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The Effect of Virtual-Learning on the Cultural Awareness of Nursing Students

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The Effect of Virtual-Learning on the Cultural Awareness of Nursing Students

by

Nicole P. Waters

A capstone project submitted to the faculty of
Gardner-Webb University School of Nursing
in partial fulfillment of the requirements for the degree of
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Abstract

This Capstone Project examined the effect of virtual-learning on the cultural awareness of nursing students. A convenience sample of 125 students enrolled in the advanced health assessment course in the Registered Nurse to Bachelor in Science in Nursing (RN to BSN) Program were included in the sample for this project. Of the 125 students, 53 completed pre-test surveys were submitted, resulting in a response rate of 42%, and 43 completed post-test surveys were submitted, resulting in a response rate of 34%.

Descriptive statistics and measures of central tendencies were used to compare the overall mean score for the responses of students to the Cultural Awareness Student (CAS) pre-test and post-test surveys. Overall total CAS mean scores, of perceived cultural awareness of students, demonstrated to not be statistically significant in awareness in relationship to the virtual-learning experience. However, students rated their general experiences of cultural awareness significantly higher.

Keywords: virtual communities, virtual-learning experiences, nursing cultural awareness, multicultural communities, and active student learning.

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Lastly, this capstone project is in memory of my favorite high school teacher, former co-worker, and mentor Mrs. Phyllis B. Elmore. She made the decision to change the heart of a 14 year-old girl that led to the change of her life and education. Words can't explain how much I miss you and wish you were here to experience this with me.

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TABLE OF CONTENTS

CHAPTER I: INTRODUCTION

Problem Statement	2
Justification of Project	3
Purpose.....	5
Project Question or Hypothesis	6
Definition of Terms.....	6
Summary	7

CHAPTER II: RESEARCH BASED EVIDENCE

Review of Literature	9
Gaps in Literature	15
Strengths and Limitations of Literature	16
Conceptual Framework.....	16
Summary of Findings.....	18

CHAPTER III: PROJECT DESCRIPTION

Setting	19
Sample.....	19
Project Design.....	20
Stakeholder	20
Timeline	22
Budget.....	23
Project Design.....	23
Preplanning	24
Initial Planning.....	25

Implementation	25
Protection of Human Subjects	31
Instruments.....	32
Data Collection	32
Data Analysis	33
Summary.....	33
CHAPTER IV: RESULTS	
Sample Characteristics.....	34
Major Findings.....	41
CHAPTER V: DISCUSSION	
Implication of Findings.....	43
Application to Theoretical/Conceptual Framework.....	45
Limitations	46
Implications for Nursing	47
Recommendations.....	48
Conclusion	49
REFERENCES	50
APPENDICES	
A: Example: Virtual Family Discussions/Responses	53
B: Example: Virtual Family Case Studies	54
C: Client Education Brochure Assignment.....	55
D: Health Assessment Paper Assignment.....	56
E: Consent Form	57
F: Cultural Awareness Student (CAS) Survey.....	58
G: Demographic Questionnaire	62

List of Tables

Table 1: Types of Evidence Forsyth Nurse Scale	9
Table 2: Virtual Multicultural Community Project Stakeholders.....	21
Table 3: Timeline of the Virtual Multicultural Community Project.....	23
Table 4: Frequency Distribution of Demographic Variables of Between Surveys	36
Table 5: Means and Standard Deviations of Pre and Post-test Scores on the Total CAS and CAS Subscales.....	37
Table 6: Means and Standard Deviations for the Most Agreed with Statements of the Pre CAS	38
Table 7: Means and Standard Deviations for the Most Agreed with Statements on the Post CAS	39
Table 8: Means and Standard Deviations for the Most Disagreed with Statements on the Pre CAS	40
Table 9: Means and Standard Deviations for the Most Disagreed with Statements on the Post CAS	41

CHAPTER I

Introduction

Virtual-learning experiences have recently appeared as a new pedagogical application. Virtual-learning is when faculty link teaching activities within their course to fictional characters' life events to provide a context for students to learn about health care issues (Giddens, Hrabe, Carlson-Sabelli, Fogg, & North, 2012). Virtual-learning environments are online simulations offering active learning experiences that are challenging skill-practices and safe for student learning (Billings, 2009). The use of virtual families/communities is becoming a more accepted way to facilitate online learning when learning requires teamwork, clinical judgment, and skill practice utilizing online activities. More recently, virtual families are represented as multicultural communities to enhance learning and increase cultural awareness of students.

Online education is becoming readily accepted as a valuable mode of learning. According to a national survey conducted by the Sloan Consortium (as cited in Allen & Seaman, 2010), curriculum offerings for online learners have grown 17% within the past year, with 4.6 million students enrolled in at least one online course (Allen & Seaman, 2010). This growth of online learners has prompted nursing education curriculum transformations. Virtual-learning is a common teaching strategy in nursing education, however, nursing faculty continue to struggle with methods of delivery for online education (Gantt, 2010). According to Dillard et al. (2009), as use of virtual-learning increases in nursing education, nurse educators are challenged to evaluate students' clinical judgment skills in an online environment. A Virtual Multicultural Community (VMC) was developed to assist nurse educators with meeting the challenges of the use of

virtual-learning experiences.

The focus of the Virtual Multicultural Community (VMC) project was to develop a virtual-learning experience for an existing online nursing course in a baccalaureate degree nursing program. The VMC learning experience consisted of healthcare experiences of three culturally diverse families utilizing demographic profiles and scenarios to enhance the learning experience and potentially increase the perceived cultural awareness among students. The implementation of virtual multicultural communities was found to expand learning experience, student satisfaction, and performance by the learners (Billings, 2009). As the student is more exposed to a culturally diverse learning experience through real-life events, the more aware they become of diverse populations (Smith & Roehrs, 2009). Implementation of the VMC project changed standard practice utilized in one online course in the Registered Nurse to Bachelor in Science in Nursing (RN to BSN) Program. Prior to implementation of the VMC, the traditional RN to BSN online nursing course's format did not include use of virtual-learning activities. Previously, these real-life client profiles were only used minimally in the face-to-face pre-licensure undergraduate programs.

Problem Statement

Delivering culturally competent care is a fundamental expectation of the professional nurse (American Nurses Association (ANA), 2010) and a necessary component within nursing education curriculum (American Association of Colleges of Nursing (AACN), 2008). Prior to implementation of the VMC, the RN to BSN Advanced Health Assessment course offering was a one-credit hour online course that entailed discussion boards, performance of two health assessments, and a written research paper

utilizing Blackboard™ to meet course objectives. The addition of the VMC learning experience increased the RN to BSN Advanced Health Assessment course to a two-credit hour online course. The effect of the VMC learning experience on the cultural awareness of students enrolled in the Advanced Health Assessment course was evaluated throughout the semester in areas of physical assessment, history gathering, critical thinking, communication, patient teaching, cultural awareness, and recognition of diagnostic studies.

It was expected that students would verbalize or indicate an increase in cultural awareness following implementation of the VMC. The VMC learning experience can be transferable to other course to increase and sustain cultural awareness and to other curriculums with similar disparities in cultural awareness curriculums. Currently, faculty are considering the addition of a VMC learning experience for community health and gerontology courses in the RN to BSN program.

Justification of Project

The original online Advanced Health Assessment (AHA) course was culturally generic in that it did not require students to take into the patient's cultural background for assessment of individuals throughout the lifespan. The primary focus of the original AHA course was the affirmation of the student's knowledge of skills of health assessment acquired through practice as a Registered Nurse. Demonstration of skills utilizing the nursing process, adult growth and development theories, and role of the Registered Nurse providing care to individuals across the adult lifespan were the primary objectives of the AHA. Additionally, the student was required to demonstrate advanced assessment skills utilizing a culturally competent, client-centered approach, because the patients presented

in the course were not representative of a culturally diverse population. The original course design did not allow the students to meet the program objective of application of advanced health assessment skills utilizing the nursing process and standards of nursing practice for the provision of patient-centered care to diverse patient populations.

The typical RN to BSN student is a working registered nurse with an associate degree in nursing completing their bachelor's degree online. These students have the option of being full-time or part-time nursing students in the online program. The RN to BSN program prepares Registered Nurses to practice professional nursing in a variety of settings, and provides the foundation for graduate study in nursing.

“Digital technologies are used in almost every aspect of contemporary health professional education” (Ellaway & Davies, 2011, p.303). Online courses have been offered increasingly more to meet the needs of learners. Giddens et al. (2012), found reform efforts associated with nursing education have called on nursing faculty to adopt learner-centered approaches promoting student engagement and deep learning through virtual-learning experiences. Educators are being challenged to utilize teaching strategies required to effectively teach in the online environment allowing students to achieve learning outcomes. Understanding these challenges and making realistic changes to online pedagogical approaches is the key to meeting learning outcomes (Wang, 2007). Virtual-learning experiences can help the instructor overcome logistical problems that accompany online learning, and provide simulated situations occurring infrequently in actual clinical practice, or involving the use of equipment too expensive for nursing schools to purchase (Kilmon, Brown, Sumit, & Mikitiuk, 2010). For example, virtual-learning may be used to help novice nurses become more proficient in their ability to

perform advanced assessments on culturally diverse patients without endangering human beings. “Although highly realistic immersive simulations could be useful in the education of beginning nursing students, they may have greater potential as a method to help nurses learn advanced skills, such as those needed in chaotic or unusual situations” (Kilmon et al., 2010, p. 316).

