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AN EXAMINATION OF ELEMENTARY PHYSICAL EDUCATION TEACHERS' PERCEIVED
SELF-EFFICACY TOWARD TEACHING CHILDREN WITH ORTHOPEDIC IMPAIRMENTS IN
MONTANA: DO TEACHERS FEEL COMPETENT?

By

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Bachelor of Arts in Physical Education, Arizona State University, Tempe, Arizona, 1992

Thesis

presented in partial fulfillment
of the Requirements for the degree of

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in
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DEDICATION

I would like to dedicate this thesis to all of my family, especially my husband, Chris Holman and youngest son, Peter. Their love, support, encouragement, and patience have given me the strength and determination to accomplish my goals.

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An Examination of elementary physical education teachers' perceived self-efficacy toward teaching children with orthopedic impairments in Montana: Do teachers feel competent?

Chairperson: Dr. Arthur Miller

The purpose of this study was to explore elementary physical educators' self-efficacy beliefs toward teaching children with orthopedic impairments in general physical education class and identify adapted physical education teacher training needs in Montana.

The method for this study is based on the Physical Educators' Self-Efficacy Toward Including Students with Disabilities - Autism (PESEISD-A) (Talliaferro et al, 2010) electronic survey instrument and Bandura's (2006) guidelines. A modification of the PESEISD-A instrument was utilized to examine physical educators' self-efficacy toward teaching students with orthopedic impairments (PESEISD-OI) with elementary physical educators in Montana ($N=83$).

Findings indicated that the lowest levels of self-efficacy were in regards to assessing motor skills, modifying equipment and activities, and teachers with higher levels of self-efficacy perceived less challenges toward teaching students with orthopedic impairments. Teachers who taught in towns of 20,000 – 50,000 in population were significantly less efficacious than teachers in all other size towns, whereas participants in small rural towns (less than 2,500 in population) were the most efficacious. Additionally, teachers who earned undergraduate and graduate credits in adapted physical education and those with coursework in both special education and adapted physical education were positively correlated with perceived self-efficacy toward teaching students with orthopedic impairments. Finally, a significant positive relationship was found between teachers' perceived self-efficacy in self-efficacy beliefs based on their perception of their undergraduate teacher preparation.

This study provides useful data for higher education in regards to pre-service teacher preparation coursework and practicum experiences. Furthermore, this information will assist the Montana Office of Public Instruction in identifying professional development opportunities to ensure that all children with disabilities receive “free and appropriate” education designed to meet their unique needs in a successful, inclusive environment.

Chapter I

Introduction

Montana requires state certification or licensure of physical education/health enhancement teachers at the elementary, middle school/junior high and high school levels. Elementary teachers, known as ‘generalists,’ are certified to teach elementary school children, K-8, in all subject areas including health enhancement and/or physical education (National Association of Sport and Physical Education, 2010). A generalist is not required to hold an endorsement in physical education/health enhancement or specific coursework in adapted physical education (APE). Pre-service teacher preparation coursework requirements, specifically related to adapted physical education and children with disabilities are minimal in Montana. Currently, five of the nine major colleges or universities in Montana offer one separate course in APE. The topic of APE is imbedded in the Physical Education Methods course at the other four campuses. Graduate level coursework in APE is not offered at any of the nine major colleges or universities in Montana.

In 1975, the U.S. Congress enacted the Education of All Handicapped Children Act (Public Law 94-142), to support states in protecting the rights of and meeting the needs of all children with disabilities. P.L. 94-142 assures all children (ages 3-21) a “free and appropriate education (FAPE) which emphasizes special education and related services designed to meet their unique needs...” The law was effective on October 1, 1977. It mandates that all public schools accepting federal funds provide an education to all children with disabilities; an Individual Education Program (IEP); an education in the Least Restrictive Environment (LRE); and instruction in physical education as a direct, educational service. The Education of All Handicapped Children

Act was renamed “Individual With Disabilities Education Act” in 1990 (P.L. 101-476) and amended in 1991 (P.L. 102-119), and again in 1997 (P.L. 105-17). The IDEA was amended by the Individuals With Disabilities Education Improvement Act of 2004 (IDEIA), Public Law 108-446.

Until the 1970s, students with disabilities were educated in special schools or classes. With the initiation of the LRE, the notion of “mainstreaming” children toward a regular classroom setting led to much concern and confusion by educators (Rizzo & Lavay, 2000). Mainstreaming represents a midpoint between full inclusion (all students spend all day in the regular classroom) and dedicated self-contained classrooms. The LRE concept presented unique challenges to teachers, from curricular and pedagogical issues to their own anxieties about teaching children with disabilities in a regular classroom (Rizzo & Lavay, 2000). Physical educators were no exception. The intention of the LRE concept was that when a student with a disability reaches a certain level of competency, he or she was to move closer to the mainstream (i.e., the regular physical education (RPE) class). However, the LRE concept did not exist between APE and RPE (Rizzo & Lavay, 2000). As the efficacy of the LRE law was being questioned, the philosophical “notion” of inclusion emerged as a better representation for education of children with disabilities, even though the term “inclusive” was not mentioned in the law. The philosophy of “inclusion” supports the educational needs of students with disabilities in general physical education classrooms by utilizing special resources, personnel and curricula to make it successful (Block, 2007; Block & Vogler, 1994).

Students who have mild or moderate disabilities are generally placed into regular physical education classes without an accompanying paraprofessional or teachers’ aid. This may be a

more common scenario, particularly when a regular physical education class is the only option. Consequently, K-8 educators assigned to teach physical education rely on their pre-service teacher training preparation (elementary or physical education teacher education), to implement appropriate strategies to meaningfully teach physical education to all children with and without disabilities. Typically, teacher preparation coursework includes one 3 credit elementary physical education methods course. As mentioned previously, some colleges and universities offer adapted physical education coursework. To date, approximately 15 states have defined a certification or endorsement in APE (Alaska, California, Indiana, Louisiana, Maine, Michigan, Minnesota, Nebraska, Nevada, North Dakota, Ohio, Oregon, Rhode Island, Wisconsin and Wyoming), while 36 states and eight territories have not defined the qualifications for teachers to provide adapted physical education to their students with disabilities (APENS, 2006). South Dakota and Texas have endorsements under consideration. Florida, Arkansas and Kansas have eliminated their certification in APE due to the fact that so few people applied. Mainstreaming or inclusion of children with disabilities into a regular physical education classroom presents unique challenges to physical educators as they attempt to meet the needs of all the children, with or without a disability, in a dynamic environment.

Statement of Purpose

The purpose of this study was to examine public school elementary physical education teachers' self-efficacy toward teaching children with orthopedic impairments in general physical education class. An additional purpose was to identify adapted physical education teacher pre-service and in-service training needs in Montana.

Overview of Research Questions

To address the purpose of this study, the following questions and hypotheses guided the data collection and analysis:

1. How confident are elementary physical educators in teaching students with orthopedic impairments in their general physical education class?
 - a. How confident are elementary physical educators in their ability to modify equipment for students with orthopedic impairments?
 - b. How confident are elementary physical educators in their ability to modify activities for students with orthopedic impairments?
 - c. How confident are elementary physical educators in their ability to create a safe environment for students with orthopedic impairments?
 - d. How confident are elementary physical educators in their ability to promote social interactions with peers for students with orthopedic impairments?
 - e. How confident are elementary physical educators in their ability to manage behaviors of students with orthopedic impairments?
 - f. How confident are elementary physical educators in their ability to modify instruction for students with orthopedic impairments?
 - g. How confident are elementary physical educators in their ability to assess the motor skills of students with orthopedic impairments?
 - h. How confident are elementary physical educators in their ability to modify rules for students with orthopedic impairments?
 - i. How confident are elementary physical educators in their ability to collaborate effectively with other teachers/professionals regarding students with orthopedic

impairments?

- j. How confident are elementary physical educators in their ability to motivate students with orthopedic impairments?

2. How do elementary physical educators evaluate their own physiological state when including a student with an orthopedic impairment in their general physical education class?

3. What are the most compelling challenges for elementary physical educators that may make it difficult to include a student with an orthopedic impairment in their general physical education class?

4. Do particular experiences/demographic factors help explain the difference in levels of perceived teacher self-efficacy toward teaching students with orthopedic impairments?

Ho1: There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on teachers' age.

Ho2: There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on teachers' gender.

Ho3: There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based the teachers' size of town or city where they teach.

- Ho4: There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on their years of experience teaching.
- Ho5: There will be no significant different in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the number of students previously taught.
- Ho6: There will be no significant different in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the number of students currently teaching.
- Ho7: There will be no significant relationship in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the teachers' number of undergraduate or graduate credits in adapted physical education or special education coursework.
- Ho8: There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the teachers' degree(s) earned.
- Ho9: There will be no significant relationship in teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on their perception of their undergraduate teaching preparation.
- Ho10: There will be no significant relationship in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the number of in-services teachers attended in the last 10 years.

5. What are the requisites for pre-service and in-service physical education teachers related to teaching children with disabilities in Montana?

Statement of Significance

The results of this study will expand the current knowledge and research in APE using the self-efficacy theory as it relates to physical educators inclusion of students with orthopedic impairments. The Physical Educators' Self-Efficacy Toward Including Students with Disabilities – Orthopedic Impairment (PESEISD-OI) instrument will contribute to the existing Physical Educators' Self-Efficacy Toward Including Students with Disabilities – Autism (PESEISD-A) (Taliaferro, et al., 2010) instrument and other self-efficacy instruments in the field. It will also provide valuable information in regards to self-efficacy beliefs and perceived competency of physical educators in Montana. Further, this study will provide useful data for higher education and the Montana Office of Public Instruction to identify adapted physical education teacher pre-service and in-service teacher training needs in Montana. Finally, this study may help to achieve the intent of the Education for All Handicapped Children Act and the enactment of IDEIA: to ensure that all students with disabilities receive “free and appropriate” physical education available to students without disabilities.

Limitations

A limitation of a study concerns a weakness that potentially limits the validity of the results. The following are limitations of this study:

1. Coverage (sampling) error could occur if any of the survey population (e.g., elementary physical educators) e-mail addresses or name(s) are incorrect.

2. All measures are self-reported, and the possibility of socially desirable responses is acknowledged due to the culturally based tendency to be acquiescent toward inclusion of students with disabilities (Dillman, 2007). Teachers may accept the idea of inclusion, but whether they make specific accommodations for children with unique needs in their classes may not occur (Obrusnikova, 2008) and may misrepresent their true feelings (Wright, 2005).

3. Participants who volunteer for the study may not be a representative sample of the population. Teachers with higher levels of self-efficacy may be more willing to volunteer and compelled to complete the survey.

4. Nonresponse errors threaten the reliability and validity of web-based surveys because of the likelihood that a solicited participant may choose to not take part in a study (self-selection bias, which can include non-received emails and solicitations deleted by potential participants) (Skitka & Sargis, 2006). Age or gender might be useful in a post-survey analysis to evaluate nonresponse error (Dillman, 2007). E-mails to the survey could be bounced by the survey or get sent to their junk/spam folder or get blocked by the server firewall, which could result in “undelivered.” If the researcher receives any e-mail notifications of undeliverable mail, an attempt will be made to verify and correct the recipient’s e-mail address and resend the survey via email. To detect any undeliverable or emails sent to the recipients’ junk email account, the PI will opt for a delivery receipt.

