ethnicity refers to a shared culture and way of life.
    d. Race refers to a shared culture and way of life; ethnicity refers to the country where an individual was born.

9. What is the main purpose of the CLAS Standards?
    a. To help organizations build cultural and linguistic competence in their workforce.
    b. To ensure a culturally competent workplace and workforce.
    c. To encourage Americans to learn more about other cultures.
    d. To reduce the number of health disparities experienced by minority populations.

10. Cultural competence:
    a. Can be achieved quickly.
    b. Can occur without a self-assessment.
    c. Can only occur among individuals.
    d. Is an ongoing process.

11. A nurse demonstrates cultural desire by:
    a. Understanding how the African American culture varies from the white culture.
    b. Teaching members of a Hispanic community about diabetes.
    c. Completing a cultural self-assessment.
    d. Volunteering to work with a group of refugees from Somalia.

12. What is the first step in performing a cultural assessment?
    a. Tell the client about your culture.
    b. Establish rapport and trust.
    c. Explain to the client why it is important you learn about her culture.
    d. Ask the client to tell you why her extended family lives with her.

13. While people in the United States are Americans, many citizens may refer to themselves as a hyphenated American ("Irish-American, African-American", etc). This term would refer to one's:
    a. Ethnicity.
    b. Culture.
    c. Race.
    d. Nationality.

14. When compared to urban Americans, rural people have lower rates of:
    a. Mental illness.
    b. Health insurance coverage that includes pharmacy plans.
    c. Chronic illness.
    d. Infant and maternal morbidity.

15. Professional isolation occurs when rural nurses:
    a. Are uncomfortable making independent nursing decisions.
    b. Have easy access to the few health care providers in the area.
    c. Travel a distance to visit their clients.
    d. Find little to do in a rural community/public health agency.

16. Many rural residents may delay seeking health care until a condition worsens to an extent that more intensive treatment is needed, or a condition that could have been prevented is now chronic. One explanation for this is that rural residents:
    a. Do not like to access health care.
    b. Are not knowledgeable of basic health care they should receive.
    c. Are not willing to pay for health services.
    d. Equate health with the ability to work and the inability to work may trigger seeking needed health care.

17. A metropolitan area has developed a state-of-the-art, comprehensive public health clinic in the next county that is easily accessible off the local expressway; however, the number of inner-city urban residents who access the services is low. A possible reason for this lower number could be:
    a. The services provided at the clinic are not needed by the inner city urban population.
    b. There are sufficient health clinics located in the inner city.
    c. The inner city urban residents do not like to travel that distance.
    d. There may be no public transportation service to the area where the clinic is located.

18. Mental health services in rural areas are less adequate than in urban areas. One of the most important aspects that compounds this deficit is the:
    a. Failure of rural health providers to provide information to the community about mental health services.
    b. Underdiagnosis and stigma of mental health problems in rural areas.
    c. Type and location of services offered.
    d. Lack of funding for additional mental health services.

19. Rural communities are sustained by informal support networks and decreased mobility; whereas, in urban communities:
    a. Mobility of populations and complex interpersonal interactions can lead to decreased social support.
    b. Informal support networks sustain the neighborhoods in communities.
    c. Fear of becoming close to neighbors inhibits development of support systems.
    d. Diversity of populations encourages close interpersonal interactions.

20. While rural health departments provide a broader array of services than urban health departments, what is also true of rural health departments?
    a. Rural health departments generally are more poorly funded and have fewer medical specialists than their urban counterparts.
    b. There are better immunization rates among rural residents than urban residents.
    c. The scope of care is more comprehensive in rural health departments than urban health departments.
    d. Rural health care providers do not have as much specialized community health education as their urban counterparts.

21. A positive aspect of government funding for medically underserved areas, both rural and urban, has been to:
    a. Shorten the response times for emergency medical services (EMS).
    b. Increase the use of nurse practitioners as providers of care.
    c. Provide better accessibility to health services in both areas.
    d. Increase Medicaid eligibility for access to services.

22. The best strategy for the nurse to achieve a positive intervention outcome to improve lower income housing conditions in the community is to partner with:
    a. The Urban League.
    b. Habitat for Humanity.
    c. The Department of Housing and Urban Development (HUD).
    d. Local home builders.

23. The local health unit in a rural county has operation hours from 9 AM to 5 PM Monday through Friday. County health statistics reveal that health indicators for this population lag behind the state mean. Strategies to improve these health indicators could involve:
    a. Having a publicity campaign to make the population aware of the services that are provided at the health unit.
    b. Coordinating health services with national health awareness months.
    c. Combining the health unit services with another county's health unit.
    d. Having flexible hours of operation and providing care in mobile health units throughout the county.

24. A nursing student makes this comment to the nurse educator: "I'm planning to find a nursing position in an urban area because rural nursing care would probably be very boring." An appropriate response by the nurse educator would be:
    a. You're right. You'd never see the interesting things in a rural setting as in a large hospital setting."
    b. "Rural nursing actually requires much more expertise in a variety of areas."
    c. "Rural health care is mostly low technology and not as cutting-edge as urban health care."
    d. "The rural population is generally healthier, so you would certainly have more experiences in a larger hospital."

25. A community health nurse is working in an urban setting and focusing on how to alter social factors that affect health. An evaluation measure of this might be:
    a. The number of police calls to intervene in domestic violence cases was decreased.
    b. The number of clients reporting inadequate housing decreased.
    c. Clients had fewer episodes of asthma attacks.
    d. Clients were able to identify locations of women's shelters within a geographic are of the city.

N310 Module 3: Chapters 9, 25
Application Exercise #1

After completing the "Cultural Self-Assessment" individually, answer the following questions.

1. What similarities did your group notice on your self-assessments?

2. What differences did your group notice on your self-assessments?

3. How will these results impact how you provide care to clients from other cultures?

N310 Module 3: Chapters 9, 25
Application Exercise #2

1. To what extent does ethnic diversity affect health care in the United States?
    a. To no extent
    b. To some extent
    c. To a great extent

Provide your rationale for your response.

2. To what extent does the value of male dominance influence the provision of health care services?
    a. To no extent
    b. To some extent
    c. To a great extent

Provide your rationale for your response.

3. To what extent does the economic status of the minority population in our community affect health care?
    a. To no extent
    b. To some extent
    c. To a great extent

Provide your rationale for your response.

N310 Module 3: Chapters 9, 25
Application Exercise #3

Please read the "Hmong Families" handout (Lao Family Community of Minnesota Inc., 1997) and answer the following questions.

A Hmong father who severely beat his 12-year-old son with a belt, leaving cuts and bruises, is charged with child abuse. The father states, "If I can't discipline my son, how can he be a good child?"

1. List some of the core values of the Hmong culture.

2. What would be an appropriate response that shows respect for this cultural group's norms and values, yet is constructive in resolving the cultural conflict?

