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Nontraditional physical activity courses: Perceptions of community college leaders

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COLLEGE OF EDUCATION

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2009

ABSTRACT

Nontraditional Physical Activity Courses:
Perceptions of Community College Leaders

by

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M.S., California Polytechnic State University, San Luis Obispo, 2003
B.A., University of California, Davis, 1996

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
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ABSTRACT

Innovative physical training practices and concepts such as yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics have emerged to provide college students with alternative fitness exercises. However, due to unavailable research, community college administrative and curriculum leaders may perceive nontraditional physical activity courses as unrelated to the values of physical education. The purpose of this quantitative study was to explore the perceptions of chairpersons/deans and faculty in physical education regarding nontraditional physical activity courses as compared to sport-related courses offered in community college physical education programs. Educational change theories of beliefs, values, and decision-making structures provided the conceptual framework for this study. Research questions focused on participants' perceptions toward health benefits, values, and contributions to students' learning experience of nontraditional physical activity courses. An 18-item survey was distributed via e-mail to 209 chairpersons/deans and 263 full-time faculty in community college physical education programs in the western region of the United States. An independent samples *t* test analysis revealed participants' perceptions differed regarding cardio kickboxing, cardio spinning, and step aerobics courses providing similar health benefits as compared to sport-related courses. Participants' perceptions also differed concerning yoga courses contributing to students' learning experience. Chi-square analysis showed participants' perceptions toward yoga, Pilates, cardio spinning, and step aerobics were dependent on their campus position in physical education. The findings in this study illustrate a positive social change community colleges can offer by teaching lifetime fitness activities that contribute to an active lifestyle and sustained wellness.

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DEDICATION

I would like to dedicate this document to my parents—their courageous and unselfish act of immigrating to the United States provided a better future for my younger brother and me. This document, therefore, symbolizes triumph and victory for their sacrifice.

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CHAPTER 1:

INTRODUCTION TO THE STUDY

Background

Physical education represents an academic discipline that educates college students on physical fitness, exercise, and health. Although physical education programs may differ at the collegiate level in regard to the types of courses offered to students, the philosophy remains the same—to promote the enhancement of physical wellness (Hoffman & Harris, 2000; Lumpkin, 2005). Because of the standard established in collegiate physical education programs, college students may link physical education curricula to sport-related activities when they consider enrolling in a physical education course. A typical college or university physical education program may offer students traditional physical activity courses in golf, basketball, volleyball, racquetball, bowling, tennis, and weight training. However, innovative physical training practices and concepts such as yoga, Pilates, tai chi, cardio kickboxing, cardio spinning (indoor cycling), and step aerobics have emerged to provide college students with alternative fitness exercises.

Alternative fitness exercises can offer potential health-related benefits to individuals of diverse backgrounds. The combination of breathing and stretching exercises in yoga can benefit college-campus members (Milligan, 2006; Schure, Christopher, & Christopher, 2008), middle-aged practitioners (Netz & Lidor, 2003; Tran, Holly, Lashbrook, & Amsterdam, 2001), and the older populations (Bennett, 2007; Birkel, 1998; Chen, Tseng, Ting, & Huang, 2007; Flegal, Kishiyama, Zajdel, & Haas, 2007). Although Pilates may share the mind-body relationship of yoga, Pilates

emphasizes muscle-core stabilization and proper alignment (Kloubec & Banks, 2004) for improvements in flexibility (Segal, Hein, & Basford, 2004) and musculoskeletal areas (Roniger, 2007; Smith & Smith, 2005). In contrast, the graceful and gentle movements of tai chi, an ancient form of Chinese martial arts, provide an effective exercise for improving balance and coordination (Downing & Yan, 1998; Lin, Hwang, Wang, Chang, & Wolf, 2006) along with flexibility and strength (Audette et al., 2006). Even though the concept of cardio kickboxing derived from martial arts, cardio kickboxing represents a noncontact, hybrid style of boxing and aerobics that utilizes high energy expenditure (American Council on Exercise, 2001; Ergun, 2005) for improvement in cardiorespiratory fitness (Kravitz, Green, Burkett, & Wongsathikun, 2003). The high-intensity activities of cardio spinning, on the other hand, can enhance metabolic and cardiovascular responses (Battista et al., 2008; Caria, Tangianu, Concu, Crisafulli, & Mameli, 2007; Ziemba et al., 2003) along with improvements in lower-body muscular strength (Jackson, Hickey, & Reiser, 2007; Van Zant & Bouillon, 2007; Ziemba, Chwalbinska-moneta, Kaciuba-Uscilko, Kruk, Krzeminski, Cybulski, & Nazar, 2003) and muscular endurance (Glaister, Stone, Stewart, Hughes, & Moir, 2007). Finally, step aerobics can improve cardiovascular responses (Sutherland, Wilson, Aitchison, & Grant, 1999), muscular endurance, muscular strength, and oxygen uptake when performed with additional resistive movements during a bout of step exercise (Kraemer, Keuning, Ratamess, Volek, McCormick, Bush, Nindl, Gordon, Mazzetti, Newton, Gomez, Wickham, Rubin, & Kakkinen, 2001; Darby, Marsh, Shewokis, & Pohlman, 2007).

Alternative fitness exercises, therefore, may offer community college students from diverse backgrounds opportunities to participate in physical activities and learn innovative methods to improve their physical wellness. Student learning outcomes may include an advanced ability to focus on learning, knowledge of mind-body relationship, strategies for lifetime fitness activities, and techniques for psychological enhancement (Insel & Roth, 2008; Hanh, Payne, & Lucas, 2007). Community colleges may also benefit from these alternative fitness exercises because they provide new ideas for physical education programs to expand curricula and they may increase student enrollments in physical education.

Although some physical education programs in community colleges may now offer yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics to community college students, there are uncertainties and concerns for community college leaders regarding whether these types of courses provide similar health-related benefits and/or contribute to students' learning experiences in the same way as sport-related courses, such as basketball, volleyball, badminton, tennis, golf, and soccer. The results of this study, which appear in chapter 4, may encourage community college administrative and curriculum development leaders to reevaluate the current physical education curricula and possibly implement changes in offering more nontraditional physical activity courses to students within the community. These potential changes may contribute to social change by generating new ideas about activities that contribute to lifelong wellness, program expansion, faculty development program, and faculty recruitment in community college physical education programs in the 21st century.

Traditionally, physical activity courses in physical education have emphasized sport skills and abilities, a situation that may have prompted students with minimal athletic skills to lose the motivation to participate in activities designed to compete and win (Ballard & Chase, 2004; Dejager, 2006; Hedlund, 1990). Ballard and Chase contended some participants may have an adverse experience from traditional physical education activities because of the competitive nature of some team sports; therefore, they proposed physical education programs should focus on nontraditional fitness activities to accommodate students with diverse physical abilities, as well as eliminate the pressure of performing sport-related skills. Similarly, Dejager argued physical education lessons should focus on the objectives and benefits of physical training to improve students' physical and psychological health, instead of emphasizing athletic dominance in traditional sport-related activities. Hedlund also indicated the specific activities chosen are insignificant as long as the participants understand the values, morality, ethics, interpersonal relationships, and significance of maintaining physical fitness. These arguments suggest noncompetitive physical education courses could offer students similar health and fitness benefits as compared to competitive courses that require specific athletic skills.

Problem Statement

A liberal arts education needs to include opportunities for physical as well as intellectual development. A well-designed physical educational program may provide a foundation for a healthy, physically active lifestyle. However, previous research studies on nontraditional physical education have focused only on team sports and recreational

activities at the precollegiate level (Ballard & Chase, 2004; Dejager, 2006; Hedlund, 1990). Because of the lack of research available regarding nontraditional physical education in community colleges, 4-year colleges, and/or universities, community college administrators and curriculum development leaders may be reluctant to offer nontraditional physical activity courses on their respective campuses. This quantitative descriptive study addressed this problem by collecting and analyzing ordinal data germane to the perceptions of chairpersons/deans and faculty in physical education regarding nontraditional physical activity courses as compared to sport-related courses offered in community colleges. Statistical findings provided important information because they may encourage community college administrators and curriculum development leaders to implement more nontraditional physical activity courses such as yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics in community college physical education programs.

Purpose of the Study

The purpose of this quantitative study was to explore the perceptions of chairpersons/deans and faculty in physical education regarding nontraditional physical activity courses as compared to sport-related courses offered in community college physical education programs. This study was also intended to encourage community college administrators and curriculum development leaders to develop and offer new courses in physical education to students who might be reluctant to enroll in a sport-related course (Ballard & Chase, 2004; Dejager, 2006; Hedlund, 1990). Because chairpersons/deans and faculty represent leaders in physical education, their opinions

provided compelling evidence for community college administrators and curriculum development leaders to reevaluate the current physical education curricula and possibly implement change for more nontraditional physical activity courses.

Research Questions

Although the limited research studies on nontraditional physical activities in physical education programs emphasized the precollegiate level (Ballard & Chase, 2004; Dejager, 2006; Hedlund, 1990), they, along with theories of educational change, offered background information and ideas useful in generating key research questions. The research questions for this study consisted of the following:

1. To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding nontraditional physical activity courses providing similar health benefits as compared to sport-related courses offered in community colleges?
2. To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding the values of nontraditional physical activity courses as compared to sport-related courses in community colleges?
3. To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding nontraditional physical activity courses contributing to students' learning experiences as compared to sport-related courses offered in community colleges?
4. To what extent do participants' perceptions relate to the individual physical activity courses offered in community colleges?

Theories of Educational Change

Theories of educational change provide the framework for this study. The works of Fullan (2007), Schlechty (1997), Sarason (1971), and Rowley and Sherman (2001) offered different perspectives pertaining to the process of educational change in higher education. Because this study intended to examine the potential shift from traditional to nontraditional curricula in community college physical education programs, educational change theories also provided strategies and ideas for implementing curriculum change. Although change in physical education curriculum for more nontraditional courses can potentially reduce or replace some sport-related courses as well as eliminate the traditional teaching of skill developments, nontraditional physical activity courses can also offer students similar opportunities to learn and develop sport-related skills, such as leadership and teamwork, through group activities and projects.

Fullan (2007) posited changes in beliefs and values represent the primary dimensions that achieve effective changes in education; that is, changes in educational programs require the understanding of new concepts and approaches prior to committing to the change process. Schlechty (1997) also argued that beliefs indicate the initial stage in implementing educational reform because a belief statement provides a motivational message or intention to act upon the change. Fullan, however, suggested altering an educator's beliefs may challenge the individual's educational core values and, therefore, the disparate perspectives may create barriers for individual educators to accept change. As a possible solution to ensure commitment toward reform, Schlechty proposed the implementation of a strategic development plan that connects beliefs to vision, mission,

goals, and actions. Because beliefs represent a basic concept, vision statements provide educators with a potential outlook or possible realization of the intended change. Vision statements, therefore, could influence the mission statements since the latter require a compelling vision statement to initiate or command action; in other words, mission statements consist of specific goals for initiating action or change (Schlechty, 1997). Schlechty further suggested educational leaders who intend to promote educational change should apply beliefs, values, mission, goals, and action in answering four key questions: (a) why is change needed?, (b) what kind of change is needed and what will it mean for us when the change comes about?, (c) is what we are being asked to do really possible?, and "what skills do we need and how will they be developed?" (p. 208).

In contrast to Fullan's (2007) and Schlechty's (1997) views regarding beliefs and values as the primary components to initiate educational change, Sarason (1971) posited the motivation to change any college program often reflects the frequent problems that exist within the university culture; that is, the expressed criticisms from campus members usually indicate the need for change in certain areas of the school. For example, recycling outdated textbooks or integrating unsuccessful teaching techniques may represent a problem or criticism that requires change in order to focus on students' needs and interests. Although identifying the frequent problems and criticisms may prompt colleges to consider implementing educational change, the intended outcomes may indicate the primary concern in the change process.

Fullan (2007) suggested outcomes represent a nonlinear change process and involve the progression of three phases—initiation, implementation, and

institutionalization. The nonlinear process of change suggests the three phases interact continuously as a two-way communication style during the decision-making process. Phase I (initiation) represents the initial process that determines the direction of change in which the decisions often derive from multiple factors such as existence and quality of innovations, advocacy from central administration, teacher advocacy, external change agents, community pressure, and new policy. In Phase II (implementation), the attempt to implement change becomes overt during the first 2 or 3 years. The implementation stage allows teachers and administrators to evaluate the change process and, if needed, modify the protocol before institutionalizing the change. Fullan suggested the success of the implementation stage may demand several key factors, including characteristics of change, local characteristics, and external factors. The success of Phase II, then, may directly affect the progress of Phase III (continuation) in that change would either evolve permanently as part of the system, or be discarded from lack of support, funding, or interest.

Even though a strategic development plan for educational change may include the essential components to clearly define the intended outcomes, Rowley and Sherman (2001) suggested implementing change in higher education depends on the institution's decision-making structure. Top-down change, for example, represents a bureaucratic model in which educational change derives directly from the power and responsibilities of administrative leaders or governing-board members; conversely, college institutions may utilize a bottom-up change to involve and encourage people throughout the organization to bring forward ideas, opinions, and potential actions for change.

Although college institutions may apply either the top-down or bottom-up strategy to implement change, Rowley and Sherman (2001) proposed colleges and universities should utilize consensus change as a method to involve different levels of constituents, staff, and faculty during the decision-making process; that is, the shared governance offers everyone an opportunity to contribute toward change. Consensus change represents the most effective method in higher education because the decision derives from the majority of the people. Overall, Fullan (2007) and Schlechty (1997) shared similar approaches to implement change in education in that established beliefs provide directions to achieve the intended outcomes. Sarason (1971) suggested the motivation to change derives directly from identifying the problems or criticisms, whereas Rowley and Sherman posited the decision-making structure could affect the effectiveness of change in higher education.

Nature of the Study

A quantitative descriptive study, with a cross-sectional design, guided this investigation. Quantitative data collection was utilized to generate statistical outputs for objective evaluation of the data. Trochim and Donnelly (2007) suggested quantitative data represent numerical values of any quantitative variable in which the data provide concrete, credible, and scientific evidence. Because this study mirrored the description of a nonexperimental research study, a cross-sectional design was used to collect quantitative data from a section of randomly selected participants in community college physical education programs at a single point in time or during a brief time period (Johnson & Christensen, 2004; Trochim & Donnelly, 2007). Feasibility and sample size

issues also prompted the elimination of utilizing a qualitative approach, which primarily involves in-depth interviews, observations, and narrative reporting instead of relying on statistical data to report the findings (Johnson & Christensen, 2004).

Public community colleges in the 13 western states represented the study population and included Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. The research participants included chairpersons/deans and full-time faculty in community college physical education programs located in the western region of the United States. Because the number of chairpersons/deans at the selected colleges was small, the entire group of 266 was used to maximize the response rate. Two chairpersons/deans from the population were excluded to eliminate biases because of the researcher's affiliation with the two institutions corresponding to the respective deans' affiliation. A 4-to-1 ratio, faculty to deans, was integrated to provide full-time faculty with an equal voice as chairpersons/deans since chairpersons/deans signify a higher leadership position in the chain of command (Cohen & Brawer, 2003). The 4-to-1 ratio, therefore, increased full-time faculty's population size to 1,064 in which the sample size was 282. An 18-item survey was used to collect quantitative data from participants' survey responses. The web-based survey was distributed via e-mail to the research participants. Appendix A provides a sample of the survey questions that relate to the research questions.

An independent *t* test was used to test for differences in outcomes of survey responses between two groups and a chi-square contingency table test was used to test for relationships between the independent and dependent variables. A pilot study was

conducted to test for validity and reliability of the survey prior to distributing it to the research participants.

Significance of the Study

Although some community college physical education programs may offer several nontraditional physical activity courses on their respective campuses, there was no current research that provided community college administrators and curriculum committee members with significant data pertaining to the emergence of nontraditional physical education courses. In the absence of these data, community college administrative and curriculum leaders may have perceived nontraditional physical activity courses as insignificant or unrelated to the values of physical education.

Because of the unknown data and the uncertainties of incorporating these alternative exercise courses, this study offers community college administrative and curriculum leaders with insights regarding the phenomenon of nontraditional physical activity courses such as yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics. The findings of this study also contribute to social change by generating new ideas about what activities constitute wellness and could lead to expansions of physical education programs, faculty recruitment, and faculty development programs in community college physical education programs. In other words, this study may increase the awareness that nontraditional physical education courses can offer fitness outcomes

similar to those indicated for conventional weight-lifting and sport-related courses. The empirical data and findings from this study may motivate community college administrative and curriculum leaders to reevaluate their current curricula in physical education and potentially work with physical education leaders to implement more nontraditional physical education activity courses.

Definitions of Terms

The following terms were used in the study:

Cardio kickboxing: A noncontact, hybrid form of boxing and martial arts that offers intense aerobics and cross-training for improvement in cardiovascular fitness, flexibility, coordination, and balance (American Council on Exercise, 2001).

Cardio spinning: An indoor fitness activity performed on a stationary bicycle to the rhythm of music and the motivating words of an instructor (Caria, Tangianu, Concu, Crisafulli, & Mameli, 2007) in which the primary objectives include enhancements of cardiovascular function and major muscle groups in the lower body (Cook & D'Almeida-Cook, 2008).

Nontraditional physical activity: Noncompetitive or holistic physical training that requires minimal or no athletic skills and abilities.

Pilates: A unique method of exercise that involves movement patterns of low-impact flexibility and muscular endurance for improvement in body tone and posture (Kloubec & Banks, 2004).

Sport-related courses: Traditional physical activity courses that require athletic skills and abilities, such as basketball, volleyball, badminton, tennis, golf, and soccer.

Step aerobics: A cardiorespiratory exercise requiring participants to perform repeated step activities on an elevated platform with the accompaniment of high-intensity music aimed to shape major muscle groups of the lower as well as upper body when exercise activities involve weights (Mazzeo, 2006).

Tai chi: A form of ancient Chinese noncombative or passive physical training involving slow and fluid bodily movement (Chen & Sherman, 2002; Crider & Klinger, 2000; Downing & Yan, 1998; Honda, 1995; Huang, 1993; Pang, 1987; Yan, 1995).

Yoga: A holistic exercise consisting of breathing and maintaining the body in various positions to achieve inner tranquility, balance, inner peace and harmony (Hafen & Frandsen, 1983).

Assumptions, Delimitations, and Limitations

Assumptions

The assumptions in this study represented components the researcher could not control or alter and thus included:

1. Chairpersons/deans and faculty view nontraditional physical activity courses differently, based on their personal and professional experiences.
2. Participants read and understood the contents within the survey and, thus, answered the questions honestly regarding nontraditional physical activity courses.
3. Participants understood that their participation was voluntary and that there would not be any penalty for not responding to the survey or specific questions within the survey.

4. Participants understood that their survey responses were confidential and anonymous throughout the data collection procedure.

Delimitations

The study was delimited to narrow the scope of the study. Only community colleges in the 13 western states, including Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming were included in the study population. This study was also delimited to chairpersons/deans and full-time faculty in community college physical education programs in the western region of the United States.

Limitations

Three limitations were identified in the study, which indicated potential weaknesses. First, the information did not represent community colleges in the Midwestern and eastern states because the study focused on community colleges in the western region of the United States. Second, cross-sectional design did not directly measure changes that occur in a given period of time. Third, some participants failed to respond to the survey and, therefore, affected data collection.

Summary

The purpose of this study was to explore the perceptions of chairpersons/deans and faculty in physical education regarding nontraditional physical activity courses as compared to sport-related courses offered in community college physical education

programs. Quantitative data were collected from a survey sent to chairpersons/deans and full-time faculty in community college physical education programs in the western region of the United States. Because of the uncertainties regarding nontraditional physical activity courses in community colleges, this study provided data and information that may motivate community college administrators and curriculum committee members to work with their physical education programs in reevaluating the current physical education curricula and courses offered to community college students. Chapter 2 includes a literature review of books and research studies related to nontraditional physical education, while chapter 3 presents the methodology of the study. Chapter 4 will present the results and data analysis, while chapter 5 will discuss the statistical findings, provide recommendations, and present a conclusion to the study.

CHAPTER 2:

LITERATURE REVIEW

The review of literature consisted of peer-reviewed journal articles closely related to the nontraditional physical activity courses in community college physical education programs. The terms used to narrow the scope of the search included: *nontraditional*, *physical education*, *holistic*, *physical activity*, *exercise, fitness, college, university, community college*, *program, noncompetitive, yoga*, *tai chi*, *Pilates*, *cardio kickboxing*, *martial arts, cardio spinning, cardio cycling*, and *step aerobics*. These key descriptors were entered into the following research databases: Academic Premiere Search, ERIC, CINAHL, Education Research Complete, Teacher Reference Center, Health and Medical Complete, ProQuest Central, Ovid Nursing Journals, GoogleScholar, ProQuest Dissertatons and Theses, and ProQuest Walden Dissertations.

Journal articles regarding the perception of physical education and curricular development were also included because these topics related to the nature of the study. Other key descriptive words comprised *perception* and *curriculum development*. In addition to peer-reviewed journal articles, books on yoga, tai chi, Pilates, cardio kickboxing, cardio spinning, and step aerobics were integrated to acquire concise definitions and descriptions of the individual exercises; thus, the literature review process provided an in-depth analysis of reports and findings from previous studies in order to determine the research gap pertaining to nontraditional physical education in community colleges. Because this study was intended to examine the potential shift from traditional

to nontraditional curricula in community college physical education programs, educational change theories were also included in the literature review.

Research Studies on Nontraditional Physical Activities in Physical Education Programs

Although there is no research available regarding nontraditional physical education in community colleges, 4-year colleges, and/or universities, previous research studies on nontraditional physical education have focused on team sports and recreational activities at the precollegiate level. Specifically, two research studies examined nontraditional fitness activities in K-12 physical education programs (Ballard & Chase, 2004; Hedlund, 1990), while another study (Dejager, 2006) investigated the effects of implementing adventure racing in middle schools as an alternative to the traditional physical education lessons.

According to Hedlund (1990), K-12 students could benefit more from nontraditional fitness activities as opposed to traditional team sports because the former emphasizes moral and ethical developments as well as enhances students' positive self-concept. Because traditional physical activities require students to demonstrate specialized or prerequisite skills such as shooting a basketball or swinging a baseball bat, Hedlund suggested these activities may decrease student participation and success. She also argued traditional physical activities are inappropriate since some activities encourage player domination. The content of nontraditional team sports, therefore, should offer students fundamental games that emphasize basic motor skills in running, jumping, throwing, catching, and kicking; in other words, the specific activities selected for the

students are irrelevant as long as the participants understand the values, morality, ethics, interpersonal relationships, and significance of maintaining physical fitness.

Similarly, Ballard and Chase (2004) argued traditional team sports emphasize winning and, therefore, some participants may develop an adverse experience because of the competitive nature of traditional team sports. To offer another alternative, Ballard and Chase proposed the inclusion of nontraditional recreation activities (e.g., hiking, rollerblading, rock climbing, cycling, swimming, and walking) for K-12 physical education curricula to accommodate student diversity in terms of gender, interest, and skill levels. In view of these authors, in addition to making access to team sports more accessible and recreational, rather than competitive, nontraditional recreation activities, could promote social and emotional development for all participants. The authors also posited that physical educators may benefit from introducing nontraditional activities in their classrooms because the concept may renew the instructors' interest in teaching students a different approach to physical fitness. On the other hand, educators, administrators, and parents may resist the implementation of nontraditional recreation activities in the physical education curriculum for several reasons, such as liability issues pertaining to safety, and risk factors related to activities such as indoor wall climbing, orienteering, and outdoor adventure activities. Expenses and costs also represent a concern for schools that cannot fund activities requiring accommodations for students and faculty; however, Ballard and Chase indicated that while constraints exist, school education programs should focus on the benefits of nontraditional recreation activities for both the students and teachers.

In contrast to the views presented by Ballard and Chase (2004), Dejager (2006) recommended implementing adventure racing as an alternative approach to instruct physical fitness to middle school students. Adventure racing or expedition racing represents a multidiscipline endurance test that includes mountain biking, trekking, navigation, running, kayaking, canoeing, and climbing. Although adventure racing implies competition among the students, Dejager indicated physical training and cooperative learning represent the primary objectives during the racing experience in which the fittest individuals might not necessarily succeed as the victor. Dejager further suggested adventure racing satisfies the national standards of physical education; for instance, the variety of physical activities in adventure racing could enhance and refine students' motor skills as well as movement patterns during the racing process. Adventure racing also provides students with lessons on respecting other students and the values associated with physical training such as enhancements of physical and psychological wellness. Because adventure racing offers many similar health benefits to students, Dejager posited the nontraditional activities could alternate with the weekly runs or cardio-fitness units and traditional sports in physical education programs.

In summary, Hedlund (1990) and Ballard and Chase (2004) suggested physical education programs should emphasize nontraditional activities without the conventional competitiveness of traditional team sports, while Dejager (2006) proposed adventure racing could replace the national standards of physical education for middle school students. Although these studies provided information regarding the benefits of implementing nontraditional activities in physical education programs at the precollegiate

level, their presence also indicated there is a lack of literature related to nontraditional physical activity courses in community college physical education programs; thus, literature on the individual nontraditional exercises were included in order to analyze the effects of practicing yoga, Pilates, tai chi, cardio kickboxing, cardio spinning (indoor cycling), and step aerobics at an adult level.

Brief Background and Research Studies: Individual Nontraditional Fitness Exercises

Because of the scarcity of research studies relating to nontraditional physical activity courses in community colleges, 4-year colleges, and universities, literature on nontraditional fitness exercises—yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics—were examined in this review. Sources include books and peer-reviewed journal articles for concise descriptions and research findings, respectively. The past and current research studies provided arguments and comparisons in terms of benefits for participating in these nontraditional exercises.

Yoga

Yoga represents an ancient Sanskrit word that connotes the union of the mind, body, and soul (Hanh, Payne, & Lucas, 2007; Insel & Roth, 2008) It was developed in India approximately 6,000 years ago as a therapeutic practice and a philosophy to balance the mind and body (Hafen & Frandsen, 1983, p. 88), as well as embrace the different aspects of life such as physical, emotional, mental, and spiritual. Hafen and Frandsen suggested the holistic exercise of breathing and maintaining the body in various positions may improve the yogi or yoga practitioner's state of inner tranquility, balance, inner peace, and harmony. The physical postures or *asanas* (Fahey, Insel, & Roth, 2008)

require the practitioner to sustain different postural positions for several seconds while performing simple breathing exercises or *pranayama* (Cappy, 2006). In other words, asanas comprise multiple forms of body posture and stretching techniques, while pranayama involves the abdomen and diaphragm for rapid and slow breathing (Cappy, 2006; Garcia, 2006; Folan, 2005; Hafen & Frandsen, 1983; Lee, 2004). If the yoga practitioner performs both the asanas and pranayama properly, the individual may experience a cleansing of the body's toxins, along with the development of a clear mind, an increase in vitality, and a heightened level of consciousness (Fahey et al., 2008; Hafen & Frandsen, 1983; Insel & Roth, 2008).

