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A COMPARISON OF TRADITIONAL FACE-TO-FACE AND HYBRID PEDIATRICS AND OBSTETRICAL NURSING COURSES

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A COMPARISON OF TRADITIONAL FACE-TO-FACE AND HYBRID PEDIATRICS AND OBSTETRICAL NURSING COURSES

by

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Dedication

"I can do all things through Christ who strengthens me." Philippians 4:13 (KJV)

I want to dedicate this dissertation to my wonderful, loving and supportive family. To those who have transitioned from this life (my parents, Rose and Lawrence Fontenot, and to my best friend, Barbara Taplin) and those who are still here (children, grand-children, siblings, friends, and family) who continue to be rays of sunshine and encouragement in this journey. Thank you for encouraging me to persevere and to not give up. And to my grandsons, Anthony, Darius, Erik and Jacob: I am finally Dr. Nana.

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A COMPARISON OF TRADITIONAL FACE-TO-FACE AND HYBRID PEDIATRICS AND OBSTETRICAL NURSING COURSES

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Distance learning is rapidly spreading across various institutions as a main methodology in the delivery of curriculum. As schools of nursing are faced with mandates to increase enrollment to meet the demands of the nursing shortage with limited resources (financial and human capital) some institutions are offering complete programs online while others are gradually integrating this methodology through hybrid instruction (51% face-to-face and 49% online). Such a shift in educational modality brings with it a commensurate concern with equivalency of educational content. Is student performance equivalent or, perhaps even superior, in one modality versus another? Does content make a difference in the effectiveness of a particular modality? This study compared four groups of students who were enrolled in the Associate Degree in Nursing program at a community college in southeast Texas. Two courses, pediatrics and obstetrics (OB), were taught in the fall 2010 semester. Each had a section delivering course content in the traditional face-to-face lecture and a second via hybrid delivery. This was the students' first experience with distance learning nursing courses. Historically, students have higher

performance outcomes (grades) in pediatric courses compared to obstetric courses. Thus, an evaluation of modality across differing content was also important.

The study was a descriptive comparative design of Content (2) x Modality (2) that examined student performance outcomes on unit exams, final exams, and the Health Education Systems, Inc. (HESI), a specialty test for pediatrics and OB. This design allowed an examination of the equivalence of the delivery methodologies across different nursing content and provided for the assessment of both content and modality contribution to educational performance outcomes.

Results indicated clear equivalences across modalities for both content areas. Improvement across time was seen in the hybrid groups but not observed in the face-to-face classes within content areas, which essentially offset initial lower performance in hybrid courses. This finding suggests that the newer and more unfamiliar format of hybrid courses may pose an initial challenge for students, but students quickly adapt and perform at equivalent levels as their face-to-face counterparts by mid-semester with no significant differences in end-point or HESI performance.

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Distance learning is rapidly spreading across various institutions as a key methodology in the delivery of curriculum. As schools of nursing with limited resources (both financial and human capital) face mandates to increase enrollment to meet the nursing shortage, some institutions have been offering complete programs online while others have gradually integrated this methodology through hybrid instruction (51% face-to-face and 49% online). Such a shift in educational modality brings with it a commensurate concern with equivalency of educational content. Is student performance equivalent or, perhaps even superior, in one modality versus another? Does content make a difference in the effectiveness of a particular modality?

HISTORY OF DISTANCE LEARNING

Reinert and Fryback (1997) defined distance learning as a combination of teaching and learning principles related to the needs of students outside a conventional classroom environment, occasionally without a faculty member. In this modality the instructor and student are separate, which allows for innovative strategies to promote the acquisition of information and enhance the education process. Greenberg (1998) defined distance learning as "a planned teaching/learning experience that uses a wide spectrum of technologies to reach learners at a distance and is designed to encourage learner interaction and certification of learning." Teaster and Blieszner (1999) stated "the term distance learning has been applied to many instructional methods; however, its primary distinction is that the teacher and the learner are separate in space and possibly time." Desmond Keegan's (1995) globalized definition noted that distance learning is a

separation of teacher and student. The student is removed from the necessity of traveling to “a fixed place, at a fixed time, to meet a fixed person, in order to be trained.” This methodology lends itself to myriad delivery options of information, including, but not limited to, mail correspondence, audio/visual cassettes, television, videotapes, email, and internet (Baldwin et al., 1996). Distance learning can be delivered in several modalities ranging from entirely online (all activities including testing/evaluation) to hybrid delivery as previously mentioned.

The concept of distance learning originated more than a century ago. Sir Isaac Pitman’s initiative to make the technique of shorthand available via traditional mail delivery was noted as one of the earliest records of distance learning (Mathews, 1999). Eventually, the United Kingdom, the United States, Japan, and Germany moved to the forefront of providing various curricula via correspondence delivery (Curran, 1997). In 1911, the University of Queensland (Australia) started the Departmental of External Studies. The United Kingdom’s Open University (OU) initiated advances in distance learning with the implementation of teaching through mixed-media, in which curricular components (texts and A/V sources) were mailed to students. This approach was supported by radio and television systems with students who had access to tutors via telephone and face-to-face group sessions. This progression resulted in the 1971 PACENET initiative, which was the first project to use satellites in distance learning (Hall, 1996).

The practice of distance learning has spread across the globe throughout education and industry. Many countries, including the U.S., have strived to meet the societal demands of improvements to their citizens’ livelihood and standards of living

through increasing levels of education and re-tooling of skill sets in preparation for a changing workforce. The increased utilization of technology via telecommunications, computer programming, etc., has allowed the distance learning industry to lead in meeting the educational needs of the public. This phenomenon has sparked interest in the area of nursing education as pressure is placed on schools of nursing to increase the number of graduates. These programs have been charged with increasing enrollment and graduates in an effort to address the nursing shortage (AACN, 2003). The depletion in the education and industry environment of professional nursing has pressed schools to become innovative and effective in meeting the charge (AACN, 2003).

STATEMENT OF THE PROBLEM

Unliked their predecessors, modern nursing students have been subject to many demands that contribute to high attrition rates, in turn leading to decreased rates of retention, persistence and graduation. Students have tended to be older and responsible for family, work, and other obligations (Carr, 1999) that make traditional, face-to-face lecture methodology a daunting challenge in meeting course objectives, mastery of content, and course or program completion. Schools of nursing have been presented with a plethora of issues that influence how curricula are delivered. As previously mentioned, non-traditional students who shoulder broad responsibilities is just one of many factors that pose challenges to nursing programs to deliver curricula that successfully address the need for increased numbers of graduates and proven teaching and learning opportunities.

The American Association of College of Nursing (AACN) has noted that the concept of distance learning could have a paramount effect on professional nursing. The AACN has called for effective, evidence-based pedagogical models based on principles

of distance learning to meet the rising complexities associated with professional nursing and the charge of a transitioning health care delivery model (AACN, 1999). Additionally, the National League of Nursing (NLN) has called for schools of nursing to provide effective and equivalent distance learning curricula that allow for exposure to technology-based programs in informatics crucial to evidence-based nursing curriculum (NLN, 2008). Similarly, the Institute of Medicine (IOM, 2008) and the Robert Woods Johnson Foundation (RWJF) developed a two-year Initiative on Nursing that has mandated the professional nursing community to provide a model to address technology-based aspects of care (nursing informatics) in the core competencies. These two agencies also provided recommendations related to delivery of care, addressing the nursing shortage, etc. The Joint Commission has recommended that, due to the increase in levels of acuity in patients receiving care and the complexities of the care provided, nurses must enter the workforce with a technology-based education that will afford them clinical judgment skills and a technology skill set contributing to improved patient outcomes.

How well are schools of nursing meeting this mandate? In 1998, Bennett described probable scenarios in distance education. Briefly, the possibilities ranged from a gross reduction of traditional university values and practices in favor of online instructional delivery to a revived interest in pedagogy with innovative classrooms and laboratories brought about by on-going telecommunications improvements.

At the time of this study, there exist 692 RN-to-BSN and 159 RN-to-MSN programs that transition diploma and associate degree nurses to an advanced education level (AACN, 2014). Of these 692 RN-to-BSN programs, more than 400 provided some form of distance learning course offerings (AACN, 2014). With this growing reliance on

technology initiatives to deliver nursing curricula comes increased accountability to ensure that student outcomes and mastery of content is not compromised. The hybrid curriculum has been designed with the intent to: 1) introduce content (teaching), 2) student acquisition of knowledge (learning), and 3) provide assessment of content mastery in an environment of face-to-face interactions and technological based online assignments/activities (evaluation). This curriculum design mandates that the attainment of student outcomes is foundational in course development. As with all curricula, teaching, learning, and evaluation is central to ensure that all aspects of delivery are pedagogically sound and robust.