N310 Module 3: Chapters 9, 25
Application Exercise #4

1. The community health nurse is working in a rural community that has a high incidence of heart disease, stroke, hypertension, and obesity. Which of the following should the nurse address first?
    a. Heart disease
    b. Stroke
    c. Hypertension
    d. Obesity

Provide your rationale for your response.

2. To what extent do policy inequities influence health in urban settings?
    a. To no extent
    b. To some extent
    c. To a great extent

Provide your rationale for your response.

3. To what extent do policy inequities influence health in rural settings?
    a. To no extent
    b. To some extent
    c. To a great extent

Provide your rationale for your response.

APPENDIX P

IRB APPROVALS

UNLV
UNIVERSITY OF NEVADA LAS VEGAS

UNLV IRB Approved OCT 26 2009 Expires OCT 25 2010

Biomedical IRB – Expedited Review
Approval Notice

NOTICE TO ALL RESEARCHERS:

Please be aware that a protocol violation (e.g., failure to submit a modification for any change) of an IRB approved protocol may result in mandatory remedial education, additional audits, re-consenting subjects, cancellation/ probation/ suspension of any research protocol at risk, suspension of additional existing research protocols, invalidation of all research conducted under the research protocol at issue, and further appropriate consequences as determined by the IRB and the Institutional Officer.

DATE: October 26, 2009

TO: **Dr. Patricia Smyer**, Nursing

FROM: Office for the Protection of Research Subjects

RE: Notification of IRB Action by Dr. John Mercer, Chair JM/CB
Protocol Title: **Evaluating Team-Based Learning in an Undergraduate Nursing Course**
Protocol #: 0909-3235

This memorandum is notification that the project referenced above has been reviewed by the UNLV Biomedical Institutional Review Board (IRB) as indicated in regulatory statutes 45 CFR 46. The protocol has been reviewed and approved.

The protocol is approved for a period of one year from the date of IRB approval. The expiration date of this protocol is October 25, 2010. Work on the project may begin as soon as you receive written notification from the Office for the Protection of Research Subjects (OPRS).

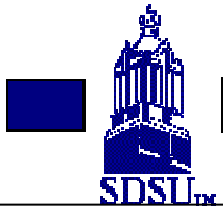
PLEASE NOTE:
Attached to this approval notice is the **official Informed Consent/Assent (IC/IA) Form** for this study. The IC/IA contains an official approval stamp. Only copies of this official IC/IA form may be used when obtaining consent. Please keep the original for your records.

Should there be *any* change to the protocol, it will be necessary to submit a **Modification Form** through OPRS. No changes may be made to the existing protocol until modifications have been approved by the IRB.

Should the use of human subjects described in this protocol continue beyond October 25, 2010 it would be necessary to submit a **Continuing Review Request Form** *60 days* before the expiration date.

If you have questions or require any assistance, please contact the Office for the Protection of Research Subjects at OPRSHumanSubjects@unlv.edu or call 895-2794.

Office for the Protection of Research Subjects
[illegible] Maryland Parkway • Box 451047 • Las Vegas, Nevada 89154-1047



Office of Research/Human Subjects Committee
SAD Room 124
Box 2201 SDSU
Brookings, SD 57007

To: Heidi Mennenga, College of Nursing

Date: October 29, 2009

Project Title: Evaluating Team-Based Learning in an Undergraduate Nursing Course

Approval #: IRB-0910016-EXM

Thank you for taking such care in completion of the request and research protocol. This project is approved as exempt. The basis for your exempt status from 45 CFR 46.101 (b) is:

(1) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

and

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

If there are any unanticipated problems involving risks to subjects or others, or changes in the procedures during the study, contact the SDSU Research Compliance Coordinator. At the end of the project please inform the committee that your project is complete.

If I can be of any further assistance, don't hesitate to let me know.

Sincerely,

Norm

Norman O. Braaten
SDSU Research Compliance Coordinator

APPENDIX Q

"TEAM-BASED LEARNING STUDENT ASSESSMENT INSTRUMENT" (39-ITEM)

Team-Based Learning Student Assessment Instrument (TBL-SAI)

This instrument asks you about your experience with team-based learning. There are no right or wrong answers. Please be honest and report your true reaction to each question by circling the number for the response that best describes your answer.

Accountability Subscale

This subscale assesses student preparation for class and contribution to the team. The scale for the items is as follows:

1= Strongly Disagree
2= Disagree
3= Neither Disagree or Agree (Neutral)
4= Agree
5= Strongly Agree

1. I spend time studying before class in order to be more prepared.	1	2	3	4	5
2. I read most of the assigned material before class.	1	2	3	4	5
3. I feel I have to prepare for this class in order to do well.	1	2	3	4	5
4. I feel that I should be accountable for my own learning.	1	2	3	4	5
5. Team-based learning makes me accountable.	1	2	3	4	5
6. Because we work in teams, I spend more time preparing for class than I would otherwise.	1	2	3	4	5
7. I contribute to my team members' learning.	1	2	3	4	5
8. My contribution to the team is not important.	1	2	3	4	5
9. My team members expect me to assist them in their learning.	1	2	3	4	5
10. I am accountable for my team's learning.	1	2	3	4	5
11. I do not need to help my team learn the material.	1	2	3	4	5
12. I am proud of my ability to assist my team in their learning.	1	2	3	4	5
13. I need to contribute to the team's learning.	1	2	3	4	5

PLEASE GO TO NEXT PAGE

Preference for Lecture or Team-Based Learning Subscale

This subscale assesses student ability to recall material and student attention level in lecture and team-based learning.

The scale for the items is as follows:

1= Strongly Disagree
2= Disagree
3= Neither Disagree or Agree (Neutral)
4= Agree
5= Strongly Agree

14. During traditional lecture, I often find myself thinking of non-related things.	1	2	3	4	5
15. I am easily distracted during traditional lecture.	1	2	3	4	5
16. I am easily distracted during team-based learning activities.	1	2	3	4	5
17. I am more likely to fall asleep during lecture than during classes that use team-based learning activities.	1	2	3	4	5
18. I get bored during team-based learning activities.	1	2	3	4	5
19. I talk about non-related things during team-based learning activities.	1	2	3	4	5
20. I easily remember what I learn when working in a team.	1	2	3	4	5
21. I remember material better when the instructor lectures about it.	1	2	3	4	5
22. Team-based learning activities help me recall past information.	1	2	3	4	5
23. It is easier to study for tests when the instructor has lectured over the material.	1	2	3	4	5
24. I remember information longer when I go over it with team members during the GRATS used in team-based learning.	1	2	3	4	5

