WEB ENHANCED ONLINE VIDEO-BASED INSTRUCTION WITHIN A POSTSECONDARY VOCATIONAL PROGRAM

by

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ABSTRACT

WEB ENHANCED ONLINE VIDEO-BASED INSTRUCTION WITHIN A POSTSECONDARY VOCATIONAL PROGRAM

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This study focused on effective instructor-based, video-based anchored instruction in the context of accommodating nontraditional learners and its implications for the growing field of massage therapy. The purpose of the study is to provide a springboard for more scholarly studies in the area of effective instructional practices in massage therapy. A mixed methods approach was used in the study for collection and analysis of the data.

No significant difference was found between the control and treatment groups in regard to the participants' skill-level scores. The participants' perceptions regarding online instruction included mixed views but indicated that students prefer online instruction accompanied by face-to-face instruction; any online component would have to be visual, or not reading and writing; the prevalent participant descriptions of their learning styles and the alignment of these descriptions to Fleming's (1995) model designates that the use of a video-based anchor within instruction parallels well with the way in which these students learn.

Future research would include stronger designs for examining the effectiveness of blended instruction, and online instructional strategies for improving student learning outcomes. It will be important for institutions to accommodate the increase in

nontraditional student population and to design programs which address this population's success and attrition rate.

The development of blended instruction within the postsecondary institution's program of massage therapy for a number of its courses, spa therapy, pregnancy massage, medical massage, chair massage, neuromuscular skeletal massage, and sports massage will add to the research regarding blended instruction and effective teaching strategies in massage therapy. Effective instruction in this field will accommodate the postsecondary nontraditional students entering the field, and those massage therapists requiring continuing education units.

CHAPTER I

INTRODUCTION

Background of the Study

While the field of massage therapy has grown over the past 30 years from a vocation to a profession, it is not fully operating at a professional level equivalent to other healthcare fields. According to Rosen (2009), one of the essential components of a mature profession is an active research focus. Research provides results and conclusions which are evidence-based and "[e]vidence-based practice is the watchword these days" (Rosen, 2009, p. 4). It is important for the profession as a whole to pursue a research agenda. However, it is just recently that the importance of rigorous research in this field has been taken seriously by its practicing professionals.

As early as 1982, the Touch Research Institute was established, and it is the first center in the world devoted solely to the study of touch and its application in science and medicine. Members of the Touch Research Institute complete research geared toward defining touch and its promotion in health and benefits to the treatment of disease as well as data on the benefits of touch-related therapies. Outside of the limited work being accomplished at the Touch Research Institute, there is very little scholarly research conducted in the area of massage therapy (Committee on the Use of Complementary and Alternative Medicine by the American Public, 2005), and there is a concern that

"practitioners, teachers and researchers also understand the advantages of more systematic audit and rigorous research within their practice" (Mills & Budd, 2000, p. 88). Even when there is research available, it is not used to the same degree by massage therapists as by their peer healthcare workers (Suter, Vanderheyden, Trojan, Verhoef, & Armitage, 2007). A number of articles and studies published regarding massage therapy indicate the lack of a research base in the field. For instance, in a study conducted by Sherman et al. (2005) that surveyed the training and practice patterns of massage therapists in the United States, there were a number of references in their publication regarding the lack of research in massage therapy to substantiate their findings. One of the key points listed in a publication of the National Center for Complementary and Alternative Medicine (NCCAM; 2006) is "[s]cientific evidence on massage therapy is limited" (p. 1). In addition to the need for more evidence-based research regarding the benefits of massage therapy for health is that there is little to no scholarly research conducted in the area of effective teaching strategies in massage programs (Sherman et al., 2005). In sum, despite the use of the term *massage therapy profession*, the industry "is plagued by incongruities in the domains of education, practice and regulation" (Rosen, 2009, p. 5).

Another component that is important for the field of massage therapy is the existence of accrediting agencies and state governing boards (Eisenberg, et al., 2002). They often mandate the base curriculum provided in massage therapy programs. According to Rosen (2009), approximately 40% of massage therapy schools are accredited. There are five agencies that are broad-spectrum vocational accreditors overseeing particular massage programs, including the following:

- Accrediting Bureau of Health Education Schools (ABHES)
- Accrediting Council for Continuing Education and Training (ACCET)
- Accrediting Commission of Career Schools and Colleges of Technology (ACCSCT)
- Commission on Massage Therapy Accreditation (COMTA)
- National Accrediting Commission of Cosmetology Arts and Sciences (NACCAS; American Massage Therapy Association [AMTA], 2011, ¶ 2)

The NACCAS deals primarily with the field of cosmetology and expanded its scope into massage therapy a few years ago, yet there is only one agency established solely for the massage therapy field, the COMTA (COMTA, 2008; Rosen, 2009). With an estimated 1,200 to 1,400 massage therapy schools in the United States (Hodgson, Dryden, Finch, & White, 2008), the implication is that over 500 schools are lacking the rigors of accreditation or an established body of research to guide their practice.

With massage therapy growing as an integral part of the Western healthcare system, there are certificate or career program options, associate degree courses of study, and full bachelor's programs at universities (Medical and Nursing Training, 2011). These programs are based on different time requirements, but most are governed by a minimum curriculum and practical requirement set by accreditors or the state. Vocational programs generally offer smaller class sizes and more specialized massage modalities, such as aromatherapy and shiatsu, whereas a university program is more general in its approach and may even include the vocational program as a track within a more generalized program such as spa management. Vocational programs at the postsecondary level are structured for instruction of a particular trade or skill, stressing hands-on training and

taking place in a short amount of time. The programs may extend over several months to two years and provide flexibility with the option of attending a night or day session (Moskowitz, 1995). Programs are designed to accommodate nontraditional students since "most nontraditional students juggle college attendance with work and family responsibilities" (Eckel & King, 2008, p. 7). The researcher of this study examined a vocational program in massage therapy at a postsecondary institution that is considered a community college.

Statement of the Problem

All of the courses in the massage therapy program at the postsecondary college described in this study are taught fully on site except for a small component of the business course. An online, video-based component was developed for the Swedish effleurage course in this study. The Swedish massage modality is "considered one of the first scientific approaches to massage, aiming specifically to affect the circulatory, lymphatic, and nervous systems" (Ezzo, Donner, Nickols, & Cox, 2001, p. 219). This modality was developed by Per Henrik Ling in 1914 and "is the most widely practiced type of massage in the United States" (Ezzo, et al., 2001, p. 219). It is the basic technique taught in the community college's massage therapy program, and it provides instruction for the beginning strokes of massage and serves as the foundation for other modalities such as deep tissue, sports, pregnancy, infant, and neuromuscular massage therapy. Therefore, it is critical that the students are successful with Swedish massage techniques so that they have a solid foundation for other techniques offered later in the program. Other material covered in the course includes proper maintenance of documentation, such

as clients' intake form and subjective, objective, assessment and plan notes and implementation of an effective massage, with proper use of draping and body mechanics. Since many of these topics are new for the students and because these students do not have the advantage of a longer course of study, it is imperative that they master the techniques incorporated within this particular course. For this study, the researcher explored blended instruction with the use of an online, video-based component in the Swedish massage course to help reinforce this introductory concept.

The development of an online, video-based component will not only be a means of redesigning the Swedish massage course into a blended design, but will also provide a model for other courses in the program. It is intended that this byproduct of the study will provide guidance for the restructure of other courses in the program that teach such modalities as deep tissue, orthopedic (sports), pregnancy, and infant massage into a blended design. Providing effective instructor-based, online, video-based instruction for nontraditional learners was examined in the context of blended instruction with an online video-based component, the importance of integrating online instruction in higher education, and its implications for the growing field of massage therapy. It is also a springboard for the researcher to examine the use of blended instruction with an online video-based component within the program's future courses, thus building a foundation for further evidence-based research related to teaching strategies in the field of massage therapy.

Research Questions

The following are specific research questions for the study:

1. How will the skill levels of students be influenced by redesigning a fully on-site Swedish massage course into a blended learning design with the integration of an online, video-based component in the same course measured by clinic evaluation results?
2. What are students' perceptions regarding online instruction?

Hypothesis

The following represents the null (H_0) and alternative (H_1) hypothesis for the first research question examined within the study.

H_0: There will be no significant difference in posttest scores between the two classes as measured by the massage skill-level survey (Appendix A).

H_1: There will be a significant difference in posttest scores between the two classes as measured by the massage skill-level survey (Appendix A).

Variables Included in the Study

The manipulated independent variable in this study was the restructure of a fully on-site Swedish massage course into a blended course with the integration of an online instructor-based, video-based component available through Google sites. The course is part of the massage therapy program at a regional community college located in the southeastern part of the United States. The students enrolled in the treatment group were exposed to a blended course design that included an online video-based component and

on-site coursework. The online video clips were sequenced along with the instructor-guided, on-site demonstrations and included narration of the actual steps corresponding to the technique shown on the video clips. The students in the control group of the Swedish massage therapy course experienced the fully face-to-face design of the course.

The learner skill level was the dependent variable of both groups enrolled in the Swedish massage course of the program for the academic year 2009 through 2010. The learner skill level consists of how well the student demonstrates certain skills during an hour-long, full body massage. During their clinical experience, students were evaluated by a lead instructor on (a) draping the client, (b) use of massage techniques, (c) continuity of the massage, (d) focus and tracking of the client, (e) and their body mechanics. Each element was evaluated using a Likert scale of 1 to 5 with the following criteria: 5 is excellent, 4 is very good, 3 is average, 2 indicates that minor improvement is needed, and 1 indicates that major improvement is needed (Appendix A).

For draping, the lead instructor observed whether the therapist provided security for the client at all times throughout the massage by tucking the sheet, keeping contact while draping, and providing as little exposure of the client as possible while allowing accessibility of the area being massaged. The evaluator also looked for whether the therapist provided proper draping for the room temperature by providing a blanket with the sheets if the client is cold and whether the therapist used bolsters and pillows for client support.

The evaluator also observed for the level of competency shown in the therapist's massage techniques and skills, and whether there is continuity or flow within the entire massage. The certain aspects the evaluator concentrated on for this element were the

techniques used for each side of the body, supine and prone; whether the student repeated techniques performed for both arms and both legs; if the technique was completed with fullness and evenness of strokes; and if the therapist integrated range of motion and used an appropriate amount of time for the body in supine and prone positions. For continuity, the evaluator looked for smoothness of strokes, transition of strokes, and the connection from one part of the body to another; use of firm and even strokes with the hand or palm; and whether the therapist recentered with the client after repositioning the client from supine to prone or prone to supine during the middle of the massage, depending on whether the client was supine or prone at the beginning of the massage.

For focus and tracking, the evaluator observed whether the therapist's intention during the massage was nurturing rather than mechanical and was given with sensitivity to the client's body language, such as flinching or facial expressions as an indication of guarding from too much pressure from the therapist. Other areas of interest for the evaluator were whether the speed of strokes was appropriate for the technique and if the pressure of the strokes originating from the therapist was given using proper body mechanics. It is important that therapists integrate proper body mechanics early in their practice for their own health and longevity in the profession. The aspects of this element targeted were alignment with stroke; for instance, the therapist's center (located at belly-button level) should be aligned with direction of stroke; there should be geometric leverage in terms of proper body and arm angles; the therapist should lean in as opposed to pushing with the arms; the therapist's legs should be placed properly for weight distribution (about shoulder length apart); the therapist should use lunges so that pressure

originates from the center of body; and the therapist's wrist and hand should be relaxed while conducting the massage technique.

Definition of Terms

The following definitions were used in this study:

Anchored Instruction. Teaching design that includes the use of an anchor, usually in the form of video, that can be explored by the learner, for subsequent instruction and learning based on a real-world situation (Cognition and Technology Group at Vanderbilt University [CTGV], 1990).

Blended Learning. Instruction that combines face-to-face instruction with computer mediated instruction (Bonk & Graham, 2006).

Cognitive Apprenticeship. A method of instruction that stems from the idea of traditional apprenticeship of learning within a social context experiencing real practice through activity and social interaction: an idea of knowing how, instead of knowing what (Love, 2005).

Community College. A community college is part of the "[p]ublic 2-year postsecondary institutions, regardless of the actual name of the institution" and offers programs that include associate's degrees, vocational programs and certificates (National Center for Education Statistics [NCES], 2008, p. 3).

Contraindication. A medical condition that indicates that a massage therapist should exercise caution concerning giving or receiving a massage.

Endangerment Sites. An area of the body to which extreme caution needs to be considered when giving a massage.

Friction. A massage technique in which the therapist uses a back and forth alternating motion with the tips of the fingers or edges of the hands over the area being massaged.

Inert Knowledge. A term coined by Whitehead (1929) as knowledge that is readily available when one is asked explicitly for it, yet is not used spontaneously in problem solving, although it is relevant (CTGV, 1990).

Meaning making. Process of learning "in which individuals construct mental models that ground their understanding in a deeply personal and unique fashion" for integrating new knowledge (Osberg, 1997, p.8).

Nontraditional Student. A student with one or more of the following characteristics:

> (a) they have delayed enrollment after finishing high school, (b) they attend college part time (c) they work full time (d) they have dependents other than a spouse [usually children] (e) they are single parents, or (f) they have not earned a high school diploma, having completed a general equivalency diploma or other type of high school certificate. (NCES, 2002a, p. 2)

Petrissage. A massage technique in which the therapist uses the palms of the hands to lift and squeeze the tissue.

Postsecondary Institution. Any institution in higher education with the following description: "[l]ess-than-2-year institutions providing short-term vocational training, 2-year institutions offering associate's degrees and vocational certificates, and 4-year colleges and universities which offer bachelor degrees and higher" both private and public (NCES, 2002a, p. 98).

Situated Cognition. A theory of learning that suggests that learning takes place within a social context or real life application or situation (CTGV, 1990).

Swedish Massage. A term used for referring to a variety of techniques including kneading, friction, tapping, stroking, and vibration in which pressure is applied to tissue centripetally, resulting in improved circulation of blood and lymph in the body.

Tapotement. A massage technique that is applied by rhythmic short rapid movements of the fingers or sides of the hands to loosen tissue or over the chest area to loosen mucus.

Web Enhanced. A term used to describe instruction that is supplemented with the use of the World Wide Web.

Significance of the Study

One of the major purposes of this study is to increase the body of knowledge in the area of effective teaching strategies within massage therapy research. The study determined the effectiveness of redesigning a fully on-site, face-to-face Swedish massage course into a blended course with the integration of an online, video-based anchor. Currently, there is a limited number of scholarly studies in the area of effective instructional practices in massage therapy.

With the use of video-streaming technology through YouTube and Google Sites, students have easy access to the video clips via the Web. This format is free of charge and offers students the flexibility of when and where to engage in learning, a concept especially vital for nontraditional learners who comprise the majority of this postsecondary population. With the enrollment of nontraditional students attending

postsecondary institutions increasing, it is important to look for instructional methods to ensure their success. This increase is related to the need for a number of adults to return to college for their professions or to pursue changes in their careers for future financial stability (Benshoff & Lewis, 1992).

According to Aslanian and Brickell (1980), the percentage of older students has increased substantially over the last 20 years. Some of the reasons these adults return to school are to complete earlier educational pursuits, to accommodate changing job responsibilities, or to further their careers (Benshoff & Lewis, 1992). The term *nontraditional* is not clear-cut, and the description generally used in research has been developed by the United States Department of Education. In "Findings from the Condition of Education 2002: Nontraditional Undergraduates," NCES (2002a) defines nontraditional student as a student who possesses one or more of the characteristics outlined in its report. In 1999-2000, 73% of the nation's undergraduate population was considered nontraditional.

In addition, Levine and Cureton (1998) state that the traditional student, or one who has entered college after high school, lives on campus and attends full time, makes up less than 20% of the student population in higher education. The nontraditional students, those who are older, attend part time, hold jobs, have families, and/or live off campus, make up the majority of college students. They desire a relationship with the college that is similar to the type of relationship they have with the electric company, bank, and grocery store. This expectation indicates that the majority of college students have a consumer-type attitude toward higher education. Therefore, they want high quality, low cost, service and convenience from the college (Levine & Cureton, 1998). It

is important for higher education institutions to realize the expectations and demand of adult students. According to Benshoff and Lewis (1992), institutions will reap the benefits of attracting, serving, and satisfying older students if they are willing to alter current programs and provide the services needed by this population.

According to Gibson, Tesone, Hodgetts, and Blackwell (2001), it is apparent from the literature that the nontraditional adult learner is the main audience for distance learning programs. These students are often trying to balance their time between family and work while attending school part time. What makes distance learning attractive for this type of learner are the convenience of working from home or office, flexibility of time, and culturally-diverse group interactions (Gibson et al., 2001). Offering an online video-based portion of the course has allowed these students the flexibility needed to hold down a full-time job and/or raise a family as they continue their education. The availability of an online video-based segment fulfills the need of the program's current and future student population in terms of availability, accessibility, and improved instruction.

In addition to filling a need for its nontraditional students, this study has created a building block for more scholarly research regarding educational strategies in the area of massage therapy. Hodgson et al. (2008) stated that there was "insufficient [massage therapy] research data being generated" and "too few trained [massage therapy] researchers to sustain a high quality, regularly appearing [massage therapy] journal" (p. 3). Indication of the lack of research in the area of massage therapy in general is evident by new journals in the discipline, specifically those studies related to effective educational strategies. Data generated from this study regarding the effectiveness of

instruction has provided a foundation for further research in this area. This study has also assisted in the preparation of proposals and grants necessary for supplemental funding of the program's sustenance and growth.