CONCEPTUAL FRAMEWORK FOR ONLINE LEARNING

Means et al.'s (2010) Conceptual Framework for Online Learning guided this study. The researchers indicated that the development of their framework was based on three key components: a) whether the activity served as a replacement for or an enhancement to conventional face-to-face instruction; b) the type of learning experience; and c) whether communication was primarily synchronous or asynchronous (Means et al.,(p.2).

The first component in the Conceptual Framework of Online Learning is to determine the purpose of the alternative delivery. The intent of the delivery of the content has been identified as: "will it serve as a replacement of current material or is the purpose to enhance the current method." Consideration needs to be given to assessing whether the replacement is equivalent to the face-to-face delivery. As educational institutions are held accountable in providing quality curricula, instruction, and evaluation within defined timelines, existing methodologies must be considered. Does the current content promote

the achievement of student learning outcomes or is there an opportunity to consider other approaches in content delivery that facilitate students to meet the benchmarks of success? Enhancement pedagogical approaches have a foundation of online activities that are delivered concurrently with face-to-face methods.

The second component of the Conceptual Framework for Online Learning is to identify how students acquire taught content. Student experiences can occur in several ways. Face-to-face (didactic/expository) has historically been delivered by an instructor providing information via lecture in an organized environment (classroom setting). Students listen to the information after the instructor has prepared content deemed suitable to meet the student learning outcomes. Student learning can also be achieved through active learning. Bonwell and Eison (1991) indicated that in "active learning students must do more than just listen. They must read, write, discuss in higher order thinking tasks as analysis, synthesis, and evaluation." This methodology has indicated that students prefer active learning to didactic instructions. Other studies have noted that the principles applied in promoting active learning augment and assist with developing critical thinking and analytical writing, and that when assessing learning styles the active learning modality is best suited for some students (Bonwell & Eison, 1991). Critical thinking and analytical writing skills are imperative for students who seek degrees in healthcare delivery education programs. Finally interactive or collaborative learning indicates that students have an inquiry-based opportunity to interact with one another and that instructors are primarily facilitators.

The last component associated with the Conceptual Framework for Online Leaning is to determine if the learning is synchronous (real-time in an actual or virtual

environment) or asynchronous (occurring after the instructor has delivered the content). Students who acquire knowledge in a synchronous environment are present in a physical location equipped with social media to provide the content to students simultaneously. Asynchronous environments provide instruction via some method of media based technology in the form of discussion boards, online assignments, and virtual lab or clinical environments.

The rationale for using this framework in this study was associated with determining whether the pedagogical model served as a "replacement for face-to-face instruction or as an enhancement of the face-to-face learning experience" (i.e., online learning activities that are part of a course given face-to-face) (DOE, 2012). The Conceptual Framework for Online Learning provided a foundation to assess:

> a replacement application that is equivalent to conventional instruction in terms of leaning outcomes is considered a success if it provides learning online without sacrificing student achievement (DOE, 2012, p. 3).

Based on the purpose and specific aims of this study, determining whether the modalities are equivalent to this conceptual framework was considered appropriate and supported this work.

DISTANCE LEARNING TODAY: AN OVERVIEW OF INITIAL PROFESSIONAL NURSING EDUCATION

Significance

The foundation of all curricula is to provide an effective and efficient methodology for achievement of student success. Research on the equivalencies between traditional face-to-face and distance learning formats was addressed in an extensive

updated review and meta-analysis of online distance education conducted by the Department of Education (2010). Of the 1,132 studies identified in the literature addressing online education, only 176 online learning research studies published between 1996 and 2008 used an experimental or quasi-experimental design and objectively measured student learning outcomes. Of these 176 studies, 99 had at least one contrast between an online or blended learning condition and face-to-face (offline) instruction. The meta-analysis found that:

> on average, students in online learning conditions performed modestly better than those receiving face-to-face instruction. The difference between student outcomes for online and face-to-face classes was larger in those studies contrasting conditions that blended elements of online and face-to-face instruction with conditions taught entirely face-to-face. Analysts noted that these blended conditions often included additional learning time and instructional elements not received by students in control conditions" (DOE, 2010, p. xi).

These findings suggest that the positive effects associated with blended learning should not be attributed to the media alone. The study concluded that a blended or hybrid learning format needs to be *more* effective than conventional face-to-face instruction to justify its additional time and costs.

This study was aimed at providing evidence to nurse educators and administrators in community college settings who are determining whether their curricula should provide distance learning options or remain strictly face-to-face. The results may allow for the evaluation of current pedagogical models in nursing education regarding equivalency of modality in student success to meet identified student learning outcomes.

RESEARCH QUESTION AND SPECIFIC AIMS

The purpose of the research study was to evaluate whether modality of content delivery resulted in equivalent, superior, or inferior performance outcomes. The findings from this work may promote best practices based on evidence identifying rigorous pedagogical initiatives in improving student outcomes. The research question (RQ) was the following:

RQ 1 Does modality of content delivery result in equivalent, superior or inferior outcomes?

The following were the specific aims and related hypotheses for this study:

SA1: To evaluate the equivalency in educational outcomes across traditional face-to-face and hybrid teaching modalities.

SA1-H1: Hybrid performance outcomes will be equivalent or better than traditional face-to-face performance outcomes on Pediatric unit, final, and HESI exams (no detrimental main effect for modality).

SA1-H2: Hybrid performance outcomes will be equivalent or better than traditional face-to-face performance outcomes on Obstetric unit, final, and HESI exams (no detrimental main effect for modality).

SA2: To evaluate potential differences of teaching modality across content in which there has historically been a difference in performance (i.e., perhaps distance learning is not equally effective for all course content).

SA2-H1: Pedi performance will be significantly higher than the OB performance on Exam 1 for both Face-to-Face and hybrid modalities (interaction effect for content x modality).

SA2-H12: Pedi performance will be significantly higher than the OB performance on Exam 2 for both Face-to-Face and hybrid modalities (interaction effect for content x modality).

SA2-H3: Pedi performance will be significantly higher than the OB performance on Exam 3 for both Face-to-Face and hybrid modalities (interaction effect for content x modality).

SA2-H4: Pedi performance will be significantly higher than the OB performance on Final Exam for both Face-to-Face and hybrid modalities (interaction effect for content x modality).

SA2-H5: Pedi performance will be significantly higher than the OB performance on Final Grade for both Face-to-Face and hybrid modalities (interaction effect for content x modality).

SA2-H6: Pedi performance will be significantly higher than the OB performance on HESI Exams for both Face-to-Face and hybrid modalities (interaction effect for content x modality).

Chapter 2: Literature Review/Conceptual Framework

DEFINITIONS AND DESCRIPTIONS

Distance learning is a concept that has expanded to include several phenomena. The term encompasses various curriculum delivery modalities including 100% online and hybrid/blended. “Online learning is defined as learning that takes place partially or entirely over the Internet” (Means et al., 2010). Online learning is supported by some measure of computer support. Faculty members may provide instruction via web chats, instructional support software (e.g., Blackboard), and email. Students receive content without the constraints of time, classroom, or lecture halls. Students are provided with an environment that provides flexibility to meet obligations and commitments to other factors (e.g., work, family) that may impact their ability to meet the course requirements and program completion. All aspects of curriculum, instruction, and evaluation occur in the cyber environment.

Hybrid/blended leaning models are an alternative to the 100% distance learning format. With hybrid/blended learning modalities, some percentage of instruction takes place face-to-face and the remainder of the teaching/learning/evaluation activities occurs in some realm of a technology-based environment.

The significance of assessing these delivery modalities lies in the determination of equivalencies of the curricula in nursing programs. Students enrolled in initial licensure programs are faced with content and pedagogy that evoke critical thinking, clinical reasoning, and technological skill sets. The course content is developed and taught in an

effort to provide students with the information required to meet the demands of the dynamic workforce scope of practice associated with the professional nurse role.