PLEASE GO TO NEXT PAGE

25. I remember material better after the application exercises used in team-based learning.	1	2	3	4	5
26. I can easily remember material from lecture.	1	2	3	4	5
27. After working with my team members, I find it difficult to remember what we talked about during class.	1	2	3	4	5
28. I do better on exams when we used team-based learning to cover the material.	1	2	3	4	5
29. After listening to lecture, I find it difficult to remember what the instructor talked about during class.	1	2	3	4	5

PLEASE GO TO NEXT PAGE

Student Satisfaction Subscale

This subscale assesses student satisfaction with team-based learning.
The scale for the items is as follows:

1= Strongly Disagree
2= Disagree
3= Neither Disagree or Agree (Neutral)
4= Agree
5= Strongly Agree

30. I enjoy team-based learning activities.	1	2	3	4	5
31. I learn better in a team setting.	1	2	3	4	5
32. I think lectures are an effective approach for learning.	1	2	3	4	5
33. I think team-based learning activities are an effective approach to learning.	1	2	3	4	5
34. I do not like to work in teams.	1	2	3	4	5
35. Team-based learning activities are fun.	1	2	3	4	5
36. Team-based learning activities are a waste of time.	1	2	3	4	5
37. I think team-based learning helped me improve my grade.	1	2	3	4	5
38. I have a positive attitude towards team-based learning activities.	1	2	3	4	5
39. I have had a good experience with team-based learning.	1	2	3	4	5

Please add any comments you may have about your experience with team-based learning.

APPENDIX R

DESCRIPTION OF CONTENT EXPERTS

Dr. Larry Michaelsen

Larry Michaelsen originally developed the idea of team-based learning in the 1970s. At the time, he was a faculty member at the University of Oklahoma, confronted with the challenge of teaching a business course to a class of 120 students. Although he had used group activities effectively in smaller classrooms, he was now facing classes that were triple the size. Since that time, Michaelsen has refined the strategy and has worked with numerous professors to enhance their use of team-based learning. He has published numerous articles in journals focused on college education (Michaelsen, 1983a, 1983b; 1992; 1999; Michaelsen & Black, 1994; Michaelsen, Watson, & Black, 1989; Michaelsen, Watson, Cragin, & Fink, 1982). He has also worked with other authors and published books on the topic (Michaelsen, Knight, & Fink, 2004; Michaelsen, Parmelee, McMahon, & Levine, 2008; Watson, Michaelsen, & Sharp; 1991). Additionally, he has conducted over 300 workshops for faculty members interested in learning about team-based learning.

Dr. Ruth Levine

Ruth Levine is a professor at the University of Texas Medical Branch. Her responsibilities include utilizing team-based learning in undergraduate, graduate, and postgraduate medical settings. Additionally, Levine offers important insight into the use of team-based learning in the health profession setting. She has conducted numerous workshops and consults with faculty who are interested in team-based learning. In addition to coauthoring a book with Michaelsen and others (Michaelsen, Parmelee, McMahaon, & Levine, 2008), she has also authored many articles regarding her experiences with team-based learning (Clark, Nguyen, Bray, & Levine, 2008; Levine,

Kelly, Karokoc, & Haidet, 2007; Thompson, Schneider, Haidet, Levine, McMahon, Perkowski, & Richards, 2007).

Dr. Michele Clark

Michele Clark is an associate professor at the University of Nevada, Las Vegas. Her research focuses include both team-based learning and instrument development. She authored a chapter about the use of team-based learning in a book by Michaelsen, Parmelee, McMahon, and Levine (2008). Additionally, Clark has performed research comparing team-based learning and traditional lecture in a nursing course (Clark, Nguyen, Bray, & Levine, 2008).

Dr. Nancy Menzel

Nancy Menzel is an associate professor at the University of Nevada, Las Vegas. She teaches a community health nursing course which utilizes a combination of traditional lecture and team-based learning.

APPENDIX S

CONTENT VALIDITY INDEX ON 45-ITEM INSTRUMENT

Content Validity Index on 45-Item Instrument

Item	Expert 1	Expert 2	Expert 3	Expert 4	Experts in agreement	Item CVI
1	3	4	4	4	4	1.00
2	3	4	2	4	3	.75
3	1	4	2	2	1	.25
4	3	4	4	4	4	1.00
5	2	4	4	3	3	.75
6		4	4	4	3	.75
7	4	4	4	4	4	1.00
8	3	4	3	4	4	1.00
9	2	4	3	3	4	1.00
10	3	4	4	4	4	1.00
11	2	4	4	4	3	.75
12	3	4	3	3	4	1.00
13	2	4	3	3	3	.75
14	3	4	4	4	4	1.00
15	2	4	3	4	3	.75
16	2	4	2	4	2	.50
17	2	4	3	4	3	.75
18	3	4	4	4	4	1.00
19	3	4	2	4	3	.75
20	2	4	4	4	3	.75
21	3	4	4	3	4	1.00
22	4	4	4	4	4	1.00
23	4	4	4	4	4	1.00
24	4	4	3	4	4	1.00
25	3	3	2	2	2	.50
26	3	4	3	3	4	1.00
27	3	4	4	4	4	1.00
28	3	4	4	4	4	1.00
29	3	4	4	4	4	1.00
30	2	4	3	3	3	.75
31	2	4	4	4	3	.75
32	4	4	3	4	4	1.00
33	2	4	1	3	2	.50
34	3	4	3	4	4	1.00
35	3	4	3	4	4	1.00
36	3	4	3	4	4	1.00
37	3	4	2	2	2	.50
38	3	4	3	4	4	1.00
39	3	4	4	4	4	1.00
40	3	4	4	4	4	1.00
41	2	4	3	4	3	.75
42	3	4	4	4	4	1.00
43	3	4	2	4	2	.75
44	2	4	3		2	.50
45	3	3	4		3	.75
Proportion relevant	.68	.96	.82	.93	Average I-CVI	.85