Purpose

The purpose of the Virtual Multicultural Community was to establish a virtual-learning experience within an online course in the RN to BSN Program offered at a small liberal arts, faith-based university. The specific learning experiences of the VMC were designed to enhance the perceived cultural awareness of students in the RN to BSN Program. Melnyk and Fineout-Overholt’s (2010) population, intervention, comparison, and outcome (PICO) format was used to guide the development of the VMC project.

- Population (P): The target population for the VMC project was undergraduate students enrolled in an existing Advanced Health Assessment course offered in the online RN to BSN Program at a small liberal arts, faith-based university.
- Intervention (I): Implementation of a Virtual Multicultural Community learning experience in an existing Advanced Health Assessment course to enhance the cultural awareness of RN to BSN students.
- Comparison (C): Compare students’ level of perceived cultural awareness before and after the VMC learning experience.
- Observation (O): Students will have an increase in perceived cultural awareness following participating in the VMC learning experience.

Project Question or Hypothesis

Key search terms used in researching the VMC project included: virtual simulation, virtual-learning experiences, nursing cultural awareness, and active student learning. The accessible literature on virtual simulation and cultural awareness supported the idea that a Virtual Multicultural Community is useful in creating a culturally diverse learning environment, which contributes to knowledge, skills, safety, and confidence of online learners. A matrix review of current literature revealed a lack of cultural awareness activities among online nursing education environments. In an attempt to increase cultural awareness, the VMC project primarily investigated the clinical question: “Does use of a Virtual Multicultural Community within an online advanced health assessment course increase the cultural awareness of the RN to BSN student?”

Definition of Terms

- Virtual families mirror real-life families through unfolding patient histories and the development of relationships over time (Giddens, 2008). These families are fictional characters residing in a community setting.
- Multicultural communities mirror culturally diverse, real-life characters (Giddens, 2008). These characters are fictional characters representing a variety of culture residing in a community setting.
- Cultural awareness is a process of self-examination of one’s own culture and biases toward other cultures, as well as becoming aware of barriers in cultural care (Giddens et al. 2012).
- For the purpose of this study, online modules containing virtual-learning activities presented to the students in a sequential format were utilized for delivery of the

course content that allowed students to meet course objectives.

Summary

Acquisition of cultural awareness among nurses is critical to client care. The complex needs of today's healthcare client and family make it essential to developing teaching strategies to educate nursing students in meeting the diverse needs of their clients and families. Virtual clients and families offer one teaching strategy to assist students in learning complex, health-related content in a contextualized manner.

CHAPTER II

Research Based Evidence

A literature review was conducted utilizing a variety of databases and search engines. The databases included Cumulative Index to Nursing and Allied Health Literature (CINAHL), ProQuest, Medline, PubMed, and the search engine Google. Key search terms related to the project topic included: virtual communities, virtual-learning experiences, nursing cultural awareness, and active student learning. The Forsyth Nursing's Unique Rating Scale of Evidence scale (NURSE) was used to assign the strength of literature reviewed. The NURSE Scale uses a hierarchal five-point system to assign strength to various forms of evidence. The scale includes terminology consistent with nursing, inclusion of both quantitative and qualitative evidence, addition of non-interventional research, and inclusion of non-research evidence (Kring, 2011). From the overall preliminary search, the strength of research studies was reviewed based on the NURSE Scale. The results are displayed in Table 1 below.

Table 1

Types of Evidence Forsyth NURSE Scale

Level	Number	Inclusion
Level I: Systematic Reviews Design	8 overall/5 included	2 Cultural/3 Virtual
Level II: Well-Designed Studies Design	6 overall/3 included	1 Cultural/2 Virtual
Level IV: Program Evaluations Design	2 overall/1 included	1 Cultural & Virtual
Level V: Nurse Expert Opinion Design	1 overall/1 included	1 Cultural & Virtual

Review of Literature

According to Dillard et al. (2009), virtual-learning experiences are used more frequently as a teaching strategy due to the increase in online education. The evidence states nurse educators lack the innovative drive of developing and implementing a cultural awareness teaching strategy to ensure online courses are achieving the outcomes desired (Gantt, 2010). Recognizing nurse educators experience anxiety with course development and nursing schools lack the faculty development support to integrate virtual-learning experiences into online courses, this Virtual Multicultural Community (VMC) project was developed. The VMC project involved designing an online course module that incorporated virtual-learning experiences that allowed students to meet the needs of the course objectives in an existing online Advanced Health Assessment course in the RN to BSN program. Leininger's Cultural Care theory was used as the framework

for the VMC project based on the support of current literature.

Virtual-Learning Experience/Virtual Communities

Giddens, Shuster, and Roehrig (2010) used a descriptive and comparative study to explore the student learning outcomes associated with a virtual community utilizing a sample of 248 baccalaureate nursing students. Students attended a series of three semesters that used a virtual community, *The Neighborhood*©, as a teaching application across the curriculum. *The Neighborhood*© allowed students to virtually assess and implement care for various clients in a virtual community delivered through an interactive television within the classroom. At the conclusion of the three semesters, study participants completed an anonymous written evaluation survey of the virtual-learning experience. Students evaluated the virtual-learning experience by answering eight questions using a Likert scale (1=low, 5=high), with a potential score range of 0 to 40. Cronbach's alpha for the scale was 0.89. Study results reported a more perceived benefit from using the virtual community, and a greater perception the virtual community helped them by connecting problems to course concepts and content. Additionally, students reported a higher benefit of virtual community each additional semester. Limitations of the study included the lack of standardized format of *The Neighborhood*© used across the courses, leading to variability of teaching strategies and faculty assigned to courses. In addition, the sample size represents one nursing school in the Southwest United States.

Giddens et al. (2012), used a quasi-experimental study involving a convenience sample of 120 first-year baccalaureate nursing students to explore the relationship between virtual community and student engagement, perceived quality of instruction, and

academic performance. Fifty-six students were utilized at the intervention site and sixty-four students at the control site. *The Neighborhood*© virtual community was utilized as the intervention in this study as a teaching application across first-year nursing courses. Data collected for this study included classroom observations, an end-of-class survey following each classroom observation, and student performance on test items from three course exams. At the end of each observed classroom session, participants were asked to complete an 11-item, end-of-class survey using a five-point scale (1=very low; 5=very high). Academic performance was measured through student performance on select test items on course exams. Participants in the control group were given standard multiple-choice questions; the interventions group received the same questions, but with virtual character included in the stem for context. Cronbach's alpha was found to be 0.80 for learner engagement scale and 0.73 for the quality of instruction scale. Results from the end-of-class surveys and classroom observations indicated students in the experimental group appeared more engaged more often. This study found when students use a virtual-learning experience as a basis for learning, they are exposed to unfolding events similar to real life, and this increases student engagement in a course. In addition, minority students stated greater engagement with virtual-learning experiences compared to traditional online course assignments. There was no significant difference in academic performance among test scores between the two groups. Limitations of the study included the lack of standardized format of *The Neighborhood*© used across the courses, leading to variability of teaching strategies and faculty assigned to courses. In addition, the sample size represented one nursing school and a small sample size.

Giddens, Fogg, and Carlson-Sabelli (2010) used a multisite study to examine the

variables associated with student-perceived benefits and utility among undergraduate nursing students using a virtual-learning experience. The sample size included 350 nursing students enrolled in five baccalaureate nursing programs using virtual-learning experiences. According to the study, a power analysis showed a medium effect size, with a power of 0.99 (significance set at 0.05), confirming this was an adequate sample size for data. A 19-item exit survey was used for data collection using a five-point Likert scale (1=low; 5=high), with questions regarding participant's personal experiences as the user of the virtual-learning. The results of the relationship between program use and perceived benefits were substantial to describe a correlation. Limitations of the study included the potential for research bias, and the sample was not randomized.

Hilbelink and Garofoli (2009) conducted a qualitative study to reinforce health assessment in a culturally diverse virtual-learning environment that could be evaluated within the online course. The revision to an existing online health assessment course included the addition of multicultural virtual families within the course. The revision allowed students to learn a more holistic approach to assessment of clients. As an assignment in the course, students completed a cultural self-assessment survey from the National Center for Cultural Competence in order to determine where their strengths and weaknesses with regard to cultural awareness. The faculty and student comments from this study supported the need to continue virtual families within future online courses. The study students appeared to be more engaged in the course, as evidenced by more frequent postings and discussion topics. Limitations were the study was qualitative and provided a small sample size.

The review of literature supports the use of virtual-learning experiences for

enhance learning experiences and student engagement. In the studies reviewed, there was a significant increase in student engagement in active learning when the nurse educator incorporated virtual-learning experiences. Benner, Sutphen, Leonary, and Day (2010) referred to this engagement as the power of context in which skills or theories are transformed to a higher level of thinking. A mutual thread noted among all studies associated with virtual-learning was a relationship between virtual-learning and student cultural awareness.