Summary

This study was conducted to observe any difference in skill development of students in a blended Swedish massage therapy course. Both quantitative and qualitative methods were used, with an emphasis on the quantitative techniques supplemented by qualitative methods for enhancement of data and results. The significance of the study involved accommodating the nontraditional student with an online video-based component that has been documented as an effective teaching strategy. It also offers a building block for future research in the area of massage therapy education. The literature that substantiates the specifics of the study is presented in Chapter 2.

CHAPTER II

LITERATURE REVIEW

Introduction

There are very few scholarly studies conducted regarding effective teaching strategies in the field of massage therapy. According to Moyer, Dryden, and Shipwright (2009), the growing body of research in massage therapy "has serious shortcomings that hamper the field's progress" (¶ 1). However, massage therapy is referenced in documentation from thousands of years ago and found in a variety of locations including Egypt, China, Japan, India, Arabic nations, Rome, and Greece. Hippocrates recognized the benefits of massage and "defined medicine as 'the art of rubbing'" (NCCAM, 2006, p. 1). Its use in the United States was introduced in the 1850s by two American physicians named Charles and George Taylor, who were brothers with a practice in New York (NCCAM, 2006). They had studied scientific massage therapy in Sweden. In the 1930s and 1940s, scientific and technological advancement overshadowed its use for the promotion of overall health (NCCAM, 2006). Its interest was revived, particularly for athletes, during the 1970s in the United States (NCCAM, 2006). Although it appears that massage therapy has a place for the improvement of overall health, the massage therapy research community is currently small in relation to those of other healthcare professions. In addition to the limited community of researchers studying massage therapy research is the lack of research specifically focused on effective teaching strategies within the field.

For this study, the researcher explored the effectiveness of blended instruction and the use of an online video-based anchor on students' skill levels as compared to a fully face-to-face course in Swedish massage. Video-based anchors are found to improve comprehension and the ability to access and apply relevant knowledge (Bransford, Sherwood, Hasselbring, Kinzer, & Williams, 1990; CTGV, 1992). Because of the program's vocational nature, the students enrolled in the massage therapy program for this study are nontraditional learners. Therefore, the use of the Internet to deliver video is consistent with appealing to the program's nontraditional student profile. It is expected that the integration of an online video-based component within the course provided a positive impact in terms of learner achievement in the area of skill-level improvement.

Looking at the level of support that could be achieved through the Internet, Brown (2008) found that in a case study of blended learning with a vocational program in beauty therapy, it is important to address "the areas where students needed more support and did not try to replace the successful parts of the course" (p. 85). Many of the existing aspects of the program and the course included effective instruction strategies such as the use of a cohort, face-to-face lecture, and demonstrations. In their study, Skopek and Schuhman (2008) discuss higher education's role of the socialization of its students. They found that structuring a curriculum with set admission times and a required sequence of courses for a specific group of students is important for the student's success in a program. The use of a cohort helps form a cohesive, small group that is beneficial and conducive to learning and socialization.

Their research also indicates that maintaining the face-to-face demonstration component of a course helps to develop students' socialization and instills particular

values, all of which can be limited in a distance learning environment (Skopek & Schuhmann, 2008). According to deLeon and Killian (2000), students do not experience social integration without the opportunity to physically meet the instructor or other students in distance education. Students also feel a sense of isolation with no face-to-face interaction, a situation which results from geographic distance. Therefore, a blended approach or hybrid offers the best case scenario for this particular course within the study.

The literature review consisted of supporting evidence in the effectiveness of a video-based online anchor for accommodating nontraditional learners within the growing field of massage therapy. Supporting evidence was gathered by searching books dedicated to research and design of online instruction. Scholarly articles published on the implementation of anchored instruction, online instruction in the health care field, and the growing field of complementary and alternative medicine were explored and reviewed. Also, a search of the library, subscription, electronic databases, and the Internet for scholarly articles regarding these three subjects was conducted.

The researcher's dependent variables were linked to course-based performance evaluation that is common in the literature. The independent variable, or treatment, is the use of technology-based, anchored instruction through the Internet, a method which is substantiated by the literature. For example, Mumbi and Mesut (2004) used anchored instruction to teach pre-service teachers integration of technology in the curriculum. Themes that emerge from this study relate directly to the study's problem statement. Research questions were related directly to the treatment.

The content of the review was drawn from research publications and peer-reviewed academic journals. There was very little experimental research in the area of massage that relates specifically to educational practices. Hodgson et al. (2008) state that "[r]esearch literacy and research capacity are underdeveloped within the massage therapy community" (p. 1). Therefore, some of the literature contains statements from conferences or data collected by accredited massage associations.

This chapter addresses what has been found in terms of massage therapy research and its infancy. The effectiveness of anchored instruction was also examined in terms of its use in a number of disciplines. The use of blended learning instruction with an integrated online video-based component was explored in terms of accommodating the growing nontraditional students' population entering higher education.

Massage Therapy Research

According to Grant (2008), "[t]he massage profession has grown rapidly since the late 1980s," and "[t]he increasing use of massage as an element of health and wellness care has attracted more attention from established health professions, health care case managers, legislators, and liability attorneys" (p. 1). According to AMTA (2010a), it is estimated "that in 2009, massage therapy was a $16-20 billion industry" (p. 1) and that "[i]n July 2009, 32 percent of adult Americans said they had at least one massage in the last five years to reduce stress or relax—up from 22 percent reported in 2007" (p. 2). Grant reports that "[m]ore practitioners are using massage as a means of intervention for specific conditions. More [massage therapists] are also practicing in a greater variety of health care contexts" (p. 6). With the assimilation of massage therapy techniques as a

valid health care option, massage therapy's increased use and visibility will be in direct correlation to increased research regarding its effectiveness, means of use, and education.

Massage therapy research has not kept up with the growing interest and demand in this profession. According to Kahn (2001), "[t]he field of research in therapeutic massage and bodywork is just beginning to develop" (¶ 23). As early as 1999, The American Massage Therapy Foundation funded a conference to address the need for a research agenda within the field of massage. Kahn indicates that the reasons for investing in this type of endeavor are that "research is a key to the professionalization [*sic*] of any health-care field" (¶ 13), research is one of the ways to improve what massage therapists offer as a continued generation of a relevant body of knowledge, and "research is also a prerequisite for access to some of the contexts in which we would like to practice" (¶ 15). For instance, some massage therapists may want to practice in conjunction with medical environments, and/or have the ability to be reimbursed by insurance companies. It is important for the profession to have inroads to these contexts.

Kahn (2001) believes that having a research agenda is a way to open the doorway to those who cannot afford massage therapy for medical reasons. Kahn compares the infancy of massage in research to that of chiropractic care for low back pain. A decade ago, chiropractic was included for the first time at a consensus conference held for reviewing treatments for low back pain. They contributed this inclusion to chiropractors spending "the past 10 years systematically funding and conducting research on the potential of chiropractic to treat back pain" (¶ 16). According to Kahn, "[t]here was a body of literature published in reputable journals reporting the results of studies on

chiropractic and back pain. They had the necessary research data" (¶ 16). Massage therapists did not have this type of data.

At the conference in 1999, a Massage Research Agenda Workgroup that included scientists, clinical research scientists, social scientists, and massage therapists developed several recommendations regarding research in massage therapy. They found that "[t]he literature on therapeutic massage and bodywork is so scant and problematic that the groups proceeded under the assumption that the entire field needed to be investigated" (Kahn, 2001, ¶ 25). Members of the Massage Research Agenda Workgroup also recommended the need for a research infrastructure to drive a research agenda, a step that they think is crucial to the profession of massage therapy. Their research infrastructure includes funding for research, establishing a bridge between researchers and academics active in the field, and working with other associations to build research as a core competency within the field.

Hymel (2002) suggests basic guidelines for a systems-based model of integrating research competencies within massage therapy education. Hymel's model includes a unit on experimental research process as a way to "begin the quest to make our profession more research competent" (p. 5). Becoming more research competent is a concept supported by the Massage Therapy Foundation which provides grants and outreach programs and "also supports the education of massage students and therapists in gaining greater research literacy" (Rosen, 2009, p. 4). Although there has been an accumulation of massage therapy research over the time frame from 1988 to 2008, massage therapy research is still in its infancy compared to other medical fields with definite research infrastructures.

Moyer et al. (2009) state that "[t]he practice of [massage therapy] is very old, but only in the last twenty years or so has scientific research on [massage therapy] begun to accumulate" (¶ 1). Their report is based on an interactive workshop with 37 participants to examine the "current state of [massage therapy] research and to explore approaches, directions, and strategies with the potential to make the next two decades of [massage therapy] research optimally productive" (Purpose section, ¶ 2). A number of items were discussed in depth and analyzed including the amount of massage therapy research in existence and the strengths and weaknesses of the studies. The results of the participants' concerns regarding massage therapy research were documented and expanded upon in the report. In reference to education and training research, it was found that "[t]raining and education are critical to the success of a profession" (Results section, ¶ 22) to include the content being taught, methods for teaching and training that are ideal for massage therapy students, and whether the amount and type of training indicate the professional success of the student. These aspects related to "education and training are all worthy of study" (Results section, ¶ 22). These comments validate the importance of research in massage therapy education.

With the growing interest in complementary and alternative medicine, such as massage therapy (Grant, 2008), it is important for higher educational institutions to adjust to changes in instruction with the integration of online components. As massage therapy becomes more prevalent as a valid medical practice for prevention and treatment of disease, the availability, accessibility, and enhanced instruction will meet the increasing interest for education of massage therapy for future therapists, with regard to continuing education units for current therapists, and for general knowledge in the field. Effective

instruction grounded in research-based instructional strategies, whether blended, fully face to face, or fully online, is a major consideration for massage therapy programs in postsecondary schools to meet the demand of this growing field.

Anchored Instruction as an Effective Teaching Strategy

Anchored instruction is a major paradigm for technology-based learning developed by the CTGV (Nix & Spiro, 1990). Anchored instruction is a well-documented instructional strategy for enhancing learner achievement and "has been used in a variety of disciplines such as language arts, social studies, math, science, and special education" (Mumbi & Mesut, 2004, p. 431). Anchored instruction involves presenting material in the context of an authentic event and allows the material to be studied from multiple perspectives to provide deep comprehension (Barab, Hay, & Duffy, 1998).

The purpose of the anchor, which in this study included a video-based online component as part of the treatment, was to provide a "common core of knowledge for all class members" (Cena & Mitchell, 1998, p. 539). The general principles of anchored instruction are that learning and teaching activities should be designed around an anchor and that curriculum materials should allow exploration by the learner (Bransford et al., 1990). According to CTGV (1990), "[t]he major goal of anchored instruction is to overcome the inert knowledge problem" (p. 3). The way to overcome the inert knowledge problem is to alter how students store it cognitively. Many times knowledge is stored in a way that is not easily retrieved or effectively used. It is important that students acquire knowledge that can be used and applied within a context, instead of being memorized and repeated.

Inert knowledge. *Inert knowledge* was coined by Alfred Whitehead (1929) as the information a student is able to express but is unable to use. Therefore, by providing instruction which incorporates an authentic situation or context through the use of an anchor, the student is able to capture the knowledge used by the expert in that situation better than a student in a strictly lecture-based instruction in which the teacher provides a set of rules and facts for students to memorize and document as evidence of learning (Glaser, Reith, Kinzer, Colburn, & Peter, 1999). Therefore, using an anchor for instruction allowed a student to visualize the areas of the body with endangerment sites versus memorizing a list of endangerment sites. Anchored instruction is a model that allows students to understand by observing the way knowledge is used within a situation. It is based on the concept of situated cognition (Williams, 1992).

Situated cognition. The term *situated cognition* suggests that knowledge is central to some extent within the "context from which it is acquired" (Kumar, 1995, p. 33). Therefore, using video of a real-world scenario as an anchor is a way of providing the backdrop for situated cognition (Kumar, 1995). The anchor provides a real situation to assist students in discerning the relevant events particular to the context being studied (Xin & Rieth, 2001).

For this study, the student was able to connect visually with the specific areas of the body, taking into account caution needed for endangerment sites, the way in which an expert maintains contact with the client while providing draping, and the use of transitions from one massage technique to another while maintaining smoothness of strokes and continuity. Providing an anchor allowed students to view how the expert used

knowledge as a tool within a real-world scenario that is related to the idea of cognitive apprenticeship (Love, 2005).

Cognitive apprenticeship. Cognitive apprenticeship is the concept that the student is an apprentice learning a skill from a master in the field. Drawing from the idea of traditional apprenticeship, *cognitive apprenticeship* is defined as "experiencing authentic practices through activity and social interaction" (Love, 2005, p. 301). Cognitive apprenticeship is based on learning in which "knowledge is a product of the context, culture, and activity in which it is situated" (p. 301). Therefore, the student is exposed to knowledge which is an integral part of the context. Knowledge is acquired and can be applied, instead of remaining a separate entity from the environment in which it is used.

In this study, the video-based anchor was set up in modules according to massage techniques conducted by a veteran and teacher in massage therapy with twenty plus years of experience in massage therapy. Students were able to view the instructor providing face-to-face demonstrations during class. The treatment was fashioned according to these demonstrations with the veteran instructor providing information while conducting a full body massage. The use of video for the treatment allowed the student to control the areas of instruction that needed to be revisited for reinforcement of information and retention.

Video-based anchors. In a study conducted by Choi and Johnson (2005) the participants indicated that the use of video for the basis of instruction "was more memorable than traditional text-based instruction" (p. 215). The concept that a video-based anchor allows for recalling material easily from memory "implies that context-

based videos in online courses have the potential to enhance learners' retention and motivation" (p. 215). According to the CTGV (1990), individuals prefer visual context rather than textual formats because "visual formats allow [us] to develop pattern recognition skills" (p. 3). Connecting mental models to video which simultaneously presents video and computer-generated information is a basis for anchored instruction (Kozma, 1991).

According to Crews, Biswas, Goldman, and Bransford (1997), "[t]he use of video, animation, graphics, and simulation allow [*sic*] the presentation of material in realistic contexts, thus addressing the problems of inert knowledge while promoting constructive and generative learning" (p. 142). Specifically, using video clips as a form of anchored instruction offers an additional learning tool for processing the lesson visually. Availability of the video clips online allows learners to view the lessons at their convenience; it also offers repetitiveness of material in areas in which the learner has evaluated the need for reinforcement. The repetition of viewing the video clips offered a more memorable learning experience for the student in the study.

According to Langone, Malone, and Clinton (1999), "technologies such as videodisc and CD-ROM can provide immediate access to rich video models and allow the instructor to link short video examples to specific concepts being taught" (p. 85). Effective anchors such as the use of video segments may help students discern features that make particular actions relevant. The conversion of a fully face-to-face course into blended instruction providing an online component allowed the learner "to interact with the media (i.e., stopping to read overlaid text, replaying segments)" (Dieker et al., 2009, p. 182). Interactive video allows learners to control the video and monitor their own

learning, rather than passively viewing an instructional video as an instructor plays the clips or on television (Wetzel, Radtke, & Stern, 1994). Students are able to retain information longer and learn more when they are actively involved in a self-driven learning project versus passively sitting and listening (Newman & Scurry, 2001).

The use of commercially-produced videotape programs for instruction cannot provide the advantages of using anchored instructional methods including the instructor's ability to expand on conventional modes of instruction, such as overheads, print, and images, to focus on specific content and subject areas being taught, and to tailor the material to fit the instructor's and students' needs (Langone et al., 1999). Although there are many commercial digital versatile discs (DVDs) on various massage techniques and modalities, there are no commercial DVDs that are based on the specific course being studied. The uniqueness of the anchor in the study is that it is instructor-based and fashioned to fit the structure, content, and design of the face-to-face component.

Instructor-based video anchors. Instructor-based video anchors allow the instructor to bridge content matter from lectures with video, thus producing "an experiential context through which meaningful and active learning can occur. Video content can be tailored to the specific lecture being provided and [students can] have immediate and repeated access to video examples" (Langone, Malone, Stecker, & Greene, 1998, p. 100). In this study, the video anchor was based on the face-to-face demonstrations conducted by the instructor.

The video segments were sequenced according to the particular area being concentrated on during a full body massage. When students examine an anchor in the

form of video, they are able to integrate new information with their own perspective and background knowledge. The anchor serves as the bond between on-site instruction and the link that assists students with melding new knowledge with their existing knowledge (Langone et al., 1998). According to Rose (2009), students have positive attitudes toward the personalization of courses with on-site or online courses. In Rose's study, the use of instructor-based video in college-level classes received an overwhelming response of acceptance, "with all the students surveyed expressing satisfaction with this method of instructor-learner interaction" (¶ 1). It is important that students are satisfied with the instruction, in addition to experiencing improved learning achievement.

Improvement in learner achievement can be attributed to the ability of the student to control the video for additional review and reinforcement. Although video-based instruction has usually been conducted with the use of video tapes, it has several limitations. One of the limitations is the linear presentation, which is cumbersome for the instructor when determining the location of particular segments of the tape to present certain topics being studied. Also, the instructor is dependent solely on the material presented in the video, even if there are a number of concepts to present at one time. A third limitation is that video tapes tailored to the specific teacher's needs are not commercially available (Langone et al., 1999). As a way to compensate for these limitations, more contemporary technology can be implemented. In this study, the researcher developed YouTube video segments of face-to-face demonstrations that were organized into video clips provided in Google Sites for free access to students. The use of contemporary technology allowed the researcher to integrate the online component with no additional cost to the institution or the student.