The extensive meta-analysis of online distance education research conducted by the Department of Education (2008) clearly demonstrated a dearth of studies that used an experimental or quasi-experimental design or that objectively measured student learning outcomes. The meta-analysis provided an in-depth assessment of various educational environments including K-12, medical, and technical pedagogical approaches. The researchers thoroughly examined various aspects of teaching, learning, and evaluation in regards to multiple teaching strategies ranging from completely online, blended, and totally face-to-face. The studies were guided by the following research studies:

1. How does the effectiveness of online learning compare with that of face-to-face instruction?

2. Does supplementing face-to-face interaction with online instruction enhance learning?

3. What practices are associated with more effective online learning?

4. What conditions influence the effectiveness of online learning? (DOE, pg. 2, 2010).

Of the 176 studies analyzed (out of 1,132 surveyed), 99 had at least one contrast between an online or blended learning condition and face-to-face (offline) instruction. The findings for a modestly better performance by students in online learning conditions than those receiving face-to-face instruction was largely noted in those studies contrasting conditions that blended elements of online and face-to-face instruction which included *greater commitments of time and effort* by faculty with conditions taught

entirely face-to-face. Thus, the report concluded that blended or hybrid learning formats need to be more effective than conventional face-to-face instruction to justify the additional time, student mastery of content, and costs entailed.

Most recently a survey conducted by Allen and Seaman (2014) noted that 7.1 million students were enrolled in a minimum of one online course. This report noted that this number was an increase from 411,000 reported in 2012. Allen and Seaman's (2014) study reported that academic administrators surveyed indicated that student learning outcomes related to online education were equivalent or exceptional to face-to-face delivery counterparts. Regarding the future of online learning as a viable option for students seeking to increase their level of education and preparation for the workforce, the study indicated 90% of chief academic administrators reported "that it is Likely or Very Likely that a majority of all higher learning students will be taking at least one online course in five years time" (p. 5). Finally the researchers reported that as time progresses and online education increases, greater credibility will be afforded to this pedagogical modality.

In regards to initial professional licensure nursing education, the research is evolving. Recent reports have suggested the number of online schools of nursing to be greater than 400 (AACN, 2014). In response to increasing numbers of uninsured Americans, increases in nurses planning for near-term retirement, and the Institute of Medicine's mandate to increase the number of Bachelor's Registered Nurses (BSN) by 2020, a proliferation of nursing schools has been seen. These newly established programs have adopted current and developing pedagogical models that are expected to prepare

graduate nurses to successfully pass the NCLEX-RN licensure examination on their initial attempts.

HISTORICAL PERSPECTIVES

Distance Learning

The concept of distance learning originated more than a century ago. Sir Isaac Pitman's 18th century initiative to make the technique of shorthand available via traditional mail delivery (Mathews, 1999) has been noted as one of the earliest records of distance learning. Eventually, the United Kingdom, the United States, Japan, and Germany moved to the forefront of providing various curriculums via correspondence delivery (Curran, 1997). In 1911, the University of Queensland (Australia) started the Departmental of External Studies. The United Kingdom's Open University (OU) initiated advances in distance learning with the implementation of teaching through mixed-media, in which curricular components (texts and A/V sources) were mailed to students. This approach was supported by radio and television systems with students who had access to tutors via telephone and face-to-face group sessions. This progression resulted in the 1971 PACENET initiative, which was the first project to use satellites in distance learning (Hall, 1996).

History of Distance Learning and Nursing Education

Florence Nightingale is considered to be a trailblazer of nursing and nursing education. When the first Nightingale school of nursing opened in 1873, nursing education as a formal institution was born. However, some reports noted that Linda Richard, the self-proclaimed first trained nurse in America (1872), was educated at the New England Hospital for Women and Children in Boston (Bullough, 1988). At the turn

of the 19th century it was estimated that more than 432 schools of nursing existed. Additionally in 1985, Wendell Odekirk documented that 117 more schools of nursing existed than was formally reported in 1900. The discrepancy between actual schools of nursing and reported numbers lies in the operational definition of nurse and which institutions of education were deemed schools of nursing.

The definition of "nurse" in the late 1800s through the early to mid-1900s had many interpretations: "wet nurse," "bedside attendant," and "physician assistant" were used interchangeable (Bullock, 2004). Individuals given the title "nurse" rarely had the benefit of learning in a traditional academic setting. Instruction was typically held in the hospital setting. Lectures and other delivery models were exceptions rather than the rule. The "student nurses" were responsible for the cleaning of the hospital units. Sanitation and cleaning took precedence over teaching and learning. When students were taught, instruction was delivered primarily by physicians. When nurses had the opportunity to teach, it was primarily performed by older nursing students who taught the younger nursing students. This methodology was sometimes referred to as the Waldham Plan (Bullough, 2004). The Waldham Plan allowed physicians to develop the curricula and perform the role of head nurse or superintendent.

As time passed there was an upsurge in the need for nursing schools and nurses. Hospitals determined that nursing schools provided revenue to their institutions since students were responsible for keeping the environment clean and caring for patients without compensation. Educational standards and school of nursing requirements spanned across many dimensions. Variations from hospital-to-hospital included hours worked/week and actual nursing instruction. Teaching was dependent on hospital census

counts and staffing. If a hospital environment was available it could be identified as a school of nursing. Emma Goldman, a Marxist militant, was recognized as being a nurse after training in a prison hospital in which she was incarcerated (Bullough, 2004).

Starting with the late 1890s the American Nurses Association and National League of Nursing began to move forward in promoting some form of regulation to nursing education. The large number of schools of nursing and the wide variance in state nursing standards proved this task to be daunting. However, these two entities were able to move forward and achieve some sense of uniformity, credibility, and integrity before the inception of World War II (Bullough, 2004). There were some institutions—e.g., John Hopkins University, the Illinois Training School in Chicago—that were exemplary models of high standards of nursing practice and education.

As nursing education continued to be a recognized curriculum, the graduates of these programs chose not to seek employment in hospital settings. Nurses worked as private duty nurses in the home and physician offices. Physicians often recommended those nurses who graduated from formal nursing schools to care for their patients with the thought that these graduates had background in medicine and nursing. However, many prospective nursing students were reluctant to work in hospitals because teaching and learning frequently took a back seat to housekeeping and custodial duties.

Subsequently, correspondence schools of nursing began to proliferate across the country. These institutions were favored by physicians and students. Because regulatory and standardized practice guidelines remained state-determined, correspondence schools were seen as a viable alternative to existing nursing education. It has been noted that the actual number of these distance learning programs are difficult to document (Bullough,

2004) due to a variety of names and classifications of these programs as well as inconsistent reports of such teaching options.

Some correspondent nursing programs possessed noted stability and longevity. The Chautauqua School of Nursing located in Jamestown, New York had established a sense of notoriety in the United States and abroad. Originating in 1874, Chautauqua initially began as an institution for which the primary focus was religious in nature. As the Chautauqua name became associated with credible teaching and learning options, the school of nursing was formally recognized in 1900 (Bullough, 2004).

The Chautauqua School of Nursing was touted in many magazines and publications directed towards women (e.g., *Ladies Home Journal*). By 1915, the Chautauqua School on Nursing had 20,000 students enrolled in its program. The curricula provided was based on basic nursing concepts, obstetrical nursing, and surgical nursing. The cost of this education was $75, which was considered expensive since the typical income during that time was $1 per day. Payment plans and other mechanisms were established in an effort to promote this delivery of education. The costs incurred paid postage for books and other publications that contained the curricula, and for delivery of examinations and other evaluation sources. Students were allowed to withdraw from the program for any reason and there existed a generous refund policy.

The Chautauqua School of Nursing became a recognized institution of nursing education without validation from any of the established nursing regulatory agencies (American Nurses Association and National League of Nursing). Rather, Chautauqua elicited validation from the medical community. The *New York Medical Journal* provided a group of well-established physicians who were charged to review the school's success

based on method of delivery and administrative functions. These physicians (599 out of 618) participated in a survey that certified graduates from the Chautauqua School of Nursing as competent and meeting the requirements to practice as nurses.

The Chautauqua School of Nursing continued to prepare nurses and received accolades from graduates in places such as the United States, Canada, England, and New Zealand. Graduates noted a variety of reasons for choosing Chautauqua over hospital training facilities. Some reasons included age (older than 35 years), unable to leave family responsibilities, unaccepted into various formal schools of professional nursing, and economic reasons. Additionally practical nurses sought their education with the Chautauqua School of Nursing to upgrade their credentials and assume the role of a professional nurse (Bullough, 2004).

During the 1920s the Chautauqua School of Nursing met with resistance from hospitals and formal nursing education programs. The professional standards were being elevated in the wake of World War II, with patients being cared for by student nurses and physicians taking the role of lead educators for professional nursing. As the nursing profession enhanced its role in becoming more visible and having a more refined presence in the hospital and community, the value of the Chautauqua School of Nursing continued to diminish, resulting in the closing of the program in the 1920s.