Cultural Awareness

A brief literature review was conducted by searching a variety of databases and search engines to identify studies utilizing virtual-learning experiences within online courses and its relationship to cultural awareness. The following studies discussed methods researchers have used to assess cultural awareness and the various factors of utilizing virtual-learning experiences.

Giddens et al. (2012) used a correlational study design to examine the relationship between virtual community use and cultural awareness among nursing students. The sample included 342 undergraduate nursing students among five baccalaureate nursing programs. Forty diverse virtual characters were used in the intent to draw connections to concepts in didactic and clinical courses. At the conclusion of the semester, students completed an exit survey. Analysis included descriptive and comparative statistics. Students evaluated the virtual-learning experience by answering a 22-question survey based on a five-point Likert scale (1=never, 5=frequently). Only three items formed the cultural awareness subscale. The study revealed a significant correlation between level of use and cultural awareness ($r=.246$; $p < .000$). This indicated cultural awareness among

students appeared to increase with intervention used by faculty. A known limitation in this study was the lack of consistency in faculty use of the intervention.

Krainovich-Miller et al. (2008) used a cross-sectional design to measure nursing students' level of cultural awareness. A convenience sample of 236 nursing students was used for this study. The Cultural Awareness Scale (CAS) was distributed to nursing students in three nursing programs at the beginning and end of the semester. The study revealed estimations of internal consistency for the total instrument score, and five subscales were significantly high and similar to previous studies, thereby lending some support to CAS's reliability. This study supported cultural awareness as the first step toward developing cultural competence. The limitations of the study were the small convenience sample and poor response of students.

Based on a number of scientifically researched standards of care, *The 2010 National Healthcare Disparities Report* (2011) identified numerous health disparities among cultural groups. "Cultural awareness is an expectation of professional practice, yet effectively teaching this concept to nursing students is challenging" (Giddens et al., 2012, p.198). According to a review of literature, faculty's perception of teaching cultural awareness depended mostly on application to practice nursing throughout the curriculum. Faculty expressed that teaching cultural awareness was important, but became frustrated by lack of resources. Furthermore, faculty requested more user-friendly teaching strategies to incorporate cultural awareness for the novice learner. The literature supported without a specific planned learning activity, cultural awareness integrated into the curriculum was easily diluted or lost within the curriculum.

Among the multiple factors contributing to disparities is the lack of a diverse and

culturally aware health care workforce (Giddens et al., 2012). Rutledge et al. (2008) stated simulation and virtual-learning experiences are new pedagogical approaches that increase cultural awareness among students. The literature review reveals many ideas and strategies to teach culture awareness to nursing students. “Thus, there is an ongoing need to develop and research pedagogical applications that effectively translate cultural learning in nursing school to culturally competent care in professional nursing practice” (Giddens et al., 2012, p.198).

Summarizing the evidence focusing on virtual-learning and cultural awareness, Norman (2012) suggested nursing programs produce user-friendly virtual-learning experiences for their students to improve cultural understanding. National nursing organizations have made recommendations and developed standards for cultural awareness learning strategies to be included in academic course content (National League for Nursing, 2011).

Gaps in Literature

The use of virtual-learning experiences is a relatively new area of research, with increasingly published studies. A review of literature exemplifies there have been studies regarding the use of virtual-learning in the academic setting and the increasing need to facilitate these learning experiences into online courses. Researchers continue to challenge nurse educators to develop curricula that will increase cultural awareness between nursing students and nurses. The most significant gap in the literature was the lack of research studies involving the development of virtual-learning experiences and research among RN to BSN programs.

Strengths and Limitations

The literature provides strong evidence that virtual-learning experiences can positively influence the teaching-learning process within an online course. Furthermore, the literature supports the use of virtual-learning experiences to increase the cultural awareness of students. Integration of virtual-learning experiences into nursing curricula is well supported based on the diverse needs of today's patient population.

Although the literature was supportive in the use of virtual-learning experiences, it is limited in the design of these virtual-learning experiences. The literature is limited to the purchase of virtual-learning experiences instead of the development of these. Significant limitations in the literature included small sample sizes and lack of design or development of virtual-learning activities. In addition, many studies only exposed students to one virtual-learning experience during the study.

This VMC project seeks to address the gaps, weaknesses, and limitations found in the literature through incorporation of virtual-learning within a RN to BSN online nursing course. Few studies have been identified that focus on the use of virtual-learning experiences in RN to BSN programs. This VMC project serves to add to the existing body of knowledge related to virtual-learning experiences in online nursing courses. In addition, implementation of the Virtual Multicultural Community will integrate culturally diverse virtual families, which is lacking in current nursing curricula.

Conceptual Framework

A review of research studies utilizing Leininger's Cultural Care Theory was conducted using a variety of databases and search engines to identify studies related to cultural awareness. Leininger's Cultural Care theory has been used in a variety of settings

to guide both academic and healthcare agencies in producing culturally aware nurses (Leininger, 2002). Leininger believes with adequate education and experiences, one can become a culturally aware nurse. Leininger (as cited in George, 2011), acknowledged a lack of cultural care knowledge as the missing link to nursing's understanding of the many variations required in patient care in patient care to support compliance, healing, and wellness.

The use of Leininger's theory allows nurses to provide care measures in congruence with an individual or group's cultural beliefs, practices, and values. Leininger defines the culturally aware nurse as:

- Consciously addresses the fact that culture affects nurse-client relationship.
- With compassion and clarity, asks each client what their cultural practices and preferences are.
- Incorporates the client's personal, social, environmental, and cultural needs/beliefs into the plan of care whenever possible.
- Respects and appreciates cultural diversity, and strives to increase knowledge and sensitivity associated with this essential nursing concern.

For the purpose of this project, the project administrator used Leininger's Cultural Care theory to guide development of the Virtual Multicultural Community. Leininger's four major concepts; health, nursing, environment, and person were applied to the virtual families utilized in the Virtual Multicultural Community. Assumptions of the theory applicable to the VMC project are that clients who experience nursing care that fails to be reasonably congruent with the client's cultural beliefs and values will show signs of stress, conflict, noncompliance, and ethical moral concerns (George, 2011). The

virtual families of the VMC were designed with demographic variables related to education, socio-economics, religion, and culture that have the potential to increase nursing care practices.

Summary of Findings

The current literature review of virtual-learning experience, active learning, and cultural awareness supported the proposed need of the RN to BSN program for enhancement of culturally based health assessment. It was believed the RN to BSN student would benefit from implementation of the VMC learning experience. A review of the current literature further supported an increased interest in virtual-learning experiences among nurse educators (Ellaway & Davies, 2011). According to Billings (2009), research regarding various aspects of virtual-learning experiences has shown positive impacts on the students learning experience, teamwork, and critical thinking.

CHAPTER III

Project Description

The aim of this project was to develop and integrate a Virtual Multicultural Community (VMC) learning experience into an Advanced Health Assessment (AHA) course to reinforce health assessment for a culturally diverse community that could be evaluated online. An essential goal of the VMC learning experience focused on the improvement of perceived cultural awareness among RN to BSN students in the AHA course. An independent samples t-test was used to compare the students' level of cultural awareness prior to and following the implementation of the Virtual Multicultural Community project. The following chapter presents the design, setting, sample, methodology, ethical considerations, instrumentation, data collection, and data analysis used in this project.

Setting

The setting for the VMC was a private, faith-based university, located in western North Carolina that provides undergraduate and graduate nursing degree opportunities for students. The mission of the university's School of Nursing is to enhance the health status of the global community by preparing individuals to practice holistic and professional nursing through the provision of student-centered programs. The course providing the opportunity for the VMC project is an Advanced Health Assessment course offered to students in the first year of the RN to BSN program, which is offered entirely online.

Sample

A convenience sampling of 125 students was used to select the student population. All students enrolled in five sections of the advanced health assessment course in the RN to BSN program were included in the sample for this project. Of the 125

students, 53 completed pre-test surveys were submitted, resulting in a response rate of 42%, and 43 completed post-test surveys were submitted, resulting in a response rate of 34%. Sample size was determined by a statistical priori analysis using the G*Power 3.1.3 software (Faul, Erdfelder, Lang, & Buchner, 2007). Power analysis showed a small effect size, with a power of 0.83 (significance set at 0.05), confirming this was an adequate sample size for data. Demographic data consisting of age, gender, certifications, and years of experience in nursing practice was collected.

Stakeholder

The successful completion of the VMC project required the establishment of a collaborative working relationship of stakeholders. Stakeholders are defined as a person, organization, or group that takes interest in or concern in a group or organization. Stakeholders can be categorized as internal or external. The internal stakeholders for the VMC project included faculty, directors, and dean of the School of Nursing. External stakeholders for the VMC project included students and personnel of other online programs in the academic community. The following Table 2 lists the stakeholders of the VMC project and the goals associated with their relationship.

Table 2

Virtual Multicultural Community Project Stakeholders

Project Stakeholders	Type	Goal
Teaching faculty	Internal	Strategies to improve cultural awareness among students and outcome measures related to course objectives.
Directors	Internal	Outcome measures specific to VMC and cultural awareness to meet program outcomes.
Dean	Internal	Outcome measure specific to VMC and cultural awareness to meet program objectives and School of Nursing mission.
Students	External	Improved cultural awareness related to student learning outcomes applicable to course objectives.
University	External	Outcome data related to course and program objectives. Teaching strategies related to the VMC to be included in the School of Nursing Annual report to the University.
Surrounding programs	External	Strategies to improve cultural awareness online education and outcome data related to VMC to be communicated to personnel of Nursing programs in the academic Community.