Use of contemporary technology for instructor-based video anchors.

Innovations such as Flash and YouTube "reduce the cost and barriers to create and share videos online. As a result, many now see the immense potential to use YouTube and other shared online video resources in education" (Teng, Bonk, Bonk, Lin, & Michko, 2009, p. 2). One does not have to rely on an audio-visual department for development of course videos. Streamed video offers the convenience of sharing video with no charge and provides ongoing access that makes it possible for instructors and students to interact for the purpose of learning at a time and place that is convenient for them (Dieker et al., 2009). It can also be used as an anchor or culmination of instructional activities serving as a "'macrocontext' or commonly viewed experience for later learning and reflection" (Teng et al., p. 3). Minimizing costs for the institution's administrators and faculty members while providing a way for students to maximize learning is an important consideration in higher education.

Designing the anchor. The idea of anchored instruction is to design instruction in a way that motivates students to become "independent thinkers and learners by developing their confidence, skills, and knowledge" (Love, 2005, p. 302). Students view new concepts as additional facts unless they have the opportunity to integrate the new information into their thinking. The anchor provides a macrocontext for students to explore the situation from various perspectives that can be revisited over time (Crews et al., 1997). Anchored instruction shifts instruction from a teacher-controlled learning environment to a learner-controlled environment. The instructor's role also shifts from that of an expert providing information to that of a coach (Baumbach, Brewer, & Bird,

1995). Anchored instruction sets up the context in which the teacher and students are participating in a learning environment that offers a situation conducive to even more learning opportunities. According to Sanny and Teale (2008), "[b]y looking repeatedly at a video segment from different perspectives and for different purposes, one is left with a deeper understanding of the interaction of factors that are involved in the respective instructional situation" (p. 6). Therefore, using video as the anchor is a unique way to overcome the problem of inert knowledge.

The purpose of an anchor is to "encourage active knowledge construction by students" and to offer a setting that is larger in scope and is easily explored by the students and teacher through the use of anchor videos (Love, 2005). McLarty et al. (1989) provide the following seven guiding design principles for developing and implementing anchored instruction:

1. choosing an appropriate anchor;
2. developing shared expertise around the anchor;
3. expanding the anchor;
4. using knowledge as tools for problem solving;
5. teaching with the anchor;
6. merging the anchor with literacy experiences; and
7. allowing student exploration. (p. 1)

These guiding principles were a consideration for developing the anchor for this study and are described in further detail.

Choosing an appropriate anchor. It is vital for the appropriate anchor to have a distinct group of instructional goals. The determination of producing a video is dependent on the compatibility "between the educational goals and the possible anchor" (Love, 2005, p. 303). The instructional goals or student learning objectives in this specific course in the study are draping techniques, massage techniques and skills, therapist continuity, focus and tracking, and body mechanics.

Each video segment demonstrates how an expert conducts Swedish massage for each area of the body using proper draping and body mechanics, applying several massage techniques and skills, simultaneous with maintaining continuity, transition, and smoothness of strokes, demonstrating focus and tracking of the client while indicating endangerment sites. Students will have the ability to see the integration of all of these elements in each segment. The ability to review these elements being integrated with each video segment will reinforce the students' contextual knowledge.

Developing shared expertise around the anchor. Incorporating expertise within the instructional anchor provides the necessary connections between new information and concepts to extended subject matter within the field of study and to the individual student's own mental models (Love, 2005). As students practice massage techniques in the face-to-face component of the course, their particular studies of and perspectives in viewing the instructor-based video anchor can be shared to assist each other with improving skill level. Techniques such as using a bolster, stool, or different angles for body mechanics are practiced and discussed and knowledge gained about endangerment sites or tips for draping can be communicated during on-site class sessions.

Expanding the anchor. Anchored instruction may include using more than one anchor to cover all of the learning objectives. It is important that anchored instruction encompasses all of the instructional material. Using more than one anchor in instruction allows for sustained student interest and motivation since knowledge gained from one anchor may help with the comprehension of additional anchors and supplemental subject matters (Love, 2005). In this study, several modules were developed according to the sequence of demonstrations for each part of the body, therefore, offering several perspectives for application of Swedish massage, including various techniques, concepts for proper body mechanics, and ways of transitioning and draping depending on the therapist's and client's needs during the session. A PowerPoint presentation was also provided for proper body mechanics within the site along with a text narrative of each session explaining different techniques and endangerment sites.

Using knowledge as tools for problem solving. The use of an anchor video offers a meaningful context from which to build new knowledge, therefore, enhancing one's ability to convey information from one context to another. These instructional "opportunities give students a way to apply their acquired knowledge and see how it helps with problem solving" (Love, 2005, p. 303). A problem for a novice student in Swedish massage is the assimilation of proper body mechanics and draping while maintaining smoothness of strokes in addition to focus and tracking of the client. Most amateur massage therapists do not have a repertoire of various techniques or the knowledge base to conduct a massage with this type of efficiency and effectiveness that provides comfort, security, and the appropriate therapy for the client.

Massage therapy students must be able to integrate all of these elements easily while conducting a full body massage that can last from 45 minutes to an hour. Fundamentals for *meaning making* include "[v]isual, audio, gestural, spatial, and multimodal designs" (Love, 2005, p. 307). Images, screen formats, and layouts are types of visual design. Sound effects and music are forms of audio design. Gestural design includes body language and behavior. Environmental or architectural spaces are considered spatial design. According to Love (2005), multimodal design is considered the most significant because it connects visual, audio, gestural, and spatial forms of design dynamically, providing patterns of connections between what is being learned. Access to viewing a video demonstration allowed the students to observe and study the way in which an expert conducts the necessary techniques, skills, and knowledge effortlessly within the context and atmosphere of providing a full body massage.

Teaching with the anchor. It is necessary for the instructor to refer to the anchor video and connect with the instructional objectives (Love, 2005). The anchor in this study was used in conjunction with the lecture and demonstration format of each module. The students were assigned to view the video after each session with the expectation of being evaluated on the concepts presented in the modules during the course's scheduled on-site practice sessions. The concepts discussed with the students after the session included their knowledge of endangerment sites and different techniques and improvements that could be made regarding draping, smoothness of strokes, continuity, and proper body mechanics. Evaluations of their sessions using the skill-level survey (Appendix A) were provided to them for review.

Merging the anchor with literacy experiences. Linking literacy with the video anchor is an important consideration, and emphasis on literacy within the instruction should not be overlooked (Love, 2005). Literacy for massage therapists includes terms related to different techniques used in massage, such as friction, petrissage, and tapotement. Other terms used in the field of massage are anatomical terms such as supine and prone, the names of particular muscle groups, and endangerment sites. These terms and their explanations were used throughout the video-based anchor by the expert within the application of a one-hour, full body Swedish massage session.

Allowing student exploration. For the students to develop a sense of being experts on the subject material "access to, and opportunities to explore, the anchor video" are vital (Love, 2005, p. 303). The face-to-face demonstrations provide a one-time instruction for application of Swedish massage. The use of video provided by the Internet allowed students the chance to review areas they thought needed to be reinforced in accordance with their particular strengths and weaknesses. It also allowed them the convenience to observe the anchor when they were able to dedicate time for study. As a blended course, the anchor provided the students the ability to share their experiences, knowledge, and perspectives within the on-site classes regarding observation of the anchor.

Blended instruction. Surveyed respondents in a study by Kim and Bonk (2006) indicated that a greater emphasis will be placed on blended learning than on fully online courses in the future. Their predictions included a distinct shift from one fourth of blended classes currently to a substantial amount of courses having some Web

component by the end of 2013. However, even with this positive prediction toward blended learning, "[b]lended courses are not more prevalent than fully online courses" (Allen, Seaman, & Garrett, 2007, p. 1). When surveying consumers identified as those who were seeking to pursue a postsecondary education within the next three years, 76% preferred a delivery mode with at least some online element, and 81% preferred a delivery mode with at least some face-to-face element (Allen et al., 2007). According to Allen et al. (2007), "it is unlikely that the proportion of postsecondary students in the United States in blended programs is much higher than 7 percent" (p. 18). These statistics are an indication that consumer preference or demand for blended delivery is far in excess of what is being offered.

In particular, consumer preference for a web-facilitated program that is primarily on campus was 24% versus preference for a course or program that is equally balanced between online and on campus (blended), 14%. Web-facilitated courses are those that use "web-based technology to facilitate what is essentially a face-to-face course" (Allen et al., 2007, p. 5). According to Allen et al. (2007), a course or program that offers between 30 and 79% of the content delivered online, using a combination of online and face-to-face delivery and online discussions with some face-to-face meetings is considered blended education.

Whether a course is web enhanced or blended, the idea of offering more than one delivery system is "perceived by some as a 'best of both worlds' approach compared to fully online courses" (Allen et al., 2007, p. 2). According to Albrecht (2006), "[b]lended learning amounts to a step in that direction, moving away from the single delivery system that inevitably favors one segment of any student population" (p. 5). With the diversity of

the community college population, traditional instructional methods are inadequate for meetings its students' individual needs (Albrecht, 2006).

The concept of blended instruction implies a basic combination of face-to-face and distance education. However, this is not a sufficient definition and may imply that to design a blended course is simply to interject technology into a traditional course as an "add on" or supplemental information component of the instruction. According to Bleed (2001), blended learning should be considered an opportunity to restructure instruction in terms of development, scheduling, and delivery with a combination of virtual and physical instruction or "bricks and clicks." Another concept of blended learning is viewed as blending a variety of learning technologies and traditional approaches, a technique which results in a reduction of "seat time" (Garrison, Kanuka, & Hawes, 2002). These two concepts are considered to be hybrid models of instruction (Vaughan, 2007). The integration of technology into instruction may be called blended or hybrid. According to Smith and Dillon (1999), "it is not the technology that has an effect; it is the way it is used" (p. 23). Therefore, it is important to have a balance between online and face-to-face components and provide a basis for redesigning instruction.

For this particular study, blended learning was a way to accommodate the course's nontraditional student population in addition to redesigning the course for meeting the learners' individual needs. Distance education accommodates nontraditional students with coordinating school and work schedules and with obtaining required classes (Choy, 2002) and also accommodates those who are busy and would like to enhance their knowledge and skills without sacrificing their jobs, losing income, or leaving home (Tesone & Ricci, 2003). Distance education is a way for nontraditional students to

balance their time between education and busy lifestyles. According to NCES (2002a), nontraditional students may find that enrolling in distance education courses assists them in overcoming "some of the difficulties they encounter in coordinating their work and school schedules or in obtaining the classes they want" (p. 31). Choy (2002) posits that nontraditional students are more likely to participate in distance education programs. The combination of the decreasing revenue experienced by higher education and students' demand for distance education is steering more emphasis toward delivery of programs online. Skopek and Schuhmann (2008) expect that the inflow of nontraditional students will continue as higher education extends its instructional delivery with distance education.

Between the 1994-95 and 1997-98 school years, enrollment and the number of courses taught at a distance nearly doubled in postsecondary institutions, and in the time frame between 1997 and 1998, higher education experienced an increase in distance learning programs of over 70% (NCES, 2000). Research supports that there will be a persistent increase in distance education and "[f]uture projections suggest that this incredible increase will continue because of the demand for online or [w]eb-based instruction" (Johnson, Benson, Shinkareva, Taylor, & Treat, 2003, p. 10). For community colleges, enrollment has grown from 55,000 in 1981 to over 500,000 in 2001 (Synergy Plus, 2002), a growth attributed to distance education "through the development and delivery of telecourses" (Johnson et al., 2003, p. 3). As institutions become more adept at developing and offering courses at a distance, instruction from these courses will become even more meaningful and noteworthy. Salyers (2005) suggests that "[w]eb-enhanced courses are increasingly popular for providing rich learning experiences and greater

flexibility in achieving course outcomes" (p. i). Providing distance education is an important consideration for higher educational institutions, but it is also important to offer instruction that will enhance learning for its students.

Therefore, the growing number of distance education courses has sparked interest in its research related to its effectiveness. The question arises, "Can a quality education be provided at a distance?" (Johnson et al., 2003, p. 4). Technological advances attributing to the growth in distance education have been met with the same skepticism as other technological advances in the past. Johnson et al. (2003) state that technologies such as "the printing press, the typewriter, the telephone, the television, and the computer" involve substantial capital investments with, some say, little return for use in enhancing knowledge (p. 3). It is evident that the educational community has come to embrace these technologies.

Distance education supported by technology has become increasingly popular since the 1970s (Synergy Plus, 2002). Since the mid 1990s, this type of learning has expanded with the introduction of the World Wide Web. According to Johnson et al. (2003),

> [a] variety of labels are used to describe this new form of distance learning, the most common of which are online learning, [w]eb-based instruction, and e-learning. Whatever labels are used for educational programs delivered using the Internet, they share a common characteristic: courses are accessible 24 hours a day, 7 days a week (24/7) from most any location in the world. (p. 9)

Therefore, “learning can occur any time, any place, and any pace” (Johnson et al., 2003, p. 9). The convenience of online learning has been a major component in its popularity and demand by many students and faculty.

In addition to the convenience online learning provides, there are additional benefits that are a byproduct of implementing blended instruction. Vaughan (2007) concluded in his study that blended learning offers several positive aspects for students, faculty, and administrators in higher education. Students stated that blended learning allows for improved learning and flexibility in terms of time management. Faculty indicated that teaching blended courses also provides flexibility when it comes to the teaching environment in addition to enhanced student engagement in learning, increased student-teacher interaction, and more opportunities for course improvement. From the administrative point of view, blended learning offers increased access to the institution’s education, reduction in operating costs, and enhancement of the institution’s reputation. Albrecht (2006) posits that a mixed delivery system assists an institution in managing its physical facilities more effectively.

The effectiveness of blended instruction lends itself to future research for effective teaching strategies. According to NCES (2000), “distance education is just as effective as traditional education with regard to learners’ outcomes” (p. 6). There are a number of studies that have found that there is no significant difference for student satisfaction or learning outcomes when technology-supported distance learning and traditional classroom-based instruction are compared to each other. Johnson et al. (2003) conclude that although these studies may be seen as narrow in focus or anecdotal in nature, they consistently show that instructional technology does not diminish learning

outcomes when compared to traditional delivery methods – "suggesting that it is the quality of the design of a course, and not the delivery format, that is important" (p. 4). Therefore, additional examination of blended instruction must include stronger research studies.

Accommodating the Nontraditional Student

One of the major components to address in the design and development of instruction are the learners and how they learn (Richey & Klein, 2007). According to Jinkens (2009), "[p]ast research has indicated that different students learn differently," therefore, an examination of the community of learners in the context of integrating technology within a community college setting is crucial for the design, impact, and implications of this study (p. 979). By identifying the student population and aligning instruction to the way in which they learn, "we could help students learn more effectively" (p. 979). A diverse group of learners is a community college's primary student base and "report various reasons for going to a community college" (NCES, 2008, p. 12). Serving this diverse group of learners presents a number of challenges for designing and developing effective instruction.

A community college is part of the postsecondary education system. The postsecondary education system consists of various types of institutions, both private and public. Postsecondary institutions include institutions with programs that are less-than-2-years long, institutions that provide vocational programs, institutions offering 2-year vocational certificates and associate's degrees, and 4-year universities and colleges that offer bachelor's degrees and higher. All of these institutions serve those who are high

school graduates plus all ages of adults who enroll for personal or career-related reasons and goals. Postsecondary institution students vary "in terms of age, sex, race/ethnicity, socioeconomic background, academic goals, and work and enrollment patterns" (NCES, 2002a, p. 98). Examining and recognizing the characteristics of these learners will help the postsecondary education system serve them more effectively.

The student body's characteristics are related to the type of institution that serves it, for instance the "[s]tudents at public 2-year institutions are more likely to have dependents, work full time, and delay enrollment than those at 4-year institutions" (NCES, 2002a, p. 99). This tendency indicated an older population for a public 2-year institution than those attending a 4-year institution. The community college in this study falls within the classification of a public 2-year institution, therefore, indicating a diverse and older student population enrolled in its classes. According to Horn and Nevill (2006), "[c]ompared to students attending 4-year colleges and universities in 2003-04, higher proportions of community college students were older, female, and from low-income families, and lower proportions were White [*sic*]" (p. 9). It was important to explore the classification, diversity, and other data regarding student characteristics in postsecondary institutions in this study for consideration in the design of the course and the implications for using an online component.

Higher education students are classified as traditional or nontraditional students, "where traditional students were frequently considered to be those less than 24 years of age, and nontraditional students were frequently considered to be those 24 years of age or older" (Jinkens, 2009, p. 979). Those students attending a doctorate-granting, private, not-for-profit institution are more apt to have the characteristics of a traditional student, a

recent high school graduate who attends full time and does not have regular employment (NCES, 2002a). Traditional students can direct more of their time and energy toward their studies while those who work full time, are older, and may be parents or single parents have to divide their energy, time, and other resources between school, family, and work. Therefore, nontraditional students encounter difficulties when it comes to scheduling classes, work, and/or child care (Horn, 1996).