The results of this historical methodology of nursing education provided the framework for distance education to prepare students for the role of the professional nurse. Many of the reasons why students chose the Chautauqua School of Nursing have been echoed today in a society seeking professional and educational gains. Students who are seeking professional nursing degrees online recognize the importance of a sound,

rigorous education but may have commitments that prevent or discourage them from pursing conventional or traditional methodologies.

CURRENT PERSPECTIVES

Hospitals and other healthcare delivery environments have recognized the value in alternative education models to determine effective, efficient avenues to provide their nurse employees with professional development and in-service instruction. Seminars, workshops, and in-services are delivered via webinars or other online methods proven to be economical and efficacious in regards to time, money and other resources associated with professional development education requirements.

Distance learning models of initial professional nursing education have spanned a myriad of delivery models. Historical programs (e.g., Excelsior) that have existed over many years have allowed participants with existing nursing and healthcare delivery knowledge and experience (e.g., LVNs, paramedics, experienced medical military corpsmen) to pursue curricula facilitating an Associate Degree in Nursing and successful completion of the NCLEX-RN examination (Klein-Collins, 2012). This pedagogical model relies extensively on participants reviewing predetermined content that is independently evaluated via on-line assessments, with an opportunity for competency validation of critical thinking and clinical reasoning in a simulation laboratory and actual hospital environments. Programs such as Excelsior have been challenged in determining the level of rigor and robustness in the curriculum that will lead to graduates being deemed competent to sit for the NCLEX-RN. It should be noted that these programs are required to be approved by various state boards of nursing for the graduates to be recognized as professional nurses in the state (Klein-Collins, 2012).

Alternatively, there are various levels of distance learning program offerings. Content ranges from pre-requisites, actual nursing course offerings available totally online, blended, to some technologically enhanced models that utilized software to mimic clinical environments. These alternative delivery options provide access to those who live outside of metropolitan areas where education is essential to improvement of livable wage, quality of life, and overall positive lifestyles (Burgess, 1994).

Mandates have increased pressure for baccalaureate-prepared nurses to be the entry level into the profession, and there has been an increase in enrollment in RN and BSN programs. Health Resources and Services Administration (HRSA)'s (2013) report identified that 55% of nurses held a baccalaureate degree. To date there were 692 RN-to-BSN and 159 RN-to-MSN programs that transition diploma and associate degree nurses to advanced education levels (AACN, 2014). Of these 692 RN-to-BSN programs there were greater than 400 that provided some form of distance learning course offerings. As nursing professionals continue to rely extensively on distance learning modalities to advance their education and provide opportunities in upward career mobility, the impetus is to ensure that online course offerings are rigorous and meet the expectations of the dynamic healthcare environments.

Nursing literature offers some insight into diverse topics related to online pedagogy. Studies have assessed modality equivalencies of distance learning pedagogy, students' experiences with online courses, and faculty member input on perception of that which promotes successful achievement of student learning outcomes. According to Rounds and Rappaport (2008) face-to-face teaching models do not always produce positive student outcomes. Additionally Biggs and Tang (2007) reported that if lecture

instruction is excellent then it “is exposing students to the most recent developments in the field and to the ongoing workings of a scholarly mind.”

Online learning is effective and success can be attained if students are actively engaged and possess the necessary skills, computers, and technological support (Atack 2003; Biggs & Tang 2007; Billings 2000; Farrell et al., 2007). Coose (2010) researched benefits, challenges, and effectiveness of the two delivery modalities (face-to-face and distance learning) in an associate degree nursing program. Results indicated that there was no statistical difference between the two groups regarding effectiveness of the modality or student achievement. Qualitative results noted that the delivery modality greatly influenced the experiences of both groups. Buckley (2003) compared the effectiveness of three groups of undergraduate nursing students who were enrolled in traditional face-to-face, web-enhanced, and web-based courses. The study examined mid-term and final examination scores, final course grades, and student and faculty self-reports of preparation/satisfaction. Overall no differences in student learning outcomes were discerned.

In summary the literature related to online education and its attributes of equivalencies in comparison to face-to-face education was documented. Meta-analyses and individual studies related to overall non-nursing and nursing curricula identified contributing factors to student success in meeting student learning outcomes. Additionally the literature supported that online education opportunities should continue in an effort to meet the evolving demands of the workforce. The expectation is that rigor of content and exceptional achievement of student learning outcomes is foundational to maintain this delivery option and be recognized as the new cornerstone for pedagogy.

Chapter 3: Methodology

PURPOSE

The purpose of the current study was to evaluate whether the modality of curriculum content delivery results in equivalent, superior, or inferior performance outcomes. The findings from this work will help to promote best practices based on evidence identifying rigorous pedagogical initiatives in improving student outcomes.

DESIGN

The study design was a descriptive, comparative design, Content (2) x Modality (2), which examined student performance outcomes on unit exams, final exams, and the Health Education Systems, Inc. (HESI) specialty test for pediatrics and obstetric courses (OB). Students were enrolled in both content courses (counterbalanced) with repeated measures (within factor - unit exams) as well as endpoint assessments (final exams and HESI). Separate cohorts were enrolled in either the face-to-face or hybrid modalities representing the between factor. Whichever modality a student began, they maintained that modality in the subsequent course, i.e., a student enrolled in face-to-face OB proceeded with face-to-face Pediatrics, and the same for hybrid. Given that there may have been differences in the efficacy of each teaching mode moderated by content, the use of two different courses allowed for the exploration of both main effects and potential content x modality interactions seen in the student outcomes related to equivalency of the curriculum.

SPECIFIC AIMS AND HYPOTHESES

The intent of this research was to determine if various pedagogical delivery modalities were equivalent for students to meet predetermined course outcomes measured

by scores achieved on course exams and a nationally recognized standardized test. The following were the specific aims and related hypotheses for this study:

SA1. To evaluate the equivalency in educational outcomes across traditional face-to-face and hybrid teaching modalities.

SA1-H1: Hybrid performance outcomes will be equivalent or better than traditional face-to-face performance outcomes on Pediatric unit, final, and HESI exams (no detrimental main effect for modality).

SA1-H2: Hybrid performance outcomes will be equivalent or better than traditional face-to-face performance outcomes on Obstetric unit, final, and HESI exams (no detrimental main effect for modality).

SA2. To evaluate potential differences of teaching modality across content in which there has historically been a difference in performance (i.e., perhaps distance learning is not equally effective for all course content).

SA2-H1: Pedi performance will be significantly higher than the OB performance on Exam 1 for both Face-to-Face and hybrid modalities (interaction effect for content x modality).

SA2-H12: Pedi performance will be significantly higher than the OB performance on Exam 2 for both Face-to-Face and hybrid modalities (interaction effect for content x modality).

SA2-H3: Pedi performance will be significantly higher than the OB performance on Exam 3 for both Face-to-Face and hybrid modalities (interaction effect for content x modality).

SA2-H4: Pedi performance will be significantly higher than the OB performance on Final Exam for both Face-to-Face and hybrid modalities (interaction effect for content x modality).

SA2-H5: Pedi performance will be significantly higher than the OB performance on Final Grade for both Face-to-Face and hybrid modalities (interaction effect for content x modality).

SA2-H6: Pedi performance will be significantly higher than the OB performance on HESI Exams for both Face-to-Face and hybrid modalities (interaction effect for content x modality).

VARIABLES AND OPERATIONAL DEFINITIONS

Dependent Variables

Unit Exams – possible range=0-100 %, 70% passing, 69-60=D, 59-0=F

Final Exams – possible range=0-100%, 70% passing 69-60=D, 59-0=F

Final Course Grades – possible range=0-100%, 70% passing 69-60=D, 59-0=F

HESI score – 850 and above=passing

Independent Variables

Modality (2) – Hybrid versus Face-to-Face

Content (2) – Pediatric versus Obstetrics

Covariates

Age, Gender, College Degree, Work (number of hours/week), Dependent Children (Y/N-if yes, number of children),

INSTRUMENTS

A brief demographic instrument completed by students was included in the study to identify specific characteristics related to participants' age, gender, previous college degrees, etc. The department exams for the pediatric and obstetrical courses were developed by faculty of record. The faculty members utilized the test bank that accompanied the textbook as part of the faculty resource package included by the publisher. Exams were based on the content course objectives and outline. The unit exams were 60-70 items, objective and constructed in relation to Blooms Taxonomy and the NCLEX-RN Test Plan. The tests were administered using the hard copy methodology, with each unit exam (n=3) worth 20% of the weighted test average. The final exam was comprehensive and given at the end of the eight-week course. The final exams for all courses were comprehensive and comprised 25% of the weighted test average. PAR Test software was utilized in grading tests.