Timeline

The proposal for the VMC project and site approval was submitted to the Capstone Project Chair in May, 2013. Following approval from the chair, the proposal was approved by the Capstone Project Committee Members, within the 2013 Summer semester. Approval of the University Institutional Review Board occurred in Summer, 2013 and resulted in an exempt review status due to non-identifiable surveys. Data collection began with implementation of the VMC project in August, 2013 in the Fall Semester. Three faculty members taught five sections of the Advanced Health Assessment course utilizing the Virtual Multicultural Community module. The VMC module included assignments and discussions based on three culturally diverse virtual families within the course. Students completed the Cultural Awareness Student (CAS) survey measuring their perception of cultural awareness the first week of the course and upon completion of the online course. The timeline for completion of the VMC project can be found in Table 3.

Table 3

Timeline of the Virtual Multicultural Community Project

Procedures	Date Completed
Project Proposal Submitted Chair/Committee	Spring Semester 2013 (May 2013)
Permission to use CAS tool/ IRB Application Submit	Summer Semester 2013 (May)
Development of VMC	Summer Semester 2013
Initial Data Collection	Fall Semester 2013 (August)
Faculty support/implementation of VMC	Fall Semester 2013
Final Data Collection	Fall Semester 2013 (December)
Final Project Completion	Fall Semester 2013 (December)

Budget

This Virtual Multicultural Community Project required minimal cost and was supported by the School of Nursing at the University.

Project Design

The significance of virtual-learning design factors on the learning outcomes revealed nurse educators must vigilantly consider the design of any virtual-learning experience for nursing students (Smith & Roehrs, 2009). In all the studies reviewed for virtual-learning, there was a significant increase in self-confidence when nurse educators had the opportunity to explore virtual-learning tools within their online course. Faculty may view virtual-learning as something for which they are not academically or technologically prepared (Kardong-Edgren, Starkweather, & Ward, 2008). Since the

support and responsibility for creating and implementing courses varies across nursing programs, virtual-learning experiences will need to be tailor-made for that program to meet faculty and student need. Based on a current review of the literature the project administrator developed an innovative virtual-learning experience, the VMC, which could be implemented by the current faculty to the needs of students.

As part of the RN to BSN Advanced Health Assessment online course, all students were required to complete weekly assignments and activities utilizing the Virtual Multicultural Community. The student was evaluated throughout the semester in areas of assessment, history gathering, critical thinking, communication, patient teaching, cultural awareness, and recognition of diagnostic studies.

Preplanning

This Virtual Multicultural Community project began with a meeting with the Chair of the RN to BSN program and School of Nursing faculty to review the course description and learning outcomes for the existing Advanced Health Assessment course. The project administrator explored the cost of available software to design the virtual-learning experience and found it prohibitive to the available School of Nursing budget. Therefore, the Chair of the RN to BSN program and project administrator decided the use of a simple webpage builder, Yola™, enabled with hyperlinks would allow the development of the Virtual Multicultural Community consisting of three culturally diverse families. In addition, basic avatars were created using the virtual avatar builder website; Voki™. The created avatars were embedded into the virtual family webpages so that upon hyperlinking the family image or weblink, the individuals of that family would be displayed with relevant health information for course assignments.

Each of the six units in the Advanced Health Assessment course became an element of time in which a variety of health events occurred throughout the semester to the three virtual families. The virtual families were multicultural representing three different cultures with a variety of health problems inherent to that population based upon current review of literature.

Initial Testing

Collaboration prior to implementation of the Virtual Multicultural Community allowed the project administrator, two nursing professors, and two recent graduates of the RN to BSN Program, to evaluate the Virtual Multicultural Community assignments. The evaluators offered positive feedback regarding design and implementation of the project. Having been through the RN to BSN program recently, the two student evaluators were comfortable with the design and development of the virtual-learning experience and the online environment. The two students were given access to developed webpages and avatars and asked to react as the scenarios unfolded. Through this initial testing phase, it was identified that students needed detailed instructions regarding how to access the webpage and computer requirements for avatar videos. The project administrator added the required detailed instructions to each of the course sections to ensure access to the Virtual Multicultural Community prior to assignment due dates.

Implementation

One-hundred and twenty five students, divided into five course sections, participated in the Advanced Health Assessment course utilizing the Virtual Multicultural Community within the course assignments. The five course sections were taught by two full-time faculty members and one adjunct faculty member, who were experienced with

the course as it was previously taught. The project administrator served as course developer to facilitate standardization of the Virtual Multicultural Community across sections. Participation in the Advanced Health Assessment course, including the Virtual Multicultural Community, was mandatory, based on current curriculum standards and course offerings. However, participation in the project and completion of the pre/post-test surveys were considered optional for the students in the course. Prior to the due date for the initial course assignment, the students were required to access the Virtual Multicultural Community to ensure technology requirements were met. The project administrator was available to students and faculty in all five course sections to offer technical support to faculty and students throughout the semester.

The traditional RN to BSN Advanced Health Assessment course entailed discussion boards, the performance of two health assessments, and a written research paper utilizing Blackboard™ to meet course objectives. The assignments are described in-depth below:

- Discussion Board: Students were required to read the assigned chapter of the textbook and respond to a prompted question/topic posted by the course instructor utilizing Blackboard™. Students were required to dialogue with each other utilizing the discussion board.
- Health Assessment Performances: Students were required to perform two health assessments on a client or manikin of their choosing. The health assessment was conducted in the presence of an evaluator at the time and place of the students choosing. The evaluator was required to be a licensed Registered Nurse holding a Bachelor of Science in Nursing or higher degree. The student was required to

successfully complete one health assessment at midterm and one at the end of the course.

- Research Paper: Students were required to research a disease or condition of their choosing and write a five-page research paper that included an overview of the disease, signs and symptoms, treatment options, and client prevention.

The Virtual Multicultural Community learning experience consisted of students utilizing three virtual multicultural families over a period of 16 weeks as evolving scenarios created over real-time. The project administrator used Leninger's Cultural Care theory to guide development of the Virtual Multicultural Community. Leninger's four major concepts: health, nursing, environment, and person (identified below) were applied to the virtual families utilized in the Virtual Multicultural Community. Each virtual family was presented as a webpage with hyperlinks used to access family members' avatar. The virtual families are described in-depth below:

- Hernandez Family: **Person**: This virtual family included a Hispanic married couple in their early sixties that have been married for 35 years and work full-time. **Environment**: Mr. Hernandez is an auto assembly worker that has recently experienced decreased in energy, decreased involvement in activities, and difficulty sleeping for the past six weeks. **Health**: He has previous medical history of arthritis, occasional back pain, and smoker of 20 years. **Nursing**: He has no current medical provider and presents to an outpatient community clinic for assessment. In addition, Mrs. Hernandez is a full-time teacher assistant and bus driver that has been admitted for surgical debridement of a non-healing ulcer on her left heel. **Health**: Her previous medical history

includes diabetes mellitus; she expresses feelings of anxiety related to surgery and her recovery.

- Ozera Family: Person: This virtual family included a Romanian married couple in their early forties that have been married for 15 years and share five children (three biological and two adopted). Environment: Mr. Ozera is a full-time engineer at the local power plant who present to the emergency department with complaints of shortness of breath, fever, chills, and pain. Health: He reported having an upper respiratory infection for the previous two weeks, and is expectorating copious amounts of sputum. Nursing: The virtual family webpage allows the student to listen to lungs sounds and view admission assessment. Environment: Mrs. Ozera is a full-time mother and home schools her five children. Health: She presents to her primary medical provider with complaints of pain, increased redness, and warmth of the right lower leg in the calf area. She is concerned that she may be admitted to the hospital for treatment. She has a previous medical history of depression and anxiety. She takes herbs for her anxiety, but is unsure of the name of the herb.
- Kozlov Family: Person: This virtual family included a multi-ethnic couple in their late twenties that have been married for four years and share one two-year-old daughter. Environment: Mr. Kozlov is Caucasian and works full-time as a physical therapist at the local hospital. Mrs. Kozlov is Japanese American and works full-time as a speech language pathologist at the same hospital. Health: Mr. Kozlov presents to the emergency department by ambulance following an automobile accident that involved a head on collision with

another vehicle. His wife and daughter were passengers in the automobile. He presents with complaints of right flank pain, shortness of breath, fever, chills, and itchy sensation all over his body. Lacerations are noted on his face and arms, he reports decreased urine output for past two days. His previous medical history is cirrhosis developed from Wilson's disease since birth. He is very anxious and combative, repeatedly asking how his wife and daughter are doing from the crash. Mrs. Kozlov presented to the emergency department unresponsive, faint pulse, shallow respirations, and cool, pale skin. Nursing: Her virtual family webpage is loaded with her electrocardiogram monitor reading.