Research studies have shown the effectiveness of yoga participation in middle-aged groups (Netz & Lidor, 2003) and college campus members (Milligan, 2006; Schure, Christopher, & Christopher, 2008). Netz and Lidor, for instance, examined the influence of a single session of mindful low-exertion activities (such as yoga or *Feldenkrais*, awareness through movement) versus aerobic modes of exercise (e.g., aerobic dance and swimming) on mood alterations in 322 middle-aged women during a 1-year enrichment program at a college. The analysis of variance for repeated measures indicated yoga, Feldenkrais, and swimming improved the mood of middle-aged participants following a single exercise session. Netz and Lidor suggested the cognitively based physical activities with repetitive, low-exertion rhythmical movements may enhance mood better than high-intensity, rhythmical movements that deemphasize cognitively based activities.

Yoga has also been shown to benefit college campus members. Milligan (2006) introduced and implemented the practice of yoga as a complementary alternative therapy

resource at a university counseling center in 2001 to assist students and faculty/staff in managing stress. The mission of the yoga program was to provide college campus members with stress-management and relaxation skills by performing a variety of yoga exercises that emphasize Eastern psychology. Because of the positive responses from students and faculty/staff, the university counseling center adopted the yoga program permanently as the Yoga for Stress Management Program. Milligan concluded yoga represents a promising innovative practice that college and university counselors can use to teach campus members an alternative method to cope with stress.

In contrast, graduate students developed positive physical, emotional, mental, spiritual, and interpersonal changes following a 15-week mindfulness-based stress reduction course that included hatha yoga, meditation, and qigong (Schure, Christopher, & Christopher, 2008). The participants reported they would consider incorporating as well as recommend mindfulness-based exercises in their personal and professional lives.

Specifically, yoga exercises have shown to enhance participants' physiological developments (Tran, Holly, Lashbrook, & Amsterdam, 2001). Ten participants (ages 18 to 27) showed improvements in muscular strength and endurance, flexibility, cardiorespiratory fitness, body composition, and pulmonary function following hatha yoga practice. Tran et al. evaluated the participants at baseline and after the 8-week training program and reported all participants demonstrated increases in isokinetic muscular strength for elbow extension, elbow flexion, and knee extension as well as isometric muscular endurance for knee flexion; furthermore, participants showed

increases in ankle flexibility, shoulder elevation, trunk extension, trunk flexion, and relative maximal oxygen uptake.

Besides young adults and middle-aged populations, older adults or senior citizens can also benefit from yoga exercises, as discovered in a study that monitored and evaluated 14 female participants (65 years of age or older) who participated in a one-month yoga program (Chen, Tseng, Ting, & Huang (2007). Chen et al. interviewed the participants to gather their reflections on the criteria of difficulty, acceptability, feasibility and helpfulness of the yoga exercises. The participants indicated that, although yoga exercises presented a challenge to perform, the training techniques were feasible and helpful and improved their sleep pattern at night, flexibility, body pain, weight management, and overall physical health. Based on the participants' responses, Chen et al. inferred yoga provides a suitable exercise method for the older or frailer populations.

The overall findings from the studies noted indicate that yoga exercises can provide health benefits for adults of all ages because the combination of breathing and stretching techniques enhances the practitioner's psychological and physical wellness when performed consistently and properly. In some aspects, yoga practitioners may argue that Pilates resembles and offers similar health benefits as yoga because of the common philosophy of the mind-body relationship (Kloubec & Banks, 2004).

Pilates

Pilates represents a method of physical training that involves low-impact flexibility and muscular-endurance exercises aimed to improve body tone and posture (Kloubec & Banks, 2004, p. 34) as well as increase strength, flexibility, stamina, and

concentration (Ungaro, 2002). Gallagher and Kryzanowska (1999) suggest Pilates comprises effective exercises for developing the body and mind uniformly in various individuals. Although the Pilates' mind-body relationship may resemble yoga with deep breathing and muscle strengthening, Kloubec and Banks argue Pilates emphasizes more the stabilizing of the muscle-core stabilization and aligning the body properly as opposed to yoga. Specifically, Pilates practitioners emphasize six principles, breath, concentration, control, precision, centering, and flow, to improve and succeed in performing the various movements (Gallagher & Kryzanowska; Ungaro).

As a teenager, Joseph Pilates developed the Pilates training system in the 1890s to improve his multiple health problems of asthma, rickets, and rheumatic fever (Gallagher & Kryzanowska, 1999; Kloubec & Banks, 2004; Ungaro, 2002). He initially named his unique training system "Contrology" (Breibart, 2005, p. 4) to describe the philosophy of balancing the body; however, the nomenclature eventually changed to Pilates as the exercise method gained in popularity in the mid-1900s. Pilates professionals argue the practice offers numerous health benefits to individuals of different age groups and backgrounds (Breibart; Gallagher & Kryzanowska; Ungaro).

Research studies have also indicated improvements in health-related and performance-related fitness following Pilates training (Jago, Jonker, Missaghian, & Baranowski, 2006; Kloubec & Banks; Roniger, 2007; Smith & Smith, 2005). In one study, Jago, Jonker, Missaghian, and Baranowski examined the effects of Pilates intervention program on the body mass index (BMI) and blood pressure of young female subjects. Thirty 11-year-old participants were randomly assigned to either a Pilates

intervention group or a control group. The intervention group performed Pilates for an hour per day, 5 days a week, for 4 weeks. Results indicated the intervention group showed large reductions in BMI and blood pressure after 4 weeks of Pilates training as compared to the control group. Jago et al. concluded Pilates provides an alternative exercise method for reducing obesity in the young populations.

Segal, Hein, and Basford (2004), on the other hand, reported disparate findings on the effects of Pilates training on flexibility, body composition, and health status of 47 adults (45 women, 2 men) who participated in a 6-month Pilates program at a fitness club. The authors administered measurements of the participants' flexibility, height, weight, and body composition at baseline, 2, 4, and 6 months. Data analysis revealed no significant changes occurred during the 6-month period of Pilates participation with the exception of flexibility, which suggested Pilates training may represent an effective exercise for adults to improve the flexibility component of fitness.

Although Pilates practitioners may improve in flexibility, the unique training method may also assist in reducing musculoskeletal problems in older adults such as sarcopenia, postural dysfunctions, reduced gait cycle, and loss of balance control and stability (Smith & Smith, 2005, p. 57). In their review of literature on Pilates, Smith and Smith proposed Pilates-based exercises could strengthen an individual's spinal and joint mobility, proprioceptive function, postural stability, balance, and coordination.

Because Pilates exercises may reduce muscular discomfort or pain, Roniger (2007) recommended rehabilitation specialists should consider using Pilates as an alternative approach for treatment. As indicated in Roniger's literature review on Pilates,

rehabilitation and pain management experts suggested Pilates represents an effective rehabilitation technique for treating patients with hip or knee injuries and lower-back pain, as well as severe conditions such as osteoporosis, multiple sclerosis, scoliosis, sciatica, or neural complications.

College physical education programs should offer Pilates to students as an alternative to traditional physical activities. Kloubec and Banks (2004) recommended the implementation of Pilates in the physical education environment to improve students' health-related and performance-related fitness, and they offered two primary suggestions to successfully implement Pilates into a physical education curriculum. First, physical educators should emphasize the five primary teaching cues often used in common Pilates exercises, which include breathing, pelvic placement, head and cervical placement, rib cage placement, and scapular movement and stabilization. Second, physical educators should apply the use of text and visual presentation to demonstrate and explain the various mat-based Pilates exercises; in other words, the success of integrating Pilates into physical education curriculum may depend on physical educators' commitment and competency. Overall, Pilates represents a training system that may assist practitioners in strengthening the musculoskeletal system as well as reduce musculoskeletal pain. Because of the potential benefits, Pilates may benefit clients in rehabilitation and students in physical education programs.

Tai Chi

Tai chi represents a form of ancient Chinese non-combative or passive physical training involving slow and fluid bodily movement (Chen & Sherman, 2002; Crider & Klinger, 2000; Downing & Yan, 1998; Honda, 1995; Huang, 1993; Pang, 1987; Yan, 1995). According to Huang, the sequence of movement in tai chi consists of gentle and coordinated movements combined with a slow breathing pattern; in other words, the gentle and graceful movements of tai chi train the performer to reconnect the mind to the body, the conscience to the subconscious, and the individual to nature. Specifically, tai chi practitioners attempt to achieve the Tao or Natural Law in order to live in harmony with oneself (Pang). Because the world comprises blind forces that create chaos and disrupt the inner flow, tai chi counterbalances and reestablishes the natural laws to expel unnecessary movement and thinking patterns. Developing the Tao, therefore, suggests the individual finds inner peace and realizes the spiritual awakening.

The slower and gentler movements of tai chi may suggest the older populations could benefit from performing the patterns to achieve health benefits. Many research studies have reported older adults or senior citizens benefited from practicing and performing tai chi (Audette, Jin, Newcomer, Stein, Duncan, & Frontera, 2006; Downing & Yan, 1998; Lin, Hwang, Wang, Chang, & Wolf, 2006; Motivala, Sollers, Thayer, & Irwin, 2006; Taylor-Piliae, Haskell, Stotts, Froelicher, 2006a; Taylor-Piliae, Haskell, Waters, Froelicher, 2006b; Wolf, O'Grady, Easley, Guo, Kressig, & Kutner, 2006). In one study, Downing and Yan determined whether tai chi or traditional locomotor exercises (e.g., walking and jogging) would improve senior adults' dynamic balance

control and ballistic aiming arm movements. Thirty-eight volunteers from a nursing home (29 females and 9 males, 76-89 years of age) participated in an 8-week program of practicing either tai chi or walking/jogging activity for 45 minutes per day, 3 times a week. Results showed senior citizens in the tai chi exercise group performed better on maintaining balance and motor control as opposed to their counterparts in the traditional locomotor exercise group with walking and jogging.

Audette, Jin, Newcomer, Stein, Duncan, and Frontera (2006) reported similar findings in comparing tai chi practice and brisk walking in senior citizens. Nineteen female participants (aged 71 or older) were randomly divided into either a tai chi group or a brisk-walking group. Both exercise groups engaged in their activities 1 hour a day, 3 days a week, for a total of 12 weeks. Data analysis indicated the tai chi group outperformed the brisk-walking group in all the measurements. Specifically, the tai chi group showed improvements in maximum oxygen uptake (VO_2max), strength, flexibility, balance, and parasympathetic activity levels. The increased parasympathetic activity coincides with the findings by Motivala, Sollers, Thayer, and Irwin (2006) drawn from a sample of older adults (60 years or older) who participated in a 37-week Tai chi program (20 minutes per day, one day a week). Motivala et al. indicated tai-chi participants showed a greater reduction in sympathetic activity than the control group. The findings from Audette et al. and Motivala et al. suggested tai chi performance could enhance internal relaxation in older populations.

In addition, Lin, Hwang, Wang, Chang, and Wolf (2006) indicated tai chi represents an effective exercise for preventing falls as well as enhances balance and gait

in older adults. The authors recruited 1,200 participants (65 years or older) in six rural villages in Taiwan. The participants drawn from two villages participated in the community-based tai chi program, while participants from four villages served as the control group. Telephone interviews were conducted every 3 months for 2 years to assess the participants' improvement in avoiding injurious falls, maintaining balance and gait, and eliminating the fear of falling. Lin et al. reported a significant reduction in injurious falls and improvement in balance and gait among the participants in the tai chi group as compared to the control group; however, both tai chi and control groups showed no significant changes in the fear of falling. The reduction in injurious falls suggested the participants in the community-based tai chi program might have improved in muscular strength, flexibility, and balance.

Taylor-Piliae, Haskell, Stotts, and Froelicher (2006a) reported adults (ages 45 years or older) showed improvements in balance, flexibility, and muscular strength and endurance following participation in a 12-week tai-chi intervention program (60 minutes per day, 3 days a week). Although reported as a separate study, Taylor-Piliae, Haskell, Waters, and Froelicher (2006b) indicated the same participants in the tai-chi intervention program also improved in psychosocial status in terms of enhanced mood state, perceived stress, and self-efficacy.

College students showed improvements in psychosocial status following participation in an 8-week intervention tai-chi program (Cai, 2000). Cai examined the effects of guided imagery, tai-chi integrated programs and traditional single-content programs on college students' anxiety and depression in the physical education

instructional settings in 71 college students (42 females, 29 males). The participants were separated into three experimental groups for comparisons: Guided imagery integration with self-defense, Tai Chi Chuan integration with self-defense, and self-defense only (control group). Cai administered pre- and post tests to measure the participants' mood during the intervention and reported college students who participated in an 8-week tai-chi training course experienced a reduction in anxiety and reduction scores as compared to the control group.

Because tai chi provides potential exercise benefits for the diverse age groups (Crider & Klinger, 2000, p. 3), Yan (1995) proposed the training method can improve students' physiological responses and psychological wellness. A panel of physical education instructors from various colleges and universities also argued in favor of implementing martial arts, including tai chi, as an alternative exercise for students of diverse ages because the actions of proper stance, movement, balance, blocks, strikes, and kicks may improve psychomotor abilities ("Should Martial Arts," 2000). Chen and Sherman (2002) offered several reasons to include tai chi in the college and secondary school curricula: (a) tai chi requires no special equipment and represents an inexpensive approach to teaching physical fitness to school students, adults, and senior citizens; (b) tai chi may reduce stress, anxiety, depression, and violent behavior in individual performers; and (c) tai chi may increase relaxation and vitality. Although older adults improved in physical and psychological health from practicing tai chi, the slow and gentle movement patterns may also benefit college students in managing anxiety and depression. As such,

college physical education programs should consider implementing tai chi as a possible alternative to traditional physical activity course.

Cardio Kickboxing

Cardio kickboxing represents a form of non-contact martial arts that has gained popularity among health-conscious adults in the 20-year period from 1988 to 2008 (Winkle & Ozmun, 2003). The American Council on Exercise (ACE; 2001) refers to cardio kickboxing as a form of martial arts combined with aerobics and intense cross-training exercise; that is, cardio kickboxing requires the practitioner to perform a variety of repetitive punches and kicks that aim to improve reflexes, strength, flexibility, coordination, and balance. ACE also indicates, in addition to improving and maintaining cardiovascular fitness, cardio kickboxing utilizes approximately 500 to 800 calories in a 60-minute bout of kickboxing activities as opposed to 300 to 400 calories in step aerobics. Because of the limited number of published research studies on cardio kickboxing, information from several published journals and unpublished dissertations on martial arts were also reviewed for in-depth analysis.

In one study, Ergun (2005) examined the effects of noncontact cardio kickboxing on cardiorespiratory fitness and weight management in 18 healthy female participants (18-55 years of age). The participants performed a 22-minute bout of cardio kickboxing routine for 10 sessions. The author measured the participants' body composition and cardiovascular responses on a treadmill at baseline and following the 10 training sessions. Data analysis indicated the combination of arm and leg movements in a 22-minute bout of cardio kickboxing utilized higher energy expenditures as compared to individual arm

or leg performance. Ergun concluded that, by increasing the duration of the exercise routine to 45 minutes, both arm and leg movements could use approximately 300 calories, which represents the ideal energy expenditure for weight management.

Caloric expenditure, along with cardiovascular responses, in cardio kickboxing may also depend on the tempo and speed of the punches. Kravitz, Green, Burkett, and Wongsathikun (2003) measured 18 trained volunteers' (12 men and 6 women, age 22 $\pm$ 2.8 years) cardiovascular responses and energy expenditure. Data for cardiovascular responses showed differences in ventilation, heart rate, and rating of perceived exertion between trials but not for oxygen uptake, while energy expenditure values increased in parallel with higher boxing tempo. No significant changes in oxygen uptake with increasing tempo suggest punching speed was ineffective in improving cardiovascular training. Based on the findings, Kravitz et al. posited the fitness boxing workouts may satisfy the criteria established by American College of Sports Medicine (ACSM) for improving cardiorespiratory fitness.

Because cardio kickboxing derived from the ideas and philosophy of martial arts (Winkle & Ozmun, 2003), research studies on martial arts may provide insights and findings related to the effects of cardio kickboxing. For instance, Columbus and Rice (1998) examined the value of participating in martial arts (e.g., Tae Kwon Do, or Tai chi) in a small group of college students with different skill levels. The authors requested 10 men and 7 women (ages ranged from 20 to 46) to describe in writing their experience of an everyday life situation in which they realized that training in martial arts is an invaluable activity. Four contexts emerged from the participants' written responses:

Criminal victimization, growth and discovery, task performance, and life transition. Criminal victimization indicated some participants desire to learn martial arts for defensive purposes against unpredicted physical or sexual assault, while others suggested martial arts provide positive spiritual experiences through growth and discovery. Furthermore, martial arts offer participants an opportunity to apply the skills learned in class toward daily challenges and sport competition, whereas some participants considered martial arts as a coping mechanism during major life changes or transitions. Columbus and Rice concluded martial arts, in general, provide a valuable experience for learning and adapting to everyday life circumstances.

Stefanek (2004), on the other hand, reported college students enrolled in a college martial-arts course for different reasons than those reported by Columbus and Rice (1998). Sixteen male and female collegiate participants of different belt ranks responded to an interview regarding their perspectives on and motives for enrolling in Tae Kwon Do classes. Although the participants' experience levels differ in Tae Kwon Do, their motives mirrored those found in traditional team sports such as improving mental and psychological health, increasing perseverance, and reducing stress. The participants also indicated the philosophy of martial arts and mind-body relationship represents the rationale and motive for participating in Tae Kwon Do.

Additional research studies on Tae Kwon Do have shown positive physiological and psychological effects in middle-aged practitioners and college students, respectively. For instance, Toskovic, Blessing, and Williford (2002) examined the effects of Tae Kwon Do on cardiovascular and metabolic responses among novice and experienced

practitioners in a group of 28 men and women (ages 19-42) and found that, although male novice and experienced practitioners in Tae Kwon Do exerted higher energy expenditures as compared to their female counterparts, there was no significant relationship between experience and energy cost. However, the mean exercise heart rate responses were similar for all groups, which suggested novice and experienced individuals adapted to the cardiovascular conditioning at a similar rate. Toskovic et al. posited the Tae Kwon Do can provide practitioners of all levels with cardiovascular conditioning and weight management.

In a study that examined the psychological effects of Tae Kwon Do in college students, Toskovic (2001) assessed 20 male and female college students (ages 18 to 21) enrolled in a Tae Kwon Do activity course and 20 additional students enrolled in a lecture-control course on their responses to the Profile of Mood States questionnaires. Participants in the Tae Kwon Do activity course scored better on the Profile of Mood States in tension, depression, anger, fatigue, confusion, and vigor than their lecture-control counterparts. Toskovic concluded a bout of Tae Kwon Do exercise may induce positive mood state changes in college students. Similar findings from other research studies indicated that, although the practice of Aikido differs than Tae Kwon Do, 150 Aikido participants from 26 different Aikido schools experienced improvement in pleasant feeling, levels of nervousness and restless, self-satisfaction, and contentment (Tapley, 2007) and college students who completed a 13-week beginning self-defense class on campus reported positive attitude and enjoyment within the physical education environment (Banks, 2006). Even though cardio kickboxing differs than Tae Kwon Do

or Aikido, martial-art movements, in general, may enhance individual performers' physiological and psychological health (Winkle & Ozmun, 2003, p. 29).

Cardio Spinning (Indoor Cycling)

Cardio spinning represents a cardiorespiratory-fitness activity that requires participants to pedal on a stationary bicycle to high-intensity music and instructor's motivational words (Caria, Tangianu, Concu, Crisafulli, & Mameli, 2007, p. 421), which has gained in popularity as a choreographed group exercise during the last decade (Battista, Foster, Andrew, Wright, Lucia, Alejandro, & Porcari, 2008). Spinning exercises aim to increase cardiovascular function and tone the major muscle groups in the lower-body (Cook & D'Almeida-Cook, 2008). The spinning bicycles consist of a weighted flywheel in the front to create a simulation of riding a regular bicycle (Kory & Seabourne, 1999; Peters, 1985). The spinning bicycles also allow individual riders to adjust the tension according to their comfort levels. A typical spinning exercise class provides approximately 50 to 60 minutes of multiple intensive routines designed to challenge participants' cardiovascular and lower-body muscular endurance. Because research studies on cardio spinning are limited, the researcher also included peer-reviewed journal articles related to the training effects of indoor cycling.

Two research studies on cardio spinning suggested indoor cycling represents a compatible fitness activity for physically-fit individuals because of the high intensity and cardiovascular conditioning involved during an exercise bout (Battista, Foster, Andrew, Wright, Lucia, Alejandro, and Porcari, 2008; Caria, Tangianu, Concu, Crisafulli, & Mameli, 2007). For instance, Caria et al. evaluated spinning instructors' metabolic and

cardiovascular responses (6 males, age 30 $\pm$ 4.8 years; 6 females, age 34 $\pm$ 6.3 years) during a standard 50-minute class. The results showed both male and female spinning instructors increased in mean power output, heart rate, and oxygen uptake in response to increasing exercise intensity, which ranged from moderate to very heavy. Battista et al. reported similar findings in physiological responses of 20 healthy female participants who participated in indoor cycling classes for 40 sessions, 45 and 35 minutes. The data analysis showed participants improved in VO_2max and heart rate as the intensity levels increased during the exercise bouts, which suggested indoor cycling activities require intensive training mode to elicit positive physiological responses and, therefore, might not be suitable for untrained individuals.

In contrast, Ziemba, Chwalbinska-moneta, Kaciuba-Uscilko, Kruk, Krzeminski, Cybulski, and Nazar (2003) observed physiological responses in 12 sedentary males (average age of 22) participating in a 3-week ergometer training at 70% VO_2max, 45 minutes per day, 3-4 times a week. The authors recorded the participants' exercise heart rate, oxygen uptake, and electrical activity of motor units (EMG) of the rectus femoris, biceps femoris, soleus, and trapezius. After 3 weeks of training, all participants demonstrated improvement in maximal work load and oxygen uptake. The findings showed rectus femoris muscle demonstrated the highest EMG amplitude as opposed to the auxiliary muscles of biceps femoris, soleus, and trapezius, which suggested that participants utilized the rectus femoris as the primary muscle during the ergometer training sessions. The findings also indicated participants' resting and submaximal heart

rates decreased in parallel with increased physical activity. Ziemba et al.'s study suggests cycling exercise may enhance sedentary males' physiological condition.

The type of indoor cycle may determine the difference in developing simultaneous enhancement in aerobic conditioning and muscular strength. For example, in a study by Van Zant and Bouillon (2007), 28 recreationally-trained adult participants (9 men, 19 women) trained 3 days per week for 9 weeks with progression from 25 to 45 minutes per session. The participants were randomly assigned to either a strength cycle training (SCT) or a standard Monark cycle training (MCT) group. SCT represented a friction-braked ergometer aimed to develop muscular strength with different cycling modes involving a unified single-action crank in which the independent pedals work concurrently during a cycling session. Although the SCT group showed increases in aerobic functioning and lower-extremity muscular strength, these functional changes mirrored those in the standard cycle ergometer training. The findings suggest cycling exercise, in general, could offer individual practitioners benefits in cardiovascular conditioning and muscular leg strength.

Jackson, Hickey, and Reiser (2007) also reported strength improvement of trained cyclists following a 10-week training program. Twenty-three trained club-level cyclists were assigned to one of the three groups: High resistance/low repetition (H-Res), low resistance/high repetition (H-Rep), or cycling-only. All three groups followed the same training plan with the exception of augmented resistance training for H-Res and H-Rep. Comparisons of pre- and post- tests of maximum strength exercises in the lower-extremity muscles indicated both H-Res and H-Rep demonstrated significant gains in all

four resistance exercises with the H-Res group experiencing significantly greater gains in leg-press exercises; however, results showed no significant differences in lactate values or economy among the three groups during the training sessions, which suggested neither H-Res nor H-Rep training method provided an advantage in performance as compared to cycling only.

Because cardio spinning involves multiple sprint intervals during a bout of exercise, the cycling activities may require individual practitioners to generate peak power at certain resistance levels. Glaister, Stone, Stewart, Hughes, and Moir (2007) examined the influence of endurance training on multiple sprint cycling performance and found increases in mean power output in college students who cycled for 20 minutes per day, 3 times a week, for 6 weeks at 70% of the power output. Klika, Alderdice, Kvale, and Kearney (2007) also reported similar results in measuring power outputs of middle-aged subjects performing biweekly indoor stationary cycling for 8 weeks and, therefore, concluded a biweekly power-based training program can induce fitness changes. Even though several studies suggested cardio spinning may be suitable for physically fit individuals (Battista, Foster, Andrew, Wright, Lucia, Alejandro, and Porcari, 2008; Caria, Tangianu, Concu, Crisafulli, & Mameli, 2007), other studies on indoor cycling indicated sedentary adults (Ziemba, Chwalbinska-moneta, Kaciuba-Uscilko, Kruk, Krzeminski, Cybulski, & Nazar, 2003) and college students (Glaister, Stone, Stewart, Hughes, & Moir, 2007) may also develop similar fitness gains.

Step Aerobics

Step aerobics represents a cardiorespiratory exercise requiring participants to perform repeated step activities on an elevated platform with the accompaniment of high-intensity music (Mazzeo, 2006). Specifically, step aerobics utilizes a polyurethane and rubber tread platform which ranges in height from four to ten inches (Pryor & Kraines, 1999). Step routines emphasize and shape major muscle groups of the lower as well as upper body when exercise activities involve weights. Depending on the class or participants' skill levels, the typical tempo ranges from 125 to 140 beats per minute. Step aerobics derived from the concepts of *aerobic dance* and *jazzercise* in the late 1960s, which gained in popularity in the mid 1970s as more classes were offered across the nation to individuals of different age groups (Mazzeo, p. 49). Several research studies have shown the benefits of step aerobics participation (Darby, Marsh, Shewokis, & Pohlman, 2007; Kin-Isler, Kosar, & Korkusuz, 2001; Kraemer, Keuning, Ratamess, Volek, McCormick, Bush, Nindl, Gordon, Mazzetti, Newton, Gomez, Wickham, Rubin, & Hakkinen, 2001; Hale & Raglin, 2002; Sutherland, Wilson, Aitchison, and Grant, 1999), while two studies indicated contrary findings to step aerobics (Kin-Isler & Kosar, 2006; Koenig, Jahn, Dohmeier, & Cleland, 1995).