APPENDIX T

CONTENT VALIDITY INDEX ON 39-ITEM INSTRUMENT

Content Validity Index for 39-Item Instrument

Item	Expert 1	Expert 2	Expert 3	Expert 4	Experts in agreement	Item CVI
1	3	4	4	4	4	1.00
2	3	4	2	4	3	.75
3	3	4	4	4	4	1.00
4	2	4	4	3	3	.75
5		4	4	4	3	.75
6	4	4	4	4	4	1.00
7	3	4	3	4	4	1.00
8	2	4	3	3	4	1.00
9	3	4	4	4	4	1.00
10	2	4	4	4	3	.75
11	3	4	3	3	4	1.00
12	2	4	3	3	3	.75
13	3	4	4	4	4	1.00
Proportion relevant	**.67**	**1.0**	**.92**	**1.0**	**Average I-CVI: Accountability Subscale**	**.90**
14	2	4	3	4	3	.75
15	2	4	2	4	2	.50
16	2	4	3	4	3	.75
17	3	4	2	4	3	.75
18	2	4	4	4	3	.75
19	3	4	4	3	4	1.00
20	4	4	4	4	4	1.00
21	4	4	4	4	4	1.00
22	4	4	3	4	4	1.00
23	3	4	3	3	4	1.00
24	3	4	4	4	4	1.00
25	3	4	4	4	4	1.00
26	3	4	4	4	4	1.00
27	2	4	4	4	3	.75
28	4	4	3	4	4	1.00
29	3	4	3	4	4	1.00
Proportion relevant	**.69**	**1.0**	**.88**	**1.0**	**Average I-CVI: Preference for Lecture or TBL Subscale**	**.89**
30	3	4	3	4	4	1.00
31	3	4	3	4	4	1.00
Question 32 omitted- added after CVI by experts based on recommendation by expert						
33	3	4	3	4	4	1.00
34	3	4	4	4	4	1.00
35	3	4	4	4	4	1.00
36	2	4	3	4	3	.75
37	3	4	4	4	4	1.00
38	3	4	2	4	2	.75
39	2	4	3		2	.50
Proportion relevant	**.78**	**1.0**	**.89**	**1.0**	**Average I-CVI: Student Satisfaction Subscale**	**.89**
Average I-CVI for Total Instrument						**.89**

APPENDIX U

IRB APPROVAL FOR PILOT STUDY

UNLV
UNIVERSITY OF NEVADA LAS VEGAS

Biomedical IRB – Exempt Review
Approved as Exempt

DATE: June 11, 2009

TO: **Dr. Patricia Smyer,** Nursing

FROM: Office for the Protection of Research Subjects

RE: Notification of IRB Action by Ms. Brenda Durosinmi, MPA, CIP, CIM
Protocol Title: **Team-Based Learning Student Assessment Instrument**
OPRS# 0905-3122

This memorandum is notification that the project referenced above has been reviewed by the UNLV Biomedical Institutional Review Board (IRB) as indicated in Federal regulatory statutes 45CFR46.

The protocol has been reviewed and deemed exempt from IRB review. It is not in need of further review or approval by the IRB.

PLEASE NOTE:
Attached to this approval notice is the **official Informed Consent/Assent (IC/IA) Form** for this study. The IC/IA contains an official approval stamp. Only copies of this official IC/IA form may be used when obtaining consent. Please keep the original for your records.

Any changes to the exempt protocol may cause this project to require a different level of IRB review. Should any changes need to be made, please submit a **Modification Form**.

If you have questions or require any assistance, please contact the Office for the Protection of Research Subjects at OPRSHumanSubjects@unlv.edu or call 895-2794.

APPENDIX V

DEMOGRAPHIC INFORMATION FORM

Demographic Information

This information will be used for research purposes only. Please answer all questions by placing an "X" in the blank beside the most appropriate answer.

1. What is your age? _____
2. Male_____ Female _____
3. What is your ethnicity? (Choose only one.)
    a. African American
    b. Asian American/Pacific Islander
    c. Caucasian
    d. Hispanic/Latino
    e. Native American
    f. Other
4. Are you currently employed? If yes, how many hours per week?
    a. Yes _____ hours/week
    b. No
5. Do you have experience in health care?
    a. Yes b. No
6. Are you:
    a. Single
    b. Married
    c. Separated
    d. Divorced
7. Do you have any children? If yes, how many?
    a. Yes _____ children
    b. No
8. What was your cumulative grade point average when entering the nursing program? _____
9. What was your cumulative grade point average at the end of your 1st semester of nursing? _____

APPENDIX W

STUDENT CONSENT TO PARTICIPATE

UNLV
UNIVERSITY OF NEVADA LAS VEGAS

Informed Consent

Department of School of Nursing

TITLE OF STUDY: Evaluating Team-Based Learning in an Undergraduate Nursing Course

INVESTIGATOR(S): Dr. Patricia SmyerDNSc, RN

CONTACT PHONE NUMBER: 702-895-5952

Purpose of the Study

You are invited to participate in a research study. The purpose of this study is to examine potential differences in student engagement between baccalaureate nursing students taught using team-based learning and those taught using traditional lecture; examine how levels of engagement affect examination scores; examine potential differences in student examination scores between baccalaureate nursing students taught using team-based learning and those taught using traditional lecture; examine how accountability affects Readiness Assurance Test scores; and determines whether a newly developed instrument accurately measures the three subscales: accountability, preference for lecture or team-based learning, and student satisfaction.

Participants

You are being asked to participate in the study because you are enrolled in NURS 310 at South Dakota State University during fall 2009 or spring 2010.

Procedures

If you volunteer to participate in this study, you will be asked to do the following: Provide consent for release of four examination scores taken this semester. Complete the "Classroom Engagement Survey". Additionally, if you are enrolled in Spring 2010, you will be asked to complete the "Team-Based Learning Student Assessment Instrument" and provide consent for release of your 12 Readiness Assurance Test scores taken during the spring 2010 class.

Benefits of Participation

There may not be direct benefits to you as a participant in this study. However, the instruments allow students to self-reflect upon the learning experience. Additionally, the data collected may enhance the learning experiences for future students. It is a professional and collegial action.

Participant Initials: _____

Risks of Participation

There are risks involved in all research studies. This study may include only minimal risks. There may be some discomfort related to completion of the instrument.

Cost /Compensation

There will not be financial cost to you to participate in this study. The study will take 20-30 minutes of your time. You will not be compensated for your time. However, your name will be entered in a drawing for a gift card to a local coffee shop or bookstore.

Contact Information

If you have any questions or concerns about the study, you may contact Dr. Patricia Smyer at 702-895-5952 . Or contact Heidi Mennenga at 605-688-6924.

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the **UNLV Office for the Protection of Research Subjects at 702-895-2794 or toll free at 877-895-2794**.

Voluntary Participation

Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without prejudice to your relations with the university. You are encouraged to ask questions about this study at the beginning or any time during the research study. Your decision whether or not to participate in this study will not affect your performance in this course. The student investigator will not review or examine completed instruments until final course grades have been submitted.

Confidentiality

All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for 3 years after completion of the study. After the storage time the information gathered will be destroyed.

Participant Consent:

I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.

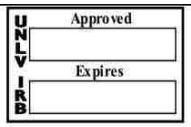
_____ _____

Signature of Participant Date

_____

Participant Name (Please Print)

Participant Initials: _____



Participant Note: Please do not sign this document if the Approval Stamp is missing or is expired.

Participant Initials: _____

APPENDIX X

GRANT AWARDS

To: Heidi Mennenga
From: Kay Foland, Phi Chapter Research Committee Chair
Re: Phi Chapter Research Grant Award
Date: April 7, 2009

Dear Heidi, I am pleased to inform you that you have been awarded a $1000.00 Phi Chapter Research Grant for your proposal titled *Using Team-Based Learning in a Baccalaureate Nursing Program.* The committee is impressed with the quality of your doctoral dissertation and wishes you the best in the future.