In addition, the project administrator collaborated with the course faculty to create and revise course assignments to ensure application of the Virtual Multicultural Community. The developed assignments are described in-depth below:

- Virtual Family Discussions/Responses (Appendix A): Students were required to review the virtual family webpages located in "Virtual Family Content" tab in Blackboard™. The webpages presented an overview of three culturally diverse families. For discussion questions, students reviewed both the family profile and the individual family member's profile. To view each of the profiles individually, students clicked on the name located at the top of the webpage. Once they opened the individual family member's profile, students reviewed the information and clicked on the family photo to load an avatar and listen to comments. After reviewing the individual family member's situation, background, and assessment, students were prompted to answer four

questions and post answers to the discussion board. Students were required to post their initial posting before viewing other student's postings. One week following the initial posting, students received an update on the individual family members condition via an avatar response linked within the course. After receiving the update on the individuals condition, students were required to respond to the comments via discussion board.

- Virtual Family Case Studies (Appendix B): As discussed above, virtual family members' webpages and avatars were accessed and reviewed prior to answering case study questions. The case studies were designed to explore student's ability to effectively assess specific clients. It was expected the student's personal insight and experiences would be included.
- Health Assessment Performance: Students were required to perform one Health Assessment on a client of their choosing. The health assessment assignment required the student choose a client, NOT a manikin or simulator. The Health Assessment was conducted in the presence of an evaluator at the time and place of the students choosing. The evaluator must be a licensed Registered Nurse with a Bachelor of Science in Nursing or higher degree.
- Client Education Brochure (Appendix C): Students were required to design and develop an educational brochure for a specific family member within the Virtual Multicultural Community. It was expected that students research guidelines on how to prepare a client education brochure on a sixth grade reading level that took into consideration the family members' age, gender, and cultural background. This brochure was to be specific to the chosen

family member and should not be an educational brochure for the general public.

- Health Assessment Paper (Appendix D): Students had to write a formal paper (utilizing APA guidelines for writing) on the health condition experienced by one of the members of the Virtual Multicultural Community. The students were required to choose one adult family member from the three virtual families presented, and complete the following: An overview of the diagnosis, signs and symptoms related to the diagnosis, description of the focused assessment required for the diagnosis, identification of any real or potential nursing interventions applicable to the diagnosis and any cultural considerations specific to the client and their diagnosis.

Protection of Human Subjects

Permission to conduct the project was obtained from the university Institutional Review Board. This project was deemed exempt due to non-identifiable surveys. Each student completed a consent form (Appendix E) prior to completing the survey. All participation was voluntary and no identifying data was placed on completed surveys, maintaining anonymity. Results were analyzed based on findings among the group; therefore, no individual results were reported. There were no identified risks associated with participation in this project, and there was no penalty associated with refusal to participate.

Instruments

The Cultural Awareness Student (CAS) Survey (Appendix F) was used to measure the perception of cultural awareness of students prior to and upon completion of participating in a virtual-learning experience utilizing a Virtual Multicultural Community. Permission to use this tool was obtained by the author Lynn Rew.

The CAS was developed to measure outcomes of a program to promote cultural awareness among nursing faculty and students. A 36 item scale utilizing a 7-point Likert scale with responses ranging from strongly disagrees to strongly agree. Subscales of the CAS include: general educational experiences, aware of attitudes, classroom and clinical instruction, research issues, and clinical practice. Higher scores on the total CAS and subscales indicate a higher level of perceived cultural awareness. Content validity and reliability (Cronbach's Alpha) for the CAS was determined by the authors to be 0.91 (Rew, Becker, Cookston, Khosropour, & Martinez, 2003). The tool has been used in various small sample sizes with similar results.

In addition to the CAS, demographic information (Appendix G) was collected by a questionnaire created by the project administrator. Demographic information of interest included age, gender, ethnicity, work experience in healthcare, and previous educational degrees held by the student. It was felt these particular factors may influence a student's perceived level of cultural awareness.

Data Collection

Students were educated on the project administrator's VMC project and data collection procedures. Students were asked to complete the demographic questionnaire and the CAS. Students were informed that completion of the surveys was anonymous and

voluntary. Students were informed of their ability to withdraw from the project at any time and were made aware that participation in the project or declining participation in the project would in no way affect their course grade or their relationship with the School of Nursing (SON) faculty, the SON, or the University.

Following explanation of the VMC project, students were provided a link to a consent form. The demographic questions and CAS survey responses were collected using the online survey program, Wufoo, Inc.™ during the first week of the course and at completion of the course. Differences in levels of student's cultural awareness as reflected in the CAS and subscales scores before and at the end of the course were measured.

Data Analysis

Data was entered into a personal computer utilizing an Excel spreadsheet. Analysis was completed using the Statistical Packages for the Social Sciences (SPSS) version 16.0. Statistical analysis of pre and post-test survey data was performed utilizing descriptive statistics and independent samples *t* tests.

Summary

Outcomes from this project were student and course-centered. From the virtual-learning experience perspective, the goal was to increase student's perceived culture awareness following completion of Virtual Multicultural Community assignments.

CHAPTER IV

Results

The aim of this project was to develop and integrate a Virtual Multicultural Community learning experience into an Advanced Health Assessment course to reinforce health assessment for a culturally diverse community that can be evaluated online. In an attempt to increase perceived cultural awareness, this project primarily investigated the research, question: “Does the use of a Virtual Multicultural Community within an online advanced health assessment course increase the perceived cultural awareness of the RN to BSN student?” The following chapter presents the results of statistical analysis for this question.

Sample Characteristics

Of the 125 students enrolled in the course, 53 completed the pre-test surveys, and 43 completed the post-test surveys, for an average return rate of 40%.

Demographics of Pre-test

The average age of the 53 students completing the pre-test surveys, was 36 years (sd = 9.939). Forty-eight (90.6%) were female and five (9.4%) were male. The majority of the students (84.9%) described themselves as Non-Hispanic/White, with only 9.4% describing themselves as Black or African American and 5.7% as Hispanic or Latino. Fifty-one of the students (96.2%) reported being employed as a healthcare professional, while only two (3.8%) reported no work experience as a healthcare professional. The majority of the students, 49 (92.5%), stated the BSN would be their second college degree, with only four (7.5%) reported that this would be their first college degree.

Demographics of Post-test

The average age of students completing the post-test survey was 34.81 (sd = 9.135) years. Of the students participating, 38 (90.5%) were female and four (9.5%) were male. Students completing the post-test survey described themselves as Non-Hispanic/White 37 (86%), Black or African American three (7%), Hispanic or Latino two (4.7%), and Hawaiian or other Pacific Islander one (2.3%). Of all the students completing the post-test, 43 (97.7%) reported being employed as a healthcare professional, while one (2.3%) reported no work experience as healthcare professional. Only nine (20.9%) reported that this would be their first college degree, and 34 (79.1%) stated this would be their second college degree. The frequency distributions of the demographic variables of students completing the pre and post-test surveys are presented in Table 4.

Table 4

Frequency Distribution of Demographic Variables of Between Surveys

Demographic Variable	Pre-test <i>n</i> (%)	Post-test <i>n</i> (%)
Gender		
Female	48 (90.6)	38 (90.5)
Male	5 (9.4)	4 (9.5)
Describe Yourself		
Hawaiian or Pacific Islander	0	1 (2.3)
Black or African American	5 (9.4)	3 (7.0)
Hispanic or Latino	3 (5.7)	2 (4.7)
Non-Hispanic/White	45 (84.9)	37 (86.0)
Experience in Health Care		
Yes	51 (96.2)	43 (97.7)
No	2 (3.8)	1 (2.3)
First Degree		
Yes	4 (7.5)	9 (20.9)
No	49 (92.5)	34 (79.1)

Descriptive statistics and measures of central tendencies were used to compare the overall mean score for the responses of students to the Cultural Awareness Scale (CAS) pre-test and post-test surveys. The CAS was developed to measure outcomes of a program to promote cultural awareness among nursing faculty and students. A 36 item scale utilizing a 7-point Likert scale with responses ranging from strongly disagree (1) to strongly agree (7). Subscales include: general educational experiences, aware of attitudes, classroom and clinical instruction, research issues, and clinical practice. The CAS score is determined by each student's self-rating on the scale. Coefficient alphas were computed to obtain internal consistency estimates of reliability for the pre and post test CAS scores. The Cronbach alpha for the pre-test CAS scores was .87 and the Cronbach

alpha for the post-test CAS scores was .90 indicating good internal consistency for the surveys. Table 5 displays the means and standard deviations of each subscale category on the CAS between the pre-test and post-test results.

Table 5

Means and Standard Deviations of Pre and Post-test Scores on the Total CAS and CAS

Subscales

Category	Pre-test (n=53)		Post-test (n=43)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Total Mean Score	5.12	0.78	5.22	0.91
General Experiences at the School of Nursing	22.73	5.65	26.14	4.47
General Awareness and Attitudes	36.98	5.58	37.70	6.66
Nursing Classes/Clinicals	69.98	19.11	69.82	23.87
Research Issues	20.69	5.73	22.62	7.53
Clinical Practice	28.46	4.82	28.03	4.74

Descriptive data utilizing mean scores for each question (the higher the score indicating more agreement) for each question on the pre-CAS revealed the students most strongly agreed that they were comfortable working with patients of all ethnic groups, respected the decisions of their patients when they are influenced by culture, would use resources available on site for information about a patient's culture and felt comfortable asking people they worked with for more information about a patient's culture. Table 6 contains the means and standard deviations for the most agreed with statements on the pre CAS.