One study suggested the height of the platform may determine the intensity or fitness challenge for the participants. Sutherland, Wilson, Aitchison, and Grant (1999) suggested there is a correlation between platform height in step aerobics and physiological responses in 10 healthy, female subjects. The participants performed a 40-minute Uni-Step routine on three different platform heights of 6, 8, and 10 inches.

Sutherland et al. utilized a treadmill protocol to measure the participants' oxygen uptake and maximum heart rate. The results indicated participants performing step routine on the 10-inch platform height elicited the highest mean intensity for $V0_2max$ (56.2%) and mean percent heart rate (70.1%) as compared to lower two step heights. The findings, therefore, suggest improvement in cardiovascular fitness may depend on the platform height in step aerobics.

In contrast, other research studies indicated the combination of exercise movements in bench-step aerobics could offer step practitioners achievements in maximal physiological responses and muscular strength (Kraemer, Keuning, Ratamess, Volek, McCormick, Bush, Nindl, Gordon, Mazzetti, Newton, Gomez, Wickham, Rubin, & Hakkinen, 2001; Darby, Marsh, Shewokis, & Pohlman, 2007). For instance, Darby et al. reported 18 female aerobic step participants (20.7 ± 1.5 years) improved in maximal heart rate following maximal graded step exercises. Kraemer et al. also reported similar findings in healthy and active female participants performing a combination of upper and lower body resistance exercises in step aerobics. Thirty-five female participants were randomly assigned to four different groups: (a) 25 minutes of bench-step aerobics only (SA25), (b) a combination of 25 minutes of bench-step aerobics and a multiple-set of upper and lower-body resistance exercise program (SAR), (c) 40 minutes of bench-step aerobics only (SA40), and (d) control group performing daily-living activities. Although all groups showed improvements in physiological responses, only the SAR group demonstrated the greatest increases in muscular endurance, muscular strength, and oxygen consumption.

Findings after 8 weeks of step aerobics exercises have shown a reduction in anxiety (Hale & Raglin, 2002) and lipid levels (Kin-Isler, Kosar, & Korkusuz, 2001) in participants. Hale and Raglin assessed 42 adults enrolled in either an introductory level resistance training class or step aerobic exercise class at Weeks 1, 4, and 8. Participants were assessed immediately prior to and 5 minutes following 50-minute exercise sessions between 70-80% intensity. The results indicated both exercise conditions of step aerobics and resistance training demonstrated decreases in state anxiety, thereby suggesting step aerobics exercises could offer similar psychological health benefits as resistance training. In addition, Kin-Isler, Kosar, and Korkusuz reported reduction in levels of serum lipids and lipoproteins following an 8-week step aerobics exercise. Forty-five sedentary female college students were randomly assigned to one of the three groups: (a) step aerobics, (b) aerobic dancing, and (c) control group. Even though differences were found among the 3 groups, only the step aerobics showed significant improvement in high-density lipoprotein (good cholesterol) level as compared to the control group. Kin-Isler, Kosar, and Korkusuz, therefore, concluded step aerobics training can assist female college students in managing their lipid and lipoprotein levels.

On the contrary, two research studies reported step aerobics failed to show improvements in physical fitness (Kin-Isler & Kosar, 2006; Koenig, Jahn, Dohmeier, & Cleland, 1995) and physiological responses (Kin-Isler & Kosar). Koenig et al. examined the effects of bench-step aerobics on muscular strength, power, and endurance in 24 healthy adults (ages 24 to 61). Thirteen participants participated in a 10-week bench-step aerobics (3 times a week for 50 minutes at 65-85% maximal heart rate), while 11

participants served as the control group performing the usual daily activities. Comparisons of pre- and post tests revealed no significant changes in the exercise group and control groups for all parameters, which suggested bench-step aerobics failed to show improvements in muscle strength, power, or endurance.

Kin-Isler and Kosar also reported 10 weeks of step aerobics showed no significant improvements in muscular strength, body weight, body fat percentage, and lean body mass in college students. Participants in the step-aerobic group, however, demonstrated improvement in mean power and vertical jump test as compared to the control group. Because of the disparate findings reported from several studies regarding the benefits of participating in step aerobics, physical education programs may want to reexamine the instructional techniques or purpose of offering step aerobics to students on campus.

Related Research Studies

Perceptions of physical education and curriculum development in physical education were also included in the literature review because both topics related to the nature of the study. College student perceptions of physical education courses could provide the rationale or motive for student retention in physical activity courses, while research studies on curriculum development may offer strategies or ideas for implementing nontraditional physical activity courses in community college physical education programs.

Students' Perceptions of Physical Education

Although college physical education and health courses offer students ideas and techniques to enhance their overall wellness (Armstrong, O'Bryant, & Costa, 2002;

Hildebrand & Johnson, 2001; Jenkins, Jenkins, Collums, & Werhonig, 2006; Mack & Shaddox, 2004; Reed & Bertelsen, 2003), student enrollment in college physical education courses may depend on the individuals' perceptions of fitness, exercise, and health. Students' positive or negative perceptions of physical education may derive from their past experiences in physical activity or health courses. Hildebrand and Johnson surveyed 812 college undergraduates to measure the participants' perceptions and motives for enrolling in physical education at a university. Survey results revealed college students continue to enroll in physical education courses because of their previous quality experiences in high school physical education. The findings suggested high school physical education programs should consider implementing curricula similar to the college level as a means to encourage student participation in physical education.

Crawford, Greenwell, and Andrew (2007) reported similar findings from surveying 300 college students. The findings indicated students' perceived quality of instruction indicated a strong predictor of satisfaction and presented an influential factor in student retention. In addition, Armstrong, O'Bryant, and Costa reported quality instruction represented an influential factor, along with skill development or enhancement of knowledge, as prominent reasons for enrolling in sport, fitness, and health courses.

College students may develop positive perceptions toward physical activity and exercise following enrollment in personal wellness classes. Mack and Shaddox (2004) surveyed 1,625 undergraduate students on the first and last day of a personal wellness class and reported students improved in short-term attitudes after completing the course.

McCormick and Lockwood (2006) also indicated students enrolling in a required Lifetime Wellness course at a university campus improved their perceptions and knowledge of physical education and wellness. Five hundred college students in 20 sections of Lifetime Wellness classes completed pre and post perception and pre and post knowledge surveys. The survey results showed higher post perception and post knowledge scores for all wellness topics.

On the other hand, Jenkins, Jenkins, Collums, and Werhonig (2006) indicated differences in student perceptions of conceptual physical education activity course. They gathered written responses from 157 college undergraduates from 10 conceptual physical education courses provided written responses to the authors' questions. Curriculum, instructor, and social environment emerged as themes in the findings and were identified as contributing factors in students' positive or negative perceptions of conceptual physical activity classes. Physical fitness testing/assignments, instructional quality, and social interaction represented positive perceptions, whereas negative perceptions comprised classroom management, class schedule, and poor teamwork. Jenkins et al. suggested conceptual physical education courses should emphasize improvement in the social environment in order to enhance student perceptions. Overall, studies reported college students' perceptions of and knowledge in physical education may depend on their experiences in physical-education courses and these positive perceptions may enhance student retention and enrollment. These related concepts from the literature also provided ideas and strategies for the use of the quantitative method which is presented in chapter 3.

Curriculum Development

Curriculum development represents a relevant topic in this literature review because of the theoretical framework related to educational change and its potential to contribute to social change. Several research studies have focused on curriculum development and curriculum change in physical education (Coulon & Reif, 1994; Kirk & Macdonald, 2001; Johns, 2005; Macdonald, 2003; Penney & Jess, 2004). Although Coulon and Reif examined the effect of curriculum development on instructional skills of classroom teachers instructing physical education at the elementary level, their study may provide insight and ideas for developing physical education curriculum in community colleges. Coulon and Reif videotaped five elementary school teachers at baseline or pre-curriculum intervention and curriculum intervention points to examine the effectiveness of curriculum change in physical education. The curriculum intervention included: (a) selecting a curriculum model that reflected the district's needs, (b) developing appropriate activities to meet the goals and objectives, (c) training five participants in the implementation of the new curriculum, and (d) evaluating the effect of the new curriculum on the instructional behaviors of the five participants. Video and data analyses showed the volunteer classroom teachers succeeded in changing their previous curricula and applying the new curriculum in their physical education classes.

Kirk and Macdonald (2001) also suggested physical educators should assert their *voice* (p. 551) and demonstrate ownership of curriculum change; in other words, they argued teachers should assert themselves by voicing the perpetual curriculum problems that need reformation. Macdonald (2003), however, indicated the process of curriculum

reform in physical education often includes several approaches to implement a new curriculum such as top-down, bottom-up, and partnership. The top-down model suggests teachers and schools represent the subordinates to administrators and curriculum writers, whereas the bottom-up model indicates the opposite approach with innovative ideas for curriculum change deriving from schools and teachers. The partnership model, on the other hand, represents a new model of curriculum reform that involves different levels of personnel. Macdonald argued that, although curriculum change models could create challenges for schools and teachers to implement new curriculum, the primary focus should shift toward students or consumers and their preferences in contemporary physical activity. Ultimately, meaningful curriculum reform should include two critical questions: (a) who are the young people in schools? and (b) what, where, and how do they learn? Because this study intended to encourage community college administrators and curriculum development leaders to develop and offer new courses in physical education to students who might be reluctant to enroll in a sport-related course (Ballard & Chase, 2004; Dejager, 2006; Hedlund, 1990), these related studies can provide chairpersons/deans and faculty in community college physical education programs with strategies and ideas to implement curriculum change.

Chen and Ennis (2004) argued physical education needs curriculum reform because of the increasing numbers in U.S. obesity and obesity-related diseases caused by sedentary lifestyle. Physical education curriculum should focus on student achievement motivation as a means to increase students' physical activity participation. Penney and Jess (2004) also contended curriculum development in physical education should aim to

promote active lifestyle and physical wellness to possibly enhance students' interest in learning the benefits of engaging in physical activity. The lessons in the physical education curriculum, therefore, should reflect individuals' diverse activity demands, needs, and interests. Penney and Jess suggested lifelong physical activity represents a holistic concept involving four dimensions: Functional physical activity, recreational physical activity, health-related physical activity, and performance-related physical activity. Functional physical activity indicates the demands of everyday work and home life, while recreational physical activity connotes leisure interests; thus, curriculum development in physical education may require physical educators to assert their ideas in implementing reform to continue promoting lifelong physical activities for students; however, curriculum reform may depend on the decision-making format processes used within the institution.

Theories of Educational Change

Because this study intended to examine the potential shift from traditional to nontraditional curricula in community college physical education programs, the literature review included theories of educational change. The works of Fullan (2007), Schlechty (1997), Sarason (1971), and Rowley and Sherman (2001) offered different perspectives pertaining to the process of educational change in higher education and their perspectives of educational change provided the framework for this study.

Fullan (2007) posited changes in beliefs and values represent the primary dimensions that achieve effective changes in education; that is, changes in educational programs require the understanding of new concepts and approaches prior to committing

to the change process. Schlechty (1997) also argued that beliefs indicate the initial stage in implementing educational reform because a belief statement provides a motivational message or intention to act upon the change. Fullan, however, suggested altering an educator's beliefs may challenge the individual's educational core values and, therefore, the disparate perspectives may create barriers for individual educators to accept change. As a possible solution to ensure commitment toward reform, Schlechty proposed the implementation of a strategic development plan that connects beliefs to vision, mission, goals, and actions. Because beliefs represent a basic concept, vision statements provide educators with a potential outlook or possible realization of the intended change. Vision statements, therefore, could influence the mission statements since the latter require a compelling vision statement to initiate or command action; in other words, mission statements consist of specific goals for initiating action or change. Schlechty further suggested educational leaders who intend to promote educational change should apply beliefs, values, mission, goals, and action in answering four key questions: (a) why is change needed?, (b) what kind of change is needed and what will it mean for us when the change comes about?, (c) is what we are being asked to do really possible?, and "what skills do we need and how will they be developed?" (p. 208).

In contrast to Fullan's (2007) and Schlechty's (1997) views regarding beliefs and values as the primary components to initiate educational change, Sarason (1971) posited the motivation to change any college program often reflects the frequent problems that exist within the university culture; that is, the expressed criticisms from campus members usually indicate the need for change in certain areas of the school. For example, recycling

outdated textbooks or integrating unsuccessful teaching techniques may represent a problem or criticism that requires change in order to focus on students' needs and interests. Although identifying the frequent problems and criticisms may prompt colleges to consider implementing educational change, the intended outcomes may indicate the primary concern in the change process.

Fullan (2007) suggested outcomes represent a nonlinear change process and involves the progression of three phases—initiation, implementation, and institutionalization. The nonlinear process of change suggests the three phases interact continuously as a two-way communication style during the decision-making process. Phase I (initiation) represents the initial process that determines the direction of change in which the decisions often derive from multiple factors such as existence and quality of innovations, advocacy from central administration, teacher advocacy, external change agents, community pressure, and new policy. In Phase II (implementation), the attempt to implement change becomes overt during the first two or three years. The implementation stage allows teachers and administrators to evaluate the change process and, if needed, modify the protocol before institutionalizing the change. Fullan suggested the success of the implementation stage may demand several key factors, including characteristics of change, local characteristics, and external factors. The success of Phase II, then, may directly affect the progress of Phase III (continuation) in that change would either evolve permanently as part of the system, or be discarded from lack of support, funding, or interest. The findings in this study could encourage physical education programs to

initiate Phase I to begin the change process of developing and offering nontraditional physical activity courses on community college campuses.

Even though a strategic development plan for educational change may include the essential components to clearly define the intended outcomes, Rowley and Sherman (2001) suggested implementing change in higher education depends on the institution's decision-making structure. Top-down change, for example, represents a bureaucratic model in which educational change derives directly from the power and responsibilities of administrative leaders or governing-board members; conversely, college institutions may utilize a bottom-up change to involve and encourage people throughout the organization to bring forward ideas, opinions, and potential actions for change. Although college institutions may apply either the top-down or bottom-up strategy to implement change, Rowley and Sherman proposed colleges and universities should utilize consensus change as a method to involve different levels of constituents, staff, and faculty during the decision-making process; that is, the shared governance offers everyone an opportunity to contribute toward change. Consensus change represents the most effective method in higher education because the decision derives from the majority of the people. Overall, Fullan (2007) and Schlechty (1997) shared similar approaches to implement change in education in that established beliefs provide directions to achieve the intended outcomes. Sarason (1971) suggested the motivation to change derives directly from identifying the problems or criticisms, whereas Rowley and Sherman posited the decision-making structure could affect the effectiveness of change in higher education.

Summary

The literature review included research studies closely related to nontraditional physical activity courses in community college physical education programs. Although several journal articles focused on nontraditional physical education (Ballard & Chase, 2004; Dejager, 2006; Hedlund, 1990), these research studies only provided information on recreational activities and team sports at the pre-collegiate level. Because of the lack of literature on nontraditional physical education in community colleges, past and current research studies, along with books, were reviewed regarding individual nontraditional physical activities that included yoga, tai chi, Pilates, step aerobics, cardio kickboxing, and cardio spinning. Journal articles on college student perceptions of physical education programs and curriculum development in physical education were also reviewed to gain a better understanding of students' motives for enrolling in physical activity courses and strategies for course implementation, respectively. Because this study intended to examine the potential shift from traditional to nontraditional curricula in community college physical education programs, the literature review included theories of educational change.

The lack of literature on nontraditional physical activity courses in community college physical education programs suggested a need for a research study. Chapter 3 provides information on the researcher's design and approach for investigating the research questions. The chapter includes a literature review regarding the methodological tradition selected for the study.

CHAPTER 3:

RESEARCH METHOD

Introduction

The purpose of this quantitative study was to explore the perceptions of chairpersons/deans and faculty in physical education regarding nontraditional physical activity courses as compared to sport-related courses offered in community college physical education programs. Because of the lack of research data on nontraditional physical education in community colleges, a survey was created and distributed to collect empirical data from chairpersons/deans and faculty in community college physical education programs regarding their perceptions of nontraditional physical activity courses, such as yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics offered to community college students. Previous studies have provided ideas and strategies on how to collect quantitative data from surveys (Armstrong, O'Bryant, & Costa, 2002; Crawford, Greenwell, & Andrew, 2007; Hildebrand & Johnson, 2001; Mack & Shaddox, 2004; Reed & Bertelsen, 2003). The empirical data provided numerical values to generate statistical analysis for objective evaluation of the participants' survey responses.

Trochim and Donnelly (2007) suggest quantitative data represent numerical values of any quantitative variable in which the data provide concrete, credible, and scientific evidence. This chapter explains the rationale for selecting the design and approach, research population and sample, instrumentation of the survey, procedure and protocol, data analysis plan, and ethical considerations for this study.

Research Design and Approach

Quantitative descriptive with a cross-sectional design was used to analyze the perceptions of chairpersons/deans and faculty in physical education regarding nontraditional physical activity courses as compared to their perceptions of sport-related courses offered in community college physical education programs. Johnson and Christensen (2004) emphasize that descriptive research in education serves as a way to learn people's attitudes, opinions, beliefs, behaviors, and demographics rather than cause-and-effect relationships; in other words, descriptive research primarily provides an accurate description or the characteristics of a situation or phenomenon. A cross-sectional design represents non-experimental quantitative research that focuses on collecting quantitative data from a section of participants at a single point in time or during a brief time period (Johnson & Christensen; Trochim & Donnelly, 2007). Longitudinal and retrospective designs were excluded because data collected at multiple points across time and historical data, respectively, were not the intention of the study. Feasibility and sample size issues also prompted the elimination of using a qualitative approach, which primarily involves in-depth interviews, observations, and narrative reporting instead of relying on statistical data to report the findings (Johnson & Christensen, 2004). An electronic survey was used to distribute and collect empirical data from chairpersons'/deans' and full-time faculty's responses in community college physical education.

Because limited studies on nontraditional physical education focused on precollegiate level and provided qualitative information (Ballard & Chase, 2004; Dejager,

2006; Hedlund, 1990), these studies failed to offer ideas for conducting a quantitative study that involved a survey; therefore, related studies that collected quantitative data from surveys in physical education were referenced to gather ideas and strategies for the study. Several of the related studies on perceptions of college physical education programs identified in chapter 2 utilized surveys as a measuring instrument to collect quantitative data (Armstrong, O'Bryant, & Costa, 2002; Crawford, Greenwell, & Andrew, 2007; Hildebrand & Johnson, 2001; Mack & Shaddox, 2004; Reed & Bertelsen, 2003). Hildebrand and Johnson surveyed undergraduate students enrolled in 12 different physical education activity classes to assess the important reasons for taking physical activity classes. The survey included categories of reasons with a rating scale that ranged from "the most important reason" to "not at all important" (p. 52). Mack and Shaddox also incorporated a similar rating scale in their survey; however, they utilized a 5-point Likert-type scale to measure short-term attitude changes in college students enrolling in personal wellness classes. The participants rated their perceptions on a scale ranging from *strongly agree* to *strongly disagree* to a 50-statement questionnaire (p. 587).

Although a 5-point Likert-type scale represents a common rating scale used in quantitative research (Fink, 2006; Johnson & Christensen, 2004; Trochim & Donnelly, 2007), two studies (Armstrong, O'Bryant, & Costa, 2002; Crawford, Greenwell, & Andrew, 2007) developed a 7-point Likert-type scale in their surveys to increase the size of the interval between the response values (Fink, 2006). For instance, Armstrong, O'Bryant, and Costa incorporated a 7-point Likert-type scale with values ranging from 1 (*not at all influential*) to 7 (*very influential*) to assess the factors that influence students'

enrollment in sports, fitness, and health courses. Crawford, Greenwell, and Andrew, on the other hand, used a 7-point Likert-type scale that ranged from 1 (*strongly disagree*) to 7 (*strongly agree*) to examine the relationship between students' perceptions of the quality of basic instruction programs and repeated participation in physical education courses. Despite the effectiveness of the 7-point Likert-type scale used in the two studies, a 5-point Likert-type scale was integrated in the survey of this study to reduce the variability of the response options. A survey using a 5-point Likert-type scale was an appropriate tool to collect data and analyze the perceptions of chairpersons/deans and faculty regarding nontraditional physical activity courses offered in community colleges.

Instrumentation

The following research questions were used as the framework to create and design the 18-item survey:

1. To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding nontraditional physical activity courses providing similar health benefits as compared to sport-related courses offered in community colleges?
2. To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding the values of nontraditional physical activity courses as compared to sport-related courses in community colleges?
3. To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding nontraditional physical activity courses contributing to

students' learning experiences as compared to sport-related courses offered in community colleges?

4. To what extent do participants' perceptions relate to the individual physical activity courses offered in community colleges?

The survey contained three parts that queried the participants on their perceptions of (a) health benefits of nontraditional phyiscal activity courses, (b) values of nontraditional physical activity coures, and (c) contribution of nontraditional physical activity courses to students' learning experience. Research participants were instructed to rate their perceptions based on a summated scale or a 5-point Likert-type scale in the following order: Strongly disagree (1), disagree (2), neutral (3), agree (4), or strongly agree (5). The 5-point Likert-type scale measured the participants' perceptions of the independent variables toward health benefits, values, and contribution to students' learning experience. The independent variables consisted of yoga, pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics.

A pilot study was conducted to test the reliability and validity of the survey. A convenience sample of faculty members in a community college physical education department participated in the pilot study. Fink (2006) suggested pilot testing may enhance response rate because the process can assist researchers in eliminating poorly written questions and faulty response options. The pilot study revealed low reliability and low validity in that the findings suggested a need to modify the survey and research questions for the actual study. In other words, the results indicated the survey questionnaire failed to address the research questions. Previous survey questions in the

pilot study comprised 10 questions in various formats, such as multiple choice, checkboxes, listing, and scale as response options for the participants. The 10-item survey consisted of questions regarding student demographics and chairpersons'/deans' attitudes toward nontraditional physical activity courses offered in community colleges; however, the survey questions did not align with the research questions and, therefore, prompted changes to the questionnaire and research questions. In addition, the University Research Reviewer recommended the adjustment of the purpose statement in order to align with the revised survey and research questions. The revised purpose statement also prompted a modification of the approach in selecting the research participants.

Survey Software Program

Survey Monkey software was used to create and design the survey. Survey Monkey is a software program available to the public and it can be accessed via the Internet at: https://surveymonkey.com. A scale-type function was selected as response options for the research participants. In addition, Survey Monkey contains a spreadsheet that records and stores the participants' responses to the individual questions posed in the survey; that is, the software is designed to collect and organize the data electronically via the Internet. Survey Monkey also provides data analysis of survey responses in terms of percentages and frequency counts (Appendix B). The e-mail message included a link to access the survey. Although chairpersons/deans and faculty in physical education received the same survey, two separate links were sent as a strategy to organize the responses from both groups. Samples of the standardized e-mail message to chairpersons/deans and full-time faculty can be found in Appendix C.

Population and Sampling

Peterson's Two-Year Colleges (2008) was referenced to locate public community colleges established in the western region of the United States, and their corresponding websites. The individual websites of the community colleges provided a starting point to locate the participants' campus e-mail addresses. Because the administrative titles in the individual physical education departments may differ among the community colleges, the survey was sent to one representative in the department who occupied either a chairperson or dean position in order to avoid duplicate responses; for instance, if a physical education department consisted of a chairperson and a dean, the researcher sent the survey to the department chairperson instead of the dean. In addition, full-time faculty in physical education departments were selected because some part-time faculty may teach at additional campuses and, therefore, could potentially receive a duplicate survey.

Peterson's Two-Year Colleges (2008) identifies 2-year community colleges with an open-enrollment policy as public community colleges. Based on this definition, 266 public community colleges in the 13 western states represented the population for selection of chairpersons/deans and full-time faculty in physical education departments. The 13 western states included Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. A complete listing of public community colleges in the western region can be found in Appendix D.

Because chairpersons/deans represented a smaller population than full-time faculty, the entire population size of 266 was used to maximize the response rate. Two chairpersons/deans were excluded from the population to eliminate biases because of the

researcher's affiliation with the two corresponding institutions. In addition, a 4-to-1 ratio, faculty to deans, was integrated to provide full-time faculty with a voice equal to that of chairpersons/deans because chairpersons/deans signify a higher leadership position in the chain of command (Cohen & Brawer, 2003). The 4-to-1 ratio, therefore, increased full-time faculty's population size to 1,064, in which the sample size was 282. A Microsoft Excel spreadsheet (2007) was used to generate random selection from a list of full-time faculty in community college physical education programs located in the western region of the United States. Random selection or simple random sampling eliminated biases and allowed the researcher to generalize from the sample to the population (Johnson & Christensen, 2004); therefore, other sampling techniques were disregarded, such as systematic sampling, stratified random sampling, cluster random sampling, and nonrandom sampling methods.

Procedure and Protocol

An 18-item survey was used to collect quantitative data from participants' survey responses. The web-based survey was distributed via e-mail to the research participants currently employed as chairpersons/deans and full-time faculty in community college physical education programs located in the western region of the United States. Because of the cross-sectional design, the data collection process requires a brief time period (Johnson & Christensen, 2004). A short period of 10 business days was set for data collection with follow-ups via e-mail and telephone on the 3rd and 6th day, respectively, from the initial survey distribution.

Community colleges' online course catalogs were reviewed from their respective websites to obtain a frequency count of the number of nontraditional physical activity courses offered in the western region of the United States. The frequency count provided general information regarding the current status of yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics offered in community colleges.

Data Analysis Plan

Descriptive statistics were utilized to analyze the participants' survey responses in terms of mean, median, mode, standard deviation, and variance. Samples of organizational tables for descriptive statistics can be found in Appendix E. Hildebrand and Johnson (2001) used primarily descriptive statistics to analyze and report the findings from students' survey responses pertaining to the rationale for enrolling in physical activity courses. In general, descriptive statistics allow researchers to describe, summarize, or explain the basic feature of the data in a variety of formats such as tables, charts, or graphs (Johnson & Christensen, 2004; Trochim & Donnelly, 2007).