The term nontraditional student is not distinctly defined in the educational community, yet part-time enrollment and age tend to be common characteristics (Bean & Metzner, 1985). In its examination of the relationship between persistence in higher education and nontraditional students, NCES (2002a) has determined that students are nontraditional if they possess one of the characteristics outlined in their report. Furthermore, Horn (1996) classifies higher education students according to a scale in which a number of nontraditional characteristics are present in their makeup. “Minimally nontraditional” students are those who have one nontraditional characteristic. Those who have two or three nontraditional characteristics are considered to be “moderately nontraditional,” and those who have four or more are categorized as “highly nontraditional.” According to NCES (2002a), in the 1999-2000 school year, 73% of all undergraduates “had one or more of these characteristics and 64 percent of graduates classified as highly nontraditional attended public 2-year institutions” (p. 29). These data indicate a large nontraditional student population among the graduates.

According to Skopek and Schuhmann (2008), there is a major shift in higher education in which traditional students search for and have expectations regarding varying means of instructional delivery, and there is an increase in nontraditional

students' looking for feasible opportunities of education. The nontraditional student, one who is older than the traditional student, attempts to find distance courses that offer videoconferencing or online delivery, since this format allows them the flexibility needed for a lifestyle that balances other responsibilities such as a family and a career (Skopek & Schuhmann, 2008). Student demand and expectations toward course delivery are accompanied by a change in student demographics.

In general, the reality is that "[w]hat the average student looks like has changed and continues to change" (Kelton, 2007, p. 4). According to New Media Consortium and EDUCAUSE Learning Initiative (2007), there are many more students currently, who work and commute than there were in the past. In their report, NCES (2002b) posits that "[t]oday's undergraduate population is different than it was a generation ago" (p. 102). Based on their report, NCES indicate that this population is "72 percent larger in 1999 than in 1970" (p. 102). Also, there are more students entering 2-year colleges and enrolling on a part-time basis. The same report indicates that among higher education students, there are more women than there are men and an increase in older students enrolled (NCES, 2002b, p. 102). In 1999, "39 percent of all postsecondary students were 25 years or older in 1999, compared with 28 percent in 1970" (NCES, 2002b, p. 102). These statistics indicate that the traditional student is becoming "the exception rather than the rule" (NCES, 2002b, p. 102).

Not only are more nontraditional students entering the arena of higher education, but these students are also becoming more comfortable with using online methods of communication and need the flexibility of being able to complete their work at night and on the weekends (Sreebny, 2007). Technology for these learners is "assumed to be a

natural part of the environment" (Oblinger, 2003, p. 38). Oblinger (2003) lists 10 attributes of the information-age mindset:

> Computers are not technology, the Internet is better than TV, reality is no longer real, doing is more important than knowing, learning more closely resembles Nintendo than logic, multitasking is a way of life, typing is preferred to handwriting, staying connected is essential, there is zero tolerance for delays, consumer and creator are blurring. (p. 40)

Inevitably the generation that has been accustomed to the use of distance learning will be replaced by a generation which uses Internet technologies at the K-12 level. A consideration for the education and instruction of the information-age mindset of future students is that the "evolving Internet-literate generation will be much more receptive to distance learning" (Johnson et al., 2003, p. 4). The future learners will see technology as an implicit part of their environment.

In addition to becoming more comfortable with technology, students and faculty members also find using online instruction as a valuable component in education. Heffner and Cohen (2005) found in their study that "[s]elf-reports from students evaluated the course Website as highly valuable. These results suggest important advantages in supplementing lecture courses with online material" (p. 74). These findings were further supported by Vodanovich and Piotrowski (2001) in a national survey that revealed that psychology faculty members consider the Internet an effective instructional tool. This research indicates that students and instructors are comfortable with the use of online instruction, justifying the increase in its use.

It is evident from the research that courses at a distance have been on the rise for some time and will continue this trend in the future. It is clear from the statistics that the student population of the community college in this study is mainly nontraditional. In their findings, NCES (2002a) indicate that "a higher percentage of students at public 2-year colleges than at 4-year institutions participated in distance education classes" (p. 102). This study took place within a community college setting which is considered a public 2-year college. Distance education is an attractive option for both the institution and the population of these institutions. Therefore, integrating distance education in instruction for this institution's population was a viable option.

In addition to the attractiveness and the demand for distance education, is the use of the Internet as a common medium for instruction. The Internet has become a natural resource for many students. Based on current research, students prefer using the Internet over many other available technological advances. From their findings, NCES (2002a) reported that "of the graduates who participated, more used the Internet (60 percent) than live audio or television (37 percent) or prerecorded audio or television (39 percent)" (p. 102). Also, "more master's students who participated in distance education classes used the Internet than live or prerecorded audio or television (68 percent versus 45 and 29 percent, respectively)" (NCES, 2002a, p. 102). It is important to acknowledge students' preferences regarding research and learning. Therefore, using the Internet as a medium for providing the video-based anchor in the study is a practical choice in considering student preferences over other technological advances.

Summary

Massage therapy research is still in its infancy, with very few studies dedicated to effective teaching strategies for this profession. Many studies conclude that video-based anchored instruction is an effective teaching strategy. Also, blended instruction is becoming an important consideration for higher education and offers the benefits inherent in both face-to-face and online instruction. The participants for this study, being enrolled at a 2-year postsecondary institution, are composed mainly of nontraditional students. Also, based on current research, there will be a substantial increase in the nontraditional student population within higher education courses in the future. In conjunction with the shift in higher education student demographics toward becoming more nontraditional in its nature is the familiarity of these students with computer technology, particularly with using the Internet. The completion of a study to discover the significance, if any, of the participants' skill level in offering a blended course with the use of a video-based anchor provided a springboard for future research in this profession. The details of its implementation are provided in Chapter 3.

CHAPTER III

METHOD

Introduction

Similar to other educational research studies, this study was quasi-experimental. The only research subjects available for implementation of the study are part of intact classes. The study followed an embedded mixed methods research design in which the quantitative method was dominant. Qualitative research was secondary or supplemental to enhance the data and information found in the quantitative method (Clark & Creswell, 2008). According to Greene (2008), this type of mixed method research is explanatory in nature since quantitative data were collected before using the qualitative data to refine the results of the quantitative data.

A skill-level survey (Appendix A) and a demographic survey (Appendix B) provided the quantitative data. Qualitative data were derived mainly from the responses provided by the classes using an open-ended questionnaire (Appendix C). A nonequivalent posttest-only comparison control design was implemented. A nonparametric test was used for the inferential statistics, since the sample size was low and the data generated were ranked (ordinal). Nonparametric tests do not rely on the assumption that the population is that of a normal distribution (Best & Kahn, 1998). The nonparametric test used was the "Mann-Whitney *U* test that is designed to test the significance of the difference between two populations, using random samples drawn

from the same population" (Best & Kahn, 1998). The Mann-Whitney *U* test is commonly used for nonparametric tests of significance. The quantitative data revealed any difference in skill level between the control and treatment groups, and the qualitative data provided substantiation of the quantitative results. The qualitative data offered valuable insight of the participants' perceptions toward the use of online video-based anchors within a blended course design. This chapter provides a description of the research design, research setting and sample, instruments and methods used in data collection and analysis, and measures taken to protect the participants' rights.

Problem and Purpose Overview

This study was conducted to examine the difference, if any, among the skill-level performance of two classes in a postsecondary institution's massage therapy program, specifically a Swedish massage course. The determination of the results identified whether the use of a video-based online anchor within blended instruction was effective in the skill level of the treatment group. Little is known regarding valuable teaching strategies within massage therapy research. Anchored instruction is a well-researched, documented, and studied form of teaching strategy. Video-based anchors are specifically regarded as effective, giving the learner the opportunity to revisit material and experience visual, auditory, and contextual instruction. Providing a video-based anchor online offered the convenience needed by many nontraditional students who make up the majority of a postsecondary institution's population. In addition, the demand and acceptance among students, and faculty toward online instruction is on an upward trend along with the use and enrollment within courses of higher education. Along with the use

and acceptance of online instruction is the attractiveness of massage therapy, a field which is considered a complementary and alternative medicine within the health industry and general public. This study provided a foundation on which to conduct further research in massage therapy instruction, and offered a basis for examining effective instructional practice for this profession.

Research Questions and Hypothesis

The following are specific research questions for the study:

1. How will students' skill levels be influenced by redesigning a fully on-site Swedish massage course into a blended learning design with the integration of an online, video-based component in the same course measured by clinic evaluation results?
2. What are students' perceptions regarding online instruction?

Hypothesis

The following represents the null (H_0) and alternative (H_1) hypothesis for the first research question examined within the study:

H_0: There is no significant difference in posttest scores between the two classes as measured by the massage skill-level survey (Appendix A).

H_1: There is a significant difference in posttest scores between the two classes as measured by the massage skill-level survey (Appendix A).

It may be found that there is no significant difference between the two classes' skill-level surveys (Appendix A). In this case, the course's design, with or without the use of a video-based online anchor, is of no consideration regarding the students' skill level. If there is a significant difference between the two classes' data, the difference will

reveal whether the blended instruction or the fully face-to-face instruction was more effective than its counterpart. Qualitative data will be coded to discover the participants' perception toward the use of the video-based online anchor.

Research Setting and Participants

The participants in this study are students enrolled in the massage therapy vocational certification program on the main campus of a community college in the southeastern United States. Since the source of data consisted of intact classes, the researcher had little control in the probability of any particular member being chosen for the sample. This type of purposeful sampling or nonprobability sampling is commonly used in an educational setting since random sampling was not available in terms of time and convenience (Wiersma & Jurs, 2009). Both classes were representative of the local community in the southeastern region of the United States. The control group (10 female, three male, M_{age} = 29 years, age range: 18-49 years) and the treatment group (13 female, two male, M_{age} = 27 years, age range: 18-49 years) had mostly female students; ranged in age from 18 to 49 years; and consisted of a variety of experiences, education, professions, aspirations, and backgrounds.

The research design for this study was dependent on the availability and schedule of the classes being researched. The control group experienced fully face-to-face lectures, outside reading and writing assignments on Swedish massage, and on-site demonstrations for the Swedish massage course. The treatment group experienced a blended design fashioned after the same course, with the outside assignment of viewing the video-based online anchor in lieu of outside reading and writing assignments. Both courses began

with an introduction of how to greet the client, dress properly, fill out the correct forms, and sanitize hands and equipment. The treatment group was given support on how to access and use the site within this introductory session. Both classes were evaluated with skill-level surveys (Appendix A) during their clinical experience. These surveys were compared to examine any variance between the results of the data.

Qualifications of Instructors

Teaching qualifications within a vocational program include practical work experience, certification, and education within the field. The current coordinator has been in her position for approximately two years now. She has over 20 years of experience as a licensed massage therapist and about 10 years of experience as an instructor in the field. The previous coordinator had the qualifications of a physical therapy degree and education experience. Adjuncts are expected to have massage therapy certification and experience in the field or equivalent educational qualifications. The current coordinator has been teaching the Swedish massage course for the past 10 years.

Researcher Bias and Familiarity with the Massage Therapy Program

The researcher is a graduate of the massage therapy program being examined and has been a Licensed Massage Therapist since 2004. The researcher has a positive rapport with the program's coordinator, former program chair, and instructors and is a proponent of massage therapy as a prevention and treatment for disease. While attending as a student, the researcher noticed that there was very little scholarly research conducted in the area of massage therapy while exploring contraindications for the Introduction to Massage Therapy course. The researcher has taught a portion of the Massage Therapy

Entrepreneurship course since 2005 and still maintains a position as an adjunct professor and a member of the Advisory Committee of the Massage Therapy Program. Assurance of quantitative reliability and validity and qualitative trustworthiness is described further in this chapter.

Structure of the Program

The Swedish massage course examined is one component of an approximately one-year long massage therapy vocational program. The program offers specialties in spa therapy, Swedish massage, pregnancy massage, medical massage, chair massage, and sports massage. In addition to these modalities, this program offers a business class to assist students with expanding their practice and managing finances, taxes, and budgets. Currently, only the business course has been offered as a blended course to accommodate the students' and faculty members' time schedules.

Based on the research, there is a shift in higher education toward online courses and most of the program's courses are fully face-to-face, limiting the program's competitiveness and accessibility to students. Most states require continuing education and refresher courses to maintain licensure in the massage therapy profession. Practicing massage therapists may not have the convenience in terms of time, money, and schedule to participate in many existing continuing education courses, since many continuing education courses are in the form of on-site workshops. According to Skopek and Schuhmann (2008), "[p]ractitioners pursuing continuing education are not usually well accommodated by traditional delivery methods such as residential programs because they are typically 'site bound' often the result of career and family obligations" (¶ 2).

Therefore, a blended course design with the use of a video-based online component is a positive move toward offering massage therapy continuing education for the community this program serves.

Structure of the Course

The fully face-to-face course included lecture sessions and demonstration sessions. The lecture sessions included information regarding contraindications, pathologies, endangerment sites, etiquette, and professional considerations. The demonstration sessions had a basic format or sequence in which the instructor conducts a massage for a particular area of the body on one of the students while the other students observed the demonstration. During the demonstration, the instructor explained the type of technique used, and why one would use it, while explaining any contraindications or endangerment sites. After the demonstration, the students were paired up to practice on each other as the instructor observed for effective use of massage techniques, continuity of the massage, focus and tracking of the client, and proper draping and body mechanics. Each class was dedicated to one area of the body for massage. An example of a sequence for each class includes working on a client who is supine (face up) on the table to demonstrate massage techniques used for the face and scalp, and then the next class would concentrate on techniques for the neck and pecs (pectoralis), then the abdomen, and then the anterior of the legs. The classes proceeded with concentrating on the back and gluteus maximus, and the posterior of the legs and feet with the client prone (face down) on the table. Outside reading and writing assignments included researching massage techniques.

The blended course was fashioned according to each class and developed into video modules on YouTube and accessible to the students via Google Sites (https://sites.google.com/site/petersdissertation/). Each video clip corresponded to a face-to-face class demonstration. In place of outside reading and writing for the course, the students were instructed to view the video on the particular module which corresponded to the on-site session. The course began with an introduction of how to greet the client, dress properly, fill out the correct forms, and sanitize hands and equipment. For this first session, the treatment group students were given an introduction of how to access and use the site. The first demonstration for the massage technique consists of a face and scalp massage demonstration with the client supine on the table and then continues in sequence with the face-to-face demonstrations discussed in the previous paragraph. Students were informed of being evaluated on information given in class and in the video during on-site practice sessions and for their clinical experience.

In Hymel's (2002) research on integrating research competencies in massage therapy education, an important component in the development of instruction involves "sequencing of topics comprising the unit by way of an advance organizer" (p. 9). An advance organizer allows the learner to connect meaningful instruction to a mental structure already presented and integrated into their learning. Therefore, for this particular course, face-to-face demonstrations were seen as advance organizers for the video-based online anchor.

Data Collection and Instrumentation

Quantitative and qualitative data were collected for the study. The majority of the quantitative data included the demographic survey (Appendix B) data and the skill-level survey (Appendix A) data. The demographic survey (Appendix B) data were collected by the researcher at the beginning of the course along with the informed consents (Appendix D). The skill-level survey (Appendix A) data were collected at the conclusion of the students' clinical experiences by the lead instructor. The majority of the qualitative data were collected from the open-ended questionnaire (Appendix C). The qualitative data were collected midway through the Swedish massage course by the researcher.

Data collection. Data for this study were collected using a skill-level survey (Appendix A), a demographic survey (Appendix B), and an open-ended questionnaire (Appendix C). The researcher took notes during discussions, and made direct observations during the course of both classes and the clinical experience. The data consist of student demographic information, skill-level evaluations, and student perceptions regarding the use of online instruction. Data were collected over a period of four semesters. The control group had a semester of the Swedish massage course and then completed their clinical experience in the next semester. The treatment group had a semester of the blended Swedish massage course and then completed their clinical experience in the next semester.

Quantitative data collection. The informed consent (Appendix D) and the demographic survey (Appendix B) were passed out for students to fill in and submitted to the researcher the first day of their Swedish massage course. The skill-level surveys

(Appendix A) were completed by the lead instructor during the clinical experience that takes place during the semester directly following the Swedish massage course. The clinic experience is the part of the program in which the students acquire the requisite hours of practice required for national certification. The clinic experience provides practical application and is open to the public to ensure that students practice massage techniques on different body types.

During this time, students are required to wear scrubs (uniform), be physically fit to conduct a massage, and prepare their workspace before and immediately following each session. One student is selected as the clinic manager for each session. This role involves assigning clients to students, managing forms, and assisting the clinic instructor. The skill-level survey (Appendix A) data were collected the first day of the clinic experience, which is the first time that students are formally evaluated on their massage skills and techniques. The clinic setting is a way for the students to apply their knowledge and skills of the Swedish massage course within a simulation of a real-world situation.

Qualitative data collection. The open-ended questionnaire (Appendix C) was passed out midway through the Swedish massage course for both classes. The researcher took notes on the discussions that took place regarding the use of online instruction, and the students shared their online instruction experiences and thoughts about online instruction as they filled out the questionnaire. The researcher also took notes regarding direct observations made at random times throughout the four semesters during the Swedish massage course and the clinical experience for both classes.

Instrumentation. Quantitative data were gathered using two surveys, a skill-level survey (Appendix A) and a demographic survey (Appendix B). Qualitative data were collected using an open-ended questionnaire (Appendix C) and researcher observation. Each instrument is outlined in this section, explaining its development and purpose.