Table 6

Means and Standard Deviations for the Most Agreed with Statements on the Pre CAS .

Statements	Pre-test (<i>n</i> =53)	
	<i>M</i>	<i>SD</i>
I respect the decisions of my patients when they are influenced by their culture, even if I disagree.	6.73	1.02
If I need more information about a patient's culture, I would feel comfortable asking people I work with.	6.51	1.30
If I need more information about a patient's culture, I would feel comfortable asking the patient or a family member.	6.45	1.39
I feel comfortable working with patients of all ethnic groups.	6.41	1.29

Following implementation of the VMC, descriptive statistics for each question on the post CAS indicated the students most strongly agreed that instructors at the nursing school adequately addressed multicultural issues in nursing, experiences at the nursing school helped them become knowledgeable about the health problems associated with various ethnic and cultural groups, the instructors used examples and/or case student that incorporated information from various cultural and ethnic groups, and they respected the decisions of their patients when they are influenced by culture. Table 7 contains the means and standard deviations for the most agreed with statements on the post CAS.

Table 7

Means and Standard Deviations for the Most Agreed with Statements on the Post CAS .

Statements	Post-test (<i>n</i> = 43)	
	<i>M</i>	<i>SD</i>
I respect the decisions of my patients when they are influenced by their culture, even if I disagree.	6.73	1.06
My experiences at this nursing school have helped me become knowledgeable about the health problems associated with various racial and cultural groups.	6.59	1.16
The instructors at this nursing school adequately address multi-cultural issues in nursing.	6.56	1.23
The instructors at this nursing school use examples and/or case studies that incorporate information from various cultural and ethnic groups.	6.54	1.35

Descriptive data utilizing measures of central tendencies for each questions (the lower the score indicating more disagreement) the pre-CAS revealed the students most strongly disagreed that they would offer assistance less frequently to individuals of a certain culture, were less patient with individuals of certain cultural backgrounds, instructors engaged in behaviors that may have made students from certain cultural backgrounds feel excluded, and some aspects of the classroom environment might have alienated students from some cultural backgrounds. Table 8 shows the means and standard deviations for the most disagreed with statements on the pre CAS.

Table 8

Means and Standard Deviations for the Most Disagreed with Statements on the Pre CAS .

Statements	Pre-test (<i>n</i> = 53)	
	<i>M</i>	<i>SD</i>
When I have an opportunity to help someone, I offer assistance less frequently to individuals of certain cultural backgrounds.	1.81	1.82
I am less patient with individuals of certain cultural backgrounds.	2.04	1.55
In my nursing classes, my instructors have engaged in behaviors that may have made students from certain cultural backgrounds feel excluded.	2.21	2.02
I believe that some aspects of the classroom environment at this nursing school may alienate students from some cultural backgrounds.	2.25	2.07

Following implementation of the VMC, descriptive statistics for each question on the post CAS indicated the students most strongly disagreed that some aspects of the classroom environment may alienate students from some cultural backgrounds; instructors engaged in behaviors that may have made students from certain cultural backgrounds feel excluded; they felt somewhat uncomfortable working with the families of patients from cultural backgrounds different than their own; and when they had an opportunity to help someone, they offered assistance less frequently to individuals of certain cultural backgrounds. Table 9 contains the means and standard deviations for the most disagreed with statements on the post CAS.

Table 9

Means and Standard Deviations for the Most Disagreed with Statements on the Post CAS.

Statements	Post-test ($n = 43$)	
	<i>M</i>	<i>SD</i>
I believe that some aspects of the classroom environment at this nursing school may alienate students from some cultural backgrounds.	2.05	2.30
In my nursing classes, my instructors have engaged in behaviors that may have made students from certain cultural backgrounds feel excluded.	2.08	2.24
I feel somewhat uncomfortable working with the families of patients from cultural backgrounds different than my own.	2.25	1.93
When I have an opportunity to help someone, I offer assistance less frequently to individuals of certain cultural backgrounds.	2.45	2.08

Major Findings

The difference in mean pre- and post-total CAS scores and subscale scores were analyzed using an independent samples *t* test. Homogeneity of variance was determined utilizing Levine's test. The Levine test was not significant for the total CAS and for the General Awareness and Attitudes, Nursing Classes/Clinicals, Research Issues, and Clinical Practice subscale scores. The Levine test was significant for the General Experiences subscale. The independent samples *t*-test for the differences in pre and post total CAS score assuming equal variances was not significant, $t(63) = .57, p = .56$. Overall the total mean score for post-test total CAS scores ($m = 5.22, sd = .91$) from the pre-test scores ($m = 5.12, sd = .78$), but not significantly. The independent samples *t*-test

for the difference in pre and posttest General Experiences subset scores assuming unequal variances was statistically significant at the .05 level of significance. Students post-test survey results for General Experiences rated their overall level of cultural awareness significantly higher ($m = 26.14$, $sd = .746$) compared to students pre-test results ($m = 22.73$, $sd = .791$), $t(85) = -3.01$, $p < .05$. Equal variances assumed, no statistically significant difference was found among the subscale scores for General Awareness and Attitudes ($t(84) = -.547$, $p > .05$), Nursing Classes/Clinicals ($t(79) = .032$, $p > .05$), Research Issues ($t(80) = -1.318$, $p > .05$) and Clinical Practice ($t(88) = .428$, $p > .05$).

CHAPTER V

Discussion

The aim of this project was to develop and integrate a Virtual Multicultural Community (VMC) learning experience into an Advanced Health Assessment (AHA) course to reinforce health assessment for a culturally diverse community that can be evaluated online. An essential goal of the VMC learning experience focused on the improvement of perceived cultural awareness among RN to BSN students in the AHA course. An independent samples t-test was used to compare the students' level of perceived cultural awareness prior to and following the implementation of the Virtual Multicultural Community project as measured by the CAS. The following chapter presents the findings of the project and how they relate to nursing education.

Implication of Findings

One hundred and twenty-five students, divided into five course sections, participated in the Advanced Health Assessment course utilizing the Virtual Multicultural Community learning experience. Of the 125 students enrolled in the course, 53 completed the pre-test surveys, and 43 completed the post-test surveys, for an average return rate of 40%. Students were expected, as a requirement of their nursing course, to participate in the Virtual Multicultural Community learning experience but were not required to complete the Cultural Awareness Student (CAS) pre-test and post-test surveys.

The mean age of the 53 students completing the pre-test surveys (36 years), was similar to the age of students completing the post-test surveys (34.81 years). Fifty-one of the students completing the pre-test surveys reported being employed as a healthcare professional, compared to 43 students completing the post-test surveys. It can be inferred

that students with previous healthcare work experience may have been exposed to culturally diverse populations and diseases, therefore, may feel more comfortable dealing with culturally diverse populations.

Forty-nine students completing the pre-test surveys stated the BSN would be their second college degree, compared to 34 students completing the post-test surveys. It is likely the experience gained from previous degrees and life experiences may have impacted the perceived cultural awareness level of students participating in the Virtual Multicultural Community project.

Overall total CAS mean scores of perceived cultural awareness of students demonstrated to not be statistically significant in awareness in relationship to the Virtual Multicultural Community. Although the overall increase of total mean scores in post-test surveys, in comparison to the pre-test surveys completed in the initial week of the Advanced Health Assessment course, may be an indication that virtual-learning experiences provide a unique opportunity for online nursing courses to deliver content and promote cultural awareness. The General Experiences subset may have been significant based on the incorporation of the Virtual Multicultural Community within the course. The students' perceived cultural awareness increased which may be a result of the implementation of the VMC throughout the semester for course assignments. The additional nonsignificant subsets focused on beliefs and attitudes, which are difficult to change, and therefore implementation of the VMC may not have been sufficient in affecting these subsets.

The project results suggest that students participating in the use of a Virtual Multicultural Community within an online Advanced Health assessment Course reported

an increase in perceived cultural awareness of the RN to BSN student.

Application to Theoretical/Conceptual Framework

Leininger's Cultural Care Theory formed the theoretical framework for this project. Leninger's four major concepts; health, nursing, environment, and person were applied to the virtual families utilized in the Virtual Multicultural Community. This theoretical framework was appropriate for this project because the project administrator had little experience in developing evolving virtual families for any nursing courses.

The use of Leninger's theory allows nurses to provide care measures in congruence with an individual or group's cultural beliefs, practices and values. Leninger defines the culturally aware nurse as:

- Consciously addresses the fact that culture affects nurse-client relationship.
- With compassion and clarity, asks each client what their cultural practices and preferences are.
- Incorporates the client's personal, social, environmental, and cultural needs/beliefs into the plan of care whenever possible.
- Respects and appreciates cultural diversity, and strives to increase knowledge and sensitivity associated with this essential nursing concern.