As a condition of your award, you are asked to present your research at the Phi – Zeta Zeta Chapter Research Day conference. The next research day conference will be in spring 2010 in Sioux Falls, hosted by the Zeta Zeta Chapter. Additionally, please complete and sign the enclosed budget sheet and return to Dr. Paula Carson as soon as possible so that a check may be printed and distributed to you in a timely manner.

The announcement of this award will be done at the 2009 Sigma Theta Tau Phi Chapter Induction ceremony on Thursday, April 16th at 7 pm in Brookings. I would invite you to attend and hope that you can be there to receive your award.

If you have questions, please feel free to call or e-mail me at Kay.Foland@sdstate.edu.

Congratulations again and hope to see you on Thursday evening for the presentation of your award.

UNLV
UNIVERSITY OF NEVADA, LAS VEGAS

October 26, 2009

Heidi Mennega, MS, RN
46374 188th Street
Castlewood, SD 57223

Dear Heidi,

I am pleased to inform you that you are a recipient of a UNLV School of Nursing Yaffa Dahan Dissertation Award. Before the award check will be disbursed, you need to provide a copy of the (a) IRB approval letters from UNLV and the institution(s) at which this study will be conducted, if different from UNLV, and (b) a revised budget. The budget must be revised as follows:

(a) Omit the conference travel. As indicated in the award description, the purpose of this award is to support the specific costs of conducting the dissertation research.
(b) Omit indirect costs.
(c) Provide a unit/description for all numbers. For example, what does the 12 and $5 refer to in Supplies?
(d) Show subtotals and sums for all items.
(e) Ensure consistency between text and equations (e.g., Copying category). Also, include an equation for consent form costs.
(f) Review the budget justification content in NURS 785 Modules 4 and 6 for examples.

Because check disbursement can take up to 6 weeks, I encourage you to make these changes and email me a pdf of these documents as soon as possible.

Regards,

[redacted]

Barbara St. Pierre Schneider, DNSc, RN
Associate Dean for Research

School of Nursing
Office of Research Support
4505 S. Maryland Parkway • Box 453029 • Las Vegas, Nevada 89154-3029
Main: (702) 895-3135 • Fax: (702) 895-3429

REFERENCES

Adams, J., & Gilman, B. (2002). Students take the professor home. *Nursing Education Perspectives, 23*(6), 282-285.

American Association of Colleges of Nursing. (2008a). *The essentials of baccalaureate education for professional nursing practice.* Washington, DC: Author.

American Association of Colleges of Nursing. (2008b). *Faculty tool kit: The essentials of baccalaureate education for professional nursing practice.* Washington, DC: Author.

Appendix: Key teaching activities for team-based learning. (2008). *New Directions for Teaching and Learning, 116*, 97-99.

Baldwin, T., Bedell, M., & Johnson, J. (1997). The social fabric of a team-based MBA program: Network effects on student satisfaction and performance. *Academy of Management Journal, 40*, 1369-1397.

Barak, M., Lipson, A., & Lerman, S. (2006). Wireless laptops as means for promoting active learning in large lecture halls. *Journal of Research on Technology in Education, 38*, 245-261.

Bastick, T. (1999). *Rewarding shared experience: Assessing individual contributions to team-based work.* A paper presented at the IACET 1999 Conference "Leadership, Creativity, and Initiative in Continuing Education and Training" for the International Association for Continuing Education and Training, Fort Lauderdale, Florida.

Bowles, D. (2006). Active learning strategies . . . not for the birds! *International Journal of Nursing Education Scholarship, 3*(1), 1-11.

Brannan, J., White, A., & Bezanson, J. (2008). Simulator effects on cognitive skills and confidence levels. *Journal of Nursing Education, 47*, 495-500.

Brown, T. (2006). *Confirmatory factor analysis for applied research.* New York, NY: The Guilford Press.

Burns, N., & Grove, S. (2001). *The practice of nursing research* (4th ed.). Philadelphia, PA: Saunders.

Chickering, A., & Gamson, Z. (1987). Seven principles for good practice in undergraduate education. *American Association for Higher Education Bulletin, 49*(2), 3-6.

Chickering, A., & Gamson, Z. (1999). Development and adaptations of the seven principles for good practice in undergraduate education. *New Directions for Teaching and Learning, 80*, 75-81.

Clark, M., Nguyen, H., Bray, C., & Levine, R. (2008). Team-based learning in an undergraduate nursing course. *Journal of Nursing Education, 47*, 111-117.

Creswell, J. (2008). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Dana, S. (2007). Implementing team-based learning in an introduction to law course. *Journal of Legal Studies Education, 24*(1), 59-108.

Day, R., & Payne, L. (1987). Computer-managed instruction: An alternative teaching strategy. *Journal of Nursing Education, 26*(1), 30-36.

DeVellis, R. (2003). *Scale development: Theory and applications* (2nd ed.). Newbury Park, CA: Sage.

Di Leonardi, B. (2007). Tips for facilitating learning: The lecture deserves some respect. *The Journal of Continuing Education in Nursing, 38*(4), 154-161.

Dinan, F. (2002). An alternative to lecturing in the sciences. In L. Michaelsen, A. Knight, & L. Fink (Eds.), *Team-based learning: A transformative use of small groups in college teaching* (pp. 97-114). Sterling, Virginia: Stylus Publishing.

Dunaway, G. (2005). Adaption of team learning to an introductory graduate pharmacology course. *Teaching and Learning in Medicine, 17*(1), 56-62.

Feingold, C., Cobb, M., Givens, R., Arnold, J., Joslin, S., & Keller, J. (2008). Student perceptions of team learning in nursing education. *Journal of Nursing Education, 47*, 214-222.

Fink, L., & Parmelee, D. (2008). Preface. In L. Michaelsen, D. Parmelee, K. McMahon, & R. Levine (Eds.), *Team-based learning for health professions education: A guide to using small groups for improving learning* (pp. xi-xv). Sterling, Virginia: Stylus Publishing.

Froese, T. (2005). *Team-based learning in construction engineering and management.* Retrieved January 22, 2009, from http://cis.apsc.ubc.ca/wiki/images/7/75/CIVIL400_lessons_learned2.doc

Fund for the Improvement of Postsecondary Education. (2003). *Baylor University: Evaluation of team learning in health-sciences education.* Retrieved from http://www.fipse.aed.org/grantshow.cfm?grantNumber=P116B000884&printGrant=yes

Goldrick, B., Appling-Stevens, S., & Larson, E. (1990). Infection control programmed instruction: An alternative to classroom instruction in baccalaureate nursing education. *Journal of Nursing Education, 29*(1), 20-25.