The HESI is a standardized test that is well established and recognized in nursing education across the country as being valid and reliable in assessing student knowledge and the application of nursing concepts in specific areas. HESI exams are based on classic test theory and critical thinking theory. HESI exams are developed on the NCLEX-RN Test Plan which includes four major areas of client needs categories: Safe and Effective Care of the Environment, Health Promotion and Maintenance, Psychosocial Integrity, and Physiologic Integrity.

SETTING AND SAMPLE

The sample for this study was a convenience sample of second year associate degree nursing students enrolled in pediatric and obstetrics theory and clinical courses at

a large community college in southeast Texas. The students were allowed to select their preferred modality of instruction; however, those student who were repeating either class (pediatrics or obstetrics) due to course failure were not permitted to enroll in the hybrid course. The student performance measures were considered reflections of the course parameters and, as such, did not constitute human subject research as determined by the definitions of the Institutional Review Board (IRB) guidelines. An application for exemption from human subjects review was submitted and approved by UTMB IRB. The participating community college IRB approval for data collection was also obtained. However, several additional demographic variables, (e.g., number of dependent children, household income) were sought on a voluntary basis to allow for more comprehensive data analyses. All data collected were kept confidential until all performance measures were matched across students. All identifiers were then removed and the data de-identified. All data were entered into SPSS Version 21 for analyses.

Procedure

Students were briefed on the study goals prior to the beginning of the classes. Inclusion and exclusion characteristics were discussed with the students in an effort to inform them of who was eligible to participate. All students were given the opportunity to ask questions related to all aspects of the research and their participation.

The specialty exams (Pedi/Ob) were 50 item computerized tests that are based on the NCLEX blueprint. All students (face-to-face and hybrid) were administered the specialty exams at the end of each eight-week course. This method of evaluation was worth 10% of the students' final grade.

The same faculty member was assigned to teach the hybrid courses (Pedi and OB), has taught for several years, and has a master's degree in nursing education. This faculty was enrolled in San Jacinto College's Distance Learning Certification class that is required by all faculty members who are assigned to distance learning classes. There were two other faculty members who taught the face-to-face content, one for pediatrics and the other for obstetrics. While it was acknowledged that there may be instructor related differences, an evaluation of that impact is beyond the scope of this study and will be considered random error.

Inclusion Criteria

Inclusion criteria were: second year nursing students in the associate degree nursing program, no previous enrollment in an online nursing course at the college (for hybrid students), and no previous failures in a nursing course taken at the college (for hybrid students).

Exclusion Criteria

Exclusion criteria were: not currently enrolled in the second year of the associate degree nursing program or a history of failure of a nursing course within the last two years for nursing students desiring hybrid modality

Table 1: Fall, 2010: Enrollments

Session	Modality Enrollments (n)			
	Pediatrics Face-to-Face	Obstetrics Face-to-Face	PediatricsHybrid	ObstetricsHybrid
1st 8-Week Session	31	45	20	17
2nd 8-Week Session	31	31	14	19

SEQUENCING

The independent variables of this study were the two modalities being introduced in the nursing curriculum in two content areas. Therefore, the data were derived from two sequential eight-week pediatric and obstetrics nursing courses taught in the fall 2010 semester at central large metropolitan community college campus. Performance measures for these two courses were collected from all second year associate degree nursing students enrolled in either the face-to-face class or the hybrid sections of both classes. Performance data on all enrolled students were collected since the data were part of ongoing curriculum evaluation. The students were required to take the same delivery method (face-to-face or hybrid) for both OB and pediatrics. Half of each modality cohort began with the OB course followed by the pediatrics course, while the other half followed the reversed sequence. This counterbalanced design controlled for sequencing effects. Once the students passed either course they enrolled in the other class. Participant numbers are displayed in Table 1 and demonstrate a robust sampling of course performance outcomes. Drop-outs were excluded from all data analyses, i.e., students not completing the second eight weeks, switching modalities, repeating the first course due to failure.

Chapter 4: Results

This study addressed the equivalence of two distinct pedagogical methodologies: face-to-face and hybrid delivery (45.1% face-to-face and 54.9% hybrid). The comparison was addressed in the outcomes of Associate Degree in Nursing students in the fall 2010 semester. Two specific aims and their hypotheses were the focus of the study.

STUDY SAMPLE CHARACTERISTICS

Fifty-one Associate Degree in Nursing students were invited to participate in this study. All participants reviewed, agreed, and signed the informed consent forms identifying the following demographic information: modality of course content delivery, age, gender, ethnicity, number of dependent children (less than 18 years of age), employment, number of hours employed per week, and previous college degree/certificate.

There were 51 students who were enrolled in the Pediatrics and OB nursing courses. Twenty-eight students were enrolled in the hybrid delivery and 23 enrolled in the face-to-face delivery. Table 2 displays the demographic characteristics for the sample. The students ranged in ages from 20 to 53 years (Mean=28.82, SD=8.62, MD=25). The distribution of age across decade groups clearly shows that the majority were in their 20s with those in their 30s second in frequency. The majority of the sample was female and Caucasian followed by Hispanic. Most of the students (70%) did not work and of those that did, the average hours per week reflected a greater than part-time employment. Less than half of the sample (30%) reported being employed. A large minority of students (41%) had an average of two dependent children at home representing a notable

secondary source of stress and time demand. Additionally 23.5% reported having previous degrees: two Associates of Arts, four Associates of Applied Science, one Bachelors of Arts, three Bachelors of Science, and two with Licensed Vocational Nurse.

STUDY ANALYSES

Specific Aims and Hypotheses

SA1: To evaluate the equivalency in educational outcomes across traditional face-to-face and hybrid teaching modalities.

SA1-H1: Hybrid performance outcomes will be equivalent or better than the traditional face-to-face performance outcomes on pediatric unit, final and HESI specialty examinations (no detriment effect for modality).

A univariate one-way ANCOVA on Modality (2) controlling for age was conducted on pediatric unit exams, final exam, final grades and HESI pediatric specialty exams (Table 3). Findings revealed that those students who were enrolled in the face-to-face pediatric classes initially scored significantly higher than the hybrid cohort on unit exams 1 and 2, but at third unit exam the hybrid students were slightly (but non-significantly) higher. By the final exam, final grade, and on the Pedi HESI there were no differences between the two groups. This finding demonstrated equivalency, i.e., there were no detrimental effect for modality, which supports SA1H1 for pediatric content.

Table 2: Demographic Characteristics of Sample

Variables	N (%)	M	SD	MD
Age		28.82	8.62	25
20-29	(67%)			
30-39	(21%)			
>40	(12%)			
Gender				
Female	47 (92.2%)			
Male	4 (7.8%)			
Ethnicity				
Asian	2 (3%)			
Black	4 (7.8%)			
Caucasian	28 (55%)			
Hispanic	17 (33.3%)			
Prev. Degrees				
No	39 (76.5%)			
Yes	12 (23.5%)			
Employed				
No	36 (70%)			
Yes	15 (30%)			
Hours/week (excl. non-employed)		22.53	9.24	20
Dependent Children				
No	30 (58.8%)			
Yes	21 (41.2%)			
Dependent Children (excl. those w/o child)		2.14	1.15	2.0

Table 3: Comparison of Modalities Across Pediatric Content Controlling for Age

Variables	Hybrid (n=28) m (sd)	Face-to-Face (n=23) M (sd)	df = 2,49 : P<
Unit 1 Exam	78.43 (4.81)	83.96 (5.43)	.000
AGE (28.38)			Ns
Unit 2 Exam	79.41 (8.91)	83.56 (6.32)	.053
AGE (28.38)			Ns
Unit 3 Exam	83.49 (5.44)	81.75 (4.62)	Ns
AGE (28.38)			Ns
Final Exam	81.21 (4.76)	81.22 (5.48)	Ns
AGE (28.38)			Ns
Final Grade	81.22 (4.41)	83.40 (4.03)	Ns
AGE (28.38)			Ns
HESI	83.67 (8.12)	83.29 (10.79)	Ns
AGE (28.38)			Ns

SA1-H2: OB hybrid students will score significantly higher than their Face-to - Face counterparts on their unit and final exams, final grades and HESI Obstetric specialty exams (main effect for Modality).