Statistical Package for the Social Sciences (SPSS 15.0) software was used to perform an independent *t* test to test for differences between two means of two groups and to determine if the difference of the two means was statistically significant (Fink, 2006; Johnson & Christensen, 2004). Because Likert-type scales provide ordinal data, an independent *t* test was used to obtain the appropriate nonparametric technique to compare the means of the participants' perceptions to the different variables that included yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics. The mean values were derived from the participants' responses to the Likert-type scale from 1 (strongly

disagree) to 5 (strongly agree). Mean comparisons determined whether chairpersons/deans and faculty in physical education differed in their perceptions regarding nontraditional physical activity courses as compared to sport-related courses offered in community colleges; thus, the independent variables included yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics, while the dependent variables consisted of chairpersons'/deans' and faculty's perceptions toward nontraditional physical activity courses.

SPSS 15.0 software was also used to perform a chi-square contingency table test to test for relationships or associations between the participants' perceptions and the individual nontraditional physical activity courses. Johnson and Christensen (2004) indicate researchers often use the chi-square test for contingency tables to determine whether a relationship observed in a contingency table is statistically significant. The following formula was applied to test the two independent samples of chairpersons'/deans' and faculty' perceptions regarding the individual nontraditional physical activity courses: $\chi^2 = \sum (O - E)^2/E$, where O is the observed value and E is the expected value (Sanders & Smidt, 2000; Triola, 2008). According to Triola, a test of independence assesses whether there is no relationship or association between the row variable and the column variable in a contingency table. The row variables included the Likert-scale ratings from 1 (strongly disagree) to 5 (strongly agree) of the individual nontraditional physical activity courses, while the column variables consisted of chairpersons/deans and faculty. For example, chairpersons'/deans' and faculty's survey responses to the questions related to yoga, Questions 1, 7, and 13, provided the

quantitative values for generating a chi-square contingency table test. Samples of contingency tables for chi-square tests can be found in Appendix F.

The statistical power for data analysis utilized a level of significance set at .05 ($\alpha = .05$) for both independent *t* test and chi-square contingency table test.

Ethical Considerations

Because the survey involved human participants, the Walden University Institutional Review Board (IRB) reviewed and evaluated both the pilot study and the actual study to ascertain that the researcher followed ethical standards established within the university's scope of authority. The IRB-approved version of the survey (03-19-09-0349355) was distributed to the participants in the study. The participants' contact information was saved on a Microsoft Excel spreadsheet in a detachable flash drive, which will remain locked in a filing cabinet for a period of at least 5 years. A consent form was provided to the participants as an attachment in the same e-mail message with the survey link (Appendix F). Because of the participants' anonymity, their signatures were not required on the informed consent form. The participants' survey responses were stored on a spreadsheet and saved in Survey Monkey website. Survey Monkey provides a secured storage site thus users must acquire a personal account with user identification and passcode to access their saved information.

Summary

This chapter reviewed literature that supports a descriptive model with a cross-sectional design. In addition, the chapter delineated the population and sampling, procedure and protocol, data collection and analysis, and instrumentation of the proposed

study. An 18-item survey was distributed to chairpersons/deans and full-time faculty in community college physical education programs in the western region of the United States. The participants' survey responses provided empirical data for the researcher to generate descriptive and inferential statistics as a means to explore the perceptions of chairpersons/deans and faculty in physical education regarding nontraditional physical activity courses as compared to sport-related courses offered in community college physical education programs. Chapter 4 will present the results and data analysis, while chapter 5 will discuss the statistical findings, provide recommendations, and present a conclusion to the study.

CHAPTER 4:

RESULTS

The purpose of this study was to explore the perceptions of chairpersons/deans and faculty in physical education regarding nontraditional physical activity courses as compared to sport-related courses offered in community college physical education programs. The following research questions were used as the framework for the 18-item survey with closed-end questions:

1. To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding nontraditional physical activity courses providing similar health benefits as compared to sport-related courses offered in community colleges?
2. To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding the values of nontraditional physical activity courses as compared to sport-related courses in community colleges?
3. To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding nontraditional physical activity courses contributing to students' learning experiences as compared to sport-related courses offered in community colleges?
4. To what extent do participants' perceptions relate to the individual physical activity courses offered in community colleges?

The 18-item survey queried the participants' perceptions germane to (a) health benefits of nontraditional phyiscal activity courses, (b) values of nontraditional physical activity coures, and (c) contribution of nontraditional physical activity courses to students' learning experience. Research participants rated their perceptions on a 5-point Likert-type scale that included strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5).

Although this study intended to utilize chairpersons'/deans' population of 266 as the sample size, the researcher found 47 of the 266 community colleges in the western states either did not offer physical education courses, or lacked a physical education program. Among the 219 physical education programs, one community college district in California and Hawaii assigned one physical education dean to lead multiple physical education programs at three and seven campuses, respectively. Two chairpersons/deans were also excluded from the sample size to eliminate biases because of the researcher's affiliation with the two corresponding institutions. Thus, the initial sample size of chairpersons/deans was reduced from 266 to 209. Because of the 4-to-1 ratio, faculty to deans, the sample size for faculty was also adjusted from 282 to 263. The 18-item survey was distributed to 209 chairpersons/deans and 263 faculty currently employed in community colleges located in the western region of the United States.

Survey Monkey software was used as a tool to distribute the 18-item survey via e-mail, as well as to collect quantitative data from the participants' responses. Data collection began on March 19, 2009 with an e-mail follow-up to nonresponsive participants on March 23, 2009. A telephone follow-up to nonresponsive participants was

performed on March 26, 27, and 30, 2009. Because telephone follow-up required 3 days to complete, data collection was extended from the initial timeframe of 10-business days to 12. Data collection concluded on April 3, 2009, and showed 86 chairpersons/deans and 115 faculty responded to the 18-item survey. The raw data are found in Appendix H.

Data Analysis

Statistical Package for the Social Sciences (SPSS 15.0) software was used to perform an independent *t* test and a chi-square contingency table test in order to answer the research questions. An independent *t* test was utilized to test for differences between two means of two groups and to determine whether the difference of the two means is statistically significant (Fink, 2006; Johnson & Christensen, 2004) for Research Questions 1, 2, and 3. A chi-square contingency table test was also used to test for associations between the participants' perceptions and the individual nontraditional physical activity courses for Research Question 4. Specifically, an independent *t* test was used to compare the means of the participants' perceptions to the different variables that included yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics. The mean values were derived from the participants' responses to the Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). Mean comparisons determined whether chairpersons/deans and faculty in physical education differed in their perceptions regarding nontraditional physical activity courses as compared to sport-related courses offered in community colleges; thus, the independent variables consisted of yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics, while the dependent variables comprised chairpersons'/deans' and faculty's perceptions toward nontraditional

physical activity courses. Because of unequal sample sizes, equal variances not assumed from SPSS output was used to report the *t* value, degree of freedom, and *p* value (Green & Salkind, 2008). The level of significance was set at .05 ($\alpha = .05$) and, therefore, *p* values less than .05 indicated the observed differences between two sample means were statistically significant (Johnson & Christensen, 2004; Sanders & Smidt, 2000; Triola, 2008).

In contrast, Research Question 4 required a chi-square contingency table test to determine whether associations exist between participants' perceptions and the individual physical activity courses offered in community colleges. Johnson and Christensen (2004) indicate researchers often use the chi-square test for contingency tables to determine whether an association observed in a contingency table is statistically significant. The following formula was applied to test the two independent samples of chairpersons'/deans' and faculty' perceptions regarding the individual nontraditional physical activity courses: $\chi^2 = \sum (O - E)^2/E$, where O is the observed value and E is the expected value (Sanders & Smidt, 2000; Triola, 2008). The row variables included the Likert-type scale ratings from 1 (strongly disagree) to 5 (strongly agree) of the individual nontraditional physical activity courses, while the column variables consisted of chairpersons/deans and faculty. The researcher set the level of significance at .05 ($\alpha = .05$) in which *p* values less than .05 indicated significant association between participants' perceptions and individual nontraditional physical activity courses. SPSS outputs for the independent *t* test and the chi-square contingency table test, respectively, can be found in Appendices I and J.

Descriptive statistics also provided data analysis of the participants' survey responses in terms of mean, median, mode, standard deviation, and variance. Hildebrand and Johnson (2001) used primarily descriptive statistics to analyze and report the findings from students' survey responses pertaining to the rationale for enrolling in physical activity courses. In general, descriptive statistics allow researchers to describe, summarize, or explain the basic feature of the data in a variety of formats such as tables, charts, or graphs (Johnson & Christensen, 2004; Trochim & Donnelly, 2007).

Research Question 1

For Research Question 1 (To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding nontraditional physical activity courses providing similar health benefits as compared to sport-related courses offered in community colleges?), a *t* test for equality of means indicated no significant differences in means for yoga, $t(197) = .492$, $p = .492$, Pilates, $t(193) = .398$, $p = .691$, and tai chi, $t(194) = .170$, $p = .866$, whereas signficant differences were found for cardio kickboxing, $t(137) = -2.66$, $p = .009$, cardio spinning, $t(124) = -2.61$, $p = .010$, and step aerobics $t(129) = -2.12$, $p = .036$.

Mean comparisons for Survey Questions 1, 2, and 3 showed chairpersons'/deans' and faculty's perceptions did not differ statistically regarding yoga, Pilates, and tai chi courses providing similar health benefits as compared to sport-related courses offered in community colleges. Descriptive statistics indicated chairpersons/deans, on average, rated health benefits for yoga ($M = 4.19$, $SD = 0.93$) and Pilates ($M = 4.19$, $SD = 0.93$) higher than 4 (agree), but less than 5 (strongly agree) on the Likert-type scale in which

faculty showed similar average ratings of 4.09 (*SD* = 1.11) and 4.13 (*SD* = 1.05), respectively; however, both groups, on average, rated tai chi slightly less than 4 on the Likert-type scale with mean values of 3.93 (*SD* = 1.00) for chairpersons/deans and 3.90 (*SD* = 1.15) for faculty.

In contrast, as compared to sport-related courses offered in community colleges, mean comparisons for Survey Questions 4, 5, and 6 reported chairpersons'/deans' and faculty's perceptions differed statistically regarding cardio kickboxing, cardio spinning, and step aerobics courses providing similar health benefits. Mean differences indicated faculty favored cardio kickboxing (*M* = 4.63, *SD* = 0.61), cardio spinning (*M* = 4.63, *SD* = 0.54), and step aerobics (*M* = 4.59, *SD* = 0.31) more than chairpersons/deans with means of 4.33 (*SD* = 0.94), 4.33 (*SD* = 0.96), and 4.35 (*SD* = 0.94), respectively. Descriptive statistics of survey responses to Survey Questions 1 through 6 from chairpersons/deans and faculty, respectively, are shown in Tables 1 and 2.

Table 1

Descriptive Statistics of Survey Responses to Survey Questions 1-6 from Chairpersons/Deans

Survey questions	*N*	*Mean*	*Median*	*Mode*	*SD*	*Variance*
1	86	4.19	4	4	0.93	0.86
2	86	4.19	4	4	0.93	0.86
3	86	3.93	4	4	1.00	1.01
4	86	4.33	5	5	0.94	0.88
5	86	4.33	5	5	0.96	0.93
6	86	4.35	5	5	0.94	0.89

Table 2

Descriptive Statistics of Survey Responses to Survey Questions 1-6 from Faculty

Survey questions	*N*	*Mean*	*Median*	*Mode*	*SD*	*Variance*
1	115	4.09	4	5	1.11	1.24
2	115	4.13	4	5	1.05	1.10
3	115	3.90	4	5	1.15	1.33
4	115	4.63	5	5	0.61	0.37
5	115	4.63	5	5	0.54	0.29
6	115	4.59	5	5	0.56	0.31

Research Question 2

In regard to Research Question 2 (To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding the values of nontraditional physical activity courses as compared to sport-related courses in community colleges?), a *t* test for equality of means showed no significant differences in means for any of the nontraditional physica activity courses as follows: Yoga, $t(185) = 1.65$, $p = .101$, Pilates, $t(174) = .906$, $p = .366$, tai chi, $t(167) = .688$, $p = .492$, cardio kickboxing, $t(143) = -.627$, $p = .532$, cardio spinning, $t(127) = -1.39$, $p = .168$, and step aerobics, $t(134) = -.697$, $p = .487$.

Mean comparisons suggested perceptions of chairpersons/deans and faculty did not differ statistically regarding the values of nontraditional physical activity courses as compared to sport-related courses offered in community colleges. Although no statistical differences were found in means for both groups, chairpersons/deans and faculty on average rated the values of yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics higher than 4 (agree) but less than 5 (strongly agree) on the Likert-type scale.

Descriptive statistics showed chairpersons/deans, on average, rated the values of yoga ($M = 4.51$, $SD = 0.76$) higher than Pilates ($M = 4.42$, $SD = 0.85$), tai chi ($M = 4.37$, $SD = 0.92$), cardio kickboxing ($M = 4.44$, $SD = 0.90$), cardio spinning ($M = 4.37$, $SD = 0.95$), and step aerobics ($M = 4.42$, $SD = 0.90$). Conversely, faculty, on average, rated the values of cardio spinning ($M = 4.53$, $SD = 0.55$) higher than yoga ($M = 4.33$, $SD = 0.78$), Pilates ($M = 4.31$ ($SD = 0.78$), tai chi ($M = 4.29$ ($SD = 0.79$), cardio kickboxing ($M =$

4.51, *SD* = 0.63), and step aerobics (*M* = 4.50, *SD* = 0.57). Tables 3 and 4 below provide Descriptive statistics of survey responses to Survey Questions 7 through 12 from chairpersons/deans and faculty, respectively, are shown in Tables 3 and 4.

Table 3

Descriptive Statistics of Survey Responses to Survey Questions 7-12 from Chairpersons/Deans

Survey questions	*N*	*Mean*	*Median*	*Mode*	*SD*	*Variance*
7	86	4.51	5	5	0.76	0.58
8	86	4.42	5	5	0.85	0.72
9	86	4.37	5	5	0.92	0.85
10	86	4.44	5	5	0.90	0.81
11	86	4.37	5	5	0.95	0.90
12	86	4.42	5	5	0.90	0.81

Table 4

Descriptive Statistics of Survey Responses to Survey Questions 7-12 from Faculty

Survey questions	*N*	*Mean*	*Median*	*Mode*	*SD*	*Variance*
7	115	4.33	4	5	0.78	0.61
8	115	4.31	4	5	0.78	0.60
9	115	4.29	4	5	0.79	0.63
10	115	4.51	5	5	0.63	0.39
11	115	4.53	5	5	0.55	0.30
12	115	4.50	5	5	0.57	0.32

Research Question 3

For Research Question 3 (To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding nontraditional physical activity courses contributing to students' learning experiences as compared to sport-related courses offered in community colleges?), a *t* test for equality of means indicated a significant difference in means for chairpersons'/deans' and faculty's perceptions of yoga contributing to students' learning experience, $t(198) = 2.20$, $p = .029$; however, no significant differences in means were found for Pilates, $t(197) = 1.58$, $p = .115$, tai chi, $t(189) = .469$, $p = .640$, cardio kickboxing, $t(178) = -.066$, $p = 0.948$), cardio spinning, $t(177) = -.132$, $p = .895$, or step aerobics, $t(179) = .329$, $p = .743$.

Mean comparisons suggested perceptions of chairpersons/deans and faculty differed statisticially regarding yoga courses contributing to students' learning experience as compared to sport-related courses in community colleges. Mean values for yoga, therefore, indicated chairpersons/deans ($M = 4.49$, $SD = 0.73$) favored yoga courses contributing to students' learning experience more than faculty ($M = 4.23$, $SD = 0.90$).

Although no significant differences were found for the other five nontraditional physical activity courses, descriptive statistics showed chairpersons/deans, on average, rated contribution of students' learning experience for Pilates ($M = 4.44$, $SD = 0.73$), tai chi ($M = 4.30$, $SD = 0.86$), cardio kickboxing ($M = 4.35$, $SD = 0.84$), cardio spinning ($M = 4.35$, $SD = 0.89$), and step aerobics ($M = 4.40$, $SD = 0.84$) higher than 4 (agree), but less than 5 (strongly agree) on the Likert-type scale. Faculty's average ratings for contribution of students' learning experience were also higher than 4 but less than 5 on

the Likert-type scale for Pilates ($M = 4.26$, $SD = 0.89$), tai chi ($M = 4.24$, $SD = 0.91$), cardio kickboxing ($M = 4.36$, $SD = 0.80$), cardio spinning ($M = 4.37$, $SD = 0.84$), and step aerobics ($M = 4.36$, $SD = 0.81$). Descriptive statistics of survey responses to Survey Questions 13 through 18 from chairpersons/deans and faculty, respectively, are shown in Tables 5 and 6.

Table 5

Descriptive Statistics of Survey Responses to Survey Questions 13-18 from Chairpersons/Deans

Survey questions	*N*	*Mean*	*Median*	*Mode*	*SD*	*Variance*
13	86	4.49	5	5	0.73	0.54
14	86	4.44	5	5	0.73	0.53
15	86	4.30	4	5	0.86	0.73
16	86	4.35	4	5	0.84	0.70
17	86	4.35	5	5	0.89	0.79
18	86	4.40	5	5	0.84	0.71

Table 6

Descriptive Statistics of Survey Responses to Survey Questions 13-18 from Faculty

Survey questions	*N*	*Mean*	*Median*	*Mode*	*SD*	*Variance*
13	115	4.23	4	5	0.90	0.81
14	115	4.26	4	5	0.89	0.79
15	115	4.24	4	5	0.91	0.83
16	115	4.36	5	5	0.80	0.63
17	115	4.37	5	5	0.84	0.71
18	115	4.36	5	5	0.81	0.65

Research Question 4

In regard to Research Question 4 (To what extent do participants' perceptions associate with the individual physical activity courses offered in community colleges?), Pearson chi-square (χ^2) tests indicated significant associations were found between participants' perceptions and yoga regarding health benefits, χ^2 (4, N = 201) = 15.37, p = .004, values, χ^2 (4, N = 201) = 10.52, p = .033, and contribution to students' learning experience, χ^2 (4, N = 201) = 15.61, p = .004, for Survey Questions 1, 7, and 13, respectively. The data analysis showed associations exist statistically between participants' perceptions and yoga courses providing health benefits, reflecting values, and contributing to students' learning experience, as compared to sport-related courses offered in community colleges. Significant associations suggested chairpersons'/deans' and faculty's perceptions of yoga toward health benefits, values, and contribution to students' learning experience depended on their campus position in physical education.

The proportions of chairpersons/deans who rated yoga courses providing health benefits were .02 (strongly disagree), .07 (disagree), .00 (neutral), .51 (agree), and .40 (strongly agree), as compared to faculty with .04 (strongly disagree), .09 (disagree), .10 (neutral), .30 (agree), and .47 (strongly agree). For values of yoga, chairpersons'/deans' to faculty's proportional ratings consisted of .02 to .00 (strongly disagree), .00 to .03 (disagree), .02 to .09 (neutral), .35 to .39 (agree), and .61 to .49 (strongly agree). The proportional ratings of chairpersons/deans to faculty for yoga contributing to student learning included .02 to .00 (strongly disagree), .00 to .09 (disagree), .00 to .05 (neutral), .42 to .40 (agree), and .56 to .46 (strongly agree). The frequency count and proportions of survey responses within Questions 1, 7, and 13 for yoga between chairpersons/deans and faculty are shown in Table 7.

Table 7

Frequency Count and Proportions of Survey Responses within Questions 1, 7, and 13 for Yoga between Chairpersons/Deans (D) and Faculty (F)

Likert-type scale for yoga		*Health Benefits*		*Values*		*Student Learning*	
		(D)	(F)	(D)	(F)	(D)	(F)
Strongly disagree (1)	Count	2	4	2	0	2	0
	Proportion	.02	.03	1.00	.00	.02	.00
Disagree (2)	Count	6	10	0	4	0	10
	Proportion	.07	.09	.00	1.00	.00	.09
Neutral (3)	Count	0	12	2	10	0	6
	Proportion	.00	.10	.17	.83	.00	.05
Agree (4)	Count	44	35	30	45	36	46
	Proportion	.51	.30	.40	.60	.42	.40
Strongly agree (5)	Count	34	54	52	56	48	53
	Proportion	.40	.47	.48	.52	.56	.46
Total	Count	86	115	86	115	86	115
	Proportion	1.00	1.00	1.00	1.00	1.00	1.00

Pearson χ^2 tests for survey questions 2, 8, and 14 showed no significant association for Survey Question 8 pertaining to the values of Pilates, χ^2 (4, N = 201) = 7.17, p = .127, as compared with health benefits, χ^2 (4, N = 201) = 11.68, p = .020, and contribution of student learning experience, χ^2 (4, N = 201) = 15.55, p = .004, for Survey Questions 2 and 14, respectively. Data for Pilates, therefore, reported

chairpersons'/deans' and faculty's perceptions of health benefits and contribution of students' learning experience were dependent on their position in physical education.

The proportional ratings of chairpersons/deans to faculty for Pilates providing health benefits were .02 to .03 (strongly disagree), .07 to .06 (disagree), .00 to .10 (neutral), .51 to .36 (agree), and .40 to .45 (strongly agree). For the values of Pilates, chairpersons'/deans' and faculty's proportional ratings included .02 to .00 (strongly disagree), .02 to .03 (disagree), .03 to .09 (neutral), .37 to .41 (agree), and .56 to .47 (strongly agree). Chairpersons'/deans' to faculty's proportional ratings for Pilates contributing to student learning were .02 to .00 (strongly disagree), .00 to .08 (disagree), .00 to .06 (neutral), .47 to .38 (agree), and .51 to .48 (strongly agree). The frequency count and proportions of survey responses within Questions 2, 8, and 14 for Pilates between chairpersons/deans and faculty are shown in Table 8.

Table 8

Frequency Count and Proportions of Survey Responses within Questions 2, 8, and 14 for Pilates between Chairpersons/Deans (D) and Faculty (F)

Likert-type scale for Pilates		*Health Benefits*		*Values*		*Student Learning*	
		(D)	(F)	(D)	(F)	(D)	(F)
Strongly disagree (1)	Count	2	4	2	0	2	0
	Proportion	.02	.03	.02	.00	.02	.00
Disagree (2)	Count	6	7	2	4	0	9
	Proportion	.07	.06	.02	.03	.00	.78
Neutral (3)	Count	0	11	2	10	0	7
	Proportion	.00	.10	.03	.09	.00	.06
Agree (4)	Count	44	41	32	47	40	44
	Proportion	.51	.36	.37	.41	.47	.38
Strongly agree (5)	Count	34	52	48	54	44	55
	Proportion	.40	.45	.56	.47	.51	.48
Total	Count	86	115	86	115	86	115
	Proportion	1.00	1.00	1.00	1.00	1.00	1.00

In contrast, Pearson χ^2 tests showed no significant relationship was found for Survey Questions 3, 9, and 15 germane to tai chi providing health benefits, χ^2 (4, N = 201) = 6.82, p = .146, reflecting values, χ^2 (4, N = 201) = 5.10, p = .278, and contributing to students' learning experience, χ^2 (4, N = 201) = 6.38, p = .173, respectively. The data analysis indicated no relationship exists statistically between participants' perceptions

and tai chi course, which suggested chairpersons'/deans' and faculty's ratings were independent of their position in physical education.

The proportions of chairpersons/deans who rated tai chi courses providing health benefits were .02 (strongly disagree), .09 (disagree), .12 (neutral), .47 (agree), and .30 (strongly agree) as compared to faculty with .07 (strongly disagree), .04 (disagree), .16 (neutral), .36 (agree), and .37 (strongly agree). For values of tai chi, chairpersons'/deans' to faculty's proportional ratings consisted of .02 to .01 (strongly disagree), .03 to .02 (disagree), .09 to .10 (neutral), .28 to .42 (agree), and .58 to .45 (strongly agree). The proportional ratings of chairpersons/deans to faculty for tai chi contributing to student learning included .02 to .01 (strongly disagree), .00 to .06 (disagree), .12 to .09 (neutral), .37 to .36 (agree), and .49 to .48 (strongly agree). The frequency count and proportions of survey responses within Questions 3, 9, and 15 for tai chi between chairpersons/deans and faculty are shown in Table 9.

Table 9

Frequency Count and Proportions of Survey Responses within Questions 3, 9, and 15 for Tai Chi between Chairpersons/Deans (D) and Faculty (F)

Likert-type scale for tai chi		*Health Benefits*		*Values*		*Student Learning*	
		(D)	(F)	(D)	(F)	(D)	(F)
Strongly disagree (1)	Count	2	8	2	1	2	1
	Proportion	.02	.07	.02	.01	.02	.01
Disagree (2)	Count	8	5	2	2	0	7
	Proportion	.09	.04	.03	.02	.00	.06
Neutral (3)	Count	10	19	8	12	10	10
	Proportion	.12	.16	.09	.10	.12	.09
Agree (4)	Count	40	41	24	48	32	42
	Proportion	.47	.36	.28	.42	.37	.36
Strongly agree (5)	Count	26	42	50	52	42	55
	Proportion	.30	.37	.58	.45	.49	.48
Total	Count	86	115	86	115	86	115
	Proportion	1.00	1.00	1.00	1.00	1.00	1.00

Pearson χ^2 tests for cardio kickboxing also indicated similar outcome as tai chi with p values greater than .05 for health benefits, χ^2 (4, N = 201) = 9.11, p = .058, values, χ^2 (4, N = 201) = 6.36, p = .174, and contribution to students' learning experience, χ^2 (4, N = 201) = 5.99, p = .199. The data analysis showed no relationships were found statistically between participants' perceptions and cardio kickboxing, which suggested

chairpersons'/deans' and faculty's ratings were independent of their position in physical education.

The proportional ratings of chairpersons/deans to faculty for cardio kickboxing providing health benefits were .02 to .00 (strongly disagree), .05 to .01 (disagree), .05 to .04 (neutral), .35 to .25 (agree), and .53 to .70 (strongly agree). For the values of cardio kickboxing, chairpersons'/deans' to faculty's proportional ratings included .02 to .00 (strongly disagree), .02 to .01 (disagree), .07 to .04 (neutral), .26 to .37 (agree), and .63 to .58 (strongly agree). Chairpersons'/deans' to faculty's proportional ratings for cardio kickboxing courses contributing to student learning were .02 to .00 (strongly disagree), .02 to .04 (disagree), .03 to .07 (neutral), .44 to .38 (agree), and .49 to .51 (strongly agree). The frequency count and proportions of survey responses within Questions 4, 10, and 16 for cardio kickboxing between chairpersons/deans and faculty are shown in Table 10.