Goodson, P. (2002). Working with nontraditional and underprepared students in health education. In L. Michaelsen, A. Knight, & L. Fink (Eds.), *Team-based learning: A transformative use of small groups in college teaching* (pp. 115-123). Sterling, Virginia: Stylus Publishing.

Haberyan, A. (2007). Team-based learning in an industrial/organizational psychology course. *North American Journal of Psychology, 9*(1), 143-152.

Haidet, P., & Fecile, M. (2006). Team-based learning: A promising strategy to foster active learning in cancer education. *Journal of Cancer Education, 21*(6), 125-128.

Haidet, P., Morgan, R., O'Malley, K., Moran, B., & Richards, B. (2004). A controlled trial of active versus passive learning strategies in a large group setting. *Advances in Health Sciences Education, 9*, 15-27.

Haidet, P., O'Malley, K., & Richards, B. (2002). An initial experience with "team learning" in medical education. *Academic Medicine, 77*(1), 40-44.

Haidet, P., Schneider, V., & Onady, G. (2008). Research and scholarship: Team-based learning in health professions education. In L. Michaelsen, D. Parmelee, K. McMahon, & R. Levine (Eds.), *Team-based learning for health professions education: A guide to using small groups for improving learning* (pp. 117-132). Sterling, Virginia: Stylus Publishing.

Harris, A., McGregor, J., Perencevich, E., Furono, J., Zhu, J., Peterson, D., & Finkelstein, J. (2006). The use and interpretation of quasi-experimental studies in medical informatics. *Journal of the American Medical Informatics Association, 13*(1), 16-23.

Hernandez, S. (2002). Team learning in a marketing principles course: Cooperative structures that facilitate active learning and higher level thinking. *Journal of Marketing Education, 24*(1), 73-85.

Hirsch, E. (2001). Seeking breadth and depth in the curriculum. *Educational Leadership, 59*(2), 22-25.

Hodgson, A., Ostafichuk, P., & Sibley, J. (2005, July). *Team-based learning in the design modules of a new, integrated, 2nd year curriculum at UBC.* Paper presented at 2nd CDEN International Conference on Design Education, Innovation, and Practice, Kananaskism, Alberta.

Hunt, D., Haidet, P., Coverdale, J., & Richards, B. (2003). The effect of using team learning in an evidence-based medicine course for medical students. *Teaching and Learning in Medicine, 15*(2), 131-139.

Ironside, P., & Valiga, T. (2006). Creating a vision for the future of nursing education: Moving toward excellence through innovation [Editorial]. *Nursing Education Perspectives, 27*(3), 120-121.

Janssen, H., Skeen, N., Schutt, R., & McMahon, K. (2008). An educational rationale for the use of team-based learning. In L. Michaelsen, D. Parmelee, K. McMahon, & R. Levine (Eds.), *Team-based learning for health professions education: A guide to using small groups for improving learning* (pp. 75-83). Sterling, Virginia: Stylus Publishing.

Jeffries, P. (2001). Computer versus lecture: A comparison of two methods of teaching oral medication administration in a nursing skills laboratory. *Journal of Nursing Education, 40*(7), 323-329.

Jeffries, P., & Norton, B. (2005). Selecting learning experiences to achieve curriculum outcomes. In D. Billings & J. Halstead (Eds.), *Teaching in nursing: A guide for faculty* (pp. 187-212). St. Louis, MO: Elsevier Saunders.

Jeffries, P., Woolf, S., & Linde, B. (2003). A comparison of two methods for teaching the skill of performing a 12-lead ECG. *Nursing Education Perspectives, 24*(2), 70-74.

Johnson, J., & Mighten, A. (2005). A comparison of teaching strategies: Lecture notes combined with structured group discussion versus lecture only. *Journal of Nursing Education, 44*, 319-322.

Jones, S. (2007). Reflections on the lecture: Outmoded medium or instrument of inspiration? *Journal of Further and Higher Education, 31*, 397-406.

Koles, P., Nelson, S., Stolfi, A., Parmelee, D., & DeStephen, D. (2005). Active learning in a year 2 pathology curriculum. *Medical Education, 39*, 1045-1055.

Koles, P., Stolfi, A., Nelson, S., & Parmelee, D. (n.d.). *Impact of team-based learning on second-year medical students' performance on pathology-based exam questions.* Retrieved from http://cgea.net/pres4.12.08/CGEA4-12-08Koles.pdf

Kühne-Eversmann, L., Eversmann, T., & Fischer, M. (2008). Team- and case-based learning to activate participants and enhance knowledge: An evaluation of seminars in Germany. *Journal of Continuing Education in the Health Professions, 28*(3), 165-171.

Kumrow, D. (2007). Evidence-based strategies of graduate students to achieve success in a hybrid web-based course. *Journal of Nursing Education, 46*(3), 140-145.

Lancaster, K., & Strand, C. (2001). Using the team-learning model in a managerial accounting class: An experiment in cooperative learning. *Issues in Accounting Education, 16*(4), 549-567.

Lane, D. (2008). Teaching skills for facilitating team-based learning. *New Directions for Teaching and Learning, 116*, 55-68.

Levine, R. (2008). Peer evaluation in team-based learning. In L. Michaelsen, D. Parmelee, K. McMahon, & R. Levine (Eds.), *Team-based learning for health professions education: A guide to using small groups for improving learning* (pp. 103-116). Sterling, Virginia: Stylus Publishing.

Levine, R., Kelly, A., Karakoc, T., & Haidet, P. (2007). Peer evaluation in a clinical clerkship: Students' attitudes, experiences, and correlations with traditional assessments. *Academic Psychiatry, 31*(1), 19-24.

Levine, R., O'Boyle, M., Haidet, P., Lynn, D., Stone, M., Wolf, D., & Paniagua, F. (2004). Transforming a clinical clerkship with team learning. *Teaching and Learning in Medicine, 16*(3), 270-275.

McInerney, M., & Fink, L. (2003). Team-based learning enhances long-term retention and critical thinking in an undergraduate microbial physiology course. *Microbial Education, 4*(1), 3-12.

Mennenga, H., & Smyer, T. (2010). A model for easily incorporating team-based learning into nursing education. *International Journal of Nursing Education Scholarship, 7*(1). Retrieved from http://www.bepress.com/ijnes/vol7/iss1/art4/

Michaelsen, L. (n.d.). *Getting started with team-based learning.* Retrieved from http://teambasedlearning.apsc.ubc.ca/d/GettingStartedwithTBL.pdf

Michaelsen, L. (1983a). Team learning in large classes. In C. Bouton & R.Y. Garth (Eds.), *Learning in groups* (pp. 13-22). New Directions for Teaching and Learning Series, No. 14, San Francisco: Jossey-Bass.