A univariate one-way ANCOVA on Modality (2) controlling for age was conducted on obstetric unit and final exams, final grade, and HESI exams (Table 4). Findings revealed that those students who were enrolled in the face-to-face classes initially scored significantly higher than the hybrid cohort on exam 1. However, there were no significant differences between groups on unit exams 2, 3, and the final exam. There was a significant effect in favor of face-to-face classes at the final grade but this was driven by the initial difference in performance at exam 1. There were no significant differences on the HESI obstetrics specialty exam. The failure of hybrid performance to be significantly higher than face-to-face did not allow rejection of the null hypotheses and did not support SA1H2. However, it did provide support for equivalency between the modalities on OB content similar to pediatric results.

SA2: To evaluate potential differences of teaching modality across content in which there has historically been a difference in performance (i.e., perhaps distance learning is not equally effective for all course content).

Table 4: Comparison of Modalities Across Obstetric Content Controlling for Age

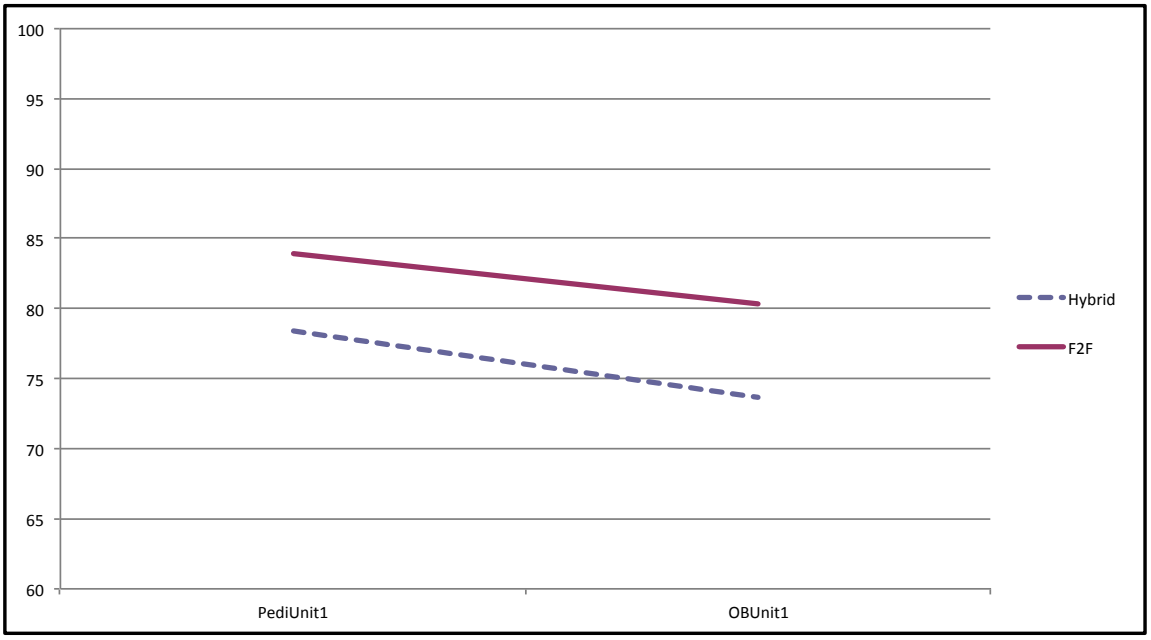
Variables	Hybrid (n=28) m (sd)	Face-to-Face (n=23) M (sd)	df = 2,49 : P<
Unit 1 Exam	73.67 (8.44)	80.35 (8.45)	.016
AGE (28.38)			Ns
Unit 2 Exam	78.90 (5.34)	80.14 (5.45)	Ns
AGE (28.38)			Ns
Unit 3 Exam	78.02 (7.45)	79.83 (6.92)	Ns
AGE (28.38)			Ns
Final Exam	78.41 (5.91)	78.91 (6.36)	Ns
AGE (28.38)			Ns
Final Grade	78.06 (5.02)	81.19 (4.39)	.020
AGE (28.38)			Ns
HESI	86.10 (8.20)	85.14 (8.80)	Ns
AGE (28.38)			Ns

SA2-H1: Pedi performance will be significantly higher than the OB performance on exam 1 for both face-to-face and hybrid modalities (main effect for content).

A one-way repeated measures ANCOVA was conducted with course (2: Pedi versus OB) as the within (repeated) factor since everyone took both and modality (2: Hybrid X F2F) as the between factor on the unit exams, final exam, final scores and HESI exam pairs (e.g., ObExam1 versus PediExam1, ObExam2 versus PediExam2, etc.) controlling for AGE. Results can be seen in Figures 1-6.

In Figure 1, the hypothesis for higher scores on pediatric content regardless of modality was supported for exam 1 ($F=13.127(1, 48)$, $p<.001$; hybrid m=76.159, SE=1.074 versus F2F =82.020, SE=1.187). Of interest was that the magnitude of difference was essentially the same for both content areas.

Figure 1: Comparisons across Exam 1 Content X Modality



Note: Y axis is truncated. Range of scores possible is 0-100

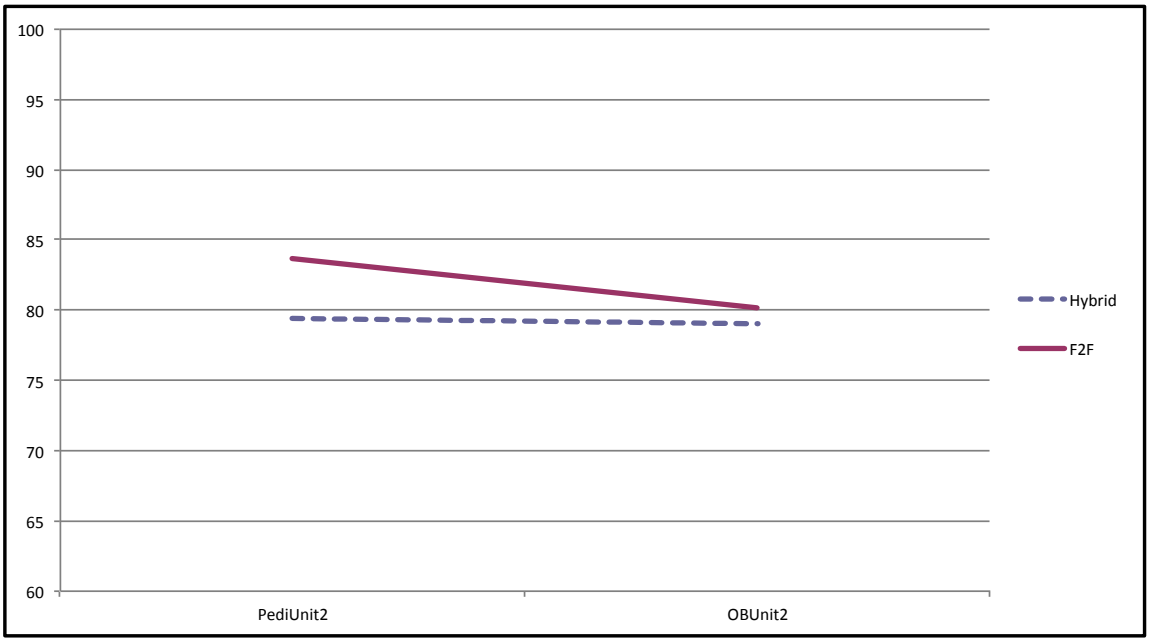
SA2-H12: Pedi performance will be significantly higher than the OB performance on exam 2 for both face-to-face and hybrid modalities (main effect for content).

In Figure 2, a pattern of differences of higher scores for pediatrics face-to-face as compared to obstetrics is shown. It is noteworthy that the magnitude of the difference was less for obstetrics.

SA2-H3: Pedi performance will be significantly higher than the OB performance on exam 3 for both face-to-face and hybrid modalities (main effect for content).