Skill-level survey (Appendix A). The lead instructor, in collaboration with other instructors, determined the criterion validity of the individual skills and sub skills to ensure that the instrument adequately differentiates between skill levels. All of the instructors have taught in the massage therapy program for the last 10 years, are licensed massage therapists, and have practical experience in the area of massage therapy to include other modalities such as Swedish, sports, neuromuscular techniques, pregnancy and infant massage. The instructors examined the survey to determine the content validity of the survey or "the systematic examination of the test content to determine whether it covers a representative sample of the behaviour [*sic*] domain to be measured" (Anastasi & Urbina, 1997, p. 114). All of the instructors are licensed massage therapists and used the knowledge of skills, laws, and content for instrument design. This instrument is regularly used when assessing the students in their clinical evaluation.

The skill-level survey (Appendix A) included the date the massage was given, the student's (therapist's) name, and the observer's (instructor's) name. Each basic skill was evaluated using a 5-point Likert-type scale. A rating of 1 indicates major improvement needed; a rating of 2 indicates minor improvement needed; a rating of 3 indicates average skill level; a rating of 4 is very good; and a rating of 5 is excellent. The main skills that were rated in the clinical experience were the student's draping techniques, massage

techniques and skills, continuity, focus and tracking, and body mechanics. These skills are comprised by a set of sub skills that allowed the evaluator to rate the student thoroughly regarding that particular basic skill. Each main skill can be addressed with four to six sub skills.

A list of the requirements regarding many of the knowledge, skills, and abilities for massage therapists is outlined by the AMTA (2010b). In regard to draping, a massage therapist must be able to "[d]emonstrate appropriate and professional client/patient draping techniques" (p. 32). Draping techniques are important for setting boundaries and are referred to in most state laws regarding massage therapists' conduct. The Florida Administrative Code (2010) for "Misconduct and Negligence in the Practice of Massage Therapy" refers specifically to the issue of draping and what constitutes misconduct and negligence in the practice of massage therapy. According to AMTA (2010b), "failure to ensure privacy in disrobing/dressing or though [*sic*] use of proper draping is one part of a series of behaviors that may constitute sexual misconduct" (p. 44). The issues and facts surrounding these laws were reiterated through most of the program's content regarding therapist-client relationships.

Assessment of draping included whether the therapist provided security for the client by taking such measures as tucking in the sheet, securing the sheet for the client's comfort, and using appropriate draping for the temperature of the room, for example, a blanket if it is cold. Assessment for draping also included whether the therapist was able to treat the area of the body being worked on while ensuring ethical and professional boundaries and used accessories such as supporting bolsters and pillows for providing a comfortable massage. According to AMTA (2010b), "[d]raping variations which

maintain client/patient modesty, warmth and comfort while allowing appropriate access for massage therapy applications" is an important consideration for knowledge in the application of massage (p. 33). A massage therapist must be able to integrate the technique of draping smoothly while maintaining contact with the client and continuity of massage techniques.

Massage techniques and skills comprised whether the therapist completed a definite beginning and end of the technique and if the therapist worked on the client both prone and supine. Techniques are also expected to be conducted for each body part, such as both of arms, legs and feet, and with fullness in their completion. It is important that the therapist integrated range of motion within the massage at some point. Range of motion is a stretching motion conducted by the therapist while the client is passive. Using range of motion improves the client's flexibility. Instructors also evaluated the time spent on the massage techniques to determine whether the therapist gave a thorough massage for the client in both prone and supine positions. The techniques that were observed include "compression; friction; gliding/stroking (effleurage); holding; kneading (petrissage); lifting; movement and mobilization (stretching, traction, range of motion and gymnastics); percussion (tapotement); and vibration" (AMTA, 2010b, p. 33). Skills are defined by the AMTA (2010b) as "the psychomotor capabilities a massage therapist utilizes" (p. 5). Massage techniques and skills encompass a wide range of strokes; however, a therapist must be able to integrate all of them smoothly for continuity throughout the massage therapy session.

Therapist continuity was comprised of the therapist's smoothness of strokes and the ability to transition from one technique or one body part to another. Contact with the

hand and palm should be firm and even. It is extremely important that a polarity hold is completed at the beginning of the massage session, at recenter, and, ideally after the massage. Centering with the client consists of the therapist placing the hands on the client's back, over the face, or on the shoulders and communicating to the client to take three deep breaths. At this time, the therapist adjusts his or her breathing in sync with the client before beginning the massage. The therapist must "[d]emonstrate varying rhythms/pace, depth, stroke sequence and flow/continuity for specific applications and intended outcomes" (AMTA, 2010b, p. 35). It is important for the therapists to have awareness of how they are conducting the massage in addition to awareness of the client, a skill which involves focus and tracking.

Focus and tracking of the client comprised the therapist's intent during the massage and whether the massage was nurturing or mechanical. Focus and tracking of the client indicated the therapist's sensitivity to the client's body language, such as guarding for pain, in which case the therapist would use less pressure. The application of massage must be "client focused" (AMTA, 2010b, p. 34). The speed of strokes indicated whether the therapist is rushing the massage or allowing for thorough, smooth strokes and working from the center of the body. The ability of the therapist to stay focused while conducting a massage is defined by AMTA (2010b) as "the capacity to observe and be aware of how and where the hands and body of the therapist are located while giving a massage" (p. 38). In reference to tracking the client, the AMTA posits that the attention to the client is "[t]he direction of awareness to any object, sense or thought for the sake of gaining clarity. Such awareness may precede or occur simultaneously with the motor activity of a massage" (p. 38). In addition to being able to successfully conduct the

massage therapy session, a therapist's health and longevity in the field involves using proper body mechanics.

Alignment of the therapist's navel with the direction of the stroke suggested that the therapist was using proper body mechanics. In addition to this positioning, proper arm and body angles give leverage in using the body weight for applying pressure. Leaning in and lunging allow the therapist to distribute weight properly to administer pressure. Therapists avoid suffering from carpal tunnel when the wrists and hands are relaxed during the session. *Body mechanics* is defined by the AMTA (2010b) as the "[a]wareness of posture, use of body weight and movement and their effect on determining massage therapy techniques and application" (p. 14). It is also "[b]alance, equilibrium and stability as they relate to movement and function" (AMTA, 2010b, p. 14). According to AMTA, the therapist can "optimize application while minimizing adverse effects and supporting longevity in the field" with the use of following techniques:

> [p]osture, balance and positioning; [s]tructural alignment of bones and joints; [u]se of body weight and leverage; [a]pplication of various forms of force; [f]oot positions and stances; [u]nderstanding of the relationship among effective body mechanics, massage therapy applications and injury prevention; [i]njury prevention strategies. (p. 31)

Also, it is important that a massage therapist "[d]emonstrate efficient and effective body mechanics during massage therapy application" and "[u]se efficient and effective body mechanics for injury prevention of the massage therapist and the client/patient" (AMTA, 2010b, p. 32). Learning proper body mechanics early in the profession allows therapists to integrate this skill easily into their massage therapy repertoire of routines.

Demographic survey (Appendix B). The demographic survey (Appendix B) included basic information such as age, education, gender, ethnicity, and marital status. The extent of the student's massage experience was taken into account, specifically whether they had none, informal, or formal experience since this factor may have had an effect on the student's skill-level evaluation. With the study being geared toward an online video-based anchor, the researcher thought it important to ask about each student's accessibility and experience with a computer. Therefore, the researcher asked if they had computers at home and the extent of their experience with computers: none, informal (self taught), or formal. Other technology-related questions asked whether they had ever taken online courses before, whether they ever worked in Google, and what their experience was in taking courses online. In addition to ascertaining basic information, the demographic survey (Appendix B) also covered how many children were in the household, whether the student worked while attending school, and family income to gather data regarding nontraditional student characteristics based on descriptions found in the research.

Open-ended questionnaire (Appendix C). There are several inquiries that the researcher found of interest regarding the students' perceptions regarding online instruction. For instance, whether they completed any online courses, and if so, the types and formats of the courses completed. Since the study was fashioned toward accommodating a nontraditional student population, the researcher wanted to know if they thought that online instruction offered them the flexibility they needed for learning

the content of the online course. The researcher also wanted to know how the students would describe their own learning styles.

The researcher also was interested in whether the students thought of themselves as nontraditional students. The following definition of a nontraditional student was provided on the survey. A nontraditional student is considered to possess one or more of these characteristics: delayed enrollment after finishing high school; attend college part time; work full time; have dependents other than a spouse (usually children); are single parents; or have not earned high school diploma, having completed a general equivalency diploma or other type of high school certificate (Horn, 1996). Many of the students did not know the difference between a traditional and nontraditional student. The researcher went into depth during the distribution of the survey to explain the difference between them, and some still had language barriers since English was a second language for some of the students.

To extract the type of demand there may be for this type of instruction within the student population being studied, and without regard as to whether online instruction is considered to be effective for teaching and learning, the researcher wanted to know if the student would like to see more online instruction within the massage therapy program and why or why not. The researcher also wanted to know if the students thought they would benefit from more online instruction within the program, and why or why not. The researcher was interested in discovering additional information which may help to add to previous research studies regarding the demand for online instruction in the future.

Informed consent (Appendix D). It was important for students to understand that their real names would not be used at any time in reporting the information given during the study and that their participation would have no effect on their grade in the course. Those who did not want to participate in the study were not required to do so and had no repercussions regarding their normal progression within the Massage Therapy Program. This study qualified for exempt research since it involved the use of final test scores as its data source. An application to the Institutional Review Board for Human Research Participants Protection was submitted and approved at the researcher's institution (Appendix E) and at the massage therapy students' institution (Appendix F).

Data Analysis

The researcher used both qualitative and quantitative methods for analysis of the study. A Mann-Whitney *U* test was used to analyze the quantitative data, and grounded theory was used to analyze the qualitative data. This section includes details of the following: the research design, description of the statistical analysis, and methods used for the qualitative data analysis.

Quantitative data analysis. This research is deductive in nature and is in alignment with using a model proposed by Tashakkori and Teddlie (2003) in which the quantitative method is dominant and the qualitative method is less dominant and in which the methods used in the study are applied simultaneously or sequentially. The quantitative portion of this study is considered quasi-experimental since random sampling has not been applied and because it is conducted with intact groups of participants

(Wiersma & Jurs, 2009). The method used is a nonequivalent group design that is one of the most common educational research designs.

The research design consists of a nonequivalent posttest-only comparison control design and expressed in Campbell and Stanley (1963) as follows:

$$X \qquad O_1$$

$$O_2 \qquad . \text{ (p. 195)}$$

A nonparametric test called the Mann-Whitney *U* test was used to determine the quantitative results. The quantitative data were entered into Vasserstats (Lowry, 2010) and used to generate descriptive statistics and determined the statistical conclusions regarding the participants' skill level.

Qualitative data analysis. The researcher used a grounded theory method for the qualitative data analysis with a positivist theoretical perspective. It was important to take steps to ensure confirmability using multiple data audits. The qualitative data were triangulated with the quantitative data to confirm and enhance the results and findings of the study.

Grounded theory. The qualitative data analysis technique was derived from grounded theory. According to Denzin and Lincoln (2000), grounded theory is based on the concept of attempting to understand the participants' "experiences in as rigorous and detailed a manner as possible" (p. 278). In grounded theory analysis, the researcher identifies the categories and ideas that emerge from the text to link them to substantive theories. Analyzing qualitative data is a repetitive process in which the researcher "becomes more and more 'grounded' in the data" for deeper models and concepts of the

situation to manifest (p. 279). Schram (2003) explains that during the analysis, the researcher attempts to discover a "basic social process" represented in the data (p. 101). The researcher also examines the data for "similarities and differences" in the data to determine consistency on which to build a prefatory classification of concepts (Schram, 2003, p. 103). Classifying and categorizing terms and statements allow the researcher to discover the variety of emerging themes within the data. The result of the analysis is the realization of "evolving patterns of action and interaction among events and happenings" (Schram, 2003, p. 103). The qualitative analysis process from this study yielded students' perceptions from responses from the open-ended questionnaire (Appendix C). The researcher maintained an objective stance when going through the qualitative analysis process.

Positivism is the researcher's theoretical perspective in this study. The epistemology embedded within this perspective is that of objectivism (Crotty, 1998). Therefore, the researcher approached the study with the assumption that meaning already resides within the world and the objects being examined. Maintaining this perspective is in line with the design of the study, one which is predominantly quantitative and explanatory in nature. The researcher maintained an objectivist viewpoint which involves taking steps to ensure confirmability of the data.

The researcher shared the results of the qualitative data with the students to test its confirmability. Interviews and direct observation notes were transcribed into an electronic format. Coding was completed by highlighting recurring themes or statements. The statements were entered into Excel to examine frequency of themes regarding the study among and between the groups of participants. The researcher also conducted

multiple data audits to examine the collection and analysis procedures and make judgments about the potential for bias or distortion.

The researcher analyzed each question's data in Excel. Statements were examined starting with specific patterns of similarities and differences in the text and worked toward exploring general broader comments made by the participants. The first step taken in the process for this study was distinguishing key terms and themes. The researcher triangulated or cross examined the data from the quantitative method with the qualitative data gathered from interviews and direct observation to confirm the results of the study. The qualitative portion of the study, like its quantitative counterpart, must also be designed to maximize reliability and validity and provide within-design consistency. The notion of "trustworthiness" in qualitative research parallels with reliability and validity in quantitative research (Lincoln & Guba, 1985).

Reliability and validity. The researcher took steps during the study to ensure quantitative reliability and validity (Table 1) and qualitative trustworthiness (Table 2). The raw data generated by the study was saved in an electronic file. Appendixes and tables were developed from summarized raw data as appropriate for further explanation and inference. Raw data was available to interested parties by request.

Table 1

Summary of Quantitative Reliability and Validity

Quantitative Reliability and Validity	Steps taken in Study
Reliability: consistency or stability of a measure of behavior, a set of measurements, or a measuring instrument.	The lead instructor, in collaboration with other instructors, determined the criterion validity of the individual skills and sub skills to ensure that the instrument adequately differentiates between skill levels. A lead instructor evaluated students on how well they demonstrated skills during their clinical experience.
Internal validity: the basic minimum without which an experiment is uninterruptible.	The instructors examined the survey to determine the content validity of the survey or "the systematic examination of the test content to determine whether it covers a representative sample of the behaviour [*sic*] domain to be measured" (Anastasi & Urbina, 1997, p. 114).
External validity: asks the question of generalizability.	Detailed procedures, appendixes, and clear descriptions were provided in the study.
Objectivity: the ability to communicate the results to advance understanding and ensure reproducibility.	Conclusions made based on the study will be examined within the dissertation defense process by external, objective parties on the dissertation committee.

Table 2

Summary of Qualitative Trustworthiness

Qualitative Trustworthiness	Steps taken in Study
Dependability: consistency of forming codes, concepts, categories, and theories and appropriately classifying the data within these structures.	Statements were examined starting with specific patterns of similarities and differences in the text and worked toward exploring broader comments made by the participants. The first step taken in the process for this study was distinguishing key terms and themes. The researcher conducted multiple data audits to examine the collection and analysis procedures and make judgments about the potential for bias or distortion.
Credibility: establishing results that are believable from the perspective of the participants in the research and those viewing the results.	The researcher's perspective is that of positivism; the researcher approached the study with the assumption that meaning already resides within the world and the objects being examined. The researcher shared the results of the qualitative data with the students to test its confirmability.
Transferability: ability of research results to transfer to situations with similar parameters, populations and characteristics.	Detailed procedures, appendixes, and clear descriptions were provided in the study.
Confirmability: degree to which any results can be confirmed or otherwise corroborated by others.	Conclusions made based on the study will be examined within the dissertation defense process by external, objective parties on the dissertation committee.

Variables

The independent variable in the study, or treatment, was the blended instruction of the Swedish massage course using an instructor-based, video-based online anchor. The participants' skill level was the dependent variable of the study. Other variables that may have influence on the participants' skill level were age, level of education, gender,

ethnicity, marital status, and massage experience. Other variables that may have caused noise were the students' varying accessibility and experience with a computer, whether they ever worked in Google, and their experience taking courses online.

Summary

This study was an embedded mixed methods research design in which the quantitative method was dominant. Its purpose was to study the difference, if any, between the skill levels of students with the use of an instructor-based, video-based anchor within a blended Swedish massage course when compared to an existing face-to-face class. As with many educational research studies, this study was quasi-experimental since intact classes were available for implementation of the study. A nonequivalent posttest-only comparison control design was used to provide the data that were analyzed using a nonparametric test called the Mann-Whitney *U* test. The quantitative data were triangulated with qualitative data for confirmation and enhancement of the study's results and findings. The current setting offers many chances to collect data for future studies to use different statistical techniques such as an analysis of covariance or longitudinal statistical procedure. Data analysis is presented in Chapter 4.

CHAPTER IV

ANALYSIS OF DATA

Introduction

A quantitative analysis of the study's data provided inferential and descriptive statistical results. A qualitative analysis of the study's data provided categorical and thematic results. The analysis includes information related to testing the research questions and hypothesis, evaluation of the sample and its representation of nontraditional student characteristics, perceptions regarding blended and online instruction, and the integration of a video-based online anchor.

The Mann-Whitney *U* test was used to determine the difference, if any, between the control group and treatment group skill-level scores in terms of the null and alternative hypothesis. The results for the first research question are outlined to include each of the following elements on the skill-level survey (Appendix A): draping, techniques and skills, continuity, focus and tracking, and body mechanics. Quantitative and qualitative results were triangulated to form a description of the participants and explore their familiarity with and perceptions toward blended and online courses and overall perceptions toward learning and the use of a video-based anchor in their selected field of massage therapy. This chapter provides a detailed analysis of the research questions and associated hypothesis.