Table 10

Frequency Count and Proportions of Survey Responses within Questions 4, 10, and 16 for Cardio Kickboxing between Chairpersons/Deans (D) and Faculty (F)

Likert-type scale for cardio kickboxing		*Health Benefits*		*Values*		*Student Learning*	
		(D)	(F)	(D)	(F)	(D)	(F)
Strongly disagree (1)	Count	2	0	2	0	2	0
	Proportion	.02	.00	.02	.00	.02	.00
Disagree (2)	Count	4	1	2	1	2	5
	Proportion	.05	.01	.02	.01	.02	.04
Neutral (3)	Count	4	5	6	5	2	8
	Proportion	.05	.04	.07	.04	.03	.07
Agree (4)	Count	30	29	22	43	38	43
	Proportion	.35	.25	.26	.37	.44	.37
Strongly agree (5)	Count	46	80	54	66	42	59
	Proportion	.53	.70	.63	.58	.49	.51
Total	Count	86	115	86	115	86	115
	Proportion	1.00	1.00	1.00	1.00	1.00	1.00

In regard to cardio spinning, Pearson χ^2 tests indicated significant relationships were found for participants' perceptions to health benefits and values for survey questions 5, χ^2 (4, N = 201) = 10.89, p = .028, and 11, χ^2 (4, N = 201) = 16.70, p = .002, but not for students learning experience in survey question 17, χ^2 (4, N = 201) = 3.88, p = .423. The data analysis indicated relationships exist statistically among participant perceptions and cardio spinning providing similar health benefits and values, as

compared to sport-related courses offered in community colleges; therefore, suggesting chairpersons'/deans' and faculty's perceptions were dependent on their campus position in physical education.

The proportions of chairpersons/deans who rated cardio spinning courses providing health benefits were .02 (strongly disagree), .05 (disagree), .07 (neutral), .30 (agree), and .56 (strongly agree) as compared to faculty with .00 (strongly disagree), .00 (disagree), .03 (neutral), .32 (agree), and .65 (strongly agree). For values of cardio spinning, chairpersons'/deans' to faculty's proportional ratings consisted of .02 to .00 (strongly disagree), .02 to .00 (disagree), .12 to .03 (neutral), .23 to .42 (agree), and .61 to .55 (strongly agree). The proportional ratings of chairpersons/deans to faculty for cardio spinning courses contributing to student learning included .02 to .00 (strongly disagree), .02 to .05 (disagree), .07 to .08 (neutral), .35 to .32 (agree), and .54 to .55 (strongly agree). The frequency count and proportions of survey responses within Questions 5, 11, and 17 for cardio spinning between chairpersons/deans and faculty are shown in Table 11.

Table 11

Frequency Count and Proportions of Survey Responses within Questions 5, 11, and 17 for Cardio Spinning between Chairpersons/Deans (D) and Faculty (F)

Likert-type scale for cardio spinning		*Health Benefits*		*Values*		*Student Learning*	
		(D)	(F)	(D)	(F)	(D)	(F)
Strongly disagree (1)	Count	2	0	2	0	2	0
	Proportion	.02	.00	.02	.00	.02	.00
Disagree (2)	Count	4	0	2	0	2	6
	Proportion	.05	.00	.02	.00	.02	.05
Neutral (3)	Count	6	3	10	3	6	9
	Proportion	.07	.03	.12	.03	.07	.08
Agree (4)	Count	26	37	20	48	30	37
	Proportion	.30	.32	.23	.42	.35	.32
Strongly agree (5)	Count	48	75	52	64	46	63
	Proportion	.56	.65	.61	.55	.54	.55
Total	Count	86	115	86	115	86	115
	Proportion	1.00	1.00	1.00	1.00	1.00	1.00

For step aerobics, Pearson χ^2 tests showed a significant relationship exists for Survey Question 12 regarding values of step aerobics, χ^2 (4, N = 201) = 10.28, p = .036, as opposed to survey questions 6, χ^2 (4, N = 201) = 8.60, p = .072, and 18, χ^2 (4, N = 201) = 4.81, p = .308, relating to health benefits and student learning experience, respectively. The data analysis indicated a relationship exists statistically between participants' perceptions and values of step aerobics courses as compared to sport-related courses

offered in community colleges, which suggested chairpersons'/deans' and faculty's perceptions were dependent on their campus position in physical education.

The proportional ratings of chairpersons/deans to faculty for step aerobics courses providing health benefits were .02 to .00 (strongly disagree), .04 to .00 (disagree), .05 to .03 (neutral), .33 to .34 (agree), and .56 to .63 (strongly agree). For the values of step aerobics courses, chairpersons'/deans' to faculty's proportional ratings included .02 to .00 (strongly disagree), .02 to .00 (disagree), .07 to .03 (neutral), .28 to .44 (agree), and .61 to .53 (strongly agree). Chairpersons'/deans' to faculty's proportional ratings for step aerobics courses contributing to student learning were .02 to .00 (strongly disagree), .02 to .05 (disagree), .02 to .05 (neutral), .40 to .38 (agree), and .54 to .52 (strongly agree). The frequency count and proportions of survey responses within Questions 6, 12, and 18 for step aerobics between chairpersons/deans and faculty are shown in Table 12.

Table 12

Frequency Count and Proportions of Survey Responses within Questions 6, 12, and 18 for Step Aerobics between Chairpersons/Deans (D) and Faculty (F)

Likert-type scale for step aerobics		*Health Benefits*		*Values*		*Student Learning*	
		(D)	(F)	(D)	(F)	(D)	(F)
Strongly disagree (1)	Count	2	0	2	0	2	0
	Proportion	.02	.00	.02	.00	.02	.00
Disagree (2)	Count	4	0	2	0	2	6
	Proportion	.04	.00	.02	.00	.02	.05
Neutral (3)	Count	4	4	6	4	2	6
	Proportion	.05	.03	.07	.03	.02	.05
Agree (4)	Count	28	39	24	50	34	44
	Proportion	.33	.34	.28	.44	.40	.38
Strongly agree (5)	Count	48	72	52	61	46	59
	Proportion	.56	.63	.61	.53	.54	.52
Total	Count	86	115	86	115	86	115
	Proportion	1.00	1.00	1.00	1.00	1.00	1.00

Ancillary Data

In addition to statistical analysis, the researcher accessed the individual community colleges' online course catalogs from their respective websites to perform frequency count of the number of nontraditional physical activity courses offered in community colleges located in the Western region of the United States. The frequency count showed community colleges offer more yoga courses (141) than Pilates (83), tai chi

(71), cardio kickboxing (71), step aerobics (68), and cardio spinning (43). Table 13 shows general information regarding the current number of yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics courses offered in community colleges located in the western states.

Table 13

Number of Nontraditional Physical Activity Courses Offered in Community Colleges in the Western Region of the United States

State	*Yoga*	*Pilates*	*Tai Chi*	*Cardio Kickboxing*	*Cardio Spinning*	*Step Aerobics*
Alaska	2	1	1	1	1	0
Arizona	11	10	10	7	4	3
California	76	41	32	40	24	41
Colorado	8	5	5	1	2	5
Hawaii	0	0	0	0	0	0
Idaho	1	1	0	0	1	0
Montana	1	1	1	1	1	0
Nevada	2	0	1	0	0	0
New Mexico	9	8	4	6	4	6
Oregon	8	6	4	3	3	2
Utah	1	2	1	2	1	1
Washington	20	8	11	9	2	10
Wyoming	2	0	1	1	0	0
Total	141	83	71	71	43	68

Summary

An independent *t* test was used to determine whether the perceptions of chairpersons/deans and faculty differ regarding nontraditional physical activity courses providing similar health benefits, reflecting values, and contributing to students' learning experience as compared to sport-related courses offered in community colleges. The chi-square contingency table test was also utilized to test whether relationships or associations exist statistically among participant perceptions and the individual nontraditional physical activity courses. Results showed significant differences in means regarding cardio kickboxing, cardio spinning, and step aerobics courses providing similar health benefits as compared to sport-related courses, whereas no significant differences in means were found for all nontraditional physical activity courses reflecting similar values to sport-related courses.

Compared to sport-related courses, participant perceptions differed statistically for yoga courses contributing to students' learning experience; however, no significant differences were found for Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics courses. Associations existed statistically between participants' perceptions and yoga, Pilates, cardio spinning, and step aerobics courses but not for tai chi and cardio kickboxing courses. Chapter 5 will provide discussions of the statistical findings, recommendations for future studies and action, and a conclusion.

CHAPTER 5:

DISCUSSION, RECOMMENDATIONS, AND CONCLUSION

A liberal arts education needs to include opportunities for physical as well as intellectual development. A well-designed physical educational program can provide a foundation for a healthy, physically active lifestyle. Because some community college leaders may be reluctant to offer nontraditional physical activity courses on their respective campuses, this study addressed the problem by exploring the perceptions of chairpersons/deans and faculty in physical education regarding nontraditional physical activity courses as compared to sport-related courses offered in community college physical education programs. This study utilized theories of educational change as the conceptual framework because the intention was also to examine the potential shift from traditional to nontraditional curricula in community college physical education programs. A quantitative method with a cross-sectional design was used to collect ordinal data from an 18-item survey sent to chairpersons/deans and faculty in community college physical education programs located in 13 western states, including Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Although limited research studies on nontraditional physical activities in physical education programs emphasized the pre-collegiate level (Ballard & Chase, 2004; Dejager, 2006; Hedlund, 1990), they, along with theories of educational change (Fullan, 2007; Rowley & Sherman, 2001; Sarason, 1971; Schlechty, 1997), offered background information and ideas useful in generating key research questions. Four research

questions provided the guidelines for designing and creating the 18-item survey, which included the following:

1. To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding nontraditional physical activity courses providing similar health benefits as compared to sport-related courses offered in community colleges?
2. To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding the values of nontraditional physical activity courses as compared to sport-related courses in community colleges?
3. To what extent do chairpersons/deans and faculty in physical education differ in their perceptions regarding nontraditional physical activity courses contributing to students' learning experiences as compared to sport-related courses offered in community colleges?
4. To what extent do participants' perceptions relate to the individual physical activity courses offered in community colleges?

This chapter will discuss the findings, provide recommendations for future studies and action, explain social implications, and present the conclusion of the study.

Discussion of Findings

An 18-item survey was distributed via e-mail to 209 chairpersons/deans and 263 full-time faculty in community college physical education programs. Eighty-six chairpersons/deans and 115 faculty responded to the survey within 12 business days. The 18-item survey queried the participants for their perceptions regarding (a) health benefits

of nontraditional phyiscal activity courses, (b) values of nontraditional physical activity coures, and (c) contribution of nontraditional physical activity courses to students' learning experience. Research participants rated their perceptions on a 5-point Likert-type scale that included the terms strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). Independent *t* test and chi-square contingency table test were utilized to compare group means and determine associations between the participants' perceptions and the individual nontraditional physical activity courses, respectively. This section provides discussions of the findings germane to the participants' perceptions toward the individual nontraditional physical activity courses.

Yoga

Statistical results for yoga indicated a significant difference in means was found for yoga courses contributing to students' learning experience, which suggested chairpersons/deans favored yoga courses contributing to students' learning experience more than the faculty. Chairpersons'/deans' stronger perception toward a contribution to students' learning may depend on their administrative position in physical education because a significant association was found between participants' perceptions and yoga contributing to students' learning experience.

Although chairpersons'/deans' and faculty's perceptions did not differ statistically for health benefits and values of yoga courses, on average, they rated health benefits and values higher than 4 (agree), but less than 5 (strongly agree) on a Likert-type scale. The mean ratings, therefore, suggested chairpersons/deans and faculty, on average, agreed yoga courses provide similar health benefits to and reflect the values of sport-related

courses offered in community colleges. The participants' mean ratings may also depend on their campus position in physical education since signficant associations were also found between participants' perceptions and yoga courses germane to health benefits and values.

Chairpersons'/deans' and faculty's positive perceptions toward yoga courses may augment support for previous research studies related to yoga; for example, the nature of yoga's cognitively-based physical activities with repetitive, low-exertion rhythmical movements could enhance an individual's psychological wellness (Milligan, 2006; Netz & Lidor, 2003), along with improving muscular strength and endurance, flexibility, cardiorespiratory fitness, body composition, and pulmonary function in young adults (Tran, Holly, Lashbrook, & Amsterdam, 2001) and older populations (Chen, Tseng, Ting, & Huang, 2007). Milligan's action research concluded yoga represents a practice that teaches college campus members an alternative method to coping with stress.

The overall findings in this study and previous research studies regarding yoga indicate that community college administrators and curriculum leaders should consider the potential benefits for students enrolling and participating in yoga activities; therefore, implementing and offering more yoga courses could provide students with a holistic and innovative method to learn lifetime fitness. Currently, 141 of 266 community colleges in the western region of the United States offer yoga courses on their respective campuses as indicated in the frequency count listed in Table 13 found in chapter 4.

Pilates

In regard to Pilates, no significant differences in means were found for health benefits, values, and students' learning experience. The findings indicated chairpersons'/deans' and faculty's perceptions did not differ statistically regarding Pilates courses providing similar health benefits, values, and their contribution to students' learning experience, as compared to sport-related courses in community colleges. Chairpersons/deans and faculty, however, on average, rated health benefits, values, and contribution to students' learning experience higher than 4 (agree) but less than 5 (strongly agree) on a Likert-type scale, which suggested both groups, on average, agreed Pilates courses could provide a valuable physical activity course for community college students to learn and improve their physical health as compared to sport-related courses.

In contrast, significant associations were found for participants' perceptions and Pilates courses toward health benefits and their contribution to students' learning experience, but not for values of Pilates courses. The findings suggest participants' perceptions of Pilates courses providing similar health benefits and contributing to students' learning experience were dependent on their campus position in physical education, whereas chairpersons'/deans' and faculty's perceptions were independent of their role for values of Pilates courses.

Chairpersons'/deans' and faculty's overall perceptions may support the idea of Pilates courses benefiting community college students in terms of health benefits, values, and contribution to students' learning. Kloubec and Banks (2004) recommended the implementation of Pilates in the physical education environment to improve students'

health-related and performance-related fitness. Pilates-based exercises, in general, could strengthen an individual's spinal and joint mobility, propriceptive function, postural stability, balance, and coordination (Smith & Smith, 2005) as well as flexibility enhancement (Segal, Hein, & Basford, 2004). Roniger (2007) also suggested Pilates exercises may benefit individuals with hip or knee injuries and lower-back pain, as well as those who have severe conditions such as osteoporosis, multiple sclerosis, scoliosis, sciatica, or neural complications.

Based on the findings in this study, as well as those from previous studies relating to Pilates, community college administrators and curriculum leaders should consider implementing more Pilates courses on their respective campuses. Ancillary data analysis showed only 83 of 266 community colleges in the western region of the United States currently offer Pilates courses to community college students, as indicated in the frequency count listed in Table 13 found in chapter 4.

Tai Chi

Similar to Pilates, no significant differences in means were found for tai chi regarding health benefits, values, and its contribution to students' learning experience. Although chairpersons'/deans' and faculty's perceptions did not differ statistically for tai chi courses providing health benefits, values, and contribution to students' learning experience, as compared to sport-related courses offered in community colleges, the participants, on average, rated values and contribution to students' learning experience higher than 4 (agree), but less than 5 (strongly agree) on a Likert-type scale. The mean ratings, therefore, suggested chairpersons/deans and faculty, on average, agreed tai chi

courses could reflect similar values to sport-related courses, as well as contribute to students' learning experience in community college physical education programs.

On the other hand, chairpersons/deans and faculty, on average, rated health benefits of tai chi courses with mean values slightly less than 4 (neutral); thereby, indicating both groups neither agree nor disagree regarding tai chi courses providing similar health benefits, as compared to sport-related courses offered in community colleges. The neutral rating suggested both groups might not be familiar with, nor have acquired, sufficient experience with tai chi activities to provide an opinion germane to whether tai chi courses enhance physical and/or psychological health for community college students.

In contrast, no statistical association existed between participants' perceptions and tai chi courses providing health benefits, reflecting values, and contributing to students' learning experience. The findings suggested the participants' perceptions of tai chi courses were independent of their campus position in physical education; that is, there were no associations between the administrative or instructional position toward the perceptions of tai chi courses providing similar health benefits, reflecting values, and contributing to students' learning experience, as compared to sport-related courses offered in community colleges.

The overall findings may also suggest that, although tai chi is known for its slow and fluid body movements (Chen & Sherman, 2002; Crider & Klinger, 2000; Downing & Yan, 1998; Honda, 1995; Huang, 1993; Pang, 1987; Yan, 1995), some chairpersons/deans and faculty in physical education might lack experience with or

knowledge of tai chi exercise and, therefore, may require exposure to tai chi activities in order to gain a better understanding of tai chi's potential benefits for improving students from diverse populations. The uncertainty or unfamiliarity of tai chi might adversely affect the growth and expansion of tai chi courses on community college campuses. Currently, only 71 of 266 community colleges in the western region of the United States offer tai chi courses to community college students, as indicated in the frequency count listed in Table 13 found in chapter 4.

Previous research studies on tai chi have indicated tai chi exercises benefited the older adults or senior citizens (Audette, Jin, Newcomer, Stein, Duncan, & Frontera, 2006; Downing & Yan, 1998; Lin, Hwang, Wang, Chang, & Wolf, 2006; Motivala, Sollers, Thayer, & Irwin, 2006; Taylor-Piliae, Haskell, Stotts, Froelicher, 2006a; Taylor-Piliae, Haskell, Waters, Froelicher, 2006b; Wolf, O'Grady, Easley, Guo, Kressig, & Kutner, 2006). Downing and Yan reported senior citizens in the tai chi exercise group performed better on maintaining balance and motor control, as opposed to their counterparts in the traditional locomotor exercise group with walking and jogging. Cai (2000), on the other hand, concluded college students who participated in an 8-week tai-chi training course experienced a reduction in anxiety and reduction scores when compared to the control group. These previous research studies, therefore, suggest tai chi exercises and activities could provide a valuable curriculum for instructing adult learners in a lifetime fitness exercise.

Cardio Kickboxing

Statistical results showed a significant difference in means for cardio kickboxing as germane to health benefits, which suggested faculty favored cardio kickboxing courses providing health benefits more than chairpersons/deans. Although the perceptions of chairpersons/deans and faculty did not differ statistically regarding the values, and contribution to students' learning experience, the participants, on average, rated the values and contribution to students' learning higher than 4 (agree), but less than 5 (strongly agree) on the Likert-type scale. The mean ratings suggested both groups, on average, agreed that cardio kickboxing courses reflect similar values and contribute to students' learning experience, as compared to sport-related courses offered in community colleges.

Similar to the data reported for tai chi, statistical results indicated no significant associations were found between participants' perceptions and cardio kickboxing regarding health benefits, values, and contribution to students' learning experience. The findings suggested the participants' perceptions toward cardio kickboxing courses were independent of their campus position in physical education. The lack of statistical association might also suggest cardio kickboxing represents a new method of teaching physical activities to community college students and, thus, some chairpersons/deans and faculty might not possess adequate experience or knowledge of cardio kickboxing to form their opinions regarding its health benefits, values, and contribution to students' learning experience.

Previous research studies relating to cardio kickboxing proposed cardio kickboxing activities provide the ideal energy expenditure for weight management (Ergun, 2005) and that fitness boxing workouts may satisfy the criteria established by the American College of Sports Medicine for improving cardiorespiratory fitness (Kravitz, Green, Burkett, & Wongsathikum, 2003). Furthermore, the American Council on Exercise (2001) indicates that cardio kickboxing utilizes approximately 500 to 800 calories in a 60-minute bout of kickboxing activities, as opposed to 300 to 400 calories in step aerobics, in addition to helping to improve and maintain cardiovascular fitness,.

The overall perceptions of chairpersons/deans and faculty suggest cardio kickboxing courses may offer a valuable course for students to enhance their physcial wellness and, thus, community college administrators and curriculum leaders should integrate cardio kickboxing into the physical education program. Currently, only 71 of 266 community colleges in the western region of the United States offer cardio kickboxing courses, as indicated in the frequency count listed in Table 13 found in chapter 4.

Cardio Spinning

Statistical results for cardio spinning paralleled cardio kickboxing in that no significant differences in means were found for values and contribution to students' learning experience, whereas significant difference in means existed for health benefits. A statistical difference for health benefits indicated faculty favored cardio spinning courses providing similar health benefits more than chairpersons/deans. The findings suggested chairpersons/deans and faculty perceived health benefits of cardio spinning

differently, and their perception may depend on their campus position in physical education since a significant association was found between participants' perceptions and cardio spinning courses toward health benefits. Although no statistical differences were found for values and contribution to students' learning experience, chairpersons/deans and faculty, on average, rated values and contribution to students' learning experience higher than 4 (agree), but less than 5 (strongly agree) on a Likert-type scale. The high means of 4 indicated both groups, on average, agreed that cardio spinning courses could offer a valuable curriculum in contributing to students' learning experience as compared to sport-related courses.

Even though values of cardio spinning showed no statistical difference in means, a significant association was found, thereby, suggesting participants' perceptions of values in cardio spinning were dependent on their position in physical education. In contrast, no significant association existed for contribution to students' learning experience, which suggested the participants' perceptions were independent of their administrative or instructional campus position in physical education.

The overall perceptions of chairpersons/deans and faculty toward cardio spinning courses may support previous research studies in that cardio spinning may provide fitness gains for physically fit individuals (Battista, Foster, Andrew, Wright, Lucia, Alejandro, and Porcari, 2008; Caria, Tangianu, Concu, Crisafulli, & Mameli, 2007) as well as for sedentary adults (Ziemba, Chwalbinska-moneta, Kaciuba-Uscilko, Kruk, Krzeminski, Cybulski, & Nazar, 2003) and college students (Glaister, Stone, Stewart, Hughes, & Moir, 2007). For example, Caria et al. reported middle-aged practitioners increased in

mean power output, heart rate, and oxygen uptake in response to increasing exercise intensity, which ranged from moderate to very heavy. Battista et al. also reported similar findings in physiological responses of 20 healthy female participants who participated in indoor cycling classes in which participants improved in oxygen uptake and heart rate as the intensity levels increased during the exercise bouts.

The findings in this study, and previous research studies relating to cardio spinning, suggest community college students could benefit from cardio spinning exercises and activities; therefore, administrators and curriculum leaders should consider implementing and offering more cardio spinning courses on their respective campuses. Ancillary data showed only 43 of 266 community colleges in the western region of the United States currently offer cardio spinning courses, as indicated in the frequency count listed in Table 13 found in chapter 4.

Step Aerobics

Statistical results for step aerobics indicated a significant difference in means for health benefits, which suggested faculty favored step aerobics providing similar health benefits as compared to sport-related courses more than chairpersons/deans. Faculty's stronger perception of step aerobics providing health benefits may depend on their campus position in physical education; however, statistical results showed no association between participants' perceptions and health benefits.

Although the perceptions of chairpersons/deans and faculty did not differ statistically for step aerobics reflecting values and contributing to students' learning experience, both groups, on average, rated values and contribution to students' learning

experience higher than 4 (agree), but less than 5 (strongly agree) on a Likert-type scale. The mean ratings of step aerobics, therefore, suggested both groups, on average, agreed step aerobics courses could provide a valuable curriculum for community college students to learn an alternative method to enhance their physical wellness in physical education. Despite the participants' mean ratings of agreement, no significant association was found between participants' perceptions contribution of students' learning, which indicated participants' perceptions were independent of their position in physical education. On the other hand, a significant association existed between the participants' perceptions and values of step aerobics; thereby, suggesting chairpersons'/deans' perceptions were dependent on their campus role as either an administrator or instructor.

Previous findings on step aerobics indicated participants performing step routine on the 10-inch platform height elicited the highest mean intensity for oxygen uptake and mean percent heart rate (Sutherland, Wilson, Aitchison, & Grant, 1999), while other research studies concluded the combination of exercise movements in bench-step aerobics could offer step practitioners achievements in maximal physiological responses and muscular strength (Kraemer, Keuning, Ratamess, Volek, McCormick, Bush, Nindl, Gordon, Mazzetti, Newton, Gomez, Wickham, Rubin, & Hakkinen, 2001; Darby, Marsh, Shewokis, & Pohlman, 2007). Step aerobics exercises and activities have also been shown to reduce the levels of anxiety (Hale & Raglin, 2002) and lipid (Kin-Isler, Kosar, & Korkusuz, 2001) in course participants.

The findings in this study, and previous research studies related to step aerobics, suggest community college administrators and curriculum leaders should consider

creating and implementing step aerobics courses because the curriculum could offer community college students an alternative method to learning lifetime-fitness skills other than sport-related courses. Ancillary data analysis showed only 68 of 266 community colleges in the western region of the United States currently offer step aerobics courses, as indicated in the frequency count listed in Table 13 found in chapter 4.

Recommendations for Action

The findings in this study support the idea of integrating and expanding nontraditional physical activity courses on community college campuses. In other words, the findings point to a need for change in community college physical education programming so that it can better promote and offer nontraditional physical activity courses to students from diverse backgrounds. However, initiating educational change will require community college administrators and curriculum leaders to embrace the idea of implementing nontraditional courses such as yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics into the physical education curricula. Schlechty (1997) suggested educational leaders who intend to promote educational change should apply beliefs, values, mission, goals, and action in answering four key questions: (a) why is change needed?, (b) what kind of change is needed and what will it mean for us when the change comes about?, (c) is what we are being asked to do really possible?, and "what skills do we need and how will they be developed" (p. 208)? By answering these questions, community college administrative and curriculum leaders can initiate, implement, and institutionalize (Fullan, 2007) nontraditional physical activity courses on their respective campuses.

Another recommendation is that community college physical education programs should collect demographic data on the student populations who enroll in nontraditional physical activity courses. These data will provide information regarding the trend and enrollment patterns and, therefore, offer support for chairpersons, deans, and faculty to create and implement additional nontraditional physical activity courses on their respective campuses. If enrollment patterns indicate that more students tend to enroll in nontraditional physical activity courses than in some of the sport-related courses, community college administrators and curriculum leaders should increase their efforts to change the physical education curricula by replacing low-enrollment sport-related courses with high-enrollment nontraditional courses.

Community college administrators and curriculum development leaders should initiate the process of curricular change by working with chairpersons, deans, and faculty in physical education programs to reevaluate the current curricula and student enrollment patterns in physical education. Kirk and Macdonald (2001) suggested physical educators should assert their "voice" (p. 551) and demonstrate ownership of curriculum change; that is, teachers should assert themselves by expressing the perpetual curriculum problems that need reformation. If faculty in community college physical education programs assert a need for curriculum change that favors the inclusion of nontraditional physical activity courses, community college administrators and curriculum leaders may increase their efforts to implement the change. Consensus change (Rowley & Sherman, 2001) or shared governance among educational leaders in community colleges represents an effective decision-making method because it provides administrators, curriculum

leaders, and physical education representatives an opportunity to contribute toward educational change.