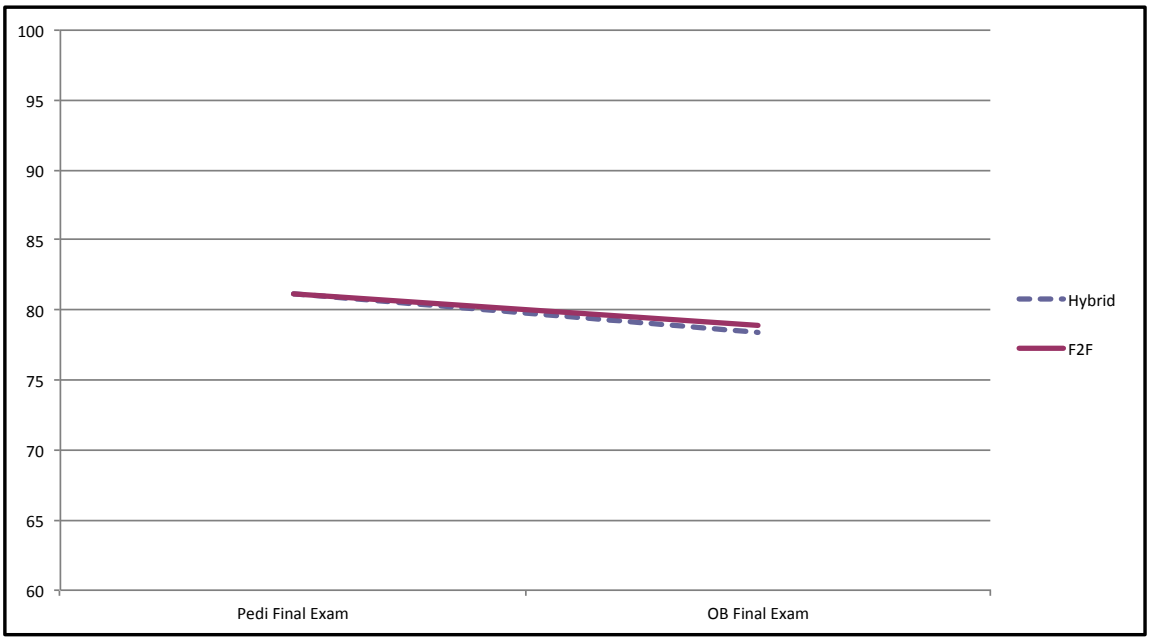
In Figure 3, a slight cross-over effect can be seen whereby hybrid scores were slightly higher for exam 3 scores for pediatric content contrary to prior exams. However, the effect was non-significant.

Figure 2: Comparisons across Exam 2 Content X Modality



Note: Y axis is truncated. Range of scores possible is 0-100

Figure 3: Comparisons across Exam 3 Content X Modality



Note: Y axis is truncated. Range of scores possible is 0-100

SA2-H4: Pedi performance will be significantly higher than the OB performance on final exam for both face-to-face and hybrid modalities (main effect for content).

In Figure 4, an even slighter cross-over effect can be seen whereby face-to-face were essentially equal for final exam scores for pediatric content. Again, the effect was non-significant.

SA2-H5: Pedi performance will be significantly higher than the OB performance on final grade for both face-to-face and hybrid modalities (main effect for content).

In Figure 5 the same patterns of differences were noted in the analysis of final grades/modality (non-significant) of higher face-to-face scores and of lesser magnitude for final grade content and modality.

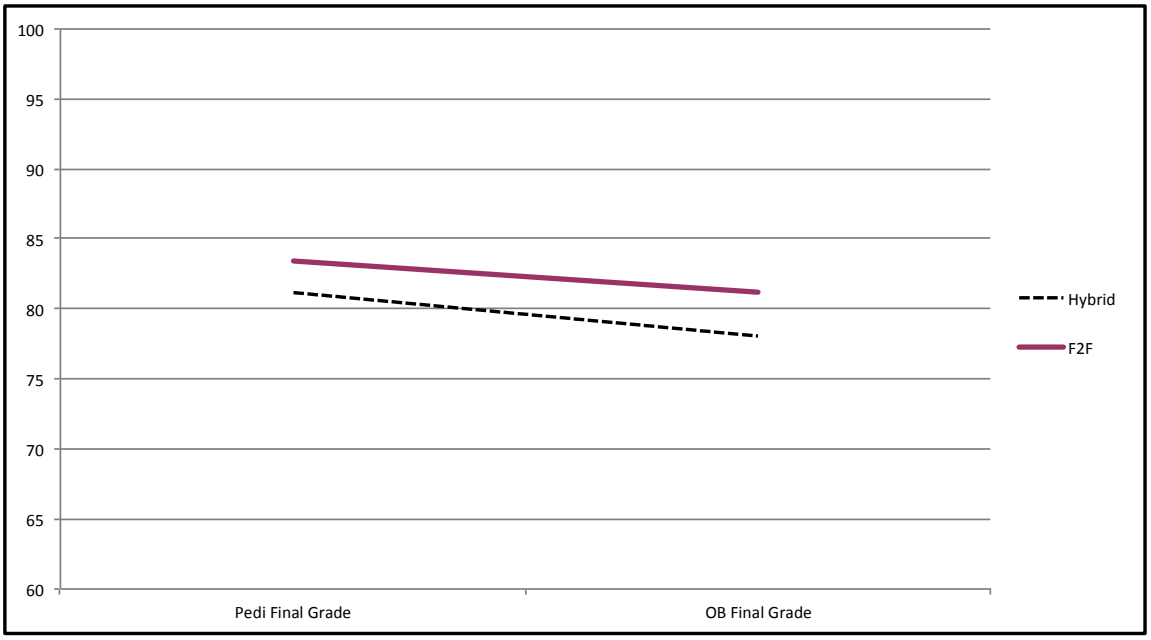
SA2-H6: Pedi performance will be significantly higher than the OB performance on HESI exams for both face-to-face and hybrid modalities (main effect for content).

The same pattern of differences can be seen in Figure 6 of non-significant higher hybrid scores for both content areas.

RESULTS

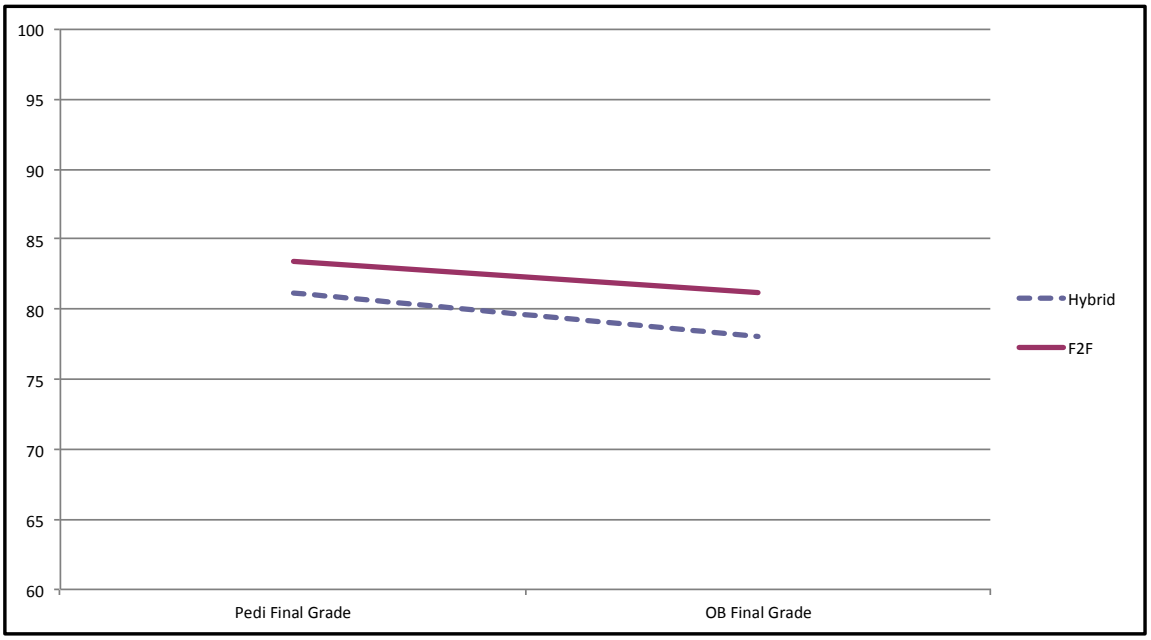
This study used a convenience sample of 51 second year associate degree nursing students in the first semester of the nursing curriculum at a community college. Two specific aims and hypotheses assessed whether two pedagogical modalities (face-to-face and hybrid) were equivalent across two content areas (pediatrics and obstetrics) as evidenced by student learning outcomes. The results indicated clear equivalences across modalities for both content areas.