5. This is only one study and generalizations beyond this research presented here may be premature. Teachers may express a perceived self-efficacy toward teaching students with orthopedic impairments based on the description and definition provided. Whether teachers respond with similar levels of self-efficacy to other types of disabilities presented or other formats (e.g., videotape of a specific motor behavior, actual physical encounter, observation or interview), may be appropriate for future studies.
6. Nondifferentiation (giving similar responses to every item), selecting the “no opinion” or “don't know” options, or acquiescence (Tourangeau, 2004) could also affect the reliability and validity of the survey. To minimize this possibility, the scales in Sections I, II, and III were randomly flipped.
7. Technical issues such as computer hardware and software compatibility may exist including browsers, platforms, processors and monitors, which can display graphic images differently or not at all (Yun & Trumbo, 2000). Other technical problems include computer freezes and crashes (Skitka & Sargis, 2006) as well as damaging viruses.

Delimitations

Delimitations of this study were identified to provide direction and focus to the research. The study was subject to the following delimitations:

1. This study was limited to elementary and middle school teachers (K-8) assigned to teach physical education or health enhancement in the state of Montana. Secondary school physical education teachers (9-12 grades) were not included.

2. The survey instrument used in this study is a modification of the Physical Educators' Self-Efficacy Toward Including Students with Disabilities – Autism survey instrument developed by Taliaferro, et al. (2010).
3. The survey instrument used in this study examined physical educators' self-efficacy toward including students with orthopedic impairments. Teachers may perceive their self-efficacy differently toward including children with other types of disabilities.
4. There may be other attributes or factors that could influence a physical educators' perceived self-efficacy in regards to teaching children with disabilities that the researcher did not consider and/or include.
5. Elementary physical education and health enhancement teachers who voluntarily complete the survey were included in the study. Contact information for all elementary physical educators was not available. Consequently, there may be teachers who were not contacted and thus did not receive an e-mail invitation to participate.

Definition of Terms

For the purposes of this study, the following definitions of terms begin with operational definitions, and followed by lexicon meanings:

Operational Definitions

Elementary Physical Education Teachers – kindergarten through 8th grade physical education teachers including middle school and junior high school.

Health Enhancement – a term used by the Montana State Department of Education (OPI, 1999) for a subject area that includes content from the disciplines of both health and physical education with the major focus on the development of a healthy lifestyle. Public schools in Montana apply the terms health enhancement and physical education at all grade levels (K-12) interchangeably.

Note: While a student with an orthopedic impairment has knowledge of health, their acquisition of this knowledge may not be affected by a teacher's low self-efficacy toward teaching this student. However, a teacher's low self-efficacy toward teaching this student in physical education could affect the student's level of activity in physical education class. Therefore, to avoid ambiguity, this study will use the term 'physical education' exclusively.

In-service teacher - Intended for those actively engaged in the profession or activity concerned (e.g., teacher in-service workshop).

Inclusion – The philosophy of supporting the educational needs of students with disabilities in general education classrooms (Block, 2007). Educating all children with disabilities (mild to severe) in regular education settings even if it involves special resources, personnel, and curricula to make it successful (Block & Vogler, 1994).

Mainstreaming - The practice of bringing students with disabilities into the “mainstream” of student life. Mainstreaming represents a midpoint between full inclusion (all students spend all day in the regular classroom) and dedicated, self-contained classrooms.

Orthopedic Impairment - A severe orthopedic (muscle or bone) impairment that adversely affects a child’s educational performance. Students may have issues using their legs, arms, and hands and some may use assistive technology or devices to help them function as independently as possible (National Association of Parents with Children in Special Education, 2007). The term includes impairments caused by a congenital anomaly, impairments caused by disease (e.g., poliomyelitis, bone tuberculosis), and impairments from other causes (e.g., cerebral palsy, amputations, and fractures or burns that limit muscle use or movement) (IDEIA, 2004).

Physical Educators – All teachers in Montana schools employed to teach physical education including general elementary education teachers, health enhancement teachers, and secondary education teachers.

Pre-service teacher - is the education and training provided to student teachers prior to any teaching.

Severe Orthopedic Impairment – “a severe impairment means a problem that is present more than 50% of the time, with an intensity, which is partially disrupting the person’s day-to-day life and which happens frequently over the last 30 days. Impairments can be

temporary or permanent; progressive, regressive or static; intermittent or continuous.

The deviation from the population norm may be slight or severe and may fluctuate over time” (ADA, 2009).

Lexicon Meanings

Adapted Physical Education (APE) – Programs designed to develop physical and motor fitness; fundamental motor skills and patterns; and skills in aquatics, dance, and individual and group games and sports so that the individual with a disability can ultimately participate in community-based physical activity programs to enjoy an enhanced quality of life.

Diversified programs generally have the same goals and objectives as general physical education, but are modified when necessary to meet the needs of each individual (Kelly, 2006).

Competence – A combination of knowledge, skills and behavior used to improve performance; or as the state or quality of being adequately or well qualified, having the ability to perform a specific role. To be competent a person would need to be able to interpret the situation in the context and to have a repertoire of possible actions to take and have trained in the possible actions in the repertoire, if this is relevant. Regardless of training, competency would grow through experience and the extent of an individual to learn and adapt (Wikipedia, 2010).

Disability – A physical or mental impairment that substantially limits one or more major life activity; having a record of such an impairment; and being regarded by others as having an impairment (Americans with Disabilities Act [ADA], 2009).

Full Time Equivalency (FTE) – A unit that represents one full-time state employee. An FTE of 1.0 means that the person is equivalent to a full-time worker.

Individual Educational Plan (IEP) - IEPs are required for students participating in the special education programs of recipients of funding under the IDEIA (U.S. Department of Education, 2010).

Individuals with Disabilities Education Improvement Act (IDEIA) - a law ensuring services to children with disabilities throughout the nation. IDEIA governs how states and public agencies provide early intervention, special education and related services to more than 6.5 million eligible infants, toddlers, children and youth with disabilities (U.S. Department of Education, 2010).

Mastery Experiences – One’s interpretations of one’s own previous experience performing a particular task (Block et al., 2010) and the most powerful source of self-efficacy.

“Successes build a robust belief in one’s personal efficacy” (Bandura, 1994).

Perceived Self-Efficacy – People’s beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives (Bandura, 1994).

Physical Education – The development of: (a) physical and motor fitness; (b) fundamental motor skills and patterns; and (c) skills in aquatics, dance and individual and group games and sports, including intramural and lifetime sports. Includes special physical education,

adapted physical education, movement education, and motor development (U.S. Office of Education, 2004).

Physiological Arousal – A source of self-efficacy involving a person’s reactions in judging their capabilities (e.g., stress reactions, negative emotions (Bandura, 2004)).

Self-Efficacy – Refers to “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997) and determine how people feel, think, motivate themselves and behave (Bandura, 1997).

Self-Efficacy Theory – Psychological procedures alter the level and strength of self-efficacy. It hypothesizes that expectations of personal efficacy determine if coping behavior will be initiated, how much effort will be required, and how long it will prolong when one encounters obstacles and adversity (Bandura, 1977).

Social Persuasion – People who are persuaded verbally that they possess the capabilities to master given activities are likely to demonstrate greater effort and sustain it than if they have feelings of self-doubts and think about personal deficiencies when issues occur (Bandura, 1994).

Vicarious Experience – Observing others successfully perform the same tasks and activities (Pajares, 2002).

Chapter II

Review of the Literature

The purpose of this study was to examine the self-efficacy of public school elementary physical education teachers toward teaching children with orthopedic impairments in general physical education class. An additional purpose was to identify adapted physical education teacher pre-service and in-service training needs in Montana.

This chapter provides a review of the relevant literature and is presented in five sections: (a) Theoretical Framework, (b) Teacher Preparation, (c) Pre-Service and In-Service Teacher Attitudes, (d) Physical Activity Among Youth with Disabilities, (e) Adapted Physical Education, and (f) Montana State and Federal Laws. At the conclusion of the literature review, the importance of physical educators' self-efficacy toward including students with disabilities will be discussed.

Theoretical Framework of the Social Cognitive Theory

The Social Cognitive Theory (SCT) can be defined as the product of a reciprocal and dynamic interaction of personal factors, behavior, and the environment influences (Bandura, 1986; Pajares, 2002). How individuals interpret the results of their own behavior, informs and adjusts their environments and the personal factors they possess will then change their future behavior (Pajares). For example, physical education teachers can work to improve their students' self-beliefs about their ability to succeed in physical education class (personal factors), improve their gross motor skills and self-control (behavior), and change the class structures that can work to maximize student success (Figure 1).

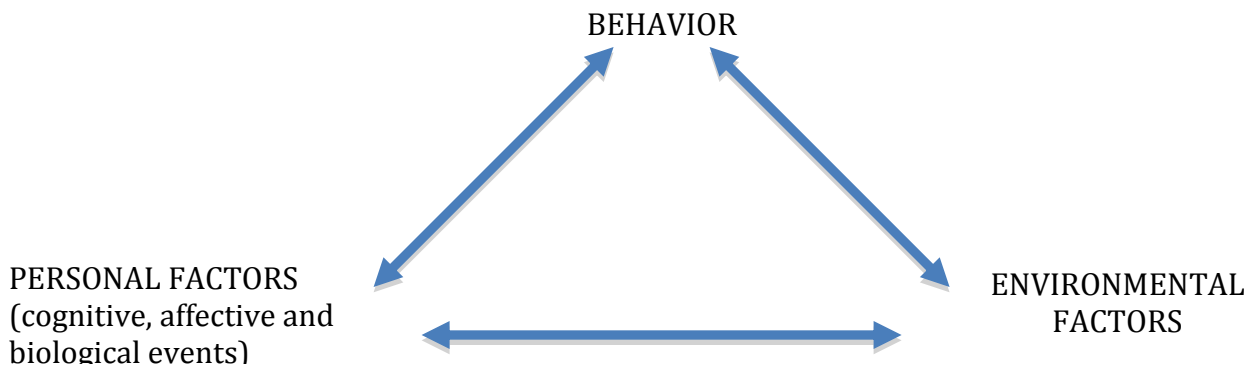


Figure 1. Bandura's Triadic Reciprocal Determinism (Bandura, 1997)

“Perceived self-efficacy refers to beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997). Self-efficacy beliefs provide the foundation for human functioning and are at the core of the social cognitive theory. Unless people believe that their actions can result in the outcomes they desire, they have little incentive to act when faced with difficult situations (Pajares, 2002). How an individual chooses to conduct him or herself can often be predicted by what they believe they are capable of rather than what they may actually be capable of accomplishing (Pajares). “Such belief influences the courses of action people choose to pursue, how much effort they put forth in given endeavors, how long they will persevere in the face of obstacles and failures, their resilience to adversity, whether their thought patterns are self-hindering or self-aiding, how much stress and depression they experience in coping with taxing environmental demands, and the level of accomplishments they realize” (Bandura). In other words, an individual may have acquired the requisite knowledge and skills to be successful, yet may not have the confidence to utilize their knowledge and skills to accomplish a given task effectively. Confident individuals can anticipate successful outcomes and conversely, one who lacks confidence may anticipate negative performance outcomes.

However, if requisite skills and knowledge are lacking or do not exist, the probability of succeeding in a given task diminishes. Given appropriate skills and adequate incentives, efficacy expectations are a major determinant of people's choice of activities (Bandura).

One's self-efficacy beliefs are developed by four main sources of influence (Bandura, 1994) -- mastery experience, vicarious experience, social persuasions and psychological states. *Mastery experience*, the most influential source of self-efficacy, is the interpreted result of one's preceding performance(s) (Pajares, 2002). Individuals partake in tasks or activities, translate the acquired results to form beliefs about their competence, consistent with the beliefs created and engage in subsequent tasks or activities (Pajares). A resilient sense of efficacy requires perseverance and experience to overcome difficulties and setbacks (Bandura). Once individuals realize that they have the ability to succeed, they will stick it out when faced with difficulty, rebound more quickly and emerge stronger (Bandura).