Furthermore, Chen and Ennis (2004) argued physical education in the United States needs curriculum reform because of the increasing cases of obesity and obesity-related diseases caused by sedentary lifestyles. Thus, instead of acknowledging that lack of physical activity contributes to health problems in the general population (Insel & Roth, 2008), community colleges must be proactive leaders in educating students regarding alternative methods that can sustain their physical wellness other than sport-related courses. Because traditional physical activities require students to demonstrate specialized or prerequisite skills such as shooting a basketball or swinging a baseball bat, Hedlund (1990) suggested these activities may decrease or discourage student participation. Similarly, Ballard and Chase (2004) argued traditional team sports emphasize winning and, therefore, some participants may develop an adverse experience because of the competitive nature of traditional team sports, a concept that may be inimical to their own native cultures. Native Americans may represent an example of a culture that abstains from participating in traditional team sports since 10 out of 17 tribal community colleges on the western region of the United States do not offer physical education courses to students and the surrounding community. Instead of featuring/promoting/providing only sport-related courses, curriculum development in physical education should aim to promote lifetime fitness activities to enhance students' interest in learning the benefits of engaging in physical activity. In other words, if community colleges purport to address the needs of their communities, the lessons in the

physical education curriculum should reflect individuals' diverse activity demands, needs, and interests. For these reasons, educational change is essential in community college physical education programs to implement curricula that include nontraditional physical activity courses to satisfy students' diverse interests and needs in physical education.

Social Change Implications

Educational change in physical education curricula can also lead to positive social changes on community college campuses through new faculty recruitment, faculty development programs, an updated image of physical education in community colleges, and alternative curricula for physical wellness. Because several of the nontraditional physical activity courses may require professional training to teach them, chairpersons or deans in physical education should begin to recruit faculty candidates who have certifications in yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and/or step aerobics. To meet the needs for instructors with needed credentials, candidates with the most experience in instructing one or more of the nontraditional physical activity courses could be favored over candidates with few or no prior experience in these nontraditional physical activity courses.

In addition, potential student demands for more nontraditional physical activity courses should prompt the implementation of a faculty development program on campuses so current and future faculty in physical education can be trained in the proper techniques to instruct specific nontraditional physical activity courses. Faculty development programs should also encourage faculty members to embrace new ideas to

instruct lifetime fitness courses rather than or in addition to the traditional focus on sport-related courses. An updated faculty development program would further stimulate faculty members to design and integrate several nontraditional physical activity courses into their physical education curricula.

The potential shift in paradigm for more nontraditional physical activity courses can change the image of physical education on community college campuses. Community college students may often link physical education curricula to sport-related activities, such as golf, basketball, volleyball, racquetball, bowling, tennis, and weight training when they consider enrolling in a physical education course; therefore, by introducing and integrating more nontraditional physical activity courses on campus, campus administrators will change students' perceptions of physical education from sport-related courses designed for athletic individuals to a discipline that teaches and equips them for lifetime fitness.

The change in physical education curriculum to include more nontraditional courses can potentially reduce or replace some sport-related courses as well as eliminate the traditional teaching of skill developments. However, community college leaders should recognize and understand that nontraditional physical activity courses can also offer students similar opportunities to learn and develop sport-related skills, such as leadership and teamwork, through group activities and projects. For instance, although yoga courses involve individual efforts to perform certain exercise movements, instructors can integrate lessons that require students to work in groups or lead a group in class activities.

The image change will also convince community college students that nontraditional physical activity courses can provide enhancements to their physical wellness as well improvements in the health-related components of physical fitness, such as cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition (Insel & Roth, 2008; Fahey, Insel, & Roth, 2008). Physical enhancements could encourage students to sustain a healthy lifestyle by eating well, exercising regularly, and avoiding harmful habits. The impact of these nontraditional physical activity courses will also influence positive changes to students' emotional wellness, interpersonal wellness, intellectual wellness, and spiritual wellness. Consequently, these lifetime fitness courses can teach students the proper techniques to balance their life both physically and psychologically.

Recommendations for Future Study

Future studies should pursue the following:

1. Collect similar data in the Midwestern and eastern regions with the inclusion of research regarding the potential effects of nontraditional physical activity courses on students' skill developments, such as organization, leadership, and team work.
2. Report quantitative data on student demographics and student enrollment patterns in yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics.
3. Perform action research study by integrating the concepts of nontraditional physical activity courses on a community college campus into current curriculum planning.

4. Perform a pre- and post test on students enrolling in a nontraditional physical activity course at a community college to compare their perceptual changes, if any, throughout the learning experience.
5. Interview chairpersons/deans and full-time faculty in community college physical education programs to probe their perceptions of nontraditional physical activity courses and how these courses provide lifetime fitness activities for the students.
6. Interview students who often enroll in nontraditional physical activity courses to gather qualitative data on these courses. The data may provide a better understanding of students' attitudes and also offer insights regarding potential relationships between nontraditional physical education courses and student retention.

Interviews, in conjunction with empirical data on student demographics and student enrollment patterns, may provide robust data on the current status of nontraditional physical activity courses in community colleges. Interviews with open-ended questions may also offer information on possible social changes and/or future trends toward the inclusion of more nontraditional physical activity courses in community colleges. Open-ended questions should include but not be limited to the following:

1. What is the physical education program doing to promote nontraditional physical activity courses?
2. What benefit would nontraditional physical activity courses have on physical education programs in community colleges?

3. What health benefits would students gain from enrolling and participating in nontraditional physical activity courses on community college campuses?
4. What can these nontraditional physical activity courses offer students besides fitness training and health improvements?
5. How would nontraditional physical activity courses affect the teaching of leadership or team-building skills?
6. What is the future trend of these nontraditional physical activity courses in community colleges?
7. How would implementing more nontraditional physical activity courses affect faculty recruitment?

Conclusion

This quantitative study reports the findings regarding the perceptions of chairpersons/deans and faculty toward nontraditional physical activity courses offered in community colleges. The researcher hopes that the information will encourage community college administrators and curriculum leaders to work with chairpersons, deans, and faculty to reevaluate their current curricula in physical education in order to implement changes that favor the inclusion of additional courses in yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics on their respective campuses. The data analysis points to the perceptions of college leaders and faculty as robust indicators that nontraditional physical activity courses are essential to expand and update community college physical education programs. It is hoped that by incorporating nontraditional physical activity courses, community college students from diverse

backgrounds might have new opportunities to participate in physical activities and learn innovative methods to improve their physical wellness, without a concern for the competitive nature of sport-related courses in physical education. In other words, nontraditional physical activity courses represent courses that teach and promote lifetime fitness skills and may provide similar health benefits, reflect values, and contribute to students' learning experience in ways that are comparable to sport-related courses.

Community colleges may also benefit from these nontraditional physical activity courses because they may provide new ideas for physical education programs to expand their curricula, and possibly increase student enrollments and retention in physical education. The potential increases in student enrollment and retention will indicate that community colleges are being proactive leaders in changing the physical education curricula to continue promoting lifetime fitness for students with diverse interests and needs. The potential shift in paradigm, therefore, could contribute to social change in community college physical education programs by generating innovative ideas about the activities that teach ways to promote and maintain wellness. By increasing and changing the mix of courses, it is hoped that program expansion, the faculty development program, and faculty recruitment will also benefit, all of which constitute strong, positive social changes for community colleges. The impact of these nontraditional physical activity courses on community college campuses can positively influence students' behavioral changes toward embracing and sustaining a healthy lifestyle that incorporates habits such as eating well, exercising regularly, and avoiding harmful habits. In essence, by including

the physical education programs analyzed in this study, community college leaders can teach proper techniques that will foster lifelong wellness and balance.

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APPENDIX A:

SURVEY QUESTIONS

Part I: Health Benefits of Nontraditional Physical Activity Courses

1. Yoga courses provide similar health benefits as sport-related courses offered in community colleges:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

2. Pilates courses provide similar health benefits as sport-related courses offered in community colleges:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

3. Tai chi courses provide similar health benefits as sport-related courses offered in community colleges:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

4. Cardio kickboxing courses provide similar health benefits as sport-related courses offered in community colleges:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

5. Cardio spinning courses provide similar health benefits as sport-related courses offered in community colleges:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

6. Step aerobics courses provide similar health benefits as sport-related courses offered in community colleges:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

Part II: Values of Nontraditional Physical Activity Courses

7. Yoga courses satisfy the values of physical education in community colleges as compared to sport-related courses:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

8. Pilates courses satisfy the values of physical education in community colleges as compared to sport-related courses:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

9. Tai chi courses satisfy the values of physical education in community colleges as compared to sport-related courses:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

10. Cardio kickboxing courses satisfy the values of physical education in community colleges as compared to sport-related courses:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

11. Cardio spinning courses satisfy the values of physical education in community colleges as compared to sport-related courses:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

12. Step aerobics courses satisfy the values of physical education in community colleges as compared to sport-related courses:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

Part III: Contribution of Nontraditional Physical Activity Courses to Students' Learning Experience

13. Yoga courses contribute to students' learning experiences in physical education as compared to sport-related courses offered in community colleges:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

14. Pilates courses contribute to students' learning experiences in physical education as compared to sport-related courses offered in community colleges:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

15. Tai chi courses contribute to students' learning experiences in physical education as compared to sport-related courses offered in community colleges:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

16. Cardio kickboxing courses contribute to students' learning experiences in physical education as compared to sport-related courses offered in community colleges:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

17. Cardio spinning courses contribute to students' learning experiences in physical education as compared to sport-related courses offered in community colleges:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

18. Step aerobics courses contribute to students' learning experiences in physical education as compared to sport-related courses offered in community colleges:

(1) strongly disagree
(2) disagree
(3) neutral
(4) agree
(5) strongly agree

APPENDIX B:

ORGANIZATION OF SURVEY RESPONSES

Survey Responses (Chairpersons/Deans)							
Questions	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Rating Average	Response Count
1	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
2	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
3	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
4	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
5	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
6	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
7	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
8	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
9	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
10	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
11	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
12	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
13	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
14	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
15	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
16	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
17	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
18	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0

Survey Responses (Full-Time Faculty)							
Questions	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Rating Average	Response Count
1	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
2	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
3	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
4	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
5	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
6	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
7	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
8	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
9	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
10	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
11	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
12	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
13	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
14	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
15	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
16	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
17	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
18	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0

APPENDIX C:

STANDARDIZED E-MAIL MESSAGE TO CHAIRPERSONS/DEANS

Date:

Dear _____:

You are invited to take part in a research study regarding the effects of nontraditional physical education courses in community colleges. You were selected for the study based on your current position and knowledge of the subject matter.

The purpose of this survey is to collect feedback from chairpersons/deans in community college physical education programs regarding nontraditional physical activity courses. Nontraditional physical activity is defined as noncompetitive or holistic physical training that requires minimal or no athletic skills and abilities in courses such as yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics. Even though some community college physical education programs may offer several nontraditional courses, currently there is no empirical evidence to show the potential effects of these types of courses in community colleges. Therefore, your survey responses and participation will provide the first empirical data collected in community colleges regarding the perceptions of nontraditional physical activity courses. All participants' survey responses will remain anonymous and will be saved in a secure website accessible only to the researcher. An informed consent form is provided to you as an attachment in which your signature is not required because of the anonymity of your participation.

Please note that this survey is being conducted as part of a doctoral dissertation at Walden University.

Directions: Please click on the link below to begin the survey. The link will open the survey in a new Internet window. This 18-item survey consists of a Likert-type scale rating. The survey requires approximately 5 minutes of your time. Upon completing the survey, please click on the icon "Done" (located at the bottom of the survey) to submit your responses. Thank you for participating.

(LINK TO SURVEY)

STANDARDIZED E-MAIL MESSAGE TO FULL-TIME FACULTY

Date:

Dear _____:

You are invited to take part in a research study regarding the potential contribution of nontraditional physical education courses in community colleges. You were selected for the study based on your current position and knowledge of the subject matter.

The purpose of this survey is to collect feedback from full-time faculty in community college physical education program regarding nontraditional physical activity courses. Nontraditional physical activity is defined as noncompetitive or holistic physical training that requires minimal or no athletic skills and abilities in courses such as yoga, Pilates, tai chi, cardio kickboxing, cardio spinning, and step aerobics. Even though some community college physical education programs may offer several nontraditional courses, currently there is no empirical evidence to show the potential effects of these types of courses in community colleges. Therefore, your survey responses and participation will provide the first empirical data collected in community colleges regarding the perceptions of nontraditional physical activity courses. All participants' survey responses will remain anonymous and will be saved in a secure website accessible only to the researcher. An informed consent form is provided to you as an attachment in which your signature is not required because of the anonymity of your participation.

Please note that this survey is being conducted as part of a doctoral dissertation at Walden University.

Directions: Please click on the link below to begin the survey. The link will open the survey in a new Internet window. This 18-item survey consists of a Likert-type scale rating. The survey requires approximately 5 minutes of your time. Upon completing the survey, please click on the icon "Done" (located at the bottom of the survey) to submit your responses. Thank you for participating.

(LINK TO SURVEY)

APPENDIX D:

LIST OF PUBLIC COMMUNITY COLLEGES IN THE U.S. WESTERN REGION

Alaska

- Ilisagvik College
- University of Alaska-Anchorage *(2-year campuses)*
  - Chugiak-Eagle River campus
  - Kenai Peninsula College
  - Kodiak College
  - Matanuska-Susitna College
  - Prince William Sound Community College
- University of Alaska-Fairbanks *(2-year campuses)*
  - Chukchi campus
  - Kuskokwim campus
  - Northwest campus
  - Tanana Valley campus
- University of Alaska-Southeast *(2-year campuses)*
  - Ketchikan
  - Sitka

Arizona

- Arizona Western College
- Central Arizona College
- Cochise College
- Coconino Community College
- Eastern Arizona College
- Maricopa Community College District
  - Chandler-Gilbert Community College
  - Estrella Mountain Community College
  - GateWay Community College
  - Glendale Community College
  - Mesa Community College
  - Paradise Valley Community College
  - Phoenix College
  - Rio Salado Community College
  - Scottsdale Community College
  - South Mountain Community College
- Mohave Community College
- Northland Pioneer College
- Pima Community College
- Tohono O'odham Community College

- Yavapai College

California

- Allan Hancock College
- Antelope Valley College
- Barstow Community College
- Brooks College
- Butte College
- Cabrillo College
- Cerritos College
- Chabot-Las Positas Community College District
    - Chabot College
    - Las Positas College
- Chaffey College
- Citrus College
- City College of San Francisco
- Coast Community College District
    - Coastline Community College
    - Golden West College
    - Orange Coast College
- College of Marin
- College of the Canyons
- College of the Desert
- College of the Redwoods
- College of the Sequoias
- College of the Siskiyous
- Contra Costa Community College District
    - Contra Costa College
    - Diablo Valley College
    - Los Medanos College
- Copper Mountain College
- Cuesta College
- El Camino College
- Feather River College
- Foothill-De Anza Community College District
    - De Anza College
    - Foothill College
- Gavilan College
- Glendale Community College
- Grossmont-Cuyamaca Community College District
    - Cuyamaca College
    - Grossmont College

- Hartnell College
- Imperial Valley College
- Kern Community College District
    - Bakersfield College
    - Cerro Coso Community College
    - Porterville College
- Lake Tahoe Community College
- Lassen College
- Long Beach City College
- Los Angeles Community College District
    - East Los Angeles College
    - Los Angeles City College
    - Los Angeles Harbor College
    - Los Angeles Mission College
    - Los Angeles Pierce College
    - Los Angeles Southwest College
    - Los Angeles Trade-Technical College
    - Los Angeles Valley College
    - West Los Angeles College
- Los Rios Community College District
    - American River College
    - Cosumnes River College
    - Folsom Lake College
    - Sacramento City College
- Marymount College
- Mendocino College
- Merced College
- MiraCosta College
- Monterey Peninsula College
- Mount San Antonio College
- Mount San Jacinto College
- Napa Valley College
- North Orange County Community College District
    - Cypress College
    - Fullerton College
- Ohlone College
- Palo Verde College
- Palomar College
- Pasadena City College
- Peralta Community College District
    - Berkeley City College
    - College of Alameda
    - Laney College
    - Merritt College

- Rancho Santiago Community College District
    - Santa Ana College
    - Santiago Canyon College
- Rio Hondo College
- Riverside Community College
- San Bernardino Community College District
    - Crafton Hills College
    - San Bernardino Valley College
- San Diego Community College District
    - San Diego City College
    - San Diego Mesa College
    - San Diego Miramar College
- San Joaquin Delta College
- San José-Evergreen Community College District
    - Evergreen Valley College
    - San José City College
- San Mateo County Community College District
    - Cañada College
    - College of San Mateo
    - Skyline College
- Santa Barbara City College
- Santa Monica College
- Santa Rosa Junior College
- Shasta College
- Sierra College
- Solano Community College
- South Orange County Community College District
    - Irvine Valley College
    - Saddleback College
- Southwestern College
- State Center Community College District
    - Fresno City College
    - Reedley College
- Taft College
- Ventura County Community College District
    - Moorpark College
    - Oxnard College
    - Ventura College
- Victor Valley College
- West Hills Community College
- West Valley-Mission College District
    - Mission College
    - West Valley College
- Yosemite Community College District

    - Columbia College
    - Modesto Junior College
- Yuba Community College District
    - Clear Lake Community College
    - Woodland Community College
    - Yuba College

Colorado

- Aims Community College
- Arapahoe Community College
- Colorado Mountain College
- Colorado Northwestern Community College
- Community College of Aurora
- Community College of Denver
- Front Range Community College
- Lamar Community College
- Morgan Community College
- Northeastern Junior College
- Otero Junior College
- Pikes Peak Community College
- Pueblo Community College
- Red Rocks Community College
- Trinidad State Junior College

Hawaii

- Transpacific Hawaii College
- University of Hawaii System *(2-year campuses)*
    - Hawaii Community College
    - Honolulu Community College
    - Kapi'olani Community College
    - Kauai Community College
    - Leeward Community College
    - Maui Community College
    - Windward Community College

Idaho Community

- College of Southern Idaho
- Eastern Idaho Technical College
- North Idaho College

Montana

- Blackfeet Community College
- Chief Dull Knife College
- Dawson Community College
- Flathead Valley Community College
- Fort Belknap College
- Fort Peck Community College
- Little Big Horn College
- Miles Community College
- Montana State University System *(2-year campuses)*
    - Billings College of Technology
    - Great Falls College of Technology
- Stone Child College
- University of Montana System *(2-year campuses)*
    - Helena College of Technology
    - Missoula College of Technology
    - Montana Tech College of Technology (Butte)

Nevada

- College of Southern Nevada
- Truckee Meadows Community College
- Western Nevada College

New Mexico

- Central New Mexico Community College
- Clovis Community College
- Luna Community College
- Mesalands Community College
- New Mexico Junior College
- New Mexico Military Institute
- New Mexico State University *(2-year campuses)*
    - Alamogordo
    - Carlsbad
    - Doña Ana Community College
    - Grants
- Northern New Mexico College
- San Juan College
- Santa Fe Community College
- Southwestern Indian Polytechnic Institute
- University of New Mexico *(2-year campuses)*
    - Gallup

  - Los Alamos
  - Taos
  - Valencia

Oregon

- Blue Mountain Community College
- Central Oregon Community College
- Chemeketa Community College
- Clackamas Community College
- Clatsop Community College
- Columbia Gorge Community College
- Klamath Community College
- Lane Community College
- Linn-Benton Community College
- Mount Hood Community College
- Oregon Coast Community College
- Portland Community College
- Rogue Community College
- Southwestern Oregon Community College
- Tillamook Bay Community College
- Treasure Valley Community College
- Umpqua Community College

Utah

- College of Eastern Utah
- Salt Lake City Community College
- Snow College

Washington

- Bellevue Community College
- Bellingham Technical College
- Big Bend Community College
- Cascadia Community College
- Centralia College
- Clark College
- Columbia Basin College
- Community Colleges of Spokane
  - Institute for Extended Learning
  - Spokane Community College
  - Spokane Falls Community College
- Edmonds Community College

- Everett Community College
- Grays Harbor College
- Green River Community College
- Highline Community College
- Lake Washington Technical College
- Lower Columbia College
- Northwest Indian College
- Olympic College
- Peninsula College
- Pierce College
- Renton Technical College
- Seattle Community College District
    - North Seattle Community College
    - Seattle Central Community College
    - Seattle Vocational Institute
    - South Seattle Community College
- Shoreline Community College
- Skagit Valley College
- South Puget Sound Community College
- Tacoma Community College
- Walla Walla Community College
- Wenatchee Valley College
- Whatcom Community College
- Yakima Valley Community College

Wyoming

- Wyoming Community College Commission
    - Casper College
    - Central Wyoming College
    - Eastern Wyoming College
    - Laramie County Community College
    - Northwest College
    - Sheridan College *(Northern Wyoming Community College District)*
    - Western Wyoming Community College

APPENDIX E:

ORGANIZATION OF DESCRIPTIVE STATISTICS

Descriptive Statistics for Survey Responses (Chairpersons/Deans)						
Questions	N	Mean	Median	Mode	SD	Variance
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						

Descriptive Statistics for Survey Responses (Full-Time Faculty)						
Questions	N	Mean	Median	Mode	SD	Variance
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						

APPENDIX F:

CONTINGENCY TABLES

Contingency Table of Chairpersons'/Deans' and Faculty's Perceptions of Yoga

	Groups		
Likert-scale Ratings for **Yoga**	Chairpersons/Deans	Faculty	Total
Strong disagree (1)			
Disagree (2)			
Neutral (3)			
Agree (4)			
Strongly agree (5)			
Total			

Contingency Table of Chairpersons'/Deans' and Faculty's Perceptions of Pilates

	Groups		
Likert-scale Ratings for **Pilates**	Chairpersons/Deans	Faculty	Total
Strong disagree (1)			
Disagree (2)			
Neutral (3)			
Agree (4)			
Strongly agree (5)			
Total			

Contingency Table of Chairpersons'/Deans' and Faculty's Perceptions of Tai Chi

	Groups		
Likert-scale Ratings for **Tai Chi**	Chairpersons/Deans	Faculty	Total
Strong disagree (1)			
Disagree (2)			
Neutral (3)			
Agree (4)			
Strongly agree (5)			
Total			

Contingency Table of Chairpersons'/Deans' and Faculty's Perceptions of Cardio Kickboxing

	Groups		
Likert-scale Ratings for **Cardio Kickboxing**	Chairpersons/Deans	Faculty	Total
Strong disagree (1)			
Disagree (2)			
Neutral (3)			
Agree (4)			
Strongly agree (5)			
Total			

Contingency Table of Chairpersons'/Deans' and Faculty's Perceptions of Cardio Spinning

	Groups		
Likert-scale Ratings for **Cardio Spinning**	Chairpersons/Deans	Faculty	Total
Strong disagree (1)			
Disagree (2)			
Neutral (3)			
Agree (4)			
Strongly agree (5)			
Total			

Contingency Table of Chairpersons'/Deans' and Faculty's Perceptions of Step Aerobics

	Groups		
Likert-scale Ratings for **Step Aerobics**	Chairpersons/Deans	Faculty	Total
Strong disagree (1)			
Disagree (2)			
Neutral (3)			
Agree (4)			
Strongly agree (5)			
Total			

APPENDIX G:

CONSENT FORM

(CHAIRPERSONS/DEANS)

You are invited to take part in a research study regarding the potential contribution of nontraditional physical education courses in community colleges. You were chosen for the study because of your expertise and knowledge of the subject. Please read this form and ask any questions you have before agreeing to be part of the study.

This study is being conducted by a researcher named Long Nguyen, who is a doctoral student at Walden University.

Background Information:
The purpose of this proposed study is to explore the perceptions of chairpersons/deans and faculty in physical education regarding nontraditional physical activity courses as compared to sport-related courses offered in community college physical education programs.

Procedures:
If you agree to be in this study, you will be asked to answer a 18-item survey questionnaire.

Voluntary Nature of the Study:
Your participation in this study is voluntary. This means that everyone will respect your decision of whether or not you want to be in the study. No one at Walden University will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. If you feel stressed during the study you may stop at any time. You may skip any questions that you feel are too personal.

Risks and Benefits of Being in the Study:
Your survey responses and participation will provide the first empirical data to explain the perceptions of nontraditional physical activity courses in community colleges. All participants' survey responses will remain anonymous and saved in a secure website accessible only to the researcher.

Compensation:
No compensation will be provided.

Confidentiality:
Any information you provide will be kept anonymous. The researcher will not use your information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in any reports of the study.

Contacts and Questions:
The researcher's name is Long Nguyen. The researcher's faculty advisor is Dr. Karin Treiber. You may ask any questions you have now. Or if you have questions later, you may contact the researcher via long.nguyen@waldenu.edu or the advisor at karin.treiber@waldenu.edu. If you want to talk privately about your rights as a participant, you may call Dr. Leilani Endicott. She is the Director of the Research Center at Walden University. Her phone number is 1-800-925-3368, extension 1210.

If you agree to participate in the study as described above, please click here to begin the survey:
(Link to Survey)

(FULL-TIME FACULTY)

You are invited to take part in a research study regarding the potential contribution of nontraditional physical education courses in community colleges. You were chosen for the study because of your expertise and knowledge of the subject. Please read this form and ask any questions you have before agreeing to be part of the study.

This study is being conducted by a researcher named Long Nguyen, who is a doctoral student at Walden University.

Background Information:
The purpose of this proposed study is to explore the perceptions of chairpersons/deans and faculty in physical education regarding nontraditional physical activity courses as compared to sport-related courses offered in community college physical education programs.

Procedures:
If you agree to be in this study, you will be asked to answer a 18-item survey questionnaire.

Voluntary Nature of the Study:
Your participation in this study is voluntary. This means that everyone will respect your decision of whether or not you want to be in the study. No one at Walden University will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. If you feel stressed during the study you may stop at any time. You may skip any questions that you feel are too personal.

Risks and Benefits of Being in the Study:
Your survey responses and participation will provide the first empirical data to explain the perceptions of nontraditional physical activity courses in community colleges. All participants' survey responses will remain anonymous and saved in a secure website accessible only to the researcher.

Compensation:
No compensation will be provided.

Confidentiality:
Any information you provide will be kept anonymous. The researcher will not use your information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in any reports of the study.