Michaelsen, L. (1983b). Developing professional competence. In C. Bouton & R.Y. Garth (Eds.), *Learning in groups* (pp. 41-57). New Directions for Teaching and Learning Series, No. 14, San Francisco: Jossey-Bass.

Michaelsen, L. (1992). Team-based learning: A comprehensive approach for harnessing the power of small groups in higher education. In D. H. Wulff & J. D. Nyquist (Eds.), *To improve the academy: Resources for faculty, instructional and organizational development* (Vol. 11). Stillwater, OK: New Forums Press.

Michaelsen, L. (1999). Myths and methods in successful small group work. *National Teaching and Learning Forum, 8*(6), 1-5.

Michaelsen, L. (2002). Getting started with team-based learning. In L. Michaelsen, A. Knight, & L. Fink (Eds.), *Team-based learning: A transformative use of small groups in college teaching* (pp. 27-50). Sterling, Virginia: Stylus Publishing.

Michaelsen, L., & Black, R. (1994). Building learning teams: The key to harnessing the power of small groups in higher education. In *Collaborative learning: A sourcebook for higher education* (Vol. 2). State College, PA: National Center for Teaching, Learning, and Assessment.

Michaelsen, L., Cragin, J., & Watson, W. (1981). Grading and anxiety: A strategy for coping. *Journal of Management Education, 6*, 32-36.

Michaelsen, L., Knight, A., & Fink, L. (Eds.). (2004). *Team-based learning: A transformative use of small groups in college teaching.* Sterling, VA: Stylus.

Michaelsen, L., & Richards, B. (2005). Drawing conclusions from the team-learning literature in health-sciences education: A commentary. *Teaching and Learning in Medicine, 17*(1), 85-88.

Michaelsen, L., & Sweet, M. (2008a). Fundamental principles and practices of team-based learning. In L. Michaelsen, D. Parmelee, K. McMahon, & R. Levine (Eds.), *Team-based learning for health professions education: A guide to using small groups for improving learning* (pp. 9-31). Sterling, Virginia: Stylus Publishing.

Michaelsen, L., & Sweet, M. (2008b). The essential elements of team-based learning. *New Directions for Teaching and Learning, 116*, 7-27.

Michaelsen, L., Watson, W., & Black, R. (1989). A realistic test of individual versus group consensus decision making. *Journal of Applied Psychology, 74*, 834-839.

Michaelsen, L, Watson, W., Cragin, J., & Fink, L. (1982). Team-based learning: A potential solution to the problems of large classes. *Exchange: The Organizational Behavior Teaching Journal, 7*(1), 13-22.

Miller, S. (2003). A comparison of student outcomes following problem-based learning instruction versus traditional lecture learning in a graduate pharmacology course. *Journal of the American Academy of Nurse Practitioners, 15*, 550-556.

Murray, L. (1982). A comparison of lecture-discussion and self-study methods in nursing education. *Journal of Nursing Education, 21*(9), 17-23.

National League for Nursing. (2003). *Innovation in nursing education: A call to reform* [Position Statement]. New York: National League for Nursing.

National League for Nursing. (2007). *Mission and goals.* Retrieved from http://www.nln.org/aboutnln/ourmission.htm

Nieder, G., Parmelee, D., Stolfi, A., & Hudes, P. (2005). Team-based learning in a medical gross anatomy and embryology course. *Clinical Anatomy, 18*, 56-63.

Odom, S. (2009, March). *Innovations in education regulation committee.* Paper presented at "Unlocking the Possibilities: The Key to Regulatory Excellence" for the National Council of State Boards of Nursing, Chicago.

Ortega, R., Stanley, G., & Snavely, A. (2006). Using a media centre to facilitate team-based learning. *Journal of Visual Communication in Medicine, 29*(2), 61-65.

Parker, N. (2007). *A team-based learning model to improve sight-singing in the choral music classroom.* (Doctoral dissertation, University of Minnesota). Retrieved from http://proquest.umi.com/pqdweb?did=1320951341&sid=2&Fmt=2&clientld=17675&RQT=309&Vname=PQD

Parmelee, D. (2008). Team-based learning in health professions education: Why is it a good fit? In L. Michaelsen, D. Parmelee, K. McMahon, & R. Levine (Eds.), *Team-based learning for health professions education: A guide to using small groups for improving learning* (pp. 3-8). Sterling, Virginia: Stylus Publishing.

Parmelee, D., DeStephen, D., & Borges, N. (2009). Medical students' attitudes about team-based learning in a pre-clinical curriculum. *Medical Education Online, 14*(1). Retrieved from http://med-ed-online.net/index.php/meo/article/view/4503

Paswan, A., & Gollakota, K. (2004). Dimensions of peer evaluation, overall satisfaction, and overall evaluation: An investigation in a group task environment. *Journal of Education for Business, 79*(4), 225-231.

Pelley, J., & McMahon, K. (2008). Facilitator skills. In L. Michaelsen, D. Parmelee, K. McMahon, & R. Levine (Eds.), *Team-based learning for health professions education: A guide to using small groups for improving learning* (pp. 99-102). Sterling, Virginia: Stylus Publishing.

Polit, D., & Beck, C. (2008). *Nursing research: Generating and assessing evidence for nursing practice* (8th ed.). New York: Lippincott, Williams, & Wilkins.

Polit, D., Beck, C., & Owen, S. (2007). Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in Nursing & Health, 30*, 459-467.

Pugsley, K., & Clayton, L. (2003). Traditional lecture or experiential learning: Changing student attitudes. *Journal of Nursing Education, 42*, 520-523.

Rider, E., & Brashers, V. (2006). Team-based learning: A strategy for interprofessional collaboration. *Medical Education, 40*, 459-489.

Rider, E., Brashers, V., & Costanza, M. (2008). Using interprofessional team-based learning to develop health care policy. *Medical Education, 42*, 513-543.

Rowles, C. (2005). Strategies to promote critical thinking and active learning. In D. Billings & J. Halstead (Eds.), *Teaching in nursing: A guide for faculty* (pp. 283-315). St. Louis, MO: Elsevier Saunders.

Rust, J., & Golombok, S. (2009). *Modern psychometrics: The science of psychological Assessment* (3rd ed.). New York: Taylor & Francis Group.

Salyers, V. (2007). Teaching psychomotor skills to beginning nursing students using a web-enhanced approach: A quasi-experimental study. *International Journal of Nursing Education Scholarship, 4*(1), 1-12.

Sandor, M. (2008). Spirituality and clinical care: Comparing team-based learning strategies with lecture and standardized patient scenarios in an interdisciplinary course. *Southern Online Journal of Nursing Research, 8*(2). Abstract retrieved from http://snrs.org/publications/SOJNR_articles2/Vol08Num02S.html#Sandor

Seidel, C., & Richards, B. (2001). Application of team learning in a medical physiology course. *Academic Medicine, 76*, 533-534.