A detailed analysis is given for the following research questions and associated hypothesis for this study:

Research questions.

- How will the skill levels of students be influenced by redesigning a fully face-to-face Swedish massage course to a blended learning design with the integration of an online video-based anchor in the same course measured by clinic evaluation results?
- What are students' perceptions regarding online instruction?

Null and alternative hypothesis.

- There is no significant difference in posttest scores between the two classes as measured by the massage skill-level survey (Appendix A).
- There is a significant difference in posttest scores between the two classes as measured by the massage skill-level survey (Appendix A).

Inferential Statistics

The Mann-Whitney *U* test was used to determine the significance of the difference between the two sets of skill-level survey (Appendix A) scores. The Mann-Whitney *U* test is a nonparametric alternative for a 2-sample *t* test for determining the significance between two means. It is appropriate for small sample sizes (between 5 and 20) and is effective when comparing ordinal scale values. It is sometimes referred to as the rank-sum test since the values are first assembled in rank order for the calculation of critical values. The scores for each element from the skill-level surveys (Appendix A)

were entered in Vassarstats (Lowry, 2010) using the Mann-Whitney *U* test to determine if there was a difference between the control group scores and the treatment group scores and, if so, its significance.

The control group originally consisted of 14 students; however, before data were collected, one student chose not to participate, leaving a total of 13 students in the control group. The treatment group originally consisted of 16 students, yet one student dropped out of the program before data were collected, leaving 15 students for the treatment group. Therefore, $n = 13$ for the control group, and $n = 15$ for the treatment group. When analyzing data regarding all students involved in the study, $n = 28$. There were no missing data for the inferential statistics.

Draping. The Mann-Whitney *U* test was used to examine the draping scores of the control group and the treatment group. Although the treatment group scored higher on average than the control group ($M_1 = 12.1$, $M_2 = 16.6$), the results confirmed the null hypothesis. With alpha set at 0.05, the results were in the expected direction but were not significant ($z = -1.43$, $p = 0.076$).

There was no significant statistical difference between the control group's and treatment group's scores for techniques and skills on the skill-level survey (Appendix A), yet the treatment group scored higher on average than the control group. A significant difference may have been found with a greater *N*. However, the difference between M_2 and M_1 of 4.4 may be an indication that the treatment group's learner achievement in terms of demonstrating proper draping improved because of the redesigned course with an integrated online video-based anchor.

Techniques and skills. The Mann-Whitney *U* test was used to examine the techniques and skills scores of the control group and the treatment group. Although the treatment group scored higher on average than the control group ($M_1 = 13.8$, $M_2 = 15.1$), the results confirmed the null hypothesis. With alpha set at 0.05, the results were in the expected direction but were not significant ($z = -0.39$, $p = 0.348$).

There was no significant statistical difference between the control group's and treatment group's scores for techniques and skills on the skill-level survey (Appendix A), yet the treatment group scored higher on average than the control group. A significant difference may have been found with a greater *N*. However, the difference between M_2 and M_1 of 1.3 may be an indication that the treatment group's learner achievement in terms of techniques and skills improved because of the redesigned course with an integrated online video-based anchor.

Continuity. The Mann-Whitney *U* test was used to examine the continuity scores of the control group and the treatment group. Although the treatment group scored higher on average than the control group ($M_1 = 12.1$, $M_2 = 16.6$), the results confirmed the null hypothesis. With alpha set at 0.05, the results were in the expected direction but were not significant ($z = -1.43$, $p = 0.076$).

There was no significant statistical difference between the control group's and treatment group's scores for continuity on the skill-level survey (Appendix A), yet the treatment group scored higher on average than the control group. A significant difference may have been found with a greater *N*. However, the difference between M_2 and M_1 of 4.5 may be an indication that the treatment group's learner achievement in terms of

applying continuity within the massage was improved because of the redesigned course with an integrated online video-based anchor.

Focus and tracking. The Mann-Whitney *U* test was used to examine the focus and tracking scores of the control group and the treatment group. Although the treatment group scored higher on average than the control group ($M_1 = 12.6$, $M_2 = 16.1$), the results confirmed the null hypothesis. With alpha set at 0.05, the results were in the expected direction but were not significant ($z = -1.11$, $p = 0.133$).

There was no significant statistical difference between the control group's and treatment group's scores for focus and tracking on the skill-level survey (Appendix A), yet the treatment group scored higher on average than the control group. A significant difference may have been found with a greater *N*. However, the difference between M_2 and M_1 of 3.5 may be an indication that the treatment group's learner achievement in terms of applying focus and tracking within the massage improved because of the redesigned course with an integrated online video-based anchor.

Body mechanics. The Mann-Whitney *U* test was used to examine the body mechanics scores of the control group and the treatment group. Although the treatment group scored higher on average than the control group ($M_1 = 12.4$, $M_2 = 16.3$), the results confirmed the null hypothesis. With alpha set at 0.05, the results were in the expected direction but were not significant ($z = -1.24$, $p = 0.1075$).

There was no significant statistical difference between the control group's and treatment group's scores for body mechanics on the skill-level survey (Appendix A), yet the treatment group scored higher on average than the control group. A significant

difference may have been found with a greater *N*. However, the difference between M_2 and M_1 of 3.9 may be an indication that the treatment group's learner achievement in terms of demonstrating proper body mechanics during the massage was improved because of the redesigned course with an integrated online video-based anchor.

Descriptive Characteristics of Participants

The researcher analyzed the data collected from the demographic survey (Appendix B) for the results pertaining to the participants' characteristics. The following characteristics are discussed in this section: age, gender, ethnicity, participants' education and enrollment pattern, marital status and number of dependents employment status, and income level. These characteristics were examined in detail to determine the prevalent nontraditional characteristics and nontraditional classification of the participants.

Age of participants. Measures of central tendency regarding the students' ages in the study indicate how well the sample parallels with the median age of community college students. According to NCES (2008), "[i]n 2003-04, the median age of community college students (24 years old) was higher than the median age for both public and private not-for-profit 4-year college student (21 years old)" (p. 12). The median age is 26 for the control group and 28 for the treatment group indicating that the average of these students is representative of the nontraditional student. Bean and Metzner (1985) posit that the student's age, along with part-time enrollment are common characteristics of nontraditional students. Jinkens (2009) states that those students over the age of 24 are considered to be nontraditional.

There were no missing data for the descriptive statistic of age for the participants. In the control group, 7 out of the 13 students or 54% of the class was over the age of 24, and 7 out of the 15 students in the treatment group, or 47% of this class were over the age of 24. The age of students in both groups is representative of a community college population, and according to Jinkens' (2009) definition regarding the age of nontraditional students, half of all the participants fall in the category of being nontraditional when it comes to the age of the participants.

Gender of participants. Gender is one of the variables typically associated with the nontraditional student (Horn, 1996). In their study, Bean and Metzner (1985) included gender as one of the four background variables that affect nontraditional students' attrition. According to Horn (1996), nontraditional students who fit into one of the following sets of criteria namely enrollment patterns, financial and family status, and high school graduation status "are more likely to be women" (p. 10). Horn and Nevill (2006) indicate that there is a higher proportion of females among college students.

The descriptive statistics included gender in the demographic data. There were no missing data for the descriptive statistic of gender for the participants. For this study, 77% and 93% of the students were female for the control and treatment groups, respectively. Most of all the participants in the study were female (82%). The large percentage of women in the program's study aligns with Horn and Nevill's (1996) research on the increase of women in higher education. Sherman et al. (2005) indicate "most massage therapists were women (85%)" (p. 1). Based on the research, any of the following factors could explain the majority of females in the program: nontraditional

students are more apt to be women, more women entering college, or women's propensity toward the massage therapy field.

Ethnicity of participants. Ethnicity is one of the background variables typically associated with the nontraditional student because of the shift in the student profile that occurred in the 1960s and 1970s as a result of sociopolitical and demographic change (Horn, 1996; Jones & Watson, 1990). In their study, Bean and Metzner (1985) included ethnicity as one of the four background variables that affect the attrition of the nontraditional student. According to Horn (1996), nontraditional students who fit into one of the three sets of criteria, enrollment patterns, financial and family status, and high school graduation status "are more likely to belong to a racial-ethnic minority group" (p. 10). Based on their study of trends and enrollment of nontraditional undergraduates, Horn and Nevill (2006) found that lower proportions of community college students were white. Sherman et al. (2005) found that most of the participants in their study of massage therapists were white (95%).

There were no missing data for the descriptive statistic of participants' ethnicity. More than half (64%) of all the participants in the study were white, 54% of the control group and 73% of the treatment group. Although the participants are not representative of nontraditional graduates in terms of ethnicity, this pattern may be due to the nature of the field of massage therapy or another factor not apparent to the nature of the study. This information also confirms the blurring and overlap regarding characteristics associated with the definition of a nontraditional student.

Delayed enrollment and education of participants. For this study, the researcher used the following definition of *delayed enrollment*, described by Horn (1996) as students who have not enrolled in college classes directly after high school completion or attend college part time. There were no missing data for identifying the descriptive statistic of delayed enrollment of the participants. The data for this study indicates that 9 out of 13 students of the control group (69%) had delayed enrollment, and 11 out of the 15 students in the treatment group (73%) had delayed enrollment. Therefore, most of the participants in the study, or 71%, had delayed enrollment. Also, most of the participants had some college or more (64%), including three with an associate's degree, two with a bachelor's degree, and one with a master's degree. These data indicate that most of the participants fit this nontraditional student characteristic.

Marital status and dependents of participants. In Horn's (1996) study on trends in enrollment of nontraditional undergraduates, one of the three sets of criteria used for identifying the nontraditional student was financial and family status. Specifically, in regard to having dependents and being a single parent, Horn describes that students were designated as nontraditional if they were married and had dependents other than a spouse or were single parents. Horn further specifies, "[i]n addition to children, dependents may include elder parents, siblings, or other members of the family for whom the student is financially responsible" (p. 7). Many nontraditional students assist with taking care of family members, such as elderly parents and younger or disabled siblings. The assistance provided to their family members may include taking on additional financial and health care responsibilities.

There were no missing data for identifying the marital status and having dependents other than a spouse of the participants. Most of the students in the control group (62%, 8 out of 13) had dependents other than a spouse (five) or were single parents (three), only five students in the treatment group (33%) had dependents other than a spouse (three) or were single parents (two). Less than half of all of the participants or 46% (13 out of 28) had dependents other than a spouse or were single parents in regard to fitting this nontraditional student characteristic.

Employment status of participants. In Horn's (1996) study on trends in nontraditional undergraduate enrollment, one of the three sets of criteria used for identifying the nontraditional student was financial and family status. Horn defines "working full-time, or being financially independent from parents" as a characteristic of a nontraditional student (p. 3). Full-time employment status is considered working more than 35 hours per week (Horn, 1996; NCES, 2002a). Missing data included students not indicating whether they were working full time or part time for both the control group (two) and the treatment group (two).

Five out of 13 of the control group (62%) worked more than 35 hours per week while going through the program. Triangulating the quantitative data with the qualitative data for the control group revealed that 1 out of the 8 students worked part time while others indicated that they had full-time employment (two) or worked two or more jobs (three) while going to school. Two students in the control group did not indicate whether they worked full or part time.

Seven out of 15 of the treatment group (46%) worked full time while attending school. Triangulating the quantitative data with the qualitative data for the treatment group revealed that 9% (1 out of the 11) worked part time while the others indicated that they had full-time (six) employment or worked two jobs (one) while going through the program. Two students in the treatment group did not indicate whether they worked full or part time.

Therefore, less than half (12 out of 28, 43%) of all of the participants fit the nontraditional student characteristic in terms of employment status. Although less than half of the participants fit this category, the missing data consists of 14% of all of the participants. If only two of the students out of the missing data indicated that they work full time, the percentage would be half of the participants. Therefore, the percentage based on recorded data is still a substantial portion of students who are going to college and working more than 35 hours per week.

Income level of participants. According to Horn and Nevill (2006), a higher proportion of the community college nontraditional student population comes from low-income families. In their study, Jones and Watson (1990) indicate that the characteristics of high-risk students are often associated with nontraditional student characteristics in which high-risk students are characterized as “minorities, the academically disadvantaged, the disabled, and those of low socioeconomic status” (¶ 6). According to Kim (2002), socioeconomic status was one of three criteria used to describe nontraditional students. The United States Social Security Administration (2010)

calculated the 2009 national average wage index as $40,934.93 (¶ 1). This amount was used for analyzing the descriptive statistical data for the income level of the participants.

Missing data for this question included four students from the control group and six from the treatment group, or 36% of all of the participants. Less than half of the control group (32%) did not respond to this question, one put “unknown” and one put “middle.” Five out of 13 students in the control group reported incomes below the national average, and three reported incomes above the national average. Less than half of the treatment group (40%) did not respond to this question. One person indicated “<80,000” for their annual income. Five out of the 15 students in the treatment group reported incomes below the national average, and three students reported incomes above the national average. Ten out of all of the participants or 40% had incomes below the national average, or less than half. Therefore, relying on the data provided, less than half of the participants fit the nontraditional characteristic in regard to socioeconomic status or income level of the participants. However, as with the employment data, any information offered from those who did not respond would have made an impact on this percentage.

Prevalent Nontraditional Characteristics and Classification of the Participants

The participants were asked if they thought that they were a nontraditional student and the reasons why or why not. For the control group, 9 out of 13, or 70% thought that they were a nontraditional student, and 73%, or 11 out of the 15 students in the treatment group, thought that they were a nontraditional student. More than half of all the participants (74%) thought they were nontraditional students. Students used the NCES (2002a) characteristics to help list the reasons why they thought they were or were not a

nontraditional student. Therefore, most of the participants thought they fit the classification of a nontraditional student.

The researcher triangulated the quantitative with the qualitative data for determining the participants' prevalent nontraditional student characteristics. The data were further examined comparing the following seven characteristics "delayed enrollment (older than typical age), part-time enrollment, financial independence, full-time employment while enrolled, dependents, single parents, GED [general equivalency diploma] recipient or certificate of completion" to distinguish their classification as minimally, moderately, and highly nontraditional (Horn, 1996). According to Horn's scale, minimally nontraditional students possess one nontraditional student characteristic, moderately nontraditional students possess two or three nontraditional student characteristics, and highly nontraditional students possess four or more nontraditional student characteristics.

The prevalent nontraditional characteristics of the control group were delayed enrollment (69%), having dependents (62%), and financial independence (46%). Most of the students in the control group (46%) were moderately nontraditional (six), 15% (two) were highly nontraditional, 15% (two) were minimally nontraditional, and 23% (three) were purely traditional. The prevalent nontraditional characteristics of the treatment group were delayed enrollment (73%), working full time (53%), and financial independence (47%). Most of the students in the treatment group (47%) were moderately nontraditional (seven), 20% (three) were highly nontraditional, 20% (three) were minimally nontraditional, and 13% (two) were purely traditional. The prevalent nontraditional student characteristic of all the participants (71%) was delayed enrollment

(20). Thirteen out of all of the participants worked full time, had dependents other than a spouse, and had financial independence, or 46% for each group. Most of the participants were moderately nontraditional or 46% (13). The other categories were evenly distributed (five in each group), resulting in 18% in the highly traditional, minimally traditional, and purely traditional categories. Therefore, most of the participants (82% or 23) were nontraditional students.

The latest percentages (1992) in Horn's (1996) study for prevalent characteristics and classification of students in a public, 2-year institution were comparable to this study's results. The prevalent characteristic found in Horn's study was delayed enrollment which was determined based on the student being older than the typical student or 75.6%, which corresponds closely to the 70% found in the study. The percentages found in Horn's study for each category were as follows: 12.6% were traditional, 14.3% were minimally nontraditional, 38.5% were moderately nontraditional, and 34.6% were highly nontraditional.

Participants' Familiarity and Perceptions Toward Blended and Online Courses

The participants' familiarity and perceptions toward blended and online courses, in general were examined by triangulating the quantitative and qualitative data. The demographic survey (Appendix B) provided data regarding the students' familiarity with online instruction. The open-ended questionnaire (Appendix C) provided data regarding the online instructional formats they experienced and their thoughts toward online instruction in general. The researcher developed emerging themes from the students' responses.

Familiarity of participants with online courses. For the question regarding the students' experience and familiarity with online courses, in the control group, one student (8%) had no experience with computers, eight (62%) had an informal or self-taught experience with computers, and four had formal (31%) experience with computers. For the treatment group, two students (13%) had no experience with computers, eight (53%) had an informal or self-taught experience with computers, and five (33%) had formal experience with computers. More than half of the students (six or 57%) had an informal or self-taught experience with computers while 11% (three) had no computer experience, and 32% (nine) had some kind of formal experience with computers. Therefore, most of the students had some kind of computer experience.

When asked if they had any experience in Google, three students out of the control group did not respond, eight students did not have any experience, and two did have experience. For the treatment group, all of the students responded to this question, and only one student had experience with Google. Therefore, the majority of the students (93%) in the treatment group had to become familiar with a new form of technological instruction for the study. If the control group were given the treatment, they would also have had to become familiar with a new form of technological instruction for the study.