The second source that people use to create self-efficacy beliefs is by observing others successfully perform the same tasks and activities or *vicarious experience* (Pajares, 2002). While this source of information is weaker than mastery experience, it is particularly effective when individuals are doubtful about their own competence or have limited experience (Pajares). The effects of social modeling contribute and strengthen the observer's beliefs about their capabilities, "If they can do it, so can I!" (Pajares). The result of modeling on perceived self-efficacy is strongly influenced by the models' attributes, likeness, successes and failures (Bandura, 1994). Competent models communicate and teach observers (e.g., teachers) the strategies, knowledge and skills for success, which in turn, raises perceived self-efficacy beliefs

(Bandura). A study, "*I Think I Can: Mentoring as a Means of Enhancing Teacher Efficacy*" explored mentoring as a means of enhancing teacher self-efficacy and found that successful modeling as a mentor creates a mastery experience while working with new educators and mentors can offer expertise and support that contributes to the learning of both teachers and students (Yost, 2002).

The next source of self-efficacy beliefs is *social persuasion*. This notion strengthens people's beliefs that they possess what it takes to succeed (Bandura, 1994) and is an important part in the development of self-efficacy beliefs (Pajares, 2002). Effective persuaders must nurture an individual's beliefs in their competence while maintaining that the foreseeable success is achievable (Pajares). Conversely, negative persuaders can weaken self-efficacy beliefs resulting in the reverse outcome (Pajares). It is often easier to discourage a person and weaken their self-efficacy beliefs than to build up their confidence through inspiring encouragement (Bandura; Pajares).

Individuals are somewhat dependent on their *psychological states of arousal and moods* (somatic and emotional), the fourth source of self-efficacy beliefs. Examples such as anxiety and stress reactions in judging their personal efficacy, as well as competence and ability to perform (Bandura, 1994; Pajares, 2002) can affect one's self-efficacy. A person's depressed mood lowers their self-efficacy, while a positive mood will boost an individual's efficacy beliefs (Bandura; Pajares). An individual's behavior is determined by each of these factors, however not in equal strength as some sources of influence are stronger than others and do not occur simultaneously.

Unless people believe they can produce desired effects by their actions, there is no incentive to perform (Bandura, 1997). Efficacy belief is a major basis of action (Bandura).

In Bandura's *Guide for Constructing Self-Efficacy Scales* (2006), he states that self-efficacy is concerned with perceived capability and that efficacy items should accurately reflect the construct. Given that self-efficacy is concerned with perceived capability, questions should be phrased in terms of *can do* rather than *will do* (Bandura). Bandura clarifies with a further explanation that "*can* is a judgment of capability; *will* is a statement of intention" (p. 308; Bandura, 1997, p. 43), which examines the perceived self-efficacy beliefs of physical educators toward teaching students with disabilities. According to Bandura (2006), if self-efficacy scales target factors that have little or no impact on the domain of functioning, research cannot give a predictive association. Thus, self-efficacy items must be customized to activity domains (e.g., physical education) and examined through the multifaceted ways in which self-efficacy beliefs function within a particular activity domain (Bandura). It is important that the self-efficacy scales are linked to factors that determine the quality of functioning within the subject area (e.g., modify equipment and activities for students with disabilities in RPE class).

The PESEISD-A (Taliaferro, et al. 2010) survey instrument was developed in accordance with Bandura's (2006) guidelines for constructing a self-efficacy scale following the format, wording and rating scale recommendations (0 to 100 or 0 to 10). The survey instrument was then expanded to explore the sources of self-efficacy (mastery experience, vicarious experience, social persuasion and physiological state of arousal), behaviors and perceived challenges of physical educators toward inclusion of students with autism in RPE class. It is the first valid instrument to measure self-efficacy beliefs toward the inclusion of students with disabilities. Participants

($n=236$) consisted of elementary, middle school and high school physical education teachers representing 13 states. The PESEISD-A survey instrument revealed a high level of internal consistency (Cronbach's $\alpha = 0.928$) and test-retest reliability indicated a "good" level of temporal stability ($r = 0.859$) (Taliaferro, 2010). Based on indicators of content and criterion-related validity, the 10-item self-efficacy scale was found to be a valid and reliable instrument to measure the self-efficacy beliefs of physical educators in regards to the inclusion of students with autism. Through a multiple regression analysis, the results revealed that while mastery experience was the most significant unique predictor, the combination of mastery experience, vicarious experience, social persuasion and psychological stimulus significantly predicted self-efficacy (Taliaferro, 2010). The researcher also found that self-efficacy significantly predicted teacher self-reported behavior; as well as the number of graduate level APE academic courses and more experience teaching students with autism as significant predictors of physical educators' self-efficacy toward the inclusion of students with autism in RPE (Taliaferro).

Teacher Preparation

Montana requires certification or licensure of physical education/health enhancement teachers at the elementary, middle school/junior high and high school levels. An undergraduate degree in elementary education (generalist) and a current state teaching certification will qualify a generalist to teach all subject areas including physical education to children in grades K-8 (National Association of Sport and Physical Education, 2010). According to the Montana Office of Public Instruction (OPI, 2010), approximately 547 certified teachers are assigned to teach physical education, health and physical education and/or adapted physical education (K-8) in Montana (313 Full Time Equivalent (FTE)). Nearly 77 percent hold an endorsement in Physical

Education and Health (K-12), and the remaining 23 percent have an Elementary Curriculum degree (4.99 FTE (1.5 percent) physical educators are assigned to teach adapted physical education).

The Montana Professional Education Preparation Program Standards do not require specific coursework in Adapted Physical Education for Physical Education or Health Enhancement teachers (OPI, 2007). For all children to meet the Health Enhancement Benchmarks set forth by the Montana Standards for Health Enhancement, each local school is required to provide for “the employment of adequately trained teachers and ongoing professional development opportunities” (OPI, 1999).

Elementary teacher education degree programs are currently offered at nine major colleges and universities in Montana. Of the nine, eight offer a physical education or health enhancement teaching degree option: University of Montana (UM), Missoula, Montana State University (MSU) Bozeman, MSU Billings, MSU Northern in Havre, Carroll College, University of Great Falls (UGF), Rocky Mountain College, and University of Montana Western (UM Western). Five of the eight universities offer a two-three credit required course in ‘Adapted Physical Education’ available to physical education majors: MSU Bozeman (Health Enhancement for Atypical Populations); UGF (Adapted Physical Education); UM Western (Adapted PE and Recreation) MSU Northern Havre (Adapted Physical Education) and MSU Billings (Special Populations in Health and Physical Education). The adapted physical education courses are taught in a lecture style format and do not include field experience. At the University of Montana and Carroll College, the topic of adapted physical education is imbedded in the required Methods for Physical Education courses.

MSU Billings, the UM Western and the UM Missoula are accredited institutions by the National Council for Accreditation of Teacher Education (NCATE). The NCATE outlines ten Standards for Professional Development Schools (PDS) for evaluating teacher education programs and improving schools in the U.S. Standard number 4 is “Learning in the Context of Practice” which states --

PDSs embrace the concept that certain kinds of learning occur best in the context of real world practice. Candidates learn about teaching and what to teach in the university; they learn how to teach in schools. Similarly, some aspects of student learning are best achieved by *doing*. Professional development schools are grounded in this concept and designed to support this kind of learning.

NASPE adopted the NCATE standards in its document, Standards for Initial Programs in Physical Education Teacher Education (NASPE, 2008). Despite the national standards set forth by NASPE and NCATE, the professional education preparation for elementary physical educators to teach children with disabilities in Montana appears to be minimal. This will be discussed further in the section, Adapted Physical Education.

Pre-service and In-service Teacher Attitudes

Considerable research has been conducted to examine the relationship of the attitudes of current physical educators’ (in-service) as well as undergraduate students majoring in physical education (pre-service) toward teaching students with disabilities in RPE (Block & Rizzo, 1995; Duchane et al., 2008; Elliott, 2008; Folsom-Meek et al., 1999; Hardin, 2005; Hodge et al., 2002; Hodge & Jansma, 2000; Kowalski & Rizzo, 1996; Obrusnikova, 2008; Oh, et al., 2010; Rizzo, 1984; Rizzo, et al., 2007; Rizzo & Kirkendall, 1995; Everhart, B., 2009). The Physical Educators’ Attitudes Toward Teaching the Handicapped (PEATH; Rizzo, 1984) and later adaptations

(Physical Educators' Attitude Toward Teaching Individuals with Disabilities - PEATID-III; Rizzo, 1993) based on the theory of reasoned action (TRA; Ajzen & Fishbein, 1975) is the instrument most widely used to measure the attitudes of future and current physical educators (Taliaferro, 2010). The TRA model proposes that intention to perform a given behavior (e.g., teach students with disabilities in a regular class) is the best predictor of behavior (Folsom-Meek & Rizzo, 2002). According to this model (Fishbein & Ajzen, 1980) behavior can be predicted from intentions, which are determined by attitudes and subjective norms. Thus, to predict specific behavior, a person's specific attitude toward that behavior needs to be determined. One limitation of the TRA is the assumption that people have the ability to choose their behaviors (Kozub & Leinert, 2003). In 1985, the TRA was expanded to include perceived behavioral control, which is now called the theory of planned behavior (TpB; Ajzen, 1985).

A revision of the PEATID-III was developed according to the protocol of the TpB, called the PEATID-IV (Tripp & Rizzo, 2006) and validated for content and construct validity. However, the PEATH (Rizzo, 1984) and subsequent versions measure outcome evaluations but not belief strengths, which is a limitation in all studies that have used a version of the PEATH (Kozub & Lienert, 2003). The PEATID survey includes only one question inquiring as to the teacher's perceived competency. The question reads "*How competent do you feel teaching students with disabilities?*" The response choices given were rated on a 3-5 point Likert scale (depending on the PEATID version) from "not at all" to "very competent" to "extremely competent." Teachers' sense of self-efficacy is not necessarily consistent across the different types of tasks or subject matters performed by teachers (Bandura, 1997). Scales of self-efficacy must be tailored to the particular domain of functioning (Bandura, 2006) and measures of teacher efficacy need to look

at teachers' assessments of their competence across the wide scope of tasks and activities for the data to be useful and generalizable (Tschannen-Moran, Hoy & Hoy, 1998).

Early research (Rizzo, 1984) studied the attitudes of physical educators toward teaching students with disabilities in a regular class and found that physical educators held more favorable attitudes toward teaching students with learning disabilities than those with physical disabilities. Further research examining the relationship between selected attributes of physical educators and their attitudes toward teaching students labeled mentally retarded, behaviorally disordered, and learning disabled indicated that children with learning disabilities were viewed more favorably than those with behavioral or intellectual disorders (Rizzo & Vispoel, 1991). Elliott (2008) ascertained the relationship between teachers' attitudes toward inclusion of students with mild to moderate mental disabilities and the amount of practice attempts performed and found that teachers with a positive attitude toward inclusion of students with disabilities provided their students with significantly more practice attempts with greater success.

Additional studies regarding how in-service teachers' attributes affect their attitudes toward teaching students with disabilities has been explored extensively (Block & Rizzo, 1995; Hardin, 2005; Obrusnikova, 2008; Rizzo, 1985). A survey conducted by Rizzo (1985) to assess the relationship between physical educators' attitudes toward teaching students with disabilities and six attributes of teachers (gender, highest degree earned, age, coursework in APE and special education and teaching experience) found that age and courses outside of physical education were found to be significantly related to teachers' attitude. No relationship was found with the

other four attributes examined. Block & Rizzo (1995) found that while there was a significant difference between attitudes toward teaching students with severe and profound disabilities, only a modest amount of the discrepancy was explained by teachers' attributes. Their study revealed that as the quality of teaching experiences improved and adapted physical education coursework increased, attitudes toward teaching students with severe disabilities were more positive (Block & Rizzo, 1995). Additionally, an increase in both coursework in special education and perceived teacher competence toward teaching students with profound disabilities resulted in more favorable attitudes (Block & Rizzo, 1995). Obrusnikova's study (2008) sought to identify variables that contribute to physical educators' positive beliefs toward teaching children with disabilities and found that teachers' beliefs were more favorable about teaching children with specific learning disabilities and less favorable about teaching children with emotional and behavior disorders.