Figure 4: Comparisons across Final Exam Content X Modality



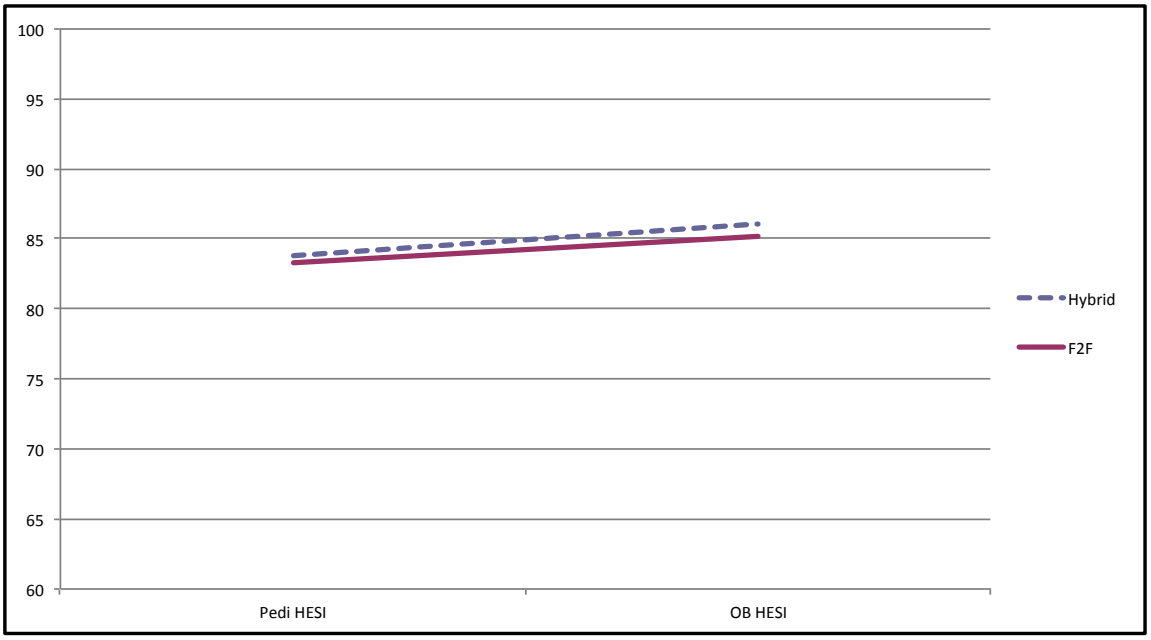
Note: Y axis is truncated. Range of scores possible is 0-100

Figure 5: Comparisons across Final Grade Content X Modality



Note: Y axis is truncated. Range of scores possible is 0-100

Figure 6: Comparisons across HESI Pedi/OB Content X Modality



Note: Y axis is truncated. Range of scores possible is 0-100

The current study provides evidence of equivalency across two (2) modalities and two (2) course content (pediatrics and obstetrics).Of interest is the fact that performance in the pediatric course was higher than that in the obstetric content, which reflected the historically proven greater level of difficulty in these two content areas. However, it is also worth noting that improvement across time was seen in the hybrid groups that were not observed in the face-to-face classes within content areas, which essentially offset initial lower performance in hybrid courses. This suggests that the newer and more unfamiliar format of hybrid courses may pose an initial challenge for students but that they quickly adapt and perform at equivalent levels as their face-to-face counterparts by mid-semester with no significant differences in end-point or HESI performance.

Chapter 5: Discussion and Recommendations

As education evolves in areas of accessibility, accountability, and feasibility, the dimensions of the delivery of content, rigor, and sustainability have come under review. This study examined the equivalency of two nursing courses (pediatrics and obstetrics) based on the pedagogical delivery (hybrid versus face-to-face) as taught in a community college in southeast Texas. The research was done to evaluate distance learning and success in achievement of student learning outcomes in initial professional associate degree nursing education.

Distance learning education has been an option to deliver curricula for several decades (Nasseh, 1997). Correspondence schools that deliver instruction ranging from secretarial skills to education degrees have provided individuals with opportunities to improve standards of living and professional goal attainment (Ticknor, 1891). During the early 1900s professional nursing education was available via U.S. mail with catalogs, tests, and other content materials delivered by the post office. Students at that time were able to study at their own pace and pay as they went. During the progression of this education model, leaders in this area decided that better control over content, evaluation, and recognition of the role of rigor and consistency were foundational to validation of the curricular authenticity. The 21st century transition has offered new and innovative models to prepare students to become professional nurses; however, concerns remain regarding equivalency of curricula, rigor and robust evaluation principles, and overall student success (i.e., first attempt passing the NCLEX-RN).

Several phenomena have been driving evaluation of pedagogical methods designed to prepare individuals for the professional nursing workforce in response to the nursing shortage. The 2010 Affordable Care Act was presented as a comprehensive opportunity to meet the healthcare needs of Americans without health insurance coverage. This legislation initiated the identification of healthcare insurance and coverage deficits. This mandate assessed all aspects of healthcare delivery, spanning various levels of providers (physicians, nurse practitioners, and physician assistants), reimbursements, and centers of healthcare delivery. The nursing shortage has been evident across the United States due in part to the longevity of the "Baby Boomers," which in turn has been associated with increased use of highly technological instrumentation for better healthcare delivery and improved patient outcomes (IOM, October, 2012). An aging populace has influenced diagnoses, treatments, and overall well-being as well as the number of professional nurses required to provide care.

Various pedagogical methods have been explored in initial licensure for professional nursing education curricula. The demands of existing dynamic healthcare delivery environments have caused nurse educators to be increasingly vigilant on both which content should be included in curricula and the ways in which the content should be delivered. The focus and responsibility to effect this change has been being placed on higher education institutions, both community colleges and universities, as the need for professional nurses has increased. As expectations have increased from education regulatory agencies for rigorous and robust curricula (including didactic, laboratory, and clinical experiences) so has the need to evaluate equivalencies of pedagogical methods. Due to these demands, schools of nursing are implementing and evaluating delivery

modalities including total face-to-face models to total online models. Desired outcomes remain constant regardless of delivery mode; these include students meeting program learning outcomes and successful passing (on the first attempt) of the NCLEX-RN licensure assessment. The application of the Conceptual Framework for Online Learning in guiding this study helped to systematically identify the critical focus in determining whether the pedagogical model served as a replacement for face-to-face instruction or as an enhancement of the face-to-face learning experience. The study results clearly indicate that the hybrid components successfully delivered equivalent curricula content and could be considered as a replacement modality for face-to-face instruction.

LIMITATIONS

This study included a small convenience sample that was limited in ethnic, gender and previous degree/certification diversity. The duration of the study was 16 weeks and represented the first attempt at alternative delivery modalities (face-to-face vs. hybrid) in the selected associate degree nursing program. The inexperience with a new format, small sample size, short duration of the courses, and lack of diversity in some areas limited study generalizability. Improvements in delivery of the new hybrid modality may occur as experience with this mode of education increases for faculty and students.

IMPLICATIONS

The results of this research provided implications in regards to nursing education and practice. One direct implication is that distance learning pedagogy may be a viable option to promote RN-BSN transition into practice. Other indirect implications of

distance learning included: decreased attrition, improved graduation rates, better prepared nursing novices, and ultimately a reduction in the nursing shortage.

Recommendations for Future Research

The opinion that online education is "just as good" as "face-to-face" delivery has become more prevalent over time. Allen and Seamen (2014) reported that in 2003 42.8% of academic administrators deemed distance learning outcomes to be inferior to face-to-face counterparts. As distance learning concepts and practices have improved, academic administrators' support of distance learning has increased. In 2012, 23% of academic administrators indicated that online education was inferior to face-to-face delivery, which represents a sharp decline from the decade prior (Allen & Seamen, 2014).

Study results support efforts to expand educational modalities of delivery and argue for the need of continued research. Improvements to sample size, a more robust diverse population, and increases in the duration of the study could allow for a more comprehensive assessment that would more fully inform decisions on new educational modalities. Of particular interest is the impact of faculty and student familiarity with particular modes of delivery. Conducting the study at an institution that has more experience in hybrid course offerings would provide a needed evaluation of stability and equivalency.

Conclusions

The final results revealed equivalency across teaching modalities as well as confirmed higher performance in pediatric courses compared to obstetric courses, which reflected historically proven difficulty variances in course content. These findings

support the use of new modalities for educational delivery as viable expansions of curricula.

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Vita

Veronica Jammer was born in Houston, Texas 1955. She has two children and four grandchildren. She began her nursing career as an LVN in 1973. She continued with her education receiving her BSN from University of Texas-Health Science Center – Houston in 1984. She worked as a school nurse at Keahey Elementary from 1984- 1988, then completing her MS in Nursing at Texas Woman's University (TWU)-Houston. After completing her graduate degree she began her role as a Professor of Nursing at San Jacinto College. She resumed her education at TWU pursing certification as a Family Nurse Practitioner (FNP). Upon completion of the FNP certification (1995) she worked as the nurse practitioner for Baylor College of Medicine –School Based Clinic at Austin High School from 1995-1997. She returned to San Jacinto College in 1997 where she has since been assigned to various roles in education spanning from faculty, to Dean of Health Sciences, to Department Chair Associate Degree Nursing which is her current assignment.

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