Assumptions of the theory applicable to the VMC project are that clients who experience nursing care that fails to be reasonably congruent with the client's cultural beliefs and values will show signs of stress, conflict, noncompliance, and ethical moral concerns (George, 2011). The virtual families of the VMC were designed with demographic variables related to education, socio-economics, religion, and culture that have the potential to nursing care practices.

Limitations

Limitations of this project include project administrator influence, instructor variance, self-report, sample size and setting.

Project administrator presence may have served as a limitation for the Virtual Multicultural Community learning experience. The project administrator served as the course developer to facilitate standardization of the Virtual Multicultural Community across sections and maintained access to the course throughout the semester. Having the project administrator involved may have skewed students' perception of their perceived cultural awareness level because of a pre-existing relationship between the project administrator and the students. The project administrator has served as a lead instructor for some of these students in other courses throughout their experience in the Associates degree and RN to BSN program.

Instructor variances between the five course sections of Advanced Health Assessment could have served as an additional limitation of this project. The five course sections were taught by two full-time faculty members and one adjunct faculty member, whom were experienced with the course as it was previously taught. The variation of nursing instructors between the five course sections could have influenced student responses to the CAS surveys.

Self-report of perceived level of cultural awareness may have served as an additional limitation of this project. Despite the anonymity of the CAS survey, it is possible that students reported a higher level of perceived cultural awareness that was actually felt. Students may have felt their consent form and survey could have been paired up, linking their identity to their answer on the survey. In addition, a pre-existing

relationship with the project administrator could have influenced their scores.

The sample size may have served as a fourth limitation of the project. The project yielded a sample size of 125 students enrolled in the course, 53 completed the pre-test surveys, and 43 completed the post-test surveys, for an average return rate of 40%. Sample sizes of this nature are difficult to generalize among student-nurse populations. The project administrator was limited to using a convenience sample.

The limited setting was an additional limitation of this project. This project was restricted to one academic setting, in which students are exposed to online learning experiences throughout their program. Time restrictions prevented the project administrator from seeking multiple settings.

Implications for Nursing

Preparing nursing students to deliver safe, culturally competent care is essential to meet the demands of today's complex patient population. Organizations and accreditations continually raise the bar on standards of care expected to be performed among all healthcare providers, including nurses. This project served to add to the existing body of knowledge regarding virtual-learning experiences and cultural awareness in nursing education. Schools of Nursing are challenged with providing nursing students with critical thinking skills and culturally diverse clients in an online setting, which in turn, impacts their overall level of competence. Incorporation of innovative teaching strategies, such as virtual-learning experiences, are essential for nurse educators. Factors, such as limited patient populations and lack of culturally aware health care providers, place students in unfamiliar situations in their nursing experience. Students may not be equipped because of limited exposure to a diverse culture

population. Virtual-learning experiences serves as a resource for allowing students to prepare to care for culturally diverse patients in a controlled environment.

Recommendations

While this project did support the notion that students participating in a Virtual Multicultural Community learning experience reported an overall higher level of cultural awareness, only one subscale (general educational experiences) demonstrated as being significant. Further projects and/or research are needed to measure cultural awareness with virtual-learning experiences. Few objective measures of cultural awareness exist in regard to virtual-learning experiences. This project assessed students' perceived cultural awareness because few projects measured cultural awareness, which merits the need for this study.

Future projects utilizing virtual-learning experiences and their effects at multiple intervals throughout the semester are needed. This project measured the perceived cultural awareness after an entire semester of virtual-learning experiences. Measuring perceived cultural awareness at multiple intervals may be more useful in determining the role virtual-learning experiences play on cultural awareness of nursing students. Furthermore, future projects utilizing larger sample sizes among varying levels of degrees. The increase of online learning and the need for more rigor in online curriculum call for nurse educators to ensure every learning experience provides opportunities for the student to become culturally aware. After offering opportunities to develop cultural awareness, the next step would be to offer opportunities to allow students to develop cultural competence in their patient-centered care. Virtual-learning experiences may assist nurse educators in bridging this gap.

The small sample sizes prove problematic for generalizing results among nursing students and across degree programs. The small sample size displayed in the literature review and lack of research of virtual-learning experiences presents unique opportunities for programs to join forces and further explore culturally diverse virtual-learning experiences.

Conclusion

With the focus on the culturally aware nurse by governing bodies, continual evaluation, and preparation of nurses that can deliver culturally competent care is essential. The diverse patient population creates unique challenges for nurse educators to educate and engage students to optimize learning experiences through teaching strategies. Virtual-learning experiences have demonstrated the ability to successfully foster knowledge acquisition among students.

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Appendix A
Example: Virtual Family Discussions/Responses

Virtual Family Discussion Question #1

Please refer to the discussion question posted here and respond on the discussion board. Remember to review discussion questions guidelines and rubric for grading.

Initial Post:

- Review Virtual Family #1 webpage located in “Virtual Family Content” tab in blackboard.
The webpage presents an overview of the Hernandez family. For this discussion question, you will be reviewing both the Hernandez Family profile and Mr. Hernandez’s profile. To view each of the profiles individually, click on the name located at the top of the page. Once you have opened Mr. Hernandez’s profile, review the information and click on Mr. Hernandez’s family photo to load his avatar and listen to his comments. Please make sure to adjust the volume on your computer to listen to the avatar.
- Answer the following questions after reviewing Mr. Hernandez’s situation, background and assessment.
 1. Which data deviated from expected findings, suggesting a need for further investigation?
 2. Which additional information should the nurse gather?
 3. What other health care team members could you collaborate with to help this client?
 4. What possible cultural considerations should you consider during your assessment and care for this client?

Response to Peers:

- Do NOT respond to peers until you receive an update on Mr. Hernandez’s condition. This update will be available 8/26 at 1201 under the Virtual Family Discussion Question folder.

Appendix B
Example: Virtual Family Case Studies

Virtual Family Case Study #1

Type your answers directly on this form.

Review Virtual Family #1 webpage located in “Virtual Family Content” tab in blackboard. The webpage presents an overview of the Hernandez family. For this case study, you will be reviewing both the Hernandez Family profile and Mrs. Hernandez’s profile. To view each of the profiles individually, click on the name located at the top of the page. Once you have opened Mrs. Hernandez’s profile, review the information and click on Mrs. Hernandez’s family photo to load her avatar and listen to her comments. Please make sure to adjust the volume on your computer to listen to the avatar. Answer the following questions after reviewing Mrs. Hernandez’s situation, background and assessment.

1. What kind of additional information would need to be gathered regarding Mrs. Hernandez’s physical, psychosocial, occupational, and cultural assessment? Include any screening test that should be included.
2. What additional diagnostic or laboratory data would you recommend to be collected and rationale for each?
3. What potential complications could Mrs. Hernandez develop?
4. Give a detailed teaching plan for post-procedure care.
5. What community resources may be available for Mrs. Hernandez after discharge from the hospital?

Appendix C
Client Education Brochure Assignment

Client Education Brochure

Directions:

Students must design and develop a client education brochure for a specific family member within the Virtual Multicultural Community. Students should research guidelines on how to prepare a client education brochure on a sixth grade reading level. Students should consider the family members age, gender, and cultural background. Remember this brochure is specific to the chosen family member and should not be an education brochure for the general public.

The brochure should include the following:

- Definition of client condition
- List of possible preventive measures
- Treatment regimen for the condition
- Illustrations necessary for clarity and appeal

Students must adhere to following guidelines:

- Brochure must be written on a sixth grade reading level. There are resources available online to assist you in this process.
- Information must be accurate, up to date, objective and organized
- Correct grammar, punctuation, format and design
- Must include a minimum of two resources, cited in APA on the back of the brochure

Submission and Evaluation Criteria:

Refer to the grading rubric attached both below and to the assignment drop box. All points must be adequately addressed to receive full credit. Submit completed assignment to the assignment drop box on the due date listed on the course calendar.

Appendix D
Health Assessment Paper Assignment

Health Assessment Paper

Purpose:

To explore the health assessment process and the role the nurse plays in assessment and implementing care.

Directions:

Students must write a formal APA paper on the health condition experienced by ONE of the members of the Virtual Multicultural Community. From the three virtual families presented, chose one adult family member and answer the questions below:

- Give an overview of the diagnosis
- Explain the signs and symptoms related to the diagnosis
- Describe the focused assessment that you would perform
 - Example: Diagnosis is Asthma then a focused respiratory assessment would be performed and explained in detail.
- Identify possible nursing interventions applicable to the diagnosis
- Identify any cultural considerations specific to the client you chose and their diagnosis

You should use appropriate headings throughout the paper to ensure you have covered all topics appropriately. The paper should be a minimum of five pages, excluding the title page and reference page. A minimum of four scholarly journal articles should be referenced.

Submission and Evaluation Criteria:

Refer to the grading rubric attached both below and to the assignment drop box. All points must be adequately addressed to receive full credit.

There are several steps to submission of this assignment:

- Each student's paper will be peer reviewed by a fellow student. The professor of the course will assign each group. The paper must be emailed to the assigned peer for review by the date listed on the course calendar.
- You as the peer reviewer are responsible for providing feedback on content, grammar, APA format, etc. The review should include detailed comments and provide an adequate critique of your peers work. Your comments should be returned to your peer by the date listed on course calendar and also submitted to the assignment drop box by the date listed on the course calendar.
- Once you receive comments on your paper, final edits should be made and submitted to the assignment drop box by the due date list on the course calendar.