Contacts and Questions:
The researcher's name is Long Nguyen. The researcher's faculty advisor is Dr. Karin Treiber. You may ask any questions you have now. Or if you have questions later, you may contact the researcher via long.nguyen@waldenu.edu or the advisor at karin.treiber@waldenu.edu. If you want to talk privately about your rights as a participant, you may call Dr. Leilani Endicott. She is the Director of the Research Center at Walden University. Her phone number is 1-800-925-3368, extension 1210.

If you agree to participate in the study as described above, please click here to begin the survey:
(Link to Survey)

APPENDIX H:

RAW DATA

Chairpersons/Deans

Participant	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**
	Response	Response	Response	Response	Response	Response	Response	Response
1	4	4	3	4	4	4	3	3
2	5	5	5	5	5	5	5	5
3	4	4	4	5	5	5	5	4
4	5	5	4	5	5	5	5	5
5	4	4	3	4	5	5	5	5
6	4	4	4	3	4	4	5	5
7	4	4	4	4	4	4	4	4
8	4	4	4	5	5	5	5	5
9	4	4	4	4	4	4	5	5
10	4	4	4	5	5	5	4	4
11	5	5	4	5	5	5	4	4
12	4	4	4	3	4	4	5	5
13	4	4	4	4	4	4	4	4
14	2	2	2	4	4	3	4	4
15	5	5	5	5	5	5	5	5
16	4	4	4	4	4	4	4	4
17	4	4	4	5	5	5	4	4
18	4	4	4	2	2	2	4	4
19	5	5	5	5	5	5	5	5
20	4	4	4	4	4	4	5	5
21	5	5	5	5	5	5	5	5
22	4	4	4	5	5	5	4	4
23	4	4	4	5	5	4	5	5
24	5	5	5	5	3	5	5	5
25	5	5	5	5	5	5	5	5
26	5	5	5	5	5	5	5	5
27	5	5	3	3	5	5	5	5
28	4	4	4	5	5	5	5	5
29	1	1	1	1	1	1	1	1
30	5	5	5	5	5	5	5	5
31	5	5	5	5	5	5	5	5
32	5	5	5	5	5	5	5	5
33	5	5	4	5	5	5	5	5
34	5	5	5	5	5	5	5	5
35	4	4	4	5	5	5	5	4
36	4	4	4	4	4	4	4	4
37	4	4	4	5	5	5	4	2
38	5	5	5	5	5	5	5	5
39	4	4	4	5	5	5	4	2

40	5	5	5	5	5	5	5	5
41	4	4	3	4	3	4	4	4
42	5	5	5	5	5	5	5	5
43	5	5	5	5	5	5	5	5
44	4	4	4	5	5	5	5	5
45	5	5	5	5	5	5	5	5
46	4	4	4	4	4	4	4	4
47	5	5	5	5	5	5	5	5
48	5	5	5	5	5	5	5	5
49	5	5	5	5	3	5	5	5
50	4	4	3	4	4	4	3	3
51	2	2	2	2	2	2	5	5
52	5	5	5	5	5	5	5	5
53	4	4	4	4	4	4	4	4
54	1	1	1	1	1	1	1	1
55	4	4	3	4	5	5	5	5
56	4	4	2	4	3	3	4	4
57	5	5	4	5	5	5	4	4
58	4	4	4	5	5	5	4	4
59	4	4	4	4	4	4	4	4
60	4	4	4	4	4	4	5	5
61	5	5	5	5	5	5	5	5
62	4	4	4	5	5	5	4	4
63	4	4	4	4	4	4	4	4
64	5	5	5	5	5	5	5	5
65	5	5	3	3	5	5	5	5
66	4	4	3	4	3	4	4	4
67	4	4	4	4	4	4	5	5
68	4	4	4	5	5	4	5	5
69	5	5	5	5	5	5	5	5
70	2	2	3	4	4	4	4	4
71	5	5	5	5	5	5	5	5
72	4	4	4	5	5	5	4	4
73	5	5	2	4	4	4	5	4
74	2	2	2	4	4	3	4	4
75	4	4	4	2	2	2	4	4
76	5	5	2	4	4	4	5	4
77	4	4	4	4	4	4	5	5
78	4	4	4	5	5	5	5	5
79	5	5	5	5	5	5	5	5
80	2	2	3	4	4	4	4	4
81	2	2	2	2	2	2	5	5
82	5	5	5	5	5	5	5	5
83	4	4	4	4	4	4	4	4
84	4	4	4	4	4	4	4	4
85	4	4	4	4	4	4	5	5
86	4	4	2	4	3	3	4	4

Participant	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
	Response	Response	Response	Response	Response	Response	Response	Response
1	3	3	3	3	4	4	4	4
2	5	5	5	5	5	5	5	5
3	5	5	5	4	5	4	3	5
4	5	5	5	5	5	5	5	5
5	5	5	5	5	4	4	4	4
6	5	3	5	5	5	5	5	3
7	4	4	4	4	4	4	4	4
8	5	5	5	5	5	5	5	5
9	5	5	5	5	4	4	4	4
10	4	5	5	5	5	5	5	5
11	4	4	4	4	4	4	4	4
12	5	3	5	5	5	5	5	3
13	4	4	4	4	4	4	4	4
14	2	4	4	4	5	4	3	4
15	5	5	5	5	5	5	5	5
16	4	4	4	4	4	4	4	4
17	5	5	4	4	4	4	5	4
18	4	2	2	2	4	4	4	4
19	5	5	5	5	4	4	4	4
20	5	5	5	5	5	5	5	5
21	5	5	5	5	5	5	5	5
22	4	5	5	5	5	5	4	4
23	5	5	5	5	5	5	5	5
24	5	5	3	5	5	5	5	5
25	5	5	5	5	5	5	5	5
26	5	5	5	5	5	5	5	5
27	3	5	5	5	5	5	3	5
28	5	5	5	5	5	5	5	5
29	1	1	1	1	1	1	1	1
30	5	5	5	5	5	5	5	5
31	5	5	5	5	5	5	5	5
32	5	5	5	5	5	5	5	5
33	5	5	5	5	5	5	5	5
34	5	5	5	5	5	5	5	5
35	5	5	5	4	5	4	3	5
36	4	4	4	4	4	4	4	4
37	4	3	3	3	4	4	4	4
38	5	5	5	5	5	5	5	5
39	4	3	3	3	4	4	4	4
40	5	5	5	5	5	5	5	5
41	3	4	3	4	4	4	3	4
42	5	5	5	5	5	5	5	5
43	5	5	5	5	5	5	5	5
44	5	5	5	5	5	5	5	5
45	5	5	5	5	5	5	5	5

46	4	4	4	4	4	4	4	4
47	5	5	5	5	5	5	5	5
48	5	5	5	5	5	5	5	5
49	5	5	3	5	5	5	5	5
50	3	3	3	3	4	4	4	4
51	5	5	5	5	4	4	4	4
52	5	5	5	5	5	5	5	5
53	4	4	4	4	4	4	4	4
54	1	1	1	1	1	1	1	1
55	5	5	5	5	4	4	4	4
56	4	4	3	3	4	4	4	2
57	4	4	4	4	4	4	4	4
58	5	5	4	4	4	4	5	4
59	4	4	4	4	4	4	4	4
60	5	5	5	5	4	4	4	4
61	5	5	5	5	5	5	5	5
62	4	5	5	5	5	5	5	5
63	4	4	4	4	4	4	4	4
64	5	5	5	5	5	5	5	5
65	3	5	5	5	5	5	3	5
66	3	4	3	4	4	4	3	4
67	5	5	5	5	4	4	4	4
68	5	5	5	5	5	5	5	5
69	5	5	5	5	5	5	5	5
70	3	4	4	4	4	4	3	4
71	5	5	5	5	5	5	5	5
72	4	5	5	5	5	5	4	4
73	4	4	4	4	5	5	5	5
74	2	4	4	4	5	4	3	4
75	4	2	2	2	4	4	4	4
76	4	4	4	4	5	5	5	5
77	5	5	5	5	5	5	5	5
78	5	5	5	5	5	5	5	5
79	5	5	5	5	4	4	4	4
80	3	4	4	4	4	4	3	4
81	5	5	5	5	4	4	4	4
82	5	5	5	5	5	5	5	5
83	4	4	4	4	4	4	4	4
84	4	4	4	4	4	4	4	4
85	5	5	5	5	4	4	4	4
86	4	4	3	3	4	4	4	2

Participant	**Q17**	**Q18**
	Response	Response
1	4	4
2	5	5
3	5	4

4	5	5
5	4	4
6	5	5
7	3	3
8	5	5
9	4	4
10	5	5
11	4	4
12	5	5
13	4	4
14	5	5
15	5	5
16	3	3
17	4	4
18	4	4
19	4	4
20	5	5
21	5	5
22	5	5
23	5	5
24	3	5
25	5	5
26	5	5
27	5	5
28	5	5
29	1	1
30	5	5
31	5	5
32	5	5
33	5	5
34	5	5
35	5	4
36	4	4
37	4	4
38	5	5
39	4	4
40	5	5
41	3	4
42	5	5
43	5	5
44	5	5
45	5	5
46	4	4
47	5	5
48	5	5
49	3	5
50	4	4

51	4	4
52	5	5
53	4	4
54	1	1
55	4	4
56	2	2
57	4	4
58	4	4
59	4	4
60	4	4
61	5	5
62	5	5
63	4	4
64	5	5
65	5	5
66	3	4
67	4	4
68	5	5
69	5	5
70	4	4
71	5	5
72	5	5
73	5	5
74	5	5
75	4	4
76	5	5
77	5	5
78	5	5
79	4	4
80	4	4
81	4	4
82	5	5
83	4	4
84	4	4
85	4	4
86	2	2

Faculty

Participant	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**
	Response	Response	Response	Response	Response	Response	Response	Response
1	4	4	4	5	5	4	3	3
2	5	5	5	5	5	5	5	5
3	5	5	5	3	5	3	4	4
4	2	2	4	4	3	3	2	2
5	5	5	5	5	5	5	5	5
6	5	5	4	5	5	5	5	5

7	5	5	5	5	5	5	4	4
8	3	3	3	4	4	4	4	4
9	4	4	3	5	5	5	5	5
10	2	2	2	5	5	5	5	5
11	5	5	5	5	5	5	5	5
12	4	4	3	4	4	4	4	4
13	4	4	4	4	4	4	5	5
14	2	2	5	2	4	4	2	2
15	5	5	5	5	5	5	5	5
16	3	3	3	5	4	4	4	4
17	4	4	3	5	5	5	4	4
18	4	4	4	4	4	4	4	4
19	3	3	3	4	4	4	3	3
20	5	5	5	5	5	5	5	5
21	4	4	4	4	4	4	4	4
22	5	5	5	5	5	5	5	5
23	5	5	5	5	5	5	5	5
24	3	3	1	5	5	5	2	2
25	5	4	4	4	4	4	5	4
26	4	4	4	5	4	4	4	4
27	1	1	1	4	4	4	4	4
28	5	5	5	5	5	5	5	5
29	3	3	3	5	5	5	4	4
30	5	5	4	5	5	5	5	5
31	5	5	5	5	5	5	4	4
32	4	4	4	4	4	4	5	5
33	4	4	4	4	4	4	4	4
34	5	5	5	5	5	5	5	5
35	5	5	5	5	5	5	5	5
36	2	4	3	5	5	5	5	5
37	5	5	5	5	5	5	4	4
38	5	5	5	5	5	5	5	5
39	3	3	3	3	4	4	3	3
40	5	5	5	5	5	5	5	5
41	4	4	4	4	4	4	4	4
42	2	2	2	4	4	4	4	4
43	5	5	5	5	5	5	5	5
44	5	5	4	5	5	5	5	5
45	4	4	4	4	4	4	4	3
46	5	5	4	5	5	5	5	5
47	4	4	4	5	5	5	3	3
48	3	3	3	5	5	5	4	4
49	4	5	4	5	5	5	5	5
50	5	5	5	5	5	5	5	5
51	5	5	5	5	5	5	5	5
52	5	5	1	5	5	5	4	4
53	4	4	4	4	4	4	4	4

54	4	4	4	4	4	4	4	4
55	5	5	5	5	5	5	5	5
56	5	5	4	5	5	4	5	5
57	4	4	2	5	4	4	4	4
58	3	3	3	3	4	4	3	3
59	5	5	5	5	5	5	5	4
60	4	4	4	4	4	4	4	4
61	4	4	4	5	5	5	3	3
62	4	4	3	5	5	5	4	4
63	4	4	3	4	4	4	4	4
64	4	4	4	5	5	5	4	5
65	5	5	5	5	5	5	5	5
66	4	4	4	4	4	4	4	4
67	5	5	5	5	5	5	4	4
68	5	5	5	5	5	5	5	5
69	5	5	5	5	5	5	4	4
70	3	4	4	5	4	5	3	4
71	5	4	4	4	5	5	4	4
72	5	5	4	5	5	5	5	5
73	5	5	5	5	5	5	5	5
74	4	4	4	5	4	4	4	4
75	5	5	5	5	5	5	5	4
76	4	4	4	4	4	4	4	4
77	4	4	4	4	4	4	4	4
78	5	4	3	3	5	4	5	5
79	1	1	1	4	4	4	4	4
80	3	4	4	5	4	5	3	4
81	4	4	4	5	5	5	3	3
82	4	4	4	4	4	4	4	3
83	5	5	5	5	5	5	5	5
84	4	4	4	5	5	4	3	3
85	5	5	5	5	5	5	5	5
86	3	3	5	3	3	3	4	4
87	3	3	3	5	4	4	4	4
88	5	5	5	5	5	5	5	5
89	5	5	5	5	5	5	4	4
90	4	4	4	5	5	5	5	5
91	4	5	4	5	5	5	5	5
92	2	2	2	4	4	4	4	4
93	4	4	4	5	5	5	5	5
94	5	5	5	5	5	5	5	5
95	5	5	5	5	5	5	5	5
96	5	5	5	5	5	5	5	5
97	4	4	3	5	4	4	5	5
98	5	5	4	5	5	5	5	5
99	5	5	5	5	5	5	5	5
100	5	5	5	5	5	5	5	5

101	5	5	4	5	5	5	5	5
102	2	3	1	5	5	5	4	4
103	5	5	5	5	5	5	5	5
104	5	5	1	5	5	5	4	4
105	5	5	5	5	5	5	4	4
106	2	4	3	5	5	5	5	5
107	2	2	2	5	5	5	5	5
108	5	5	5	5	5	5	5	5
109	5	5	5	5	5	5	5	5
110	1	1	1	4	4	4	4	4
111	2	2	4	4	3	3	2	2
112	5	4	4	4	5	5	4	4
113	1	1	1	4	4	4	4	4
114	4	4	3	5	5	5	5	5
115	4	4	3	5	4	4	5	5

Participant	**Q9**	**Q10**	**Q11**	**Q12**	**Q13**	**Q14**	**Q15**	**Q16**
	Response	Response	Response	Response	Response	Response	Response	Response
1	3	4	4	4	4	4	4	4
2	5	5	5	5	5	5	5	5
3	4	3	4	3	4	4	4	3
4	3	5	3	4	2	2	5	5
5	5	5	5	5	5	5	5	5
6	5	5	5	5	5	5	5	5
7	4	4	4	4	5	5	5	5
8	4	5	5	5	5	5	5	5
9	5	5	5	5	5	5	5	5
10	5	5	5	3	2	2	2	4
11	5	5	5	5	5	5	5	5
12	3	4	5	5	5	4	3	5
13	5	5	5	5	5	5	5	5
14	2	2	4	4	2	2	2	2
15	5	5	5	5	5	5	5	5
16	4	4	4	4	4	4	4	4
17	4	4	4	4	4	4	4	4
18	4	4	4	4	4	4	4	4
19	3	4	4	4	3	3	3	3
20	5	5	5	5	5	5	5	5
21	4	4	4	4	4	4	4	4
22	5	5	5	5	2	2	2	2
23	5	5	5	5	3	3	5	5
24	1	5	4	5	2	3	1	4
25	4	4	4	4	4	4	4	4
26	4	4	4	4	5	5	5	5
27	4	4	4	4	4	4	4	4
28	5	5	5	5	5	5	5	5

29	4	4	4	4	4	4	4	4
30	4	5	5	5	4	4	4	4
31	4	4	4	4	5	5	5	5
32	5	5	5	5	5	5	5	5
33	4	5	5	5	4	4	4	4
34	5	5	5	5	5	5	5	5
35	5	5	5	5	5	5	5	5
36	5	5	5	5	5	5	5	5
37	4	4	4	4	5	5	5	5
38	5	5	5	5	5	5	5	5
39	3	3	4	4	3	3	3	3
40	5	5	5	5	2	2	2	2
41	4	4	4	4	4	4	4	4
42	4	4	4	4	4	4	4	4
43	5	5	5	5	3	3	5	5
44	4	5	5	5	4	4	4	5
45	4	4	5	4	4	4	4	4
46	4	5	5	5	4	4	4	4
47	4	5	4	4	4	5	4	4
48	4	4	4	4	4	4	4	4
49	5	5	5	5	5	5	5	5
50	5	5	5	5	2	2	2	2
51	5	5	5	5	5	5	5	5
52	4	4	4	4	4	4	4	4
53	4	4	4	4	4	4	4	4
54	4	4	4	4	4	4	4	4
55	5	5	5	5	5	5	5	5
56	3	5	5	4	5	5	3	5
57	2	4	4	4	4	4	3	4
58	3	3	4	4	3	3	3	3
59	5	5	5	5	5	5	5	5
60	4	4	4	4	4	4	4	4
61	4	5	4	4	4	5	4	4
62	4	4	4	4	4	4	4	4
63	3	4	5	5	5	4	3	5
64	5	5	5	5	4	5	5	5
65	5	5	5	5	5	5	5	5
66	4	4	4	4	4	4	3	3
67	4	4	4	4	4	4	4	4
68	5	5	5	5	2	2	2	2
69	4	4	4	4	5	5	5	5
70	5	5	5	5	4	4	4	4
71	4	4	4	4	4	4	4	4
72	4	5	5	5	4	4	4	4
73	5	5	5	5	5	5	5	5
74	4	4	4	4	5	5	5	5
75	5	5	5	5	5	5	5	5

76	4	4	4	4	4	4	3	3
77	4	4	4	4	4	4	4	4
78	3	3	5	5	5	5	3	3
79	4	4	4	4	4	4	4	4
80	5	5	5	5	4	4	4	4
81	4	5	4	4	4	5	4	4
82	4	4	5	4	4	4	4	4
83	5	5	5	5	5	5	5	5
84	3	4	4	4	4	4	4	4
85	5	5	5	5	5	5	5	5
86	5	3	3	3	3	3	5	3
87	4	4	4	4	4	4	4	4
88	5	5	5	5	5	5	5	5
89	4	4	4	4	4	4	4	4
90	5	5	5	5	5	5	5	5
91	5	5	5	5	5	5	5	5
92	4	4	4	4	4	4	4	4
93	5	5	5	5	5	5	5	5
94	5	5	4	5	5	5	5	5
95	5	5	5	5	5	5	5	5
96	5	5	5	5	5	5	5	5
97	5	5	5	5	5	5	5	5
98	5	5	5	5	5	5	5	5
99	5	5	5	5	5	5	5	5
100	5	5	5	5	5	5	5	5
101	4	5	5	5	4	4	4	5
102	3	5	5	5	4	4	4	4
103	5	5	5	5	5	5	5	5
104	4	4	4	4	4	4	4	4
105	4	4	4	4	4	4	4	4
106	5	5	5	5	5	5	5	5
107	5	5	5	3	2	2	2	4
108	5	5	5	5	5	5	5	5
109	5	5	5	5	5	5	5	5
110	4	4	4	4	5	5	5	5
111	3	5	3	4	2	2	5	5
112	4	4	4	4	4	4	4	4
113	4	4	4	4	5	5	5	5
114	5	5	5	5	5	5	5	5
115	5	5	5	5	5	5	5	5

Participant	**Q17**	**Q18**
	Response	Response
1	4	4
2	5	5
3	4	3

4	3	4
5	5	5
6	5	5
7	5	5
8	5	5
9	5	5
10	4	4
11	5	5
12	5	5
13	5	5
14	2	2
15	5	5
16	4	4
17	4	4
18	4	4
19	3	3
20	5	5
21	4	4
22	2	2
23	5	5
24	4	4
25	4	4
26	5	5
27	4	4
28	5	5
29	4	4
30	3	4
31	5	5
32	5	5
33	4	4
34	5	5
35	5	5
36	5	5
37	5	5
38	5	5
39	4	4
40	2	2
41	5	4
42	4	4
43	5	5
44	5	5
45	4	4
46	3	4
47	4	4
48	4	4
49	5	5
50	2	2

51	5	5
52	4	4
53	4	4
54	4	4
55	5	5
56	5	4
57	2	2
58	4	4
59	5	5
60	5	4
61	4	4
62	4	4
63	5	5
64	5	5
65	5	5
66	3	3
67	4	4
68	2	2
69	5	5
70	4	4
71	5	5
72	3	4
73	5	5
74	5	5
75	5	5
76	3	3
77	4	4
78	5	5
79	4	4
80	4	4
81	4	4
82	4	4
83	5	5
84	4	4
85	5	5
86	3	3
87	4	4
88	5	5
89	4	4
90	5	5
91	5	5
92	4	4
93	5	5
94	5	3
95	5	5
96	5	5
97	5	5

98	5	5
99	5	5
100	5	5
101	5	5
102	5	5
103	5	5
104	4	4
105	4	4
106	5	5
107	4	4
108	5	5
109	5	5
110	5	5
111	3	4
112	5	5
113	5	5
114	5	5
115	5	5

APPENDIX I:

INDEPENDENT *t* Test SPSS OUTPUT

T test

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[DataSet1] D:\Independent t test.sav
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Group Statistics

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Yoga: Health Benefits	Chair/Deans	86	4.1860	.92687	.09995
	Faculty	115	4.0870	1.11265	.10375
Pilates: Health Benefits	Chair/Deans	86	4.1860	.92687	.09995
	Faculty	115	4.1304	1.04732	.09766
Tai Chi: Health Benefits	Chair/Deans	86	3.9302	1.00341	.10820
	Faculty	115	3.9043	1.15450	.10766
Cardio Kickboxing: Health Benefits	Chair/Deans	86	4.3256	.93861	.10121
	Faculty	115	4.6348	.61173	.05704
Cardio Spinning: Health Benefits	Chair/Deans	86	4.3256	.96335	.10388
	Faculty	115	4.6261	.53739	.05011
Step Aerobics: Health Benefits	Chair/Deans	86	4.3488	.94268	.10165
	Faculty	115	4.5913	.56032	.05225
Yoga: Values	Chair/Deans	86	4.5116	.76303	.08228
	Faculty	115	4.3304	.78048	.07278
Pilates: Values	Chair/Deans	86	4.4186	.84666	.09130
	Faculty	115	4.3130	.77647	.07241
Tai Chi: Values	Chair/Deans	86	4.3721	.92095	.09931
	Faculty	115	4.2870	.79212	.07387
Cardio Kickboxing: Values	Chair/Deans	86	4.4419	.90235	.09730
	Faculty	115	4.5130	.62640	.05841
Cardio Spinning: Values	Chair/Deans	86	4.3721	.94616	.10203
	Faculty	115	4.5304	.55126	.05141
Step Aerobics: Values	Chair/Deans	86	4.4186	.90052	.09711
	Faculty	115	4.4957	.56776	.05294
Yoga: Student Learning Experience	Chair/Deans	86	4.4884	.73154	.07888
	Faculty	115	4.2348	.90156	.08407
Pilates: Student Learning Experience	Chair/Deans	86	4.4419	.72930	.07864
	Faculty	115	4.2609	.88938	.08294
Tai Chi: Student Learning Experience	Chair/Deans	86	4.3023	.85502	.09220
	Faculty	115	4.2435	.91375	.08521
Cardio Kickboxing: Student Learning	Chair/Deans	86	4.3488	.83691	.09025
	Faculty	115	4.3565	.79683	.07430
Cardio Spinning: Student Learning Experience	Chair/Deans	86	4.3488	.89136	.09612
	Faculty	115	4.3652	.84116	.07844
Step Aerobics: Student Learning Experience	Chair/Deans	86	4.3953	.84407	.09102
	Faculty	115	4.3565	.80776	.07532

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Yoga: Health Benefits	Equal variances assumed	4.766	.030	.670	199	.504	.09909	.14789	-.19254	.39072
	Equal variances not assumed			.688	196.641	.492	.09909	.14406	-.18502	.38320
Pilates: Health Benefits	Equal variances assumed	2.186	.141	.391	199	.696	.05561	.14223	-.22485	.33608
	Equal variances not assumed			.398	193.367	.691	.05561	.13974	-.22000	.33122
Tai Chi: Health Benefits	Equal variances assumed	2.244	.136	.166	199	.868	.02588	.15575	-.28125	.33302
	Equal variances not assumed			.170	194.484	.866	.02588	.15264	-.27515	.32692
Cardio Kickboxing: Health Benefits	Equal variances assumed	10.343	.002	-2.822	199	.005	-.30920	.10957	-.52526	-.09314
	Equal variances not assumed			-2.661	137.252	.009	-.30920	.11618	-.53894	-.07946
Cardio Spinning: Health Benefits	Equal variances assumed	19.274	.000	-2.812	199	.005	-.30051	.10686	-.51122	-.08979
	Equal variances not assumed			-2.605	124.150	.010	-.30051	.11534	-.52879	-.07223
Step Aerobics: Health Benefits	Equal variances assumed	12.668	.000	-2.274	199	.024	-.24247	.10663	-.45273	-.03220
	Equal variances not assumed			-2.121	129.128	.036	-.24247	.11429	-.46860	-.01634
Yoga: Values	Equal variances assumed	.925	.337	1.644	199	.102	.18119	.11021	-.03614	.39852
	Equal variances not assumed			1.649	185.415	.101	.18119	.10985	-.03552	.39791
Pilates: Values	Equal variances assumed	.003	.955	.917	199	.360	.10556	.11507	-.12136	.33248
	Equal variances not assumed			.906	174.175	.366	.10556	.11652	-.12442	.33554
Tai Chi: Values	Equal variances assumed	1.426	.234	.703	199	.483	.08514	.12111	-.15369	.32396
	Equal variances not assumed			.688	166.964	.492	.08514	.12377	-.15921	.32949
Cardio Kickboxing: Values	Equal variances assumed	5.519	.020	-.660	199	.510	-.07118	.10787	-.28390	.14154
	Equal variances not assumed			-.627	143.415	.532	-.07118	.11349	-.29551	.15314
Cardio Spinning: Values	Equal variances assumed	18.445	.000	-1.489	199	.138	-.15834	.10635	-.36805	.05137
	Equal variances not assumed			-1.386	127.507	.168	-.15834	.11425	-.38440	.06772
Step Aerobics: Values	Equal variances assumed	9.141	.003	-.742	199	.459	-.07705	.10389	-.28191	.12782
	Equal variances not assumed			-.697	134.203	.487	-.07705	.11060	-.29579	.14170
Yoga: Student Learning Experience	Equal variances assumed	3.335	.069	2.135	199	.034	.25359	.11878	.01936	.48782
	Equal variances not assumed			2.200	197.638	.029	.25359	.11529	.02624	.48094
Pilates: Student Learning Experience	Equal variances assumed	3.626	.058	1.539	199	.125	.18099	.11759	-.05088	.41287
	Equal variances not assumed			1.584	197.271	.115	.18099	.11429	-.04440	.40638
Tai Chi: Student Learning Experience	Equal variances assumed	.305	.582	.464	199	.643	.05885	.12676	-.19111	.30880
	Equal variances not assumed			.469	189.261	.640	.05885	.12554	-.18880	.30649
Cardio Kickboxing: Student Learning Experience	Equal variances assumed	.122	.727	-.066	199	.947	-.00768	.11607	-.23657	.22120
	Equal variances not assumed			-.066	178.235	.948	-.00768	.11690	-.23837	.22300
Cardio Spinning: Student Learning Experience	Equal variances assumed	.000	.988	-.133	199	.894	-.01638	.12302	-.25898	.22622
	Equal variances not assumed			-.132	177.286	.895	-.01638	.12406	-.26121	.22845
Step Aerobics: Student Learning Experience	Equal variances assumed	.036	.849	.331	199	.741	.03883	.11739	-.19267	.27032
	Equal variances not assumed			.329	178.775	.743	.03883	.11814	-.19431	.27196