There were no missing data in either group for the question as to whether the students had previous online course experience. All of the students in the control group reported having at least one to three semesters of online course experience, and one student experienced more than three semesters of taking courses online. For the treatment group, however, the majority (67%) of students listed that they had no experience taking courses online, and five (33%) listed that they had one to three semesters experience with

no students in the treatment group listing more than three semesters of taking courses online. Therefore, there were more students in the treatment group with no online course experience as compared to the control group. These students had to become familiar with taking a course online in addition to learning a new form of technological instruction.

Triangulating the quantitative and qualitative data revealed that most of the online courses referred to in the demographic information were those provided within the Massage Therapy Program. All but two students in the control group listed taking the Business Ethics Course offered in the program, and five students (38%) stated having taken the Occupational Safety and Health Administration (OSHA)/AIDS fully online program requirement. Six students in the control group (46%) listed online courses taken outside of the program. Most of the treatment group (11 out of 15, 73%) had taken the OSHA/AIDS course requirement, and three students (20%) listed online courses taken outside of the program. Therefore, 61% (17) of the participants (n = 28) were exposed to taking a totally online course which was the OSHA/AIDS course requirement. Less than half of the participants (11 or 39%) had experienced a blended course.

Perceptions of participants with online courses. The qualitative data were used to discover what the participants thought about online instruction. The researcher categorized the statements into fully positive comments, mixed (positive and negative) comments, and fully negative comments. If the responses were not clear, the researcher categorized it as a mixed response. The results were examined by starting from a broad perspective and then working down into detailed items using the statements provided by the participants (Shank, 2006).

There was one student in the control group (8%) who did not respond to the question. In the control group, three students (23%) had fully negative comments, five students (38%) had mixed comments, and four students (31%) had fully positive comments. There were no missing data for the treatment group. In the treatment group, three students (20%) had fully negative comments, eight students (53%) had mixed comments, and four students (27%) had fully positive thoughts. When aggregated, 46% (13) of the participants had mixed thoughts regarding online instruction, 29% (eight) had fully positive, and 21% (six) had fully negative thoughts toward online instruction (one missing or 4%).

Emerging themes were categorized within the classifications: fully positive, mixed (positive and negative), and fully negative. The following are the emerging themes categorized as fully positive: enjoy online, fits my schedule, good for time. The following are the emerging themes categorized as fully negative: no verbal communication, need interaction and discipline, learn better with hands on. In examining the mixed responses regarding online instruction, one can make the following statement and complete it with the emerging themes from the data: Online instruction is good if . . .

- you are motivated.
- it is used for basic information or if the course is easy.
- you learn better by reading/bookwork.
- it is used for certain courses and is convenient.
- it is accompanied by face-to-face instruction.

The following statement could be completed with the following emerging themes from the data: Online instruction is good but . . .

- there is no interaction.
- you do not have anyone to explain things to you.
- it leaves lots of room for cheating and thus is not really learning.

After examining the emerging themes, specific items were analyzed as to their frequency within the participants' responses. For fully positive responses, the words most used were *good* (includes *love* and *great*; six), *schedule* (two), and *time* (two); for fully negative responses, the words most used were *no/don't like* (includes *prefer classroom*, and *would rather not take classes online*; five), *interaction* (three), and *hands on* (three); for mixed responses, words most used were *instruction* (includes *courses*; six), *good* (four), *motivate* (three).

The researcher examined these terms in aggregation: the words that were used most were *good* (ten), *instruction* (seven), and *no/don't like* (five). The researcher noted that the students used the word *schedule* in the fully positive responses and not in the other categories, and the words *discipline* and *interaction* were contained in the fully negative responses and not in the others. The researcher combined terms related to these words and the frequency of each word's use to formulate an overall theory regarding the students' perceptions of online instruction.

The qualitative data were also used to examine if the participants thought that online instruction provided the flexibility they needed as a student. There was one response missing (8%) from the control group, and one student (8%) did not say yes or no but gave the following explanation: "would procrastinate to [*sic*] much – plus I don't like to sit in front of a computer for hours." The majority of the control group (85%) said yes, that it did give them the flexibility needed as students. There was one response

missing (7%) from the treatment group, and the majority of the treatment group (93%) said yes, that online instruction did give them the flexibility needed as students. Although the question was strictly regarding the flexibility of an online course, students added the following commentary: “did not learn as much in online instruction,” and it “catered for working students.”

Participants’ Perceptions of the Use of Online Instruction in Massage Therapy

The qualitative data were used to explore whether the students would like to see more online components within the massage therapy program. The responses were categorized into the following classifications: positively yes (PY), conditionally (C), and positively no (PN). For the control group, one response (8%) was missing. The responses for the control group had the following distribution: one (8%) PY, five (38%) C, and six (46%) PN. For the treatment group, one response (7%) was missing; the responses for this group had the following distribution: six (46%) PY, six (46%) C, and two (15%) PN. After categorizing the responses, the researcher noted emerging themes from each group.

In the control group, the one PY response was as follows: “want to see more PowerPoint presentations.” The emerging themes from the C responses were as follows: “massage therapy is hands on” (three), and “as long as online instruction is accompanied with face-to-face instruction” (three). The emerging theme from the PN responses was as follows: “massage therapy is hands on” (four). In the treatment group, the emerging themes from the PY responses were as follows: “it would be convenient” and “help with their schedule” (three), and “it would benefit in their learning” (three). The emerging themes from the C responses were as follows: “need the interaction from face to face”

(three), “massage therapy is hands on” (two), and “it would be convenient and fit my schedule” (two). The emerging themes from the PN responses came from one response and included the following: “don’t like online,” “online instruction adds to workload,” and “can’t learn massage therapy with online.” There were no major emerging themes that were exclusive to the PY and PN responses and two that were exclusive to the C category (“with face-to-face [*sic*]” and “need interaction”). An aggregation of the emerging themes was used to develop an overall consensus of what the students thought in regard to online instruction for the massage therapy program.

The qualitative data were also used to discover if additional online instruction would benefit students in the massage therapy program. The responses were analyzed using the same categories as in the previous question: PY, C, and PN. For the control group, one response (8%) was missing, the responses for this group had the following distribution: one (8%) PY, five (38%) C, and six (46%) PN. Although this distribution is the same as for the previous question, there were four respondents whose comments shifted from one category to another. For the treatment group, one response (7%) was missing, the responses for this group had the following distribution: six (40%) PY, three (20%) C, and five (33%) PN.

After categorizing the responses, the researcher noted emerging themes from each group. Although the distribution in responses closely resembles that of the previous question, the responses were more specific and varied. As in the previous question, there were no major emerging themes that were exclusive to the PY and PN responses, and all but one of the major emerging themes was exclusive to the C category (“want hands-on instruction”; three in the PN, and one in C). Four perceptions emerged from the students’

responses regarding their comments on the use of online instruction in massage therapy. These perceptions are listed in order by frequency of items in Chapter 5 for the discussion section of Research Question 2.

The second part of perceptions 3 and 4 may be confirmed using qualitative data from the second question on the open-ended questionnaire (Appendix C). The participants listed the following formats: discussion, chat, video, tests/quizzes, PowerPoint, reading material, and assignments. The frequencies of these items were calculated to explore the main formats that participants had been exposed to previous to this study. The prevalent formats mentioned were tests/quizzes, discussion, assignments, and reading material and was determined by examining the frequency of items per group and in aggregation (Table 3).

Table 3

Previous Online Course Formats

Format	Control	Treatment	All Participants
Test/quizzes	5	10	15
Discussion	10	2	12
Assignments	3	5	8
Reading material	2	5	7
PowerPoint	2	3	5
Video	0	5	5
Chat	0	1	1

The analysis regarding the prevalent online formats participants have experienced may be a contributing factor to their perception that online instruction is mainly for reading, writing, book work, review, and tests.

Participants' Perceptions of Learning and the Use of Video-Based Anchors in Massage Therapy

The researcher used quantitative and qualitative data to determine the participants' previous massage experience and their perceptions toward learning and the use of video-based anchors within the field of massage therapy. The participants' previous massage experience data were collected using the demographic survey (Appendix B). The participants' perceptions regarding learning were examined using the open-ended questionnaire (Appendix C) data from their responses related to their learning style. Most of the students had no previous massage therapy experience and the data does not indicate any relationship between experience in the field and their learning style.

Participants' previous massage experience. The researcher used quantitative data to explore whether the participants had previous massage therapy experience. There were no missing data in either group for this question. In the control group, one student (8%) had formal experience in massage therapy and one student (8%) had an informal or self-taught experience in massage therapy.

The majority of students (85%) in the control group had no experience in massage previous to the Swedish massage course. In the treatment group, three students (20%) had informal or self-taught experience in massage therapy while the majority (80%) had no

previous massage therapy experience. Therefore, the majority of both groups had no previous massage therapy experience, indicating that this variable would not have a major effect on the results of the skill-level survey (Appendix A) data.

Participants' perceptions toward learning. There is a plethora of research on learning styles and the ways in which people learn. This consideration is an important one for nontraditional students since they are such a diverse group of learners. The researcher used qualitative data from the study to examine how the students described their learning style. The approach for analyzing the data were to take what the participants thought their learning style was in their own words and match it to the model that would best fit their descriptions. This type of data provides insight for the use of a video-based anchor instruction with this diverse group of learners and its importance in learner achievement.

There was one missing response from the control group and two missing responses from the treatment group for this question. Most of the participants used more than one of the following descriptions to define their learning style: *hands on*, *writing* (note taking), *reading*, *visual* (seeing), *audio* (hearing), *review*, *repetition*, and *self learner*. The prevalent description that participants used was *hands on* and was determined by the frequency of the description in the responses (Table 4).

Table 4

Participants' Descriptions of Learning Styles

Description	Control Group Frequency	Treatment Group Frequency	All Participants
Hands on	8	7	15
Reading	6	5	11
Writing	7	3	10
Visual	6	4	10
Audio	3	2	5
Review/repetition	1	2	3
Self learner	1	1	2

These descriptions were then aligned to Fleming's (1995) modes of presentation or VARK: (*visual* [graphs, charts, and flow diagrams], *aural* [speech, arrives to the learner's ear]; *reading/writing* [printed words]; *kinesthetics* [using the senses: touch, hearing, smell, taste, and sight]). Of course, some students in the study listed several styles of learning that were effective for them, or *multimodes* (Fleming, 1995, p. 1).

The V is for *visual* in Fleming's (1995) model which specifically denotes the use of graphs, charts, and flow diagrams. Since the course in the study does not use graphs, charts and flow diagrams for instruction, none of the student descriptions aligned with the V. The student description of *visual* was aligned with the K (*kinesthetic*). Students listed *audio*, which would fall under the A since it is described in Fleming's model as speech accessed by the learner's ear. The students' descriptions of *reading*, *writing*, and *note taking* clearly constitute the R since it is described by Fleming as learning by the printed word. The student descriptions of *visual*, *audiovisual*, and *hands-on* learning align with the K, since the K indicates that these students "can easily learn conceptually and abstract material provided it arrives with suitable analogies, real-life examples, or metaphors.

They learn theory through its application" (Fleming, 1995, p. 2). This kinesthetic mode of presentation in which learning occurs in the context of application corresponds well with cognitive apprenticeship in which students gain knowledge by observing real-world application.

After aligning the participants' descriptions to Fleming's (1995) model, the researcher found that the prevalent learning styles were the multimode K R (*kinesthetic* and *reading*; 39%), and K (*kinesthetic*; 36%) by aligning the number of participants with the learning styles according to Fleming's modes of presentation (Table 5).

Table 5

Participants' Learning Styles Using Fleming's (1995) Model

VARK	Control Group	Treatment Group	All Participants
K, R	5	6	11
K	4	6	10
A, Self learner	1	1	2
A, K	1	0	1
R	1	0	1
Self learner	1	0	1
A	0	0	0
V	0	0	0

Note. V = visual; A = aural; R = reading; K = kinesthetic.

Summary

The results of the study included inferential statistics for each element of the skill-level survey (Appendix A): draping, techniques and skills, continuity, focus and tracking, and body mechanics. Although the treatment group's overall median score was greater than that of the control group, there was no significant difference between the two groups

for each element. The descriptive statistical analysis indicates that most of the participants were nontraditional.

The participants' perceptions regarding online instruction included mixed views but indicated that students prefer online instruction accompanied by face-to-face instruction. Specifically, in terms of their profession, the participants thought that online instruction could not replace the face-to-face component and that if an online component were provided, it would have to be visual, not reading and writing. The analysis developed within this chapter will provide the foundation for the conclusions presented in Chapter 5.

CHAPTER V

DISCUSSION

The purpose of the study was to determine the effectiveness of redesigning a fully on-site, face-to-face Swedish massage course into a blended course with the integration of an online, video-based anchor as a springboard for more scholarly studies in the area of effective instructional practices in massage therapy. The results emanating from the study's inferential and descriptive statistical analysis, emerging themes and categories, and triangulation of quantitative and qualitative data provide the basis for the following discussion and conclusions.

The literature review was divided into the following components which are also integral parts of the conceptual framework: massage therapy research, anchored instruction, blended instruction, and accommodating the nontraditional learner. The researcher used a range of sources to form the basis of the literature review which included books, scholarly articles, the Internet, conferences, and data collected by accredited massage associations. A mixed methods approach was used to examine the data from the study. A nonequivalent posttest-only comparison control design was used for the quantitative data and grounded theory was used to discover key terms and emerging themes from the qualitative data. The quantitative data and qualitative data were triangulated to enhance and confirm the results and conclusions.

There are well-documented studies regarding the effectiveness of anchored instruction as a teaching strategy in a number of disciplines. However, in the area of massage therapy, there is little to no research in the area of effective teaching methods for postsecondary students. Based on the research, future trends include an increase in the nontraditional student population within higher education institutions along with an increasing demand for blended instruction. The development of this study was expected to build a foundation for future massage therapy educational research.

Discussion of Results and Conclusions

This section summarizes the results and conclusions for research question 1 and 2. The implications of the study were examined in terms of using a video-based anchor within a blended design for instruction at a postsecondary institution and accommodating the nontraditional student. The limitations of the study were reviewed in terms of the nature of the course in the study, and their effect on the data collection and analysis.

Research question 1. How will the students' skill levels be influenced by redesigning a fully on-site Swedish massage course into a blended learning design with the integration of an online, video-based component in the same course measured by clinic evaluation results?

$H_0$1: There is no significant difference in posttest scores between the two classes as measured by the massage skill-level survey (Appendix A).

Findings and discussions. Although the treatment group's overall median score was greater than that of the control group, there was no significant difference between the

two groups for each element. This outcome supports the research of a multitude of studies in which there was no significant difference for student learning outcomes in comparing traditional face-to-face instruction with technology-supported distance education (Johnson et al., 2003). According to NCES (2000), distance education and traditional education are similar in effectiveness when it comes to learners' outcomes.

There is an enormous amount of research regarding the effectiveness of technology-supported instruction compared to that of face-to-face instruction. The consensus is that more research is needed in the area of blended instruction, particularly research projects using stronger research designs (Randolph, 2007). Therefore, the effectiveness of blended instruction lends itself to future research as an effective teaching strategy. This finding confirms that the quality of instruction's design is crucial, and not necessarily its delivery format (Johnson et al., 2003).

Conclusion. A significant difference did not exist between the two classes as measured by the massage therapy skill-level survey (Appendix A). This finding is consistent with the literature regarding Russell's (2010) "No Significant Difference" phenomenon (Frequently Asked Questions Section ¶ 2). Therefore, the student outcomes for both classes "were neither worse nor better than those in the face-to-face" course (Russell, 2010, Frequently Asked Questions Section ¶ 3). The finding of *no significant difference* does not indicate that the study or its conclusions were not important, but that both modes of delivery were just as effective in teaching students the learning objectives.

Although the study and its findings were limited because of a small sample, this is a general problem for the community of educational research, "we are, after all, working

with real students in the real world, not controlled experimental conditions in a laboratory" (Russell, 2010, Frequently Asked Questions Section ¶ 12). Perhaps using a stronger research design, such as pretest-posttest along with a different statistical technique such as an analysis of covariance, would have reduced the effects of the variability among the two groups. Conducting the study to include different educational settings and increasing the sample size would have had improved reliability and generalizability of the findings for the first research question. Taking the conclusions of qualitative data into consideration, using a blended approach may insure learning among more potential students.

Research question 2. What are students' perceptions regarding online instruction?

The participants' perceptions regarding online instruction included fully positive, mixed (positive and negative), and fully negative comments. The fully positive emerging themes were "enjoy online," "fits my schedule," and "good for time." The fully negative emerging themes were "no verbal communication," "need interaction and discipline," and "learn better with hands on."

The mixed emerging themes were "online instruction is good if you're motivated, it is used for basic information or if the course is easy, you learn better by reading/bookwork, it is used for certain courses, is convenient, and if accompanied with face-to-face instruction" and "online instruction is good but there is no interaction, you don't have anyone to explain things to you, and it leaves lots of room for cheating and thus is not really learning." Online instruction provided the flexibility they needed in

terms of having a busy schedule, working full time, having more than one job, and having an unexpected emergency.

The researcher developed the following perceptions in order by frequency of terms regarding online instruction in massage therapy using the emerging themes from the qualitative data:

1. Massage therapy needs hands-on instruction and online instruction could not replace this aspect of the course; therefore, face-to-face instruction has to accompany it.
2. If online instruction were part of the course, the online instruction would have to include visuals.
3. Online instruction is mainly suited for reading, writing, bookwork, review and tests.
4. The main advantage of online instruction is flexibility and convenience, and the main disadvantage is the need for self motivation.