A qualitative study was conducted to identify practicing physical educators' perspectives regarding the APE curriculum of their personal physical education teacher preparation programs and how their program affected their feelings of competence and confidence when teaching children with disabilities in GPE (Hardin, 2005). Through observation and interviews, Hardin found three emerging themes from the data: 1) the importance of teaching experience (mastery experience) as the most valuable knowledge source to learn how to teach children with disabilities, 2) the example of other teachers (vicarious experience) and, 3) the influence of their adaptive physical education coursework during their physical education teacher preparation program. Hardin concluded that teacher education programs need to provide their pre-service teachers the opportunity to teach students with disabilities in their field and student teaching

experiences, and teaching students with disabilities should be “a thread of information woven through the teacher education curriculum.”

There has been a plethora of research regarding pre-service teachers attitudes toward teaching children with disabilities. Rizzo & Kirkendall (1995) assessed the attitudes of future physical educators toward teaching students with mild disabilities and suggested that perceived competence and academic preparation were the best predictors of favorable attitudes. Duchane, Leung & Coulter-Kern (2008) found that pre-service teachers displayed a positive, although low, attitude score toward teaching children with disabilities. Major teacher-related variables were examined including academic preparation, experience, and perceived competence working with students with disabilities. The results of the study revealed that students with prior experience with persons with disabilities, those majoring in adapted physical education, and female students were more positive than males toward individuals with disabilities and factors related to positive attitudes (Duchane, Leung & Coulter-Kern, 2008). Hodge, Davis and Sherill (2002) compared the effects of two practicum types (off campus and on campus) on physical education teacher education (PETE) students' attitudes and perceived competence toward teaching school-aged children with physical disabilities or intellectual disabilities. They suggested that “if the quality or quantity of professional preparation is limited (i.e., one APE course) and does not provide for adequate attitude-change strategies, PETE students' attitudes and perceived competence in teaching students with disabilities will not change favorably or may be adversely impacted” (p. 167).

The PEATID-III (Rizzo, 1993) instrument was utilized by Hodge and Jansma (2000) to examine the attitudes of future physical educators and other enrolled students from 40 colleges and universities nationwide toward teaching students with disabilities. This study found that female participants with experience teaching individuals with disabilities showed more positive attitudes and perceived comfort than male peers (with and without teaching experience) and female peers without teaching experience. Yet both male and female participants tended to be ambivalent and indecisive toward teaching students with physical disabilities (Hodge & Jansma, 2000). Participants' ethnic status, academic major and coursework preparation were not significant toward overall attitude scores toward teaching children with disabilities. Though participants who had taken coursework specifically designed to prepare them to teach students with sensory and physical disabilities (e.g., adapted physical education) revealed higher attitude scores (Hodge & Jansma, 2000).

A study conducted to examine the attributes of pre-service teachers and their attitudes toward teaching individuals with disabilities revealed that while infusion-based and APE courses, along with their program major were significant predictors, pre-service teachers perceived competence was the best predictor of positive attitudes toward teaching/working with students disabilities (Kowalski & Rizzo, 1996). Folsom-Meek, Nearing and Rizzo (1999) utilized the PEATID-III (Rizzo, 1993) to explore attitudes of future professionals in 44 states ($n=3,090$) at institutions of higher learning and found that pre-service teachers with more educational preparation with individuals with disabilities, greater perceived competence as well as experience with individuals with disabilities predicts positive attitudes toward teaching students with disabilities.

The results of research conducted to assess pre-service teachers' attributes associated with positive intentions toward teaching a student with Attention Deficit Hyperactivity Disorder in GPE found that pre-service teachers with more experience teaching students with disabilities rated themselves as feeling more competent and more aware of factors under their control that influence their ability to teach children with disabilities in GPE (Oh et al., 2010).

A qualitative study (Rust & Sinelnikov, 2010) involved interviews with a pre-service teacher pre and post his teaching practicum and found that the general education special education course pertained to "just supervision and a little like play time" but did not really pertain to physical education. The pre-service teacher in this study also had difficulties distinguishing what type of disability students had and how to plan to teach these students effectively perhaps because of his lack of content and pedagogical knowledge about these students (Rust & Sinelnikov).

The anxiety of pre-service teachers teaching students with disabilities was investigated by Everhart (2009) and found that students were more anxious and nervous working with students with disabilities than without disabilities. A pre-service teacher interviewed by Hardin (2005) revealed fear about spending time with someone with a disability and was afraid that the student would "flip out or something" and "scared I just wouldn't be able to communicate with him" (p. 52). Everhart suggests the need for teacher educators to provide more clinical teaching experience that includes students with disabilities. These findings are compatible with Bandura's theory of self-efficacy and the relationship of the psychological source (somatic and emotional) in judging one's personal efficacy, competence and ability to perform (Bandura, 1994; Pajares, 2002).

Little research has been conducted using Bandura's (1977) self-efficacy theory to measure the self-efficacy of physical educators toward inclusion of children with disabilities, particularly orthopedic impairments. One survey instrument, the Physical Educators' Self-Efficacy Toward Including Students with Disabilities – Autism (PESEISD-A), developed by Taliaferro and colleagues (2010), based on Bandura's (2006) guidelines, found that the number of graduate level APE courses and more experience teaching students with autism were significant predictors of physical educators' self-efficacy toward inclusion of students with autism.

The theory of self-efficacy and the influence on the development of competency in respect to adapted physical educators had limited attention and research prior to the PESEISD-A. The PESEISD-A survey instrument has been deemed a reliable and valid instrument (Taliaferro, 2010) to examine teachers' self-efficacy toward teaching students with autism. Thus, a modification of the PESEISD-A to examine physical educators' self-efficacy toward teaching students with orthopedic impairments should yield valuable data and useful information in the area of APE.

Physical Activity among Youth with Disabilities

The National Health and Nutrition Examination Survey (HNANES) report revealed that since 1980 the percentage of overweight children, ages 6-11, increased by more than 300 percent from (6.5% to 19.6%) and by 350 percent (from 5.0% to 18.1%) for adolescents ages 12-19 (HNANES, 2008). The risks and consequences of childhood overweight and obesity, with or without a disability, include chronic health conditions and disease (e.g., high blood pressure, Type II diabetes, metabolic disorders and cardiovascular disease). Children and adolescents

experiencing weight issues are faced with the health consequences and social effect that is often exacerbated through adulthood (Foxhall, 2006). A population based prevalence study reported that secondary conditions are common among adults with disabilities (Kinne, Patrick, & Doyle, 2004). The study revealed that 87% of those with disabilities reported at least one secondary condition as a result of their disability and 49% of individuals without disabilities reported at least one condition. People with disabilities reported more than three times as many secondary conditions than those without disabilities. Secondary conditions most common in people with physical disabilities can contribute to obesity including mobility limitations, physical deconditioning, poor fitness, fatigue, chronic pain, contractures, autonomic dysreflexia, pressure sores, seizures, depression, arthritis and social isolation (Liou, Pi-Sunyer, & Laferrere, 2005).

Youth with physical and cognitive disabilities have a higher prevalence of overweight than their peers without disabilities (Rimmer, 2007). The Council on Children with Disabilities Executive Committee of the American Academy of Pediatrics encourages health care professionals to promote participation in sports, recreation and physical activities to children with disabilities and their families in the least restrictive environment (Murphy, Carbone, Council on Children with Disabilities, 2008).

One of the overarching goals of the Healthy People 2010 initiative and maintained in the Healthy People 2020 objectives was to “promote the health of people with disabilities, prevent secondary conditions and eliminate disparities between people with and without disabilities in the U.S. population” (U.S. Department of Health and Human Services, 1999; U.S. Department of Health and Human Services, 2009). These documents affirm the increased rate of disability among

youth and the importance of targeting activities and services that specifically address all areas of health and well being, including promoting health, avoiding secondary conditions and removing barriers. Secondary conditions are prevalent among adults with disabilities and they are more likely to experience pain that decreases their activity level than the nondisabled (Kinne, Patrick, & Doyle, 2004). Since people with disabilities are a potentially underserved population, they would be expected to experience disadvantages in health and well being compared with people without disabilities. Surgeon General Reports emphasize the high risk of obesity and obesity related disorders particularly among people with mental illness (Galson, 2008; U.S. Health and Human Services, 2010). The associated health risk factors for youth with mental health problems include poor nutrition, inadequate exercise, substance abuse, and lack of adequate health care monitoring (Varley & McClellan, 2009). Possible side effects of psychiatric medications for children and adults with mental health problems include rapid weight gain. Those with a long-term disability further substantiate and necessitate health promotion including physical, social, emotional, or societal. Correll et al., (2009) showed a marked weight gain of more than 7% total body weight over a 12-week period in children and adolescents aged 4-19 treated by antipsychotic medications.

Adapted Physical Education

Since the inception of Public Law 94-142 (Education of All Handicapped Children Act) in 1975, the subject of adapted physical education (APE) has been researched extensively. One early survey in the field of APE was developed by Dummer (1982) to assess the educational and experiential backgrounds, current and past teaching assignments, and teaching competencies of public school physical educators in the State of Maryland. This study revealed that physical

educators needed additional in-service training coursework to help them become more competent in individualized instruction and evaluating motor skills (Dummer, 1982).

In 1985, the Office of Special Education and Rehabilitative Services, granted Bundschuh (1987) a three-year project to develop a needs assessment survey instrument, *Comprehensive System of Personnel Development in Physical Education (CSPD-PE)* with a specific focus on the needs of physical educators serving children with disabilities. The intended use of this instrument was for State Department of Education personnel to determine service needs in special physical education. During the first year, the project staff met with state education agency personnel to review the CSPD portion of all State Plans submitted to the Office of Special Education and Rehabilitative Services (Bundschuh, 1987). To implement the SpecPE Needs Assessment Management System, both regional and on-site training programs were provided to personnel in the contiguous 48 states, Alaska and Puerto Rico during the second and third year.

Unfortunately, search results of literature for any use of this instrument were unsuccessful.

However, it is important to note that the U.S. Department of Education recognized the necessity to request assistance to facilitate a nationwide, comprehensive needs assessment for children with disabilities.

Perhaps an outcome of the CSPD-PE needs assessment prompted subsequent research and surveys in the field of APE. A questionnaire was developed on adapted physical education service delivery to identify adapted physical education teacher training needs in Indiana (Davis & Dummer, 1987). The research revealed that teachers found it difficult to assess student skills, including physical fitness, gross motor skill, sports skill and knowledge and motor development

characteristics of students with disabilities. Students with disabilities were evaluated more frequently based on effort, behavior and improvement rather than skills and knowledge, which should be specified in the student's individual education plan (IEP). However, few respondents reported knowledge of or participation in the IEP process (Davis & Dummer, 1987).

Davis (1993) developed a survey to determine the APE service delivery in California. This study indicated a significant need for in-service training in the areas of knowledge of disabling conditions, individualized instruction, and early childhood education and motor abilities.