APPENDIX J:

CHI-SQUARE TEST SPSS OUTPUT

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Yoga: Health Benefits * Groups	201	100.0%	0	.0%	201	100.0%
Yoga: Values * Groups	201	100.0%	0	.0%	201	100.0%
Yoga: Student Learning Experience * Groups	201	100.0%	0	.0%	201	100.0%
Pilates: Health Benefits * Groups	201	100.0%	0	.0%	201	100.0%
Pilates: Values * Groups	201	100.0%	0	.0%	201	100.0%
Pilates: Student Learning Experience * Groups	201	100.0%	0	.0%	201	100.0%
Tai Chi: Health Benefits * Groups	201	100.0%	0	.0%	201	100.0%
Tai Chi: Values * Groups	201	100.0%	0	.0%	201	100.0%
Tai Chi: Student Learning Experience * Groups	201	100.0%	0	.0%	201	100.0%
Cardio Kickboxing: Health Benefits * Groups	201	100.0%	0	.0%	201	100.0%
Cardio Kickboxing: Values * Groups	201	100.0%	0	.0%	201	100.0%
Cardio Kickboxing: Student Learning Experience * Groups	201	100.0%	0	.0%	201	100.0%
Cardio Spinning: Health Benefits * Groups	201	100.0%	0	.0%	201	100.0%
Cardio Spinning: Values * Groups	201	100.0%	0	.0%	201	100.0%
Cardio Spinning: Student Learning Experience * Groups	201	100.0%	0	.0%	201	100.0%
Step Aerobics: Health Benefits * Groups	201	100.0%	0	.0%	201	100.0%
Step Aerobics: Values * Groups	201	100.0%	0	.0%	201	100.0%
Step Aerobics: Student Learning Experience * Groups	201	100.0%	0	.0%	201	100.0%

Yoga: Health Benefits * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Yoga: Health Benefits	1.00	Count	2	4	6
		Expected Count	2.6	3.4	6.0
		% within Yoga: Health Benefits	33.3%	66.7%	100.0%
	2.00	Count	6	10	16
		Expected Count	6.8	9.2	16.0
		% within Yoga: Health Benefits	37.5%	62.5%	100.0%
	3.00	Count	0	12	12
		Expected Count	5.1	6.9	12.0
		% within Yoga: Health Benefits	.0%	100.0%	100.0%
	4.00	Count	44	35	79
		Expected Count	33.8	45.2	79.0
		% within Yoga: Health Benefits	55.7%	44.3%	100.0%
	5.00	Count	34	54	88
		Expected Count	37.7	50.3	88.0
		% within Yoga: Health Benefits	38.6%	61.4%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Yoga: Health Benefits	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.373[a]	4	.004
Likelihood Ratio	19.740	4	.001
Linear-by-Linear Association	.450	1	.502
N of Valid Cases	201		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.57.

Yoga: Values * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Yoga: Values	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Yoga: Values	100.0%	.0%	100.0%
	2.00	Count	0	4	4
		Expected Count	1.7	2.3	4.0
		% within Yoga: Values	.0%	100.0%	100.0%
	3.00	Count	2	10	12
		Expected Count	5.1	6.9	12.0
		% within Yoga: Values	16.7%	83.3%	100.0%
	4.00	Count	30	45	75
		Expected Count	32.1	42.9	75.0
		% within Yoga: Values	40.0%	60.0%	100.0%
	5.00	Count	52	56	108
		Expected Count	46.2	61.8	108.0
		% within Yoga: Values	48.1%	51.9%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Yoga: Values	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.516[a]	4	.033
Likelihood Ratio	13.110	4	.011
Linear-by-Linear Association	2.680	1	.102
N of Valid Cases	201		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .86.

Yoga: Student Learning Experience * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Yoga: Student Learning Experience	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Yoga: Student Learning Experience	100.0%	.0%	100.0%
	2.00	Count	0	10	10
		Expected Count	4.3	5.7	10.0
		% within Yoga: Student Learning Experience	.0%	100.0%	100.0%
	3.00	Count	0	6	6
		Expected Count	2.6	3.4	6.0
		% within Yoga: Student Learning Experience	.0%	100.0%	100.0%
	4.00	Count	36	46	82
		Expected Count	35.1	46.9	82.0
		% within Yoga: Student Learning Experience	43.9%	56.1%	100.0%
	5.00	Count	48	53	101
		Expected Count	43.2	57.8	101.0
		% within Yoga: Student Learning Experience	47.5%	52.5%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Yoga: Student Learning Experience	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.608[a]	4	.004
Likelihood Ratio	22.225	4	.000
Linear-by-Linear Association	4.478	1	.034
N of Valid Cases	201		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .86.

Pilates: Health Benefits * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Pilates: Health Benefits	1.00	Count	2	4	6
		Expected Count	2.6	3.4	6.0
		% within Pilates: Health Benefits	33.3%	66.7%	100.0%
	2.00	Count	6	7	13
		Expected Count	5.6	7.4	13.0
		% within Pilates: Health Benefits	46.2%	53.8%	100.0%
	3.00	Count	0	11	11
		Expected Count	4.7	6.3	11.0
		% within Pilates: Health Benefits	.0%	100.0%	100.0%
	4.00	Count	44	41	85
		Expected Count	36.4	48.6	85.0
		% within Pilates: Health Benefits	51.8%	48.2%	100.0%
	5.00	Count	34	52	86
		Expected Count	36.8	49.2	86.0
		% within Pilates: Health Benefits	39.5%	60.5%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Pilates: Health Benefits	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.676[a]	4	.020
Likelihood Ratio	15.708	4	.003
Linear-by-Linear Association	.154	1	.695
N of Valid Cases	201		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 2.57.

Pilates: Values * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Pilates: Values	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Pilates: Values	100.0%	.0%	100.0%
	2.00	Count	2	4	6
		Expected Count	2.6	3.4	6.0
		% within Pilates: Values	33.3%	66.7%	100.0%
	3.00	Count	2	10	12
		Expected Count	5.1	6.9	12.0
		% within Pilates: Values	16.7%	83.3%	100.0%
	4.00	Count	32	47	79
		Expected Count	33.8	45.2	79.0
		% within Pilates: Values	40.5%	59.5%	100.0%
	5.00	Count	48	54	102
		Expected Count	43.6	58.4	102.0
		% within Pilates: Values	47.1%	52.9%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Pilates: Values	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.166[a]	4	.127
Likelihood Ratio	8.294	4	.081
Linear-by-Linear Association	.842	1	.359
N of Valid Cases	201		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .86.

Pilates: Student Learning Experience * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Pilates: Student Learning Experience	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Pilates: Student Learning Experience	100.0%	.0%	100.0%
	2.00	Count	0	9	9
		Expected Count	3.9	5.1	9.0
		% within Pilates: Student Learning Experience	.0%	100.0%	100.0%
	3.00	Count	0	7	7
		Expected Count	3.0	4.0	7.0
		% within Pilates: Student Learning Experience	.0%	100.0%	100.0%
	4.00	Count	40	44	84
		Expected Count	35.9	48.1	84.0
		% within Pilates: Student Learning Experience	47.6%	52.4%	100.0%
	5.00	Count	44	55	99
		Expected Count	42.4	56.6	99.0
		% within Pilates: Student Learning Experience	44.4%	55.6%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Pilates: Student Learning Experience	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.552[a]	4	.004
Likelihood Ratio	22.170	4	.000
Linear-by-Linear Association	2.353	1	.125
N of Valid Cases	201		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .86.

Tai Chi: Health Benefits * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Tai Chi: Health Benefits	1.00	Count	2	8	10
		Expected Count	4.3	5.7	10.0
		% within Tai Chi: Health Benefits	20.0%	80.0%	100.0%
	2.00	Count	8	5	13
		Expected Count	5.6	7.4	13.0
		% within Tai Chi: Health Benefits	61.5%	38.5%	100.0%
	3.00	Count	10	19	29
		Expected Count	12.4	16.6	29.0
		% within Tai Chi: Health Benefits	34.5%	65.5%	100.0%
	4.00	Count	40	41	81
		Expected Count	34.7	46.3	81.0
		% within Tai Chi: Health Benefits	49.4%	50.6%	100.0%
	5.00	Count	26	42	68
		Expected Count	29.1	38.9	68.0
		% within Tai Chi: Health Benefits	38.2%	61.8%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Tai Chi: Health Benefits	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.820[a]	4	.146
Likelihood Ratio	7.007	4	.136
Linear-by-Linear Association	.028	1	.868
N of Valid Cases	201		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.28.

Tai Chi: Values * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Tai Chi: Values	1.00	Count	2	1	3
		Expected Count	1.3	1.7	3.0
		% within Tai Chi: Values	66.7%	33.3%	100.0%
	2.00	Count	2	2	4
		Expected Count	1.7	2.3	4.0
		% within Tai Chi: Values	50.0%	50.0%	100.0%
	3.00	Count	8	12	20
		Expected Count	8.6	11.4	20.0
		% within Tai Chi: Values	40.0%	60.0%	100.0%
	4.00	Count	24	48	72
		Expected Count	30.8	41.2	72.0
		% within Tai Chi: Values	33.3%	66.7%	100.0%
	5.00	Count	50	52	102
		Expected Count	43.6	58.4	102.0
		% within Tai Chi: Values	49.0%	51.0%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Tai Chi: Values	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.095[a]	4	.278
Likelihood Ratio	5.141	4	.273
Linear-by-Linear Association	.495	1	.482
N of Valid Cases	201		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.28.

Tai Chi: Student Learning Experience * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Tai Chi: Student Learning Experience	1.00	Count	2	1	3
		Expected Count	1.3	1.7	3.0
		% within Tai Chi: Student Learning Experience	66.7%	33.3%	100.0%
	2.00	Count	0	7	7
		Expected Count	3.0	4.0	7.0
		% within Tai Chi: Student Learning Experience	.0%	100.0%	100.0%
	3.00	Count	10	10	20
		Expected Count	8.6	11.4	20.0
		% within Tai Chi: Student Learning Experience	50.0%	50.0%	100.0%
	4.00	Count	32	42	74
		Expected Count	31.7	42.3	74.0
		% within Tai Chi: Student Learning Experience	43.2%	56.8%	100.0%
	5.00	Count	42	55	97
		Expected Count	41.5	55.5	97.0
		% within Tai Chi: Student Learning Experience	43.3%	56.7%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Tai Chi: Student Learning Experience	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.376[a]	4	.173
Likelihood Ratio	8.948	4	.062
Linear-by-Linear Association	.216	1	.642
N of Valid Cases	201		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.28.

Cardio Kickboxing: Health Benefits * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Cardio Kickboxing: Health Benefits	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Cardio Kickboxing: Health Benefits	100.0%	.0%	100.0%
	2.00	Count	4	1	5
		Expected Count	2.1	2.9	5.0
		% within Cardio Kickboxing: Health Benefits	80.0%	20.0%	100.0%
	3.00	Count	4	5	9
		Expected Count	3.9	5.1	9.0
		% within Cardio Kickboxing: Health Benefits	44.4%	55.6%	100.0%
	4.00	Count	30	29	59
		Expected Count	25.2	33.8	59.0
		% within Cardio Kickboxing: Health Benefits	50.8%	49.2%	100.0%
	5.00	Count	46	80	126
		Expected Count	53.9	72.1	126.0
		% within Cardio Kickboxing: Health Benefits	36.5%	63.5%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Cardio Kickboxing: Health Benefits	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.108[a]	4	.058
Likelihood Ratio	9.919	4	.042
Linear-by-Linear Association	7.696	1	.006
N of Valid Cases	201		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .86.

Cardio Kickboxing: Values * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Cardio Kickboxing: Values	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Cardio Kickboxing: Values	100.0%	.0%	100.0%
	2.00	Count	2	1	3
		Expected Count	1.3	1.7	3.0
		% within Cardio Kickboxing: Values	66.7%	33.3%	100.0%
	3.00	Count	6	5	11
		Expected Count	4.7	6.3	11.0
		% within Cardio Kickboxing: Values	54.5%	45.5%	100.0%
	4.00	Count	22	43	65
		Expected Count	27.8	37.2	65.0
		% within Cardio Kickboxing: Values	33.8%	66.2%	100.0%
	5.00	Count	54	66	120
		Expected Count	51.3	68.7	120.0
		% within Cardio Kickboxing: Values	45.0%	55.0%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Cardio Kickboxing: Values	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.357[a]	4	.174
Likelihood Ratio	7.115	4	.130
Linear-by-Linear Association	.437	1	.509
N of Valid Cases	201		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .86.

Cardio Kickboxing: Student Learning Experience * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Cardio Kickboxing: Student Learning Experience	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Cardio Kickboxing: Student Learning Experience	100.0%	.0%	100.0%
	2.00	Count	2	5	7
		Expected Count	3.0	4.0	7.0
		% within Cardio Kickboxing: Student Learning Experience	28.6%	71.4%	100.0%
	3.00	Count	2	8	10
		Expected Count	4.3	5.7	10.0
		% within Cardio Kickboxing: Student Learning Experience	20.0%	80.0%	100.0%
	4.00	Count	38	43	81
		Expected Count	34.7	46.3	81.0
		% within Cardio Kickboxing: Student Learning Experience	46.9%	53.1%	100.0%
	5.00	Count	42	59	101
		Expected Count	43.2	57.8	101.0
		% within Cardio Kickboxing: Student Learning Experience	41.6%	58.4%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Cardio Kickboxing: Student Learning Experience	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.996[a]	4	.199
Likelihood Ratio	6.941	4	.139
Linear-by-Linear Association	.004	1	.947
N of Valid Cases	201		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .86.

Cardio Spinning: Health Benefits * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Cardio Spinning: Health Benefits	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Cardio Spinning: Health Benefits	100.0%	.0%	100.0%
	2.00	Count	4	0	4
		Expected Count	1.7	2.3	4.0
		% within Cardio Spinning: Health Benefits	100.0%	.0%	100.0%
	3.00	Count	6	3	9
		Expected Count	3.9	5.1	9.0
		% within Cardio Spinning: Health Benefits	66.7%	33.3%	100.0%
	4.00	Count	26	37	63
		Expected Count	27.0	36.0	63.0
		% within Cardio Spinning: Health Benefits	41.3%	58.7%	100.0%
	5.00	Count	48	75	123
		Expected Count	52.6	70.4	123.0
		% within Cardio Spinning: Health Benefits	39.0%	61.0%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Cardio Spinning: Health Benefits	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.890[a]	4	.028
Likelihood Ratio	13.044	4	.011
Linear-by-Linear Association	7.644	1	.006
N of Valid Cases	201		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .86.

Cardio Spinning: Values * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Cardio Spinning: Values	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Cardio Spinning: Values	100.0%	.0%	100.0%
	2.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Cardio Spinning: Values	100.0%	.0%	100.0%
	3.00	Count	10	3	13
		Expected Count	5.6	7.4	13.0
		% within Cardio Spinning: Values	76.9%	23.1%	100.0%
	4.00	Count	20	48	68
		Expected Count	29.1	38.9	68.0
		% within Cardio Spinning: Values	29.4%	70.6%	100.0%
	5.00	Count	52	64	116
		Expected Count	49.6	66.4	116.0
		% within Cardio Spinning: Values	44.8%	55.2%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Cardio Spinning: Values	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.704[a]	4	.002
Likelihood Ratio	18.446	4	.001
Linear-by-Linear Association	2.204	1	.138
N of Valid Cases	201		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .86.

Cardio Spinning: Student Learning Experience * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Cardio Spinning: Student Learning Experience	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Cardio Spinning: Student Learning Experience	100.0%	.0%	100.0%
	2.00	Count	2	6	8
		Expected Count	3.4	4.6	8.0
		% within Cardio Spinning: Student Learning Experience	25.0%	75.0%	100.0%
	3.00	Count	6	9	15
		Expected Count	6.4	8.6	15.0
		% within Cardio Spinning: Student Learning Experience	40.0%	60.0%	100.0%
	4.00	Count	30	37	67
		Expected Count	28.7	38.3	67.0
		% within Cardio Spinning: Student Learning Experience	44.8%	55.2%	100.0%
	5.00	Count	46	63	109
		Expected Count	46.6	62.4	109.0
		% within Cardio Spinning: Student Learning Experience	42.2%	57.8%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Cardio Spinning: Student Learning Experience	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.879[a]	4	.423
Likelihood Ratio	4.666	4	.323
Linear-by-Linear Association	.018	1	.894
N of Valid Cases	201		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .86.

Step Aerobics: Health Benefits * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Step Aerobics: Health Benefits	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Step Aerobics: Health Benefits	100.0%	.0%	100.0%
	2.00	Count	4	0	4
		Expected Count	1.7	2.3	4.0
		% within Step Aerobics: Health Benefits	100.0%	.0%	100.0%
	3.00	Count	4	4	8
		Expected Count	3.4	4.6	8.0
		% within Step Aerobics: Health Benefits	50.0%	50.0%	100.0%
	4.00	Count	28	39	67
		Expected Count	28.7	38.3	67.0
		% within Step Aerobics: Health Benefits	41.8%	58.2%	100.0%
	5.00	Count	48	72	120
		Expected Count	51.3	68.7	120.0
		% within Step Aerobics: Health Benefits	40.0%	60.0%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Step Aerobics: Health Benefits	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.601[a]	4	.072
Likelihood Ratio	10.766	4	.029
Linear-by-Linear Association	5.065	1	.024
N of Valid Cases	201		

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .86.

Step Aerobics: Values * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Step Aerobics: Values	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Step Aerobics: Values	100.0%	.0%	100.0%
	2.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Step Aerobics: Values	100.0%	.0%	100.0%
	3.00	Count	6	4	10
		Expected Count	4.3	5.7	10.0
		% within Step Aerobics: Values	60.0%	40.0%	100.0%
	4.00	Count	24	50	74
		Expected Count	31.7	42.3	74.0
		% within Step Aerobics: Values	32.4%	67.6%	100.0%
	5.00	Count	52	61	113
		Expected Count	48.3	64.7	113.0
		% within Step Aerobics: Values	46.0%	54.0%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Step Aerobics: Values	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.282[a]	4	.036
Likelihood Ratio	11.800	4	.019
Linear-by-Linear Association	.551	1	.458
N of Valid Cases	201		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .86.

Step Aerobics: Student Learning Experience * Groups

Crosstab

			Groups		
			Chair/Deans	Faculty	Total
Step Aerobics: Student Learning Experience	1.00	Count	2	0	2
		Expected Count	.9	1.1	2.0
		% within Step Aerobics: Student Learning Experience	100.0%	.0%	100.0%
	2.00	Count	2	6	8
		Expected Count	3.4	4.6	8.0
		% within Step Aerobics: Student Learning Experience	25.0%	75.0%	100.0%
	3.00	Count	2	6	8
		Expected Count	3.4	4.6	8.0
		% within Step Aerobics: Student Learning Experience	25.0%	75.0%	100.0%
	4.00	Count	34	44	78
		Expected Count	33.4	44.6	78.0
		% within Step Aerobics: Student Learning Experience	43.6%	56.4%	100.0%
	5.00	Count	46	59	105
		Expected Count	44.9	60.1	105.0
		% within Step Aerobics: Student Learning Experience	43.8%	56.2%	100.0%
Total		Count	86	115	201
		Expected Count	86.0	115.0	201.0
		% within Step Aerobics: Student Learning Experience	42.8%	57.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.808[a]	4	.308
Likelihood Ratio	5.659	4	.226
Linear-by-Linear Association	.110	1	.740
N of Valid Cases	201		

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .86.

CURRICULUM VITAE

Long B. Nguyen

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Education:

Ph.D., Education with emphasis in Community College Leadership, 2009
Walden University, Minneapolis, Minnesota

Doctoral dissertation: "Nontraditional Physical Activity Courses: Perceptions of Community College Leaders"

M.S., Kinesiology with emphasis in Physical Education and Sport Studies, 2003
California Polytechnic State University, San Luis Obispo
Graduated with honors

Presented at a professional conference, Northwest Southwest American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD), February, 2003. Topics included: "Racial Inequality in American Sport" and "Service Learning in Adapted Physical Education"

Thesis: "The Effect of Eastern Time Zone on West-Coast Professional Football Teams Playing Against East-Coast Professional Football Teams on the East Coast"

B.A., Exercise Science, 1996
University of California, Davis

Leadership Experience in Community College

Cypress College (Cypress, CA) Summer 2009

Practicum, Walden University

- Attended leadership meetings with directors, deans, executives, and vice president on campus.
- Participated in weekly mentoring sessions with dean of physical education.
- Worked on a Title IX proposal with dean of physical education in conjunction with the California Community College Athletic Association to implement new policies for gender equity in intercollegiate sports.
- Attended leadership conferences with dean of physical education.

Professional Experiences in Higher Education

Cerritos College (Norwalk, CA) Jan 08 – Present

Health Instructor, Fitness and Wellness

- The course emphasizes on the advancement in the medical-science field of personal health and wellness.
- The course includes a lecture and a fitness lab.

Los Angeles Trade Tech College (Los Angeles, CA) Aug 07 – Present

Health Instructor, Principles of Healthful Living

- The course emphasizes on the advancement in the medical-science field of personal health and wellness.

Health Instructor, Human Sexuality

- Instructing a classroom course in human sexuality.
- The course emphasizes on the advancement in the medical-science field of human sexuality.

Cypress College (Cypress, CA) Aug 04 – Present

Physical Education Instructor, Introduction to Physical Education

- The course consists of introduction and orientation to physical education as a profession and academic discipline.

Physical Education Instructor, Health

- The course emphasizes on the advancement in the medical-science field of personal health and wellness.

Physical Education Instructor, First Aid/CPR/Emergencies

- Course contents include: certification of First Aid, CPR, and AED through American Red Cross.

Physical Education Instructor, Aquatics

- Fundamental and intermediate/advanced swimming strokes include: front crawl, back crawl, breaststroke, elementary backstroke, butterfly, and sidestroke.
- Also instructing swim-for-fitness and water exercise courses, which emphasize on swimming for health and physical fitness.

Physical Education Instructor, Badminton

- Instructing the fundamentals of badminton, which include rules and regulations of the game.
- Skills include: clears, drives, drops, high serves, and smashes.

Physical Education Instructor, Basketball

- Instructing an activity course in basketball with emphasis in fundamental skills, strategy, and team play.
- Course contents include: basketball drills and teamwork.

Physical Education Instructor, Physical Fitness

- Instructing an activity course in physical fitness with emphasis in resistive exercises and body-building routines.
- Course contents include: free weights and nautilus machines.

Physical Education Instructor, Tennis

- Instructing the fundamentals of tennis, which include rules and regulations of the game.
- Skills include: forehand, backhand, and serve.

Physical Education Instructor, Walking for Fitness

- Instructing an activity course in walking for fitness with emphasis in the different walking techniques for health and fitness.
- Course contents include: distance walking, speed walking, and power walking.

California Polytechnic State University (San Luis Obispo, CA) Jan 02 – Jun 03

Kinesiology Instructor, Biomechanics Laboratory

- Taught a laboratory in biomechanics to kinesiology undergraduates.
- Instructed undergraduates on the concepts of physics, functional anatomy, center of gravity, buoyancy, resistive torque, acceleration and velocity, and ground reaction force.
- Assisted course instructor in designing and updating several of the labs.

Kinesiology Instructor, Professional Activity (Football)

- Designed and taught a professional-activity course in football.
- Instructed undergraduates on the fundamental football skills.
- Skills test and written exam were administered.

Kinesiology Instructor, Professional Activity (Basketball)

- Designed and taught a professional-activity course in basketball.
- Instructed undergraduates on the fundamental basketball skills.
- Skills test and written quizzes were administered.

Kinesiology Instructor, Adapted Physical Education Laboratory

- Taught a laboratory in adapted physical education to kinesiology undergraduates.
- Worked closely with Special-Olympics leaders and athletes.
- Instructed undergraduates on how to teach sports skills to athletes with developmental disabilities.
- Presented lecture materials and led class discussions during lecture hours on several occasions.

Research Assistant

- Worked with kinesiology professor on observational study.
- Filmed and edited videos of middle and high school students performing different sport skills.
- Composed questionnaires regarding observational sports performance.

Professional Experiences in Management

Inhale Therapeutic Systems (San Carlos, CA) Mar 01 – Aug 01
Project Coordinator

BroadVision (Redwood City, CA) Nov 00 – Feb 01
Financial Services Program Manager

Certifications:

Online Instruction, Moodle
Online Instruction, Blackboard
CPR/First Aid/AED (Authorized Instructor), American Red Cross
CPR/First Aid/AED, American Red Cross
Water Safety Instructor, American Red Cross
Coaching Principles, The California Interscholastic Federation