Sharkey, S., & Sharples, A. (2003). The impact of work-related stress of mental health teams following team-based learning on clinical risk management. *Journal of Psychiatric and Mental Health Nursing, 10*, 73-81.

Shellenberger, S., Seale, P., Harris, D., Johnson, J., Dodrill, C., & Velasquez, M. (2009). Applying team-based learning in primary care residency programs to increase patient alcohol screenings and brief interventions. *Academic Medicine, 84*(3), 340-346.

Sims, B. (2006). Creating a teaching and learning environment in criminal justice courses that promotes higher order thinking. *Journal of Criminal Justice Education, 17*, 336-399.

Sinclair, B., & Ferguson, K. (2009). Integrating simulated teaching/learning strategies in undergraduate nursing education. *International Journal of Nursing Education Scholarship, 6*(1), 1-11.

Siu, H., Laschinger, H., & Vingilis, E. (2005). The effect of problem-based learning on nursing students' perceptions of empowerment. *Journal of Nursing Education, 44*, 459-468.

Slavin, R. (1996). Research on cooperative learning and achievement: What we know, what we need to know. *Contemporary Educational Psychology, 21*, 54-69.

Stiernborg, M., Zaldivar, S., & Santiago, E. (1996). Effect of didactic teaching and experiential learning on nursing students' AIDS-related knowledge and attitudes. *AIDS Care, 8*, 601-608.

Su, A. (2007). The impact of individual ability, favorable team member scores, and student perception of course importance on student preference of team-based learning and grading methods. *Adolescence, 42*, 805-826.

Sweet, M., & Michaelsen, L. (2007). How group dynamics research can inform the theory and practice of postsecondary small group learning. *Educational Psychology Review, 19*, 31-47.

Sweet, M., Michaelsen, L., & Wright, C. (2008). Simultaneous report: A reliable method to stimulate class discussion. *Decision Sciences Journal of Innovative Education, 6*, 483-487.

Tabachnick, B., & Fidell, L. (2007). *Using multivariate statistics* (5th ed.). New York, NY: Allyn & Bacon.

Team-Based Learning. (n.d.). *Team-based learning: Two methods for calculating peer evaluation scores.* Retrieved from http://teambasedlearning.apsc.ubc.ca/d/peerevalscores.pdf

Team-Based Learning Collaborative. (2005). *What is team-based learning?* Retrieved from http://www.tlcollaborative.org/ABOUT.HTM

Thackeray, R., & Wheeler, M. (2006). Innovations in social marketing education: A team-based learning approach. *Social Marketing Quarterly, 3*(3), 42-48.

Thompson, B., Schneider, V., Haidet, P., Levine, R., McMahon, K., Perkowski, L., & Richards, B. (2007). Team-based learning at ten medical schools: Two years later. *Medical Education, 41*, 250-257.

Thompson, B., Schneider, V., Haidet, P., Perkowski, L., & Richards, B. (2007). Factors influencing implementation of team-based learning in health sciences education. *Academic Medicine, 82*(10), S53-S56.

Tiwari, A., Lai, P., So, M., & Yuen, K. (2006). A comparison of the effects of problem-based learning and lecturing on the development of students' critical thinking. *Medical Education, 40*, 547-554.

Tombari, M., & Borich, G. (1999*). Authentic assessment in the classroom: Applications and practice.* Upper Saddle River, NJ: Merrill, Prentice Hall.

Touchet, B., & Coon, K. (2005). A pilot use of team-based learning in psychiatry resident psychodynamic psychotherapy education. *Academic Psychiatry, 29*(3), 293-296.

Tsai, C., & Huang, C. (2002). Exploring students' cognitive structures in learning science: A review of relevant methods. *Journal of Biological Education, 36*, 163-169.

Vasan, N., DeFouw, D., & Compton, S. (2009). A survey of student perceptions of team-based learning in anatomy curriculum: Favorable views unrelated to grades. *Anatomical Sciences Education, 2,* 150-155.

Vasan, N., DeFouw, D., & Holland, B. (2008). Modified use of team-based learning for effective delivery of medical gross anatomy and embryology. *Anatomical Sciences Education, 1,* 3-9.

Waltz, C., Strickland, O., & Lenz, E. (2005). *Measurement in nursing and health research* (3rd ed.). New York: Springer Publishing Company.

Watson, W., Michaelsen, L., & Sharp, W. (1991). Member competence, group interaction and group decision-making: A longitudinal study. *Journal of Applied Psychology, 76,* 801-809.

Williams, B., Anderson, M., & Day, R. (2007). Undergraduate nursing students' knowledge of and attitudes toward aging: Comparison of context-based learning and a traditional program. *Journal of Nursing Education, 46,* 115-120.

Wolfe, K., Lee, K., Wu, C., & Gould, R. (2003). An assessment of self-selected versus instructor-assigned teams in an introductory tourism course. *Journal of Teaching in Travel & Tourism, 3*(3), 1-18.

Woo, M., & Kimmick, J. (2000). Comparison of internet versus lecture instructional methods for teaching nursing research. *Journal of Professional Nursing, 16,* 132-139.

Yost, S., & Lane, D. (2007). *Implementing a problem-based multi-disciplinary civil engineering design capstone: Evolution, assessment, and lessons learned with industry partners.* Paper presented at the ASEE Southeast Section Conference, Louisville, KY.

Young, J. (2009, July 24). When computers leave classrooms, so does boredom. *The Chronicle of Higher Education, 55*(42), A1-A13.

VITA

Graduate College
University of Nevada, Las Vegas

Heidi Ann Mennenga

Degrees:

Bachelor of Science, Nursing, 2001
South Dakota State University

Master of Science, Nursing, 2006
South Dakota State University

Special Honors and Awards:

Sigma Theta Tau Phi Chapter Grant, $1000.00, Spring 2009
Yaffa Dahan Dissertation Award, $1000.00, Fall 2009

Publications:

Mennenga, H., & Smyer, T. (2010). A model for easily incorporating team-based learning into nursing education. *International Journal of Nursing Education Scholarship, 7*(1). Retrieved from http://www.bepress.com/ijnes/vol7/iss1/art4/

Mennenga, H., & Hendrickx, L. (2008). Faculty concerns regarding the requirement of laptops in the classroom. *Nurse Educator, 33*(4), 151-154.

Dissertation Title: Team-Based Learning: Engagement and Accountability With Psychometric Analysis of a New Instrument

Dissertation Examination Committee:

Chairperson, Tish Smyer, D.N.Sc, R.N., C.N.E.
Committee Member, Michele Clark, Ph.D., R.N.
Committee Member, Nancy York, Ph.D., R.N., C.N.E.
Graduate Faculty Representative, Chad Cross, Ph.D., M.S., N.C.C., M.A.C., S.A.P., L.C.A.D.C., M.F.T.