In an effort to develop national standards and a national certification examination for adapted physical educators, the National Consortium for Physical Education and Recreation for Individuals with Disabilities (NCPERID) and Kelly (1992) were charged with developing a national job analysis survey to determine the roles and responsibilities of adapted physical educators, their teacher training preparation in APE and their perceptions regarding the emphasis of their training. The five-year project was funded through the U.S. Department of Education, Office of Special Education and Rehabilitative Services. As a result of this study, an Adapted Physical Education National Standards (APENS) examination was created and administered throughout the U.S. in 1997. Subsequently, APENS developed the certificate of APE (CAPE) for qualified physical educators and to bring about appropriate professional recognition. To date, approximately 15 states have defined a certification or endorsement in APE (Alaska, California, Indiana, Louisiana, Maine, Michigan, Minnesota, Nebraska, Nevada, North Dakota, Ohio, Oregon, Rhode Island, Wisconsin and Wyoming). This translates into 36 states and eight

territories that have not defined the qualifications for teachers to provide adapted physical education to their students with disabilities (APENS, 2008).

As most students with disabilities are included in general physical education classes, it is vital that general physical educators are prepared to teach all children with disabilities, (whether subtle or immediately apparent) by utilizing a variety of instructional strategies that support learning and encourage a healthy lifestyle (Oh et al., 2010). Developing the competency to safely, successfully and meaningfully include students with disabilities in RPE class can present unique challenges (Taliaferro, 2010) including safety, instructional modifications, class structure and organization, curricular modifications, equipment and activity accommodations and behavior management (Block, Klavina & Flint, 2007). Constraints such as class size and the various ability levels of individuals with and without disabilities can affect the success or failure of students and physical educators in RPE class (Menear & Davis, 2007). General elementary and physical educators may be unaware of alternative teaching styles (e.g., task teaching or guided discovery) that may better meet the needs of students with disabilities and help to create a successful inclusive environment (Lieberman, James & Ludwa, 2004). Teaching physical education presents exceptional challenges for those who strive to meet the needs of the children with disabilities without neglecting the needs of children without disabilities (Elliot, 2008). In Montana, 15 physical educators are assigned to teach between 0.066 and 0.75 FTE (total 8.4 FTE) of adaptive physical education (K-8) with either an endorsement in Physical Education and Health (K-12) or Elementary Curriculum (Montana Office of Public Instruction, 2010).

Montana State & Federal Laws

The Americans with Disabilities Act of 1990 (ADA) defined 'disability' as a "physical or mental impairment that substantially limits one or more major life activity; having a record of such an impairment; or being regarded by others as having an impairment" (ADA, 2009) such as individuals with a severe facial scarring, a cleft palate, or a speech impairment (e.g., stuttering). Disability categories can include an array of classifications including cognitive, speech or language impairment, orthopedic impairment, emotional disturbance, specific learning disability, autism and sometimes multiple disabilities (U.S. Department of Education, 2009). Students who have mild to moderate disabilities are typically placed into a general physical education class. According to the National Center for Education Statistics, in 2006-2007, nearly 7 million children in the United States with disabilities are served under Individuals with Disabilities Education Improvement Act (IDEIA), Part B. In Montana, 18,557 or 12.8% of public school children, ages 3-21 years old are served under the IDEIA (IES, 2008).

The Rehabilitation Act (P.L. 93-112, Section 504) was created in 1973 to assure that individuals with disabilities are not excluded from any program or activity receiving federal funding based on their disability. Students with disabilities who do not qualify for services under IDEIA, yet still require reasonable accommodations to benefit from their education, must have a written 504 plan. The 504 plan identifies modifications and accommodations that the student will require to be given the same program as individuals without disabilities.

In 1975, Congress passed Public Law 94-142 (Education of All Handicapped Children Act), which was revised in 2004 to what is now known as the Individuals with Disabilities Education

Improvement Act (IDEIA). The IDEIA (Public Law 108-466) states that physical education is a required service for children and youth between the ages of 3-21 who qualify for special education because of a specific disability or developmental delay (IDEIA, 2004). In order to receive federal funds, states must develop and implement policies that assure a free appropriate public education (FAPE) to all children with disabilities. As a result of P.L. 94-142, states and local agencies are required to have a Comprehensive System of Personnel Development (CSPD) “to adequately and appropriately prepare personnel to implement quality direct service programs for all children and youth with disabilities” (U.S. Office of Education, 1977, p. 42474). Therefore, all teachers are required to meet the needs of all children, with or without disabilities.

Public Law 108-446 mandates physical education to children with disabilities. Specifically, Section 300.39 (b) (2)(i) states:

The development of—

(A) Physical and motor fitness

(B) Fundamental motor skills and patterns; and

(C) Skills in aquatics, dance, and individual and group games and sports (including intramural and lifetime sports); and

(ii) Includes special physical education, adapted physical education, movement education, and motor development.

- (3) Specially designed instruction means adapting, as appropriate to the needs of an eligible child under this part, the content, methodology, or delivery of instruction--
- (i) To address the unique needs of the child that result from the child's disability; and
 - (ii) To ensure access of the child to the general curriculum, so that the child can meet the educational standards within the jurisdiction of the public agency that apply to all children.

On June 30, 2004, the President signed Public Law 108-265, the Child Nutrition and WIC (Women, Infants and Children) Reauthorization Act of 2004. Each local educational agency participating in a program authorized by the Richard B. Russell National School Lunch Act (42

U.S.C. 1751 et seq) or the Child Nutrition Act of 1966 (42 U.S.C. 1771 et seq) was to establish a local school wellness policy by year 2006-2007. Section 204, Local Wellness Policy, (a) (1) requires that at a minimum, each participating agency “includes goals for nutrition education, physical activity, and other school-based activities that are designed to promote student wellness in a manner that the local educational agency determines is appropriate...” (USDA, 2004). The legislation required that a broad group of local stakeholders including school administrators, representatives of the school food authority, parents, students and members of the public be involved in designing the policy to ensure the diverse needs of the community are met (CDC, 2008). States and local agencies are required to have a Comprehensive System of Personnel Development (CSPD) “to adequately and appropriately prepare personnel to implement quality direct service programs for all children and youth with disabilities” (U.S. Office of Education, 1977, p. 42474). According to OPI (2010), the Montana CSPD elects to use a process that includes pre-service, in-service, needs assessment and technical assistance for parents, general education staff, administrators and other service providers; collaboration, dissemination, and evaluation with the end result being better programs and services for all children and youth. “The mission for the CSPD will be to value and promote services which...evaluate and disseminate best practices and achievements through ongoing high-quality professional development... are designed to meet individual needs delivered through personalized, accessible and practical formats” (OPI, 2010). Evidently, Montana OPI is mindful of the obligation to better serve children with disabilities in public schools.

Conclusion

Research has revealed that perceived competence and academic preparation were the best predictors of a more favorable attitude and higher level of perceived self-efficacy toward teaching children with disabilities in GPE class (Block & Rizzo, 1995; Rizzo & Kirkendall, 1995; Hodge et al., 2002; Kowalski & Rizzo, 1996; Oh et al., 2010). To develop a greater level of perceived self-efficacy toward teaching students with disabilities, undergraduate teacher preparation education programs need to provide a comprehensive experience that includes the requisite knowledge, skills, abilities specific to teaching children with disabilities in all subject areas, particularly in their teaching practicum experience. This is imperative in view of the fact that a novice elementary education graduate from a higher learning institution in Montana could potentially be hired to teach one subject area (e.g., math) or several subject areas including physical education. Knowledge of the different types of disabilities will heighten a teacher's positive attitude toward children with disabilities as well as create a more accepting and inclusive climate for all students with and without disabilities. Thus, it is essential for elementary school teachers to develop a positive attitude toward teaching children with disabilities and acquire the self-efficacy and competence to successfully, safely and meaningfully include students with disabilities in their GPE class.

Through this study, the researcher will examine public school elementary physical educators' self-efficacy toward teaching children with orthopedic impairments in general physical education as well as identify pre-service and in-service needs for future and current professionals in the field of adapted physical education.

Chapter III

Methodology

The purpose of this study was to examine public school elementary physical education teachers' self-efficacy toward teaching children with orthopedic impairments in GPE class. An additional purpose was to identify APE teacher pre-service and in-service training needs in Montana.

For the purposes of this study, the type of disability and survey instrument for measuring teachers' self-efficacy, included a comprehensive literature search along with professional inquiries with colleagues at the University of Montana Rural Institute and Montana Disability and Health Program, the Montana Office of Public Instruction Health Enhancement and Special Education directors, and University of Montana Human Performance professors. The researcher contacted well recognized national experts in the field by personal communication via e-mail and/or phone including Dr. Block and Dr. Taliaferro, the primary authors of the original survey instrument (Physical Educators' Self-Efficacy Toward Including Students with Disabilities – Autism (PESEISD-A; Taliaferro et al., 2010), which was selected as the model for this study.

A modification of the 10-item PESEISD-A (Taliaferro, et al., 2010) survey instrument was chosen for this study for the following reasons: 1) it has been deemed a valid and reliable instrument to measure self-efficacy beliefs toward the inclusion of students with a disability (Taliaferro, 2010); 2) the survey questions are in reference to perceived capability and phrased in terms of *can do*; 3) the self-efficacy items are customized to physical education activity domains and linked to factors that determine the quality of functioning within the subject area (Bandura, 2006); it

measures teacher efficacy through a wide span of tasks and activities (Tschannen-Moran, Hoy & Hoy, 1998).

In regards to choosing the type of disability, it became apparent that if more than one type of disability to measure physical educators' self-efficacy toward students with disabilities was utilized, it could potentially lead the teacher to respond more or less favorably depending on their experience and/or competency level concerning each specific disability. This approach could have led to less reliable and invalid data. Thus, this author made an informed decision to use 'orthopedic impairments' as the type of disability for examining the physical educators' self-efficacy toward teaching students with disabilities.

While the percentage of children with orthopedic impairments is lower than other types of disabilities (0.43 percent in 2008-2009 for ages 6-21 in Montana, (U.S. Department of Education, 2010)), teaching physical education to children in this disability category presents a unique set of challenges to physical educators. It requires specific skills, knowledge and abilities in order to be attentive to all students' needs and mindful of the most appropriate adaptations and/or modifications of the curriculum, lessons and climate for inclusion in a general physical education class. Additionally, through informal discussions with key informants and colleagues as well as personal experience as a physical educator, this researcher is in agreement.

A clear definition for 'orthopedic impairment' was crucial for the reliability of participants' responses to the survey. Colleagues suggested the definition developed by IDEIA (2004) as it should be most familiar to teachers. The National Association of Parents with Children in

Special Education (NAPSCSE, 2007) provides further clarity to the IDEIA (2007) definition. As a result, the following definition was included in the survey instructions immediately following the informed consent and previous to the first question.

Orthopedic Impairment - A severe orthopedic (muscle or bone) impairment that adversely affects a child's educational performance. Students may have issues using their legs, arms, and hands and some may use assistive technology or devices to help them function as independently as possible (NAPCSE, 2007). The term includes impairments caused by a congenital anomaly, impairments caused by disease (e.g., polio, bone tuberculosis), and impairments from other causes (e.g., cerebral palsy, amputations, and fractures or burns that may limit muscle use or movement (IDEIA, 2004)).

For further clarification, the definition of "severe impairment" (ADA, 2008) was included in the survey instructions immediately following the 'orthopedic impairment' definition above:

Severe Impairment – "a severe impairment means a problem that is present more than 50% of the time, with an intensity, which is partially disrupting the person's day-to-day life and which happens frequently over the last 30 days. Impairments can be temporary or permanent; progressive, regressive or static; intermittent or continuous. The deviation from the population norm may be slight or severe and may fluctuate over time" (ADA, 2009).

Choosing a relevant, valid and reliable survey instrument was the next step of the process. Additional research revealed numerous APE survey instruments that measured pre-service and in-service physical educators' attitudes, competency level and needs (Baber & Crowley, 1985; Davis & Dummer, 1987; Dummer, 1982, 1982; Davis, 1993; Kelly, 1992; Rizzo, 1984, 1993, 2006; Taliaferro, 2010). Rizzo's surveys (PEATID), initially based on the Theory of Reasoned Action (TRA) and thereafter, the Theory of Planned Behavior (TpB), seemed to be more widely used in the field of APE. According to the TRA, intention to perform a behavior is dependent on both attitude, subjective norm. The TRA is now known as the TpB as control beliefs are now included in the model as an additional variable for intention and behavior. The TRA and TpB theories posit that intention is the best predictor of the actual behavior (Taliaferro, 2010).

As discussed in greater detail in the Review of Literature, the *Guide for Constructing Self-Efficacy Scales*, Bandura (2006) states that self-efficacy is concerned with perceived capability. The PESEISD-A (Taliaferro, et al., 2010) survey was constructed using Bandura's (2006) guidelines for constructing a self-efficacy scale following the format, wording and rating scale recommendations. It was expanded to explore the four sources of self-efficacy (mastery experience, vicarious experience, social persuasion and physiological state). The purpose of this research is to examine general physical educators' self-efficacy toward teaching students with orthopedic impairments. As such, this researcher concluded that Taliaferro, et al.'s (2010) self-efficacy theoretical model (Bandura, 1997; 2006) would be the most appropriate survey instrument for this study.

Pilot Procedures

In January, 2011, the researcher contacted seven physical education teachers in Montana (three elementary and three middle school and one K-8) and one University of Montana colleague via e-mail (Appendix A), to request their assistance by providing expert feedback on the pilot survey instrument. Their contribution was to act as members of the pilot study. The pilot survey instrument consisted of ten categories with a total 75 questions. Once the teachers agreed to participate, the pilot survey instrument was sent to them via surveygizmo.com. They were asked to review but not complete the pilot survey, as no data was to be collected at that time. The last section, *Expert Evaluation and Feedback*, consisted of nine questions regarding the clarity, readability, format, computer technical issues, length of time to complete and an open ended question for additional feedback. Based on feedback from the pilot study participants and colleagues, and to increase the response rate, the survey was modified to include the 10 item self-efficacy scale, two questions regarding the physiological state when including a child with an orthopedic impairment and 12 questions in reference to when particular situations may make it difficult for a teacher to include students with orthopedic impairments. The survey concluded with 15 questions about the teacher's demographics (e.g., age, gender) and past experiences teaching students with orthopedic impairments in general physical education class.

Sampling

Potential survey participants were kindergarten through eighth grade public school elementary physical educators in Montana. Participation was voluntary. Surveys were distributed by electronic mail through the researcher's University of Montana electronic mail account. The population consists of a total of 547 teachers (313.3 full time equivalent [FTE]) assigned to teach

physical education only, health and physical education or adapted physical education in elementary schools (K-5), middle school (6-8) or junior high school (7-8). Based on an online sample size calculator (Raosoft, 2004), a target sample size of 225 is recommended. Taliaferro (2010) noted that the larger the number of items and number of factors expected, the larger the sample size that should be used.

According to OPI officials (personal communication), a list serve for physical educators in Montana was nonexistent at the time of the study. Consequently, obtaining contact information for K-8 physical educators in Montana resulted in a complex, multi-step process. With the assistance of the School Administrators of Montana (SAM) (personal communication), the SAM Executive Director sent an electronic mail to each public school elementary and middle principal in Montana explaining the research project. Principals were asked for contact information (including e-mail addresses) for each physical educator in their school and that this information be forwarded to the researcher for the sole purpose of recruiting potential survey participants for the study. After two weeks, a reminder e-mail was sent. Through this process, approximately 54 physical educators were recruited. Lastly, the author created a database of contact information for elementary and middle/junior high physical educators in Montana obtained either through school websites or by contacting individual schools or school districts.

The informed consent and revised survey instrument was created through the online survey program, surveygizmo.com in compliance with the University of Montana Institutional Review Board (UMT-IRB) Statement of Confidentiality requirements. The UMT-IRB application was submitted to the UMT-IRB immediately following the thesis proposal approval. To minimize

error in scoring, participants were provided specific written instructions and definitions of “orthopedic impairment” and “severe impairment” (Appendix E). Participants were informed that they needed approximately 10-15 minutes to complete the survey. This estimation was based on feedback generated from participants of the pilot survey.

Dillman (2007) recommends sending a pre-notice e-mail message for e-mail surveys, to convey an impression of great importance so that the participants will not be as likely to delete the survey when it is received. The pre-notice e-mail stated the importance of the study, their valuable participation and assurance that respondents will have access to the study upon completion as well as a thank you in advance for their valuable time.

Procedures

The instrument for this survey is an adaptation of the (PESEISD-A) instrument (Talliafero et al., 2010) originally constructed and validated to measure general physical education teachers’ self-efficacy in regard to including students with autism. The purpose of the survey instrument (PESEISD-OI) for this current study was to examine elementary physical education teachers’ self-efficacy toward inclusion of students with orthopedic impairments in their general physical education class.

The sample consisted of 295 elementary physical education teachers in Montana. As recommended by the UM IT Department, all e-mails were sent in batches to help decrease the chance of an e-mail getting placed in the recipients’ junk mail accounts. Due to UM server limitations, all e-mails were sent over a 2-day period in batches of 50 emails (3 batches of 50

emails/day=300). Additionally, to ensure that recipients did not feel as though they were part of a mass e-mail, for confidentiality and to increase the response rate (Dillman, 2007), all e-mails were sent as a 'blind carbon copy (bcc).' Thus, immediately following the UM IRB approval (Appendix B), 295 potential participants were sent a pre-notice e-mail (Appendix C) prior to the actual survey e-mail to inform them of the study and be on the alert for the subsequent survey email. The researcher selected a delivery receipt option to help identify undeliverable e-mails, which were noted, verified and corrected if possible. Of the 295 pre-notice e-mails sent, notification of 204 e-mails were 'delivered' via delivery receipt, 27 e-mails were returned as 'failed delivery,' one request for a paper copy to be sent, and one deleted who no longer teaches physical education. Twenty e-mail addresses were corrected. The survey responses were anonymous, thus all subsequent e-mails were sent to all 294 potential participants.

If a recipient preferred to complete the survey on paper and return it via U.S. Mail, they were instructed to e-mail the researcher with a physical mailing address. One paper copy of the survey was requested. A copy of the survey instrument and a self-addressed envelope was mailed to one participant. The survey was returned to the researcher and manually entered into survey gizmo by another graduate student other than the researcher.

A time lapse of only two or three days between the pre-notice and the questionnaire is recommended to increase the chance that the recipients will link the first contact with the second (Dillman, 2007). Within three days of the pre-notice e-mail, a subsequent e-mail was sent to 291 e-mail addresses with a link to the survey (Appendix D) using the same procedures described for the pre-notice e-mail. The body of the e-mail included an appeal to physical education teachers for their voluntary participation and request to complete the survey within

five working days as recommended by Dillman (2007, p. 384). This e-mail informed participants that their responses were confidential and anonymous and no names or identifying information would be expected or collected. When participants voluntarily opted to follow the link to the online survey, they were instructed to read the informed consent agreement (see Appendix E) and required to click on 'I Decline' or 'I Accept.' If the potential participant clicked the 'I decline' tab, they were directed automatically to the end of the survey and thanked for their interest in participating in the survey. If the potential participant clicked the 'I Accept' tab, they were acknowledging the informed consent and directed automatically to the first page of the survey comprised of directions and definitions followed by the actual survey instrument (Appendix F). All participants were over the age of 18 and were asked to participate voluntarily.

The survey began with instructions for participants to recall a specific child or children in their physical education classes who they currently teach or have taught in the past, with an orthopedic impairment and who may benefit from lesson modifications or adaptations to accommodate their unique needs related to their disability. They were asked to refer to their experiences with teaching this child or children as point of reference while completing the survey.

After seven working days, all potential participants were sent a reminder e-mail (Appendix G) via the researcher's UM electronic mail account. The electronic mail thanked the participants if they already completed the survey as well as reminded those who had not yet completed it. A final reminder was sent after seven working days via the researcher's UM electronic mail account requesting that teachers complete the survey within the next five days (Appendix H).

Thus, from the initial pre-notice e-mail, to the last follow-up request was approximately 23 days. Prior to the final deadline, participants had the option to complete the survey at a later time or day if they were not able to finish it in one sitting. Once the survey was closed, participants were not able to access the survey.

The survey was constructed conservatively to minimize the differences in question display, and to avoid differences in the visual appearance of questions resulting from dissimilar screen configurations, operating systems, browsers, partial screen displays and wrap around text (Dillman, 2007). As some color combinations are difficult to read and the chance that some respondents were unable to read them at all (e.g., color blindness), black lettering with a white background were used as recommended (Dillman, 2007). Participants were advised to maximize their screens when responding to the survey for optimal viewing. Nondifferentiation (giving similar responses to every item), selecting the “no opinion” or “don't know” options, or acquiescence (Tourangeau, 2004) could also affect the reliability and validity of the survey. To minimize this possibility, the scales were randomly flipped.

Instrumentation

The data collection survey instrument used for this study is a modification of the PESEISD-A (Taliaferro, et al., 2010) survey instrument based on Bandura's Self Efficacy Theory (1977). Taliaferro, et al., (2010) developed the survey instrument and Taliaferro (2010) distributed the PESEISD-A survey through QuestionPro.com, an online survey website. The initial response rate was 83.8% with a usable rate of 74.9% ($N = 236$). Participants represented elementary, middle school and high school physical educators from 13 states with over 95% certified to teach

physical education. The PESEISD-A survey instrument revealed a high level of internal consistency (Cronbach's alpha = .928) and test-retest reliability indicated a "good" level of temporal stability ($r = .859$) (Taliaferro, 2010). The self-efficacy scale was scored by summing responses across all ten items to create a total score. This was then divided by the total number of self-efficacy items with the resulting score serving as a measure of self-efficacy. Based on indicators of content and criterion-related validity, the 10-item self-efficacy scale was found to be a valid and reliable measure of self-efficacy toward inclusion of students with autism in general physical education class (Taliaferro, 2010).

Data Analysis

Once data collection was completed, data were converted into an Excel spreadsheet and then to Predictive Analytics SoftWare (PASW) Statistical Package for the Social Sciences (SPSS) (Version 18.0 Analytical) and analyzed in relation to the research questions and hypotheses. An alpha level of 0.05 was set to define statistical significance for all analyses.

The 10-item self-efficacy scale was subjected to preliminary analysis to handle missing data by utilizing mean substitution. Cronbach's alpha was employed to measure internal reliability of the 10-item self-efficacy scale. Descriptive data and measures of central tendency were reported for individual items of the self-efficacy scale. A factor analysis was conducted to analyze the interrelationship among the items and to explain their common underlying factors.

A Pearson correlation was computed to determine the strength of the relationship between the two questions regarding physiological states. Cronbach's alpha and a Pearson correlation was

conducted to determine the relationship between the physiological states based on the overall measure of self-efficacy.

The 12-item challenge scale was measured utilizing the Pearson correlation coefficient and Cronbach's alpha. Mean substitution was used to handle missing data. To determine the interrelationships among the challenge items and identify any common factors, a common factor analysis was conducted. A Pearson correlation coefficient analysis was performed to determine the relationship between the 12-item challenge scale and the overall measure of self-efficacy.

To examine the teachers' level of self-efficacy based on demographic variables (age, gender, size of town, number of years of experience teaching PE/HE, number of children previously taught and currently teaching children with orthopedic impairments, degree earned), analysis of variance (ANOVA) was utilized. Descriptive data and measures of central tendency were reported.

A Pearson correlation coefficient analysis was conducted to determine the strength of the relationship between a teachers' level of perceived self-efficacy and the number of undergraduate and graduate credits earned in special education and adapted physical education. Cronbach's alpha was utilized to measure the internal reliability of the 4-item special education/adapted physical education credits scale.

To determine the strength of the relationship between the teachers' level of perceived self-efficacy based on their discernment of their undergraduate teaching preparation, credits earned

and number of in-service attended, a Pearson correlation coefficient analysis was employed for each variable.

The importance of in-service training needs was analyzed by descriptive statistics utilizing measures of central tendency and percentages. Other in-service topics reported were analyzed qualitatively.

Table 1. *Summary of Data Analysis*

Question	Data Analysis Method
<p><u>Research Q1:</u></p> <p>How confident are elementary physical educators in teaching students with orthopedic impairments in their general physical education class?</p>	<ul style="list-style-type: none"> - Descriptive data. - Measures of central tendency (mean) - Factor Analysis - Internal reliability – Cronbach’s alpha - Item analysis with item-total correlations and Cronbach alpha if item deleted. - Interrationship among items – Pearson correlation.
<p><u>Sub Q1 – a:</u></p> <p>How confident are elementary physical educators in their ability to modify equipment for students with orthopedic impairments?</p> <p><u>Sub Q1 – b:</u></p> <p>How confident are elementary physical educators in their ability to modify activities for students with orthopedic impairments?</p>	<p><i>The following statistical analyses were utilized for Sub Q1: a – j:</i></p> <ul style="list-style-type: none"> - Measures of central tendency (means) and standard deviation will be used to examine the 10 individual categories (Sub Q1: a – j) of the self-efficacy scale instrument.
<p><u>Sub Q1 – c:</u></p> <p>How confident are elementary physical educators in their ability to create a safe environment for students with orthopedic</p>	

impairments?	
<p><i>Sub Q1 – d:</i></p> <p>How confident are elementary physical educators in their ability to promote social interactions with peers for students with orthopedic impairments?</p>	
<p><i>Sub Q1 – e:</i></p> <p>How confident are elementary physical educators in their ability to manage behaviors of students with orthopedic impairments?</p>	
<p><i>Sub Q1 – f:</i></p> <p>How confident are elementary physical educators in their ability to modify instruction for students with orthopedic impairments?</p>	
<p><i>Sub Q1 – g:</i></p> <p>How confident are elementary physical educators in their ability to assess the motor skills of students with orthopedic impairments?</p>	
<p><i>Sub Q1 – h:</i></p> <p>How confident are elementary physical educators in their ability to modify rules for students with orthopedic impairments?</p>	
<p><i>Sub Q1 – i:</i></p> <p>How confident are elementary physical educators in their ability to collaborate effectively with other teachers/professionals regarding students with orthopedic impairments?</p>	

<p><u>Sub Q1 - j:</u></p> <p>How confident are elementary physical educators in their ability to motivate students with orthopedic impairments?</p>	
<p><u>Research Q2:</u></p> <p>How do elementary physical educators evaluate their own physiological state when including a student with an orthopedic impairment in their general physical education class?</p>	<ul style="list-style-type: none"> - Descriptive data. - Measures of central tendency - Internal reliability – Cronbach’s alpha coefficient. - Correlations with self-efficacy scores. - Interrationship among items – Pearson correlation.
<p><u>Research Q3:</u></p> <p>What are the most compelling challenges for elementary physical educators that may make it difficult to include a student with an orthopedic impairment in their general physical education class?</p>	<ul style="list-style-type: none"> - Descriptive data - Measures of central tendency (mean) - Missing data - Pearson correlation, Cronbach’s alpha and factor analysis - Item analysis with item-total correlations and Cronbach alpha if item deleted. - Pearson correlation coefficient analysis between challenges and self-efficacy scores
<p><u>Research Q4:</u></p> <p>Do particular experiences/demographic factors help explain the difference in levels of perceived teacher self-efficacy toward teaching students with orthopedic impairments?</p>	<ul style="list-style-type: none"> - Descriptive data reported for each demographic factor. - Descriptive data. - One-way analysis of variance (ANOVAs) - difference in levels of perceived teacher self-efficacy and age, gender, size of town, years of experience teaching PE/HE, number of students previously taught and currently teaching, and degree(s) earned. - Pearson correlation analysis – to determine the strength of the relationship between a

	teachers' level of perceived self-efficacy based on the number of undergraduate and graduate credits in adapted physical education and special education, undergraduate teaching preparation, and number of in-services.
<u>Ho1:</u> There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the teachers' age.	- One-way analysis of variance (ANOVAs)
<u>Ho2:</u> There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the teachers' gender.	- One-way analysis of variance (ANOVAs)
<u>Ho3:</u> There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based the teachers' size of town or city where they teach.	- One-way analysis of variance (ANOVAs)
<u>Ho4:</u> There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on their years of experience teaching.	- One-way analysis of variance (ANOVAs)
<u>Ho5:</u> There will be no significant difference in a teachers' level of perceived self-efficacy toward	- One-way analysis of variance (ANOVAs)

teaching students with orthopedic impairments based their years of experience teaching students with an orthopedic impairment.	
<u>Ho6:</u> There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the teachers' number of credits in adapted physical education or special education undergraduate coursework.	- One-way analysis of variance (ANOVAs)
<u>Ho7:</u> There will be no significant relationship in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the teachers' degree(s) earned.	- Pearson correlation coefficient analysis - Cronbach's alpha
<u>Ho8:</u> There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the teachers' degree(s) earned.	- One-way analysis of variance (ANOVAs)
<u>Ho9:</u> There will be no significant relationship in teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on their perception of their undergraduate teaching preparation.	- Pearson correlation coefficient analysis
<u>Ho10:</u>	- Pearson correlation coefficient analysis

<p>There will be no significant relationship in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the number of in-services teachers attended in the last 10 years.</p>	
<p><u>Research Q5:</u> What are the requisites for pre-service and in-service physical education teachers related to teaching children with disabilities in Montana?</p>	<ul style="list-style-type: none"> - Descriptive data - Measures of central tendency (mean) - Qualitatively

Chapter IV

Results

The purpose of this study was to examine public school elementary physical education teachers' self-efficacy toward teaching children with orthopedic impairments in general physical education class. An additional purpose was to identify adapted physical education teacher pre-service and in-service training needs in Montana.

Sample

Of the 204 survey e-mails sent, 83 individuals completed and submitted an electronic survey for a response rate of 41%. The final sample was comprised of 83 participants ($n = 37$ males, 46 females) representing 23 of the 56 counties within 67 Montana school districts. The mean age of participants ($N = 83$) in the sample was 42.4 years with 4.8% of participants ($n = 4$) aged 21-25, 14.5% of participants ($n = 12$) aged 26-30, 25.3% of participants ($n = 21$) aged 31-40, 23% of participants ($n = 23$) aged 41-50, 22.9% of participants ($n = 19$) aged 51-60 years, and 4.8% of participants ($n = 4$) aged over 61+ years. Thirteen (15.7%) participants were from small rural towns with a population of less than 2,500, 21 (25.3%) participants were from urban cities of 2,500 to 19, 999 in population, 20 (24.1%) were from urban cities of 20,000 – 50,000 in population, and 29 (34.9%) were from urban cities with more than 50,000 in population ($N = 83$).

Forty-three participants (51%) indicated they had earned their undergraduate degree in physical education or comparable discipline (e.g., health enhancement) ($N = 61$). Fifty respondents (60%) percent responded to the question reported as having earned or having earned credits towards a masters. Four participants (6.5%) reported having earned a graduate

degree in physical education or similar degree. The majority (55.4%) of respondents reported having taught physical education for more than 10 years ($N = 51$), 8.4% taught 0-2 years ($n = 7$), 10.8% taught 3-4 years ($n = 9$), 14.5% taught 5-7 years ($n = 12$) and 10.8% taught 8-10 years ($n = 9$). Four participants (5%) of participants reported not having previously taught any students with orthopedic impairments, while 64 participants (77%) had previously taught up to 20 students with orthopedic impairments, and 76% of the respondents currently teaching students with orthopedic impairments ($N = 83$).

In regards to coursework earned in special education, 20.3% of the respondents reported having earned at least one undergraduate credit in special education, and 9% reported having earned at least three graduate credits in special education ($N = 54$). Forty three percent of the respondents reported having earned at least one undergraduate credit in adapted physical education, and 15% reported having earned at least three graduate credits in adapted physical education ($N = 53$).

As to how well participants felt their undergraduate teacher preparation program coursework prepared them to teach students with orthopedic impairments in general physical education, 22.9% reported good to very good, 50% reported poor to barely acceptable, and 21.2% reported extremely poor. In regards to the number of in-services respondents had attended in the last 10 years that had information on teaching children with disabilities, 27.7% reported zero in-services, 20.5% reported one in-services, and 12% reported two in-services and 39.8% attended 3 or more in-services ($N = 65$). Demographic information and descriptive statistics for the sample of physical education teachers are summarized in Table 2.

Table 2. Demographic information & descriptive statistics for the sample of physical education teachers based on self efficacy.

Variables	<i>n</i>	%	<i>M</i>	<i>S.D.</i>
1. Age (<i>N</i> = 83)				
21-25 years	4	4.8	75.50	11.45
26-30 years	12	14.4	80.75	8.23
31-40 years	21	25.3	77.00	11.31
41-50 years	23	27.7	77.17	12.59
50-60 years	19	23.9	79.90	16.28
60+ years	4	4.8	60.25	10.72
2. Gender (<i>N</i> = 83)				
Male	37	44.6	79.91	13.26
Female	46	55.4	75.33	12.46
3. Size of town (<i>N</i> = 83)				
Less than 2,500	13	15.7	82.00	12.12
2,500 – 19,999	21	25.3	81.00	10.71
20,000 – 50,000	20	24.1	71.50	14.30
more than 50,000	29	34.9	76.79	12.72
4. Years of teaching experience (<i>N</i> = 83)				
0-2 years	7	8.4	78.71	9.29
3-4 years	9	10.8	80.44	9.24
5-7 years	12	14.5	75.17	12.76
8-10 years	9	10.8	81.33	9.85
11+ years	46	55.4	76.37	14.64
5. Number of students previously taught with orthopedic impairments (<i>N</i> = 83)				
0	4	4.8	74.50	24.12
1-20	64	77.0	76.63	12.16
21-40	9	11.4	81.22	13.19
41-60	3	3.6	82.00	9.00
60-80+	3	3.6	81.00	20.42
6. Number of students currently teaching with orthopedic impairments (<i>n</i> = 83)				
0	19	22.9	76.16	13.19
1-20	64	77.1	77.73	12.96
7. Number of credits (<i>N</i> = 54)				
Adapted Physical Education credits				
Undergraduate			2.45	3.30
Graduate			1.23	2.78

Variables	<i>n</i>	%	<i>M</i>	<i>S.D.</i>
Special Education credits				
Undergraduate				
Graduate			2.68	2.68
			.92	1.94
8. Degree(s) earned (<i>N</i> = 61)				
Physical Education	43	70.5	77.44	12.97
Other degree	18	29.5	78.61	13.39
9. Number of in-services attended in last 10 years (<i>N</i> = 65)				
0	23	35.4		
1	17	26.2		
2	10	15.4		
3	2	3.1		
4	2	3.1		
5	1	1.5		
7	3	3.1		
8	1	1.5		
9	1	1.5		
10	5	7.7		

The PESEISD-OI 10-item self-efficacy scale data results were subjected to preliminary analysis procedures. Mean substitution was utilized to handle missing data by replacing the missing value with the average value across the non-missing values for these items for each person in the sample who randomly left an item value (and in one case two values) blank. The individual's mean substitution score was then rounded up to the nearest whole number. This procedure was completed on six items of the self-efficacy scale with one item having two missing values. To measure internal consistency of the 10-item scale, a Cronbach's alpha (both unstandardized and standardized) was utilized ($\alpha = .87$; $\alpha_{\text{stand.}} = .88$). Cronbach's alpha if item deleted was analyzed in the 10-item self-efficacy scale. All items in the self-efficacy scale had a Cronbach's alpha if item deleted score greater than .85 but no greater than .87 (Table 3). Thus, no item should be removed from the scale as results close to 1.00 represent very good internal reliability.

Table 3.

Item-total statistics for 10-item self efficacy scale (N = 83).

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SE1 - Modify equipment	70.71	128.57	.64	.72	.86
SE2 - Modify activities	69.99	131.26	.71	.77	.85
SE3 - Create a safe environment	69.33	130.30	.73	.61	.85
SE4 - Promote social interactions	68.98	140.66	.60	.50	.86
SE5 - Manage behaviors	69.29	144.40	.49	.43	.87
SE6 - Modify instruction	69.60	138.61	.69	.57	.86
SE7 - Assess motor skills	70.95	135.58	.55	.42	.87
SE8 - Modify rules to games	69.40	141.32	.56	.42	.87
SE9 - Collaborate effectively	68.75	145.32	.42	.35	.87
SE10 - Motivate students	69.37	141.09	.60	.50	.86

The main research question considered in this study was:

RQ1: How confident are elementary physical educators in teaching students with orthopedic impairments in their general physical education class?

Descriptive statistics for the 10-item self-efficacy scale are illustrated in Table 4.

Table 4.

10-Item self-efficacy scale (N=83).

	Mean	S.D.
Modify equipment	6.66	2.33
Modify activities	7.39	1.99
Create a safe environment	8.05	1.99
Promote social interactions	8.40	1.70
Manage behaviors	8.08	1.73
Modify instruction	7.77	1.63
Assess motor skills	6.42	2.16
Modify rules to games	7.98	1.75
Collaborate effectively	8.63	1.87
Motivate students	8.00	1.66
Total	77.37	12.95

To further analyze the interrelationship among the variables, a factor analysis was conducted. Factor analysis is a statistical approach used to analyze interrelationships among variables and to explain their common underlying factors. Results of the factor analysis found a Kaiser-Meyer-Olkin (KMO) value of 0.83, which indicates that the ten items provide adequate sampling, while Bartlett's Test of Sphericity (397.8; df 45; $p \leq .00$) showed that the off-diagonal correlation matrix coefficients are significantly different than zero. The KMO value of 0 indicates that a factor analysis is likely to be inappropriate, whereas a KMO value of 1 indicates that a factor analysis should yield distinct and reliable factors (Field, 2005). A value greater than 0.5 is acceptable; values between 0.5 and 0.7 are mediocre; values between 0.7 and 0.8 are good; and values between 0.8 and 0.9 are great, and values above 0.9 are superb (Kaiser, 1974). Thus, for these data the value is 0.83, which falls into the range of being great, thus, the factor analysis is appropriate. Likewise, if the Bartlett's test is significant (a value less than 0.05), the factor analysis is appropriate. A single factor solution explained 47.8% of the variance in the ten items, while a two-factor solution accounted for 61.8% of the variance in the ten-item scale.

RQ2: How do elementary physical educators evaluate their own physiological state when including a student with an orthopedic impairment in their general physical education class?

To determine the strength of the relationship between the two questions, a Pearson correlation was computed for the two questions regarding how teachers felt about including a child with an orthopedic impairment in their general education class. These two items were found to have a moderate correlation ($r = .59, p \leq .00$), indicating a significant linear relationship between the two variables. With this substantial significant relationship between the two items, the teacher's score on the non-missing item supplied the missing data for one teacher for the one item. A

subscale was then created for the two items. Internal reliability of the subscale was measured utilizing Cronbach's alpha ($\alpha = .73$; $\alpha_{\text{stand.}} = .74$). Simple Pearson correlation analysis was conducted on this 2-item scale to determine how elementary physical educators evaluated their own physiological state (e.g., feeling uneasy or tense) on this two-item scale when including a student with an orthopedic impairment based on the overall measure of self-efficacy. There was a significant inverse relationship ($r = -.55$; $p \leq .00$) meaning that physical educators who are more efficacious toward teaching students with orthopedic impairments are less uneasy or tense about including a student with an orthopedic impairment.

RQ3: What are the most compelling challenges for elementary physical educators that may make it difficult to include a student with an orthopedic impairment in their general physical education class?

Using a five point Likert scale (0-5), from 'not applicable' to 'very much an issue,' participants were asked to rate the extent to which each of the 12 challenge items makes it difficult for them to meaningfully include a student with an orthopedic impairment into their general physical education class (Table 5). Random missing values were found for a three teachers for items 1, 8, and 9; these were assigned a value using the same method as described above for the 10-item self-efficacy scale. The strength of the relationship for all 12-challenge items was measured utilizing the Pearson correlation coefficient (Appendix I, Table 1) and Cronbach's alpha ($\alpha = .68$; $\alpha_{\text{stand.}} = .70$) representing strong internal reliability to which all items measured the same construct. Items 8 (no information) and 9 (limited information) were found to be very highly correlated and statistically significant ($r = .90$; $p \leq .01$) and Cronbach's alpha was highly significant at .95. Thus, to handle missing data for these two items for two participants, substitution was utilized by replacing the missing value with the same value as the non-missing

correlating item. Item 1 was found to be moderately correlated to item 10 ($r = .52$).

Accordingly, to handle missing data for this item for one participant, substitution was also figured by replacing the missing value with the same value as the non-missing correlating item.

A common factor analysis was used to analyze the interrelationships among the challenge items and identify any common factors (Appendix I, Table 2). The single factor analysis of variance accounted for 25.36% of the variance among these 12 items, with a KMO = .62 (values between 0.5 and 0.7 are mediocre) and Bartlett's Test of Sphericity = 357.7 ($df = 66$; $p \leq .00$). Cronbach's alpha if item deleted was analyzed in the 12-item challenge scale (Table 6). All items in the challenges scale had a Cronbach's alpha if item deleted score greater than .63 but less than .72, thus all 12 items in the scale were retained. Summing the 12 items of the self-efficacy scale created a new subscale for challenges. A Pearson correlation coefficient analysis was conducted to determine the relationship between self-efficacy and the 12-item challenge scale among participants. There was a significant inverse relationship ($r = -.39$; $p \leq .00$) suggesting that physical educators who are more efficacious toward teaching students with orthopedic impairments perceive these situations as less challenging.

Table 5.

Physical educator challenges - correlations with self-efficacy (N = 83).

	Pearson		Mean	S.D.
	Correlation	Sig.		
	Sig. (2-tailed)	(2-tailed)		
Large class sizes	-.14	.19	3.51	1.37
No appropriate equipment	-.35	.00	3.28	1.16
Limited training	-.49	.00	3.25	1.25
Skill level is very different	-.13	.24	2.82	1.34
No aid or support	-.19	.08	2.77	1.48
Problems staying on task	.07	.52	2.47	1.16
Limited information	-.15	.18	2.41	1.33
No time for modifications	-.44	.00	2.37	1.04
No information	-.10	.36	2.36	1.35
Behavior problems	.02	.84	2.29	1.24
Modify activities	-.66	.00	2.11	.92
Multiple classes	.06	.61	1.78	1.77
Challenge Sum	-.39	.00		

Scale = 0-5.

Table 6.

Item-total Statistics for 12 challenges.

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
CH4 - Large class sizes	27.92	47.47	.26	.18	.67
CH5 - Multiple classes	29.64	50.04	.04	.17	.72
CH1 - Modify activities	29.31	49.66	.28	.45	.67
CH2 - No time for modifications	29.05	49.10	.27	.26	.67
CH3 - No appropriate equipment	28.14	46.61	.39	.34	.65
CH6 - Skill level is very different	28.60	45.93	.36	.33	.66
CH7 - No aid or support	28.65	44.06	.40	.27	.65
CH8 - No information	29.06	44.33	.45	.82	.64
CH9 - Limited information	29.01	43.06	.53	.84	.63
CH10 - Limited training	28.17	44.61	.48	.43	.64
CH11 - Behavior problems	29.13	48.80	.22	.65	.68
CH12 - Problems staying on task	28.95	48.68	.26	.67	.67

Research question 4 (Ho1-Ho6) was examined by utilizing analysis of variance (ANOVA) as the five demographic variables are categorical rather than interval variables, with the demographic factor as the independent variable, and the self-efficacy scale as the dependent variable.

RQ4: Do particular experiences/demographic factors help explain the difference in levels of perceived teacher self-efficacy toward teaching students with orthopedic impairments?

Ho1: There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the teachers' age.

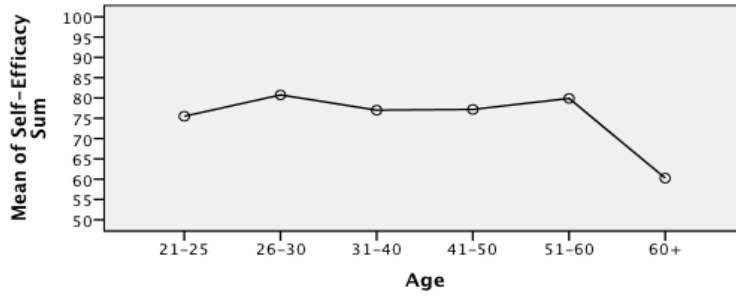
A one-way ANOVA was used to test for a significant difference in a teachers' level of perceived self-efficacy based on the teachers' age (Table 7). There was no significant difference ($F(5, 77) = 1.81; p \leq .12$) when analyzed by age. A means plot is shown below to illustrate the difference (Figure 2).

Table 7.
Self-efficacy by age group (N = 83).

Age	N	Mean	S.D.
21-25	4	75.50	11.45
26-30	12	80.75	8.24
31-40	21	77.00	11.31
41-50	23	77.17	12.59
51-60	19	79.90	16.28
60+	4	60.25	10.72
Total	83	77.37	12.95

$F(5, 77) = 1.81, p \leq .12.$

Figure 2. *Self-efficacy by age.*



Ho2: There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the teachers' gender.

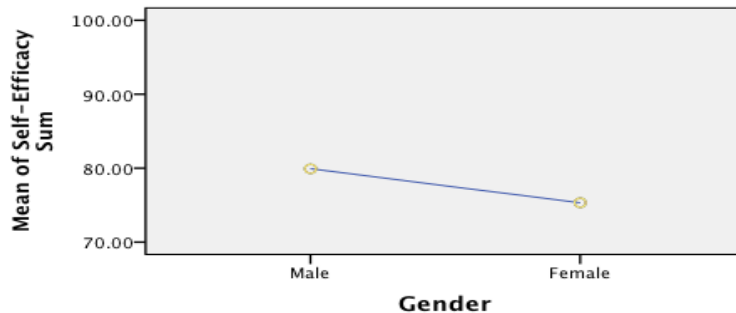
A one-way ANOVA was used to test for a significant difference in a teachers' level of perceived self-efficacy based on the teachers' gender (Table 8). There was no significant difference ($F(1, 81) = 2.63, p \leq .11$) when analyzed by gender. A means plot is shown below to illustrate difference (Figure 3).

Table 8.
Self-efficacy by gender (N = 83).

	<i>N</i>	<i>Mean</i>	<i>S.D.</i>
Male	37	79.92	13.27
Female	46	75.33	12.46
Total	83	77.37	12.95

$F(1, 81) = 2.63, p \leq .11$

Figure 3. *Self-efficacy by gender.*



Ho3: There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based the teachers' size of town or city where they teach.

A one-way ANOVA was used to test for a significant difference in teachers' level of perceived self-efficacy based the teachers' size of town or city where they taught (Table 9). There was a notable difference ($F(3, 79) = 2.70, p \leq .05$) when analyzed by size of town. A means plot is shown below to illustrate the difference (Figure 4).