Findings and discussions. The following consensus of what the participants thought about online instruction was developed from the qualitative analysis:

> Most of the students like online instruction, especially in regard to time, schedule and convenience; however, the obstacles associated with learning online are that it is not conducive for hands-on instruction, lacks interaction between students and student and instructor, and does not provide the motivation and discipline that the student requires. Online instruction definitely provides the flexibility they need in terms of convenience.

The study's findings align with what is found in the research that online instruction accommodates nontraditional students when it comes to balancing their time between work and other responsibilities (Choy, 2002; Gibson et al., 2001; NCES, 2000; NCES, 2002a; Skopek & Schumann, 2008; Tesone & Ricci, 2003; Vaughan, 2007). The findings also confirm that the majority of postsecondary students prefer a delivery mode that includes a face-to-face component (Allen et al., 2007). The face-to-face component fills the students' needs in terms of socialization and interaction, factors which may be limited with distance learning alone (deLeon & Killian, 2000; Skopek & Schuhmann, 2008). The participants' prevalent learning styles using Fleming's (1995) modes of presentation (kinesthetic and multimodes) also correspond to the situational scenario and multimodal design exhibited with the use of a video-based anchor and supports the research relating to learners' preference of video-based anchored instruction (CTGV, 1990).

Conclusion. Based on the findings, the researcher concludes that an online instructional component provides the convenience and flexibility needed for the students. There seems to be a major perception that there is a lack of social interaction among students and between instructor and students in an online course, thereby justifying refashioning the course and maintaining the successful components within the design (Brown, 2008). These components would include using a cohort and maintaining the face-to-face component (Skopek & Schuhman, 2008). The conclusions correspond with the increase in the use of and preference for blended instruction. The findings regarding

the students' predominant kinesthetic learning styles and a perception that massage therapy is a "hands-on" course parallels with the use of video-based anchored instruction.

Future research would include stronger designs for examining blended instruction's effectiveness and online instructional strategies for improving student learning outcomes. Video-based anchored instruction is a well-documented and valid teaching strategy for use in these studies (CTGV, 1990). This type of research is particularly suited for having a focus on the nontraditional student population. Not only will it be important for institutions to accommodate the increase in this student population (Benshoff & Lewis, 1992), but it will also be imperative for these institutions to design programs that address this population's low attrition rate (Horn, 1996).

Implications of the Study

The results of the study confirm the use of blended instruction with the use of a video-based anchor within a postsecondary institution for accommodating its prevalent population of nontraditional students. Current research indicates an increase in a nontraditional student population and an increase for the demand of blended instruction. Current research also confirms a preference toward blended instruction and using video-based anchors to provide the flexibility, convenience, and method of learning that nontraditional students need.

It is imperative for institutions of higher education to modify programs to ensure that these students succeed in terms of both attrition and student learning outcomes (Horn, 1996). The advancement of emerging technologies such as the Internet, YouTube, and Google allow for minimal expenditures in regard to physical facilities and learning

management systems (Teng et al., 2009). Research of effective teaching strategies in the field of massage therapy and in terms of accommodating nontraditional students can be expanded upon to include stronger designs of study.

Limitations of the Study

Because of the nature of the classes studied within the program at a regional community college located in the southeastern part of the United States, a quasi-experimental study was conducted using the intact classes available to the researcher. Also, the course is an introductory component of the program which nullifies the use of a pretest within a contextual environment comparable to the posttest setting. Therefore, the researcher was limited to using the nonequivalent posttest-only comparison control design.

The researcher was a student of the program and continues a working relationship with the program's coordinator and instructors. It was important to reduce any chance for researcher bias; therefore, the lead instructor in collaboration with the other instructors in the program determined the criterion validity of the skill-level survey (Appendix A) and conducted the evaluations to obtain student scores. In addition to the limitations regarding the quantitative analysis was the limited amount of research found related to effective teaching strategies in the area of massage therapy and the limited amount of massage therapy research in general.

Stakeholders

The study's findings were explored in terms of its importance for major stakeholders, such as postsecondary students, administrators, and instructors. For each

stakeholder, there are many challenges, obstacles, and considerations in terms of learning, teaching, and technology. Postsecondary students, instructors, and administrators are faced with balancing factors, such as time, money, and a quality in education. Recommendations for future research are also discussed in this section.

Postsecondary students. Based on the research, the nontraditional student population is increasing, and the traditional student is becoming more of the exception than the rule (NCES, 2002b). The results of the study confirm the need for accommodating the nontraditional population of postsecondary students. These students face many obstacles that impede their success. The research on effective teaching methods that accommodate these students, particularly blended instruction, is limited (Allen et al., 2007).

It is important to have studies that focus on achievement in student learning outcomes for these students (Horn, 1996). The challenges which need to be met for these studies are improving the strength of the study's design and the need for using larger sample sizes. Particularly in education, a researcher is limited to intact classes, the structure of the program in place, and the participants currently enrolled in the setting. Other challenges involve the setting's limitations when it comes to technology, the institution's or instructor's willingness to participate in the study, and/or researcher bias. The researcher sees this study as a way to establish a rapport to conduct further research within this setting in the expectation of expanding on the study and possibly overcoming some of these limitations.

Postsecondary administrators. Based on the research, programs offered online will continue to increase in the future (Johnson et al., 2003). It is expected that an increase in the enrollment of online courses will follow (Synergy Plus, 2002). It is important for administrators to recognize the expectations of offering more online instruction in addition to providing online instruction that improves student learning outcomes.

Of course, as with any other form of technology, there is a consideration for a substantial capital investment in addition to resistance to change in traditional teaching methods (Johnson et al., 2003). However, Vaughan (2007) indicates that blended instruction will increase access to the institution's courses, thus increasing enrollment and enhancing the institution's reputation. It will also assist in reducing operating costs and managing physical facilities more effectively (Albrecht, 2006).

Postsecondary instructors. Based on the research, faculty members are becoming more comfortable with technology as a component of their instruction (Heffner & Cohen, 2005; Vodanovich & Piotrowski, 2001). Instructors experience the same benefits from the use of technological advancements in education that students do, such as convenience and flexibility in regard to time schedules. Instructors also find that using blended instruction offers many opportunities for student engagement and course improvement (Vaughan, 2007).

Instructors will have to be prepared to modify the way they teach with the increasing expectations from students, and inevitably, from administration, for online instructional components. It will be important for these instructors to have a resource or

body of knowledge to use as a reference for this endeavor. Effective research focused on blended instructional designs is vital for developing a viable resource for them.

Recommendations for Future Research

This study provides a template to complete additional studies with the use of multiple settings within the area to include other institutions which offer a comparative program. It also provides a method for developing and redesigning courses within this program and others to include online video-based anchored instruction. With the use of a larger sample and a number of settings, the researcher will be able to use a stronger design for research in this area.

The results from the study confirm the use of blended instruction using a video-based anchor for accommodating nontraditional postsecondary learners. Specifically, these learners prefer having a face-to-face component along with an online component. Online instruction provides them the flexibility and convenience they need for balancing time among a number of responsibilities such as financial and family constraints. The face-to-face component offers them the socialization that may not occur with distance education. The video-based anchor provides them the teaching method that matches their learning style. Thus blended instruction using an online video-based anchor encompasses the factors they find necessary for a successful learning experience.

Based on the research, the nontraditional student population within higher education is expected to increase; the demand for blended instruction exceeds what is currently being offered by postsecondary educational institutions (Allen et al., 2007) and studies regarding the effectiveness of blended instruction on student learning

achievement are limited. It is important for institutions to modify programs which include instruction that will ensure the nontraditional students' success in terms of attrition and success. The use of current advanced emerging technologies can assist with the expenses associated with online instruction.

This study can be used for the development of blended instruction within the postsecondary institution's program of massage therapy for a number of its courses which include spa therapy, pregnancy massage, medical massage, chair massage, and sports massage. In addition to providing research related to blended instruction, this study will also add to research related to effective teaching strategies in massage therapy and the growing body of massage therapy research in general. There is an increasing interest and demand for complementary and alternative medicine, such as massage therapy (Grant, 2008), and effective instruction in this field will not only accommodate the postsecondary nontraditional students who decide to enter the field but will also provide enhanced instruction for massage therapists requiring continuing education units. The research will also provide avenues for massage therapists to practice in the context of medical environments (Kahn, 2001).

Concluding Remarks

There is a major body of research dedicated to examining nontraditional student populations and anchored instruction. Added research in terms of anchored instruction will include video-based anchors and the use of emerging technologies. There is a limited body of research regarding the effectiveness of blended instruction and effective teaching methods in massage therapy.

This study is one step toward developing a building block for research that will have a focus for both of these areas. In addition to enhancing these research areas, the study provided information for designing programs that address improvement in nontraditional student learning outcomes and attrition. The implications for this future research have an endless number of possibilities in terms of massage therapy, technology, the constantly changing profile of postsecondary students, and teaching methods that provide not only what students want in terms of an education, but also what students need to be successful learners.

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APPENDIXES

Appendix A

Skill-Level Survey

Skill-Level Survey

Practical Massage I: Clinic Assessment Date:_____
Therapist:_____ Observer:_____

5) Excellent
4) Very Good
3) Average
2) Minor Improvement Needed
1) Major Improvement Needed

Draping Techniques
1. Did therapist provide security for the client (via tucking, etc)?
2. Including appropriate draping for room temperature i.e. use of blanket?
3. Allowed for accessibility to body area being treated?
4. Including using the drape as a boundary?
5. Integrated the use of bolsters and or pillow for proper support?

Massage Techniques and Skills
1. Did the therapist communicate a definite beginning and ending of technique?
2. Was touch done on each side of the body (prone, supine)?
3. Were techniques repeated on each body part the same i.e. arms, legs etc.?
4. Was each individual stroke done with complete fullness (even)?
5. Range of Motion i.e. neck, arms, hands, feet
6. Was the appropriate time used on the body prone and supine?

Therapist Continuity
1. Smoothness of strokes
2. Connection of body parts
3. Transition
4. Hand or Palm contact firm and even?
5. Re-centering after they turned client over i.e. Polarity hold

Focus and Tracking
1. Therapist intention (giving, nurturing not mechanical)
2. Sensitivity to client's body language i.e. facial expressions and flinching?
3. Speed of strokes
4. Pressure of stroke, is therapist using center of the body?

Body Mechanics
1. Alignment with stroke (belly-button with direction of stroke)
2. Geometric leverage (proper body/arm angles)
3. Leaning in (as opposed to pushing)
4. Leg placement (weight distribution, using center of the body)
5. Relaxed wrist and hand.

Appendix B

Demographic Survey

Demographic Survey

1. Name: _____ 2. Age: _____

3. Education Completed:
   1. High School or GED Equivalent
   2. Some college courses.
   3. Associate's Degree
   4. Bachelor's Degree
   5. Master's Degree
   6. Post-Graduate Degree

4. Gender: 1. Female____ 2. Male_____

5. Massage Experience:
   1. None
   2. Informal, (self taught)
   3. Formal from 1 to 5 years experience

6. Computer Experience:
   1. None
   2. Informal, (self taught)
   3. Formal from 1 to 5 years experience

7. Do you have a computer at home? 1. Yes_____ 2. No_____

8. Have you taken online courses before? 1. Yes_____ 2. No_____

9. Have you ever worked in Google Docs? 1. Yes_____ 2. No_____

10. What is your experience in taking courses online?
    1. None
    2. 1 to 3 semesters
    3. more than 3 semesters

11. Ethnicity:
    1. Asian
    2. African American
    3. Caucasian
    4. Hispanic
    5. Native American
    6. Other, specify_____

12. Marital Status: 1. Single_____ 2. Married_____

13. Number of Children in Household: _____

14. Are you currently working while going to school? 1. Yes_____ 2. No_____

15. Family Income: _____

Appendix C

Open-Ended Questionnaire

Open-Ended Questionnaire

1. Please specify the courses you have taken that offered online components.

2. What type of format did the course have?

3. What do you think about online instruction?

4. Do you think that online instruction offers you the flexibility you need as a student?

5. How would you describe your learning style?

6. Do you think that you are a nontraditional student and why?

(A nontraditional student is considered to possess one or more of these characteristics. (a) they have delayed enrollment after finishing high school, (b) they attend college part-time (c) they work full-time (d) they have dependents other than a spouse [usually children] (e) they are single parents, or (f) they have not earned high school diploma, having completed a GED or other type of high school certificate.)

7. Would you like to see more online components within the massage therapy program courses? Why?

8. Do you think you will benefit from more online instruction available within the massage therapy program? Why?

Appendix D

Informed Consent

Informed Consent

Researcher: Pearl Darlene Peters, 850-525-5905
Participant Information: Name: _____
Address:_____ Phone/email address:_____

Thank you for agreeing to participate in this study which will take place from August, 2009 to August 2010. This form outlines the purposes of the study and provides a description of your involvement and rights as a participant. The purposes of this project are: research involved in a doctoral study titled: "Integration of Online Video-Based Instruction within a Massage Therapy Program."

Description of the research and your participation
Your participation will involve filling out surveys, interviews, and skill-level surveys regarding the integration an online video-based instruction. The methods to be used to collect information for this study are explained below. From this information, I will complete my dissertation. Data will be collected from pre and posttest skill level tests. The qualitative data collected will be generated from observations and interviews using open-ended questions directly pertaining to the focus of the study. You are encouraged to ask any questions at any time about the nature of the study and the methods that I am using. Your suggestions and concerns are important to me; please contact me at any time at the address/phone number listed above. I will use the information to conduct a mixed methods research study. This report will be read by you, the course instructor, and optionally, by one other person if you give permission, to check on the accuracy of the report.

I guarantee that the following conditions will be met:

1) Your real name will not be used at any point of information collection, or in the written case report; instead, you and any other person and place names involved in your case will be given numbers or pseudonyms that will be used in all verbal and written records and reports.

2) Your participation in this research is voluntary; you have the right to withdraw at any point of the study, for any reason, and without any prejudice, and the information collected and records and reports written will be turned over to you.

3) You will receive a copy of the final report before it is handed in, so that you have the opportunity to suggest changes to the researcher, if necessary.

4) You will receive a copy of the report that is handed in to the instructor.

Do you grant permission to be quoted directly? Yes _____ No _____
I agree to the terms: Respondent _____ Date_____
I agree to the terms: Researcher _____Date_____

Appendix E

The University of West Florida Institutional Review Board Approval

University of West Florida

Research and Sponsored Programs
11000 University Parkway, Bldg. 11
Pensacola, FL 32514-5750

Ms. P. Darlene Peters
3675 Beagles St.
Pensacola, FL 32514

November 05, 2009

Dear Ms. Peters:

The Institutional Review Board (IRB) for Human Research Participants Protection has completed its review of your proposal titled "Integration of Online Video-Based Instruction Within a Post-Secondary Vocational Program," as it relates to the protection of human participants used in research, and granted approval for you to proceed with your study on 11-04-2009. As a research investigator, please be aware of the following:

* You will immediately report to the IRB any injuries or other unanticipated problems involving risks to human participants.
* You acknowledge and accept your responsibility for protecting the rights and welfare of human research participants and for complying with all parts of 45 CFR Part 46, the UWF IRB Policy and Procedures, and the decisions of the IRB. You may view these documents on the Research and Sponsored Programs web page at http://www.research.uwf.edu/internal. You acknowledge completion of the IRB ethical training requirements for researchers as attested in the IRB application.
* You will ensure that legally effective informed consent is obtained and documented. If written consent is required, the consent form must be signed by the participant or the participant's legally authorized representative. A copy is to be given to the person signing the form and a copy kept for your file.
* You will promptly report any proposed changes in previously approved human participant research activities to Research and Sponsored Programs. The proposed changes will not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the participants.
* **You are responsible for reporting progress of approved research to Research and Sponsored Programs at the end of the project period 08-01-2010. If the data phase of your project continues beyond the approved end date, you must receive an extension approval from the IRB.**

Good luck in your research endeavors. If you have any questions or need assistance, please contact Research and Sponsored Programs at 850-857-6378 or irb@uwf.edu.

Sincerely,

Richard S. Podemski

Dr. Richard S. Podemski, Associate
Vice President for Research and
Dean of Graduate Studies

Dr. Terry Prewitt, Chair
IRB for the Protection of Human
Research Participants

CC: Byron Havard, Karen Rasmussen

Phone 850.474.2824 Fax 850.474.2802
Web research.uwf.edu

Appendix F

Pensacola State College Institutional Review Board Approval

Pensacola Junior College
Institutional Review Board
Memorandum

Phone: 850.484.1705
Fax: 850.484.1899

January 5, 2010

TO: Darlene Peters

FROM: Jim Brady, Department Head
Biological Sciences
IRB Chair

SUBJECT: Approval of Protocol #2010-PJC-0001

TITLE: Integration of Online Video-based Instruction within a Postsecondary Vocational Program

I am pleased to advise you that the Pensacola Junior College Institutional Review Board has recommended approval of this protocol. Based on its review, the PJCIRB determined that this research presents no more than minimal risk to participants. Given your protocol, it is essential that you obtain signed documentation of informed consent from each participant.

If you wish to make any changes to this protocol, you must disclose your plans before you implement them so that the PJCIRB can assess their impact on your protocol. In addition, you must report to the PJCIRB any unexpected complications that affect your participants.

If you have not completed this protocol by January 4, 2011, please telephone our office (850) 484-1705.

Pensacola Campus ■ 1000 College Boulevard ■ Pensacola, Florida 32504-8998
ddouma@pjc.edu