Appendix E Consent Form

Study Title: The Effect of Virtual-learning on the Cultural Awareness of Nursing Students

Investigator: Nicole Waters, MSN, RN

As part of the requirements for the Doctorate of Nursing Practice Degree, I am conducting a study about the effect of virtual-learning on the cultural awareness of nursing students. You have been selected for inclusion in this project because you are enrolled in an advanced health assessment course at Gardner-Webb University. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please take the time to read the following information carefully.

The purpose of this study is to examine the level of cultural awareness of nursing students prior to and following the implementation of the Virtual Multicultural Community project. Your expected time commitment for this study is approximately 15-30 minutes. You will be asked to complete an anonymous online demographics questionnaire, and a Cultural Awareness Student Survey linked within your course.

The risks of this study are minimal. These risks are similar to those you experience when disclosing information to others. You may decline to answer any or all questions, and you may terminate your involvement at any time if you choose. This will not affect your standing as a student or the relationship you have with the faculty. There may be risks that are not anticipated. However, every effort will be made to minimize any risks.

Completion of the survey is anonymous and voluntary. There will be no direct benefit to you for your participation in this study. There is no monetary compensation or extra credit to you for your participation in this study. You may withdraw from the study at any time. Participation in the project or the decision not to participate in the project will in no way affect your course grade or relationship to the University.

It is up to you to decide whether or not to take part in this study. If you do decide to take part in this study, your return of the survey will be considered your consent. If you decide to take part in this study, you are still free to withdraw at any time and without giving a reason.

Your responses will be anonymous and confidential. Please do not write any identifying information on your questionnaire. Should you have any questions about the research or any related matters, please contact the researcher nwaters@gardner-webb.edu or my professor, Rebecca Beck-Little at rbeck-little@gardner-webb.edu.

By submitting the Cultural Awareness Student Survey, I confirm that I have read and understood the information. I understand that my participation is voluntary, and that I am free to withdraw at any time.

Appendix F
Cultural Awareness Student (CAS) Survey

**The University of Texas at Austin
School of Nursing
Cultural Awareness Student survey
Shirin Catterson, Jeff Cookston, Stephanie Martinez, Lynn Rew**

Use the scale of 1 to 7 (1=Strongly Disagree, 4=No Opinion, 7=Strongly Agree) to indicate how much you agree or disagree with each statement.

Please note that the questionnaire is only about your experiences at this school of nursing, not the entire University.

		General Experiences at this School of Nursing	Does Not Apply	Strongly Disagree			No Opinion			Strongly Agree
1	1.	The instructors at this nursing school adequately address multicultural issues in nursing	<input type="checkbox"/>	1	2	3	4	5	6	7
1	2.	This nursing school provides opportunities for activities related to multicultural issues.	<input type="checkbox"/>	1	2	3	4	5	6	7
1	3.	Since entering this school of nursing my understanding of multicultural issues has increased.	<input type="checkbox"/>	1	2	3	4	5	6	7
1	4.	My experiences at this nursing school have helped me become knowledgeable about the health problems associated with various racial and cultural groups.	<input type="checkbox"/>	1	2	3	4	5	6	7
General Awareness and Attitudes										
2	5.	I think my <i>beliefs and attitudes</i> are influenced by my culture.	<input type="checkbox"/>	1	2	3	4	5	6	7
2	6.	I think my <i>behaviors</i> are influenced by my culture.	<input type="checkbox"/>	1	2	3	4	5	6	7
2	7.	I often reflect on how culture affects beliefs, attitudes, and behaviors.	<input type="checkbox"/>	1	2	3	4	5	6	7
4 RC	8.	When I have an opportunity to help someone, I offer assistance less frequently to individuals of certain cultural backgrounds.	<input type="checkbox"/>	1	2	3	4	5	6	7

4 RC	9.	I am less patient with individuals of certain cultural backgrounds.	<input type="checkbox"/>	1	2	3	4	5	6	7
4	10.	I feel comfortable working with patients of all ethnic groups.	<input type="checkbox"/>	1	2	3	4	5	6	7
2	11.	I believe nurses' own cultural beliefs influence their nursing care decisions.	<input type="checkbox"/>	1	2	3	4	5	6	7
4 RC	12.	I typically feel somewhat uncomfortable when I am in the company of people from cultural or ethnic backgrounds different from my own.	<input type="checkbox"/>	1	2	3	4	5	6	7

Nursing Classes/Clinicals

4 RC	13.	I have noticed that the instructors at this nursing school call on students from minority cultural groups when issues related to their group come up in class.	<input type="checkbox"/>	1	2	3	4	5	6	7
1	14.	During group discussions or exercises, I have noticed the nursing instructors make efforts to ensure that no student is excluded.	<input type="checkbox"/>	1	2	3	4	5	6	7
2	15.	I think that students' cultural values influence their classroom behaviors (for example, asking questions, participating in groups, or offering comments.)	<input type="checkbox"/>	1	2	3	4	5	6	7
1 RC	16.	In my nursing classes, my instructors have engaged in behaviors that may have made students from certain cultural backgrounds feel excluded.	<input type="checkbox"/>	1	2	3	4	5	6	7
2	17.	I think it is the nursing instructor's responsibility to accommodate the diverse learning needs of students.	<input type="checkbox"/>	1	2	3	4	5	6	7
1	18.	My instructors at this nursing school seem comfortable discussing cultural issues in the classroom.	<input type="checkbox"/>	1	2	3	4	5	6	7
1	19.	My nursing instructors seem interested in learning how their classroom behaviors may discourage students from certain cultural or ethnic groups.	<input type="checkbox"/>	1	2	3	4	5	6	7
2	20.	I think the cultural values of the nursing instructors influence their behaviors in the clinical setting.	<input type="checkbox"/>	1	2	3	4	5	6	7
1	21.	I believe the classroom experiences at this nursing school help our students become more comfortable interacting	<input type="checkbox"/>	1	2	3	4	5	6	7

		with people from different cultures.								
1 RC	22.	I believe that some aspects of the classroom environment at this nursing school may alienate students from some cultural backgrounds.	<input type="checkbox"/>	1	2	3	4	5	6	7
5	23.	I feel comfortable discussing cultural issues in the classroom	<input type="checkbox"/>	1	2	3	4	5	6	7
1	24.	My clinical courses at this nursing school have helped me become more comfortable interacting with people from different cultures.	<input type="checkbox"/>	1	2	3	4	5	6	7
1	25.	I feel that this nursing school's instructors respect differences in individuals from diverse cultural backgrounds.	<input type="checkbox"/>	1	2	3	4	5	6	7
1	26.	The instructors at this nursing school model behaviors that are sensitive to multicultural issues.	<input type="checkbox"/>	1	2	3	4	5	6	7
1	27.	The instructors at this nursing school use examples and/or case studies that incorporate information from various cultural and ethnic groups.	<input type="checkbox"/>	1	2	3	4	5	6	7

Research Issues

3	28.	The faculty at this school of nursing conducts research that considers multicultural aspects of health-related issues.	<input type="checkbox"/>	1	2	3	4	5	6	7
3	29.	The students at this school of nursing have completed theses and dissertation studies that considered cultural differences related to health issues.	<input type="checkbox"/>	1	2	3	4	5	6	7
3	30.	The researchers at this school of nursing consider relevance of data collection measures for the cultural groups they are studying.	<input type="checkbox"/>	1	2	3	4	5	6	7
3	31.	The researchers at this school of nursing consider cultural issues when interpreting findings in their studies.	<input type="checkbox"/>	1	2	3	4	5	6	7

Clinical Practice

5	32.	I respect the decisions of my patients when they are influenced by their culture, even if I disagree.	<input type="checkbox"/>	1	2	3	4	5	6	7
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5	33.	If I need more information about a patient's culture, I would use resources available on site (for example, books, videos, etc.).	<input type="checkbox"/>	1	2	3	4	5	6	7
5	34.	If I need more information about a patient's culture, I would feel comfortable asking people I work with.	<input type="checkbox"/>	1	2	3	4	5	6	7
5	35.	If I need more information about a patient's culture, I would feel comfortable asking the patient or a family member.	<input type="checkbox"/>	1	2	3	4	5	6	7
4 RC	36.	I feel somewhat uncomfortable working with the families of patients from cultural backgrounds different than my own.	<input type="checkbox"/>	1	2	3	4	5	6	7

Appendix G
Demographic Questionnaire

Demographic Questionnaire

Select or fill in the appropriate answer that most accurately reflects you and your experience in nursing.

1. What is your age? _____
2. What is your sex?
 - a. Male
 - b. Female
3. How do you describe yourself? (please check the one option that best describes you)
 - a. American Indian or Alaska Native
 - b. Hawaiian or Other Pacific Islander
 - c. Asian or Asian American
 - d. Black or African American
 - e. Hispanic or Latino
 - f. Non-Hispanic White
4. Have you ever been employed as a health care professional (i.e. CNA, medication aide, surgical tech, LPN, RN, etc).
 - a. Yes
 - b. No
5. Is this your first degree from a college or university?
 - a. Yes
 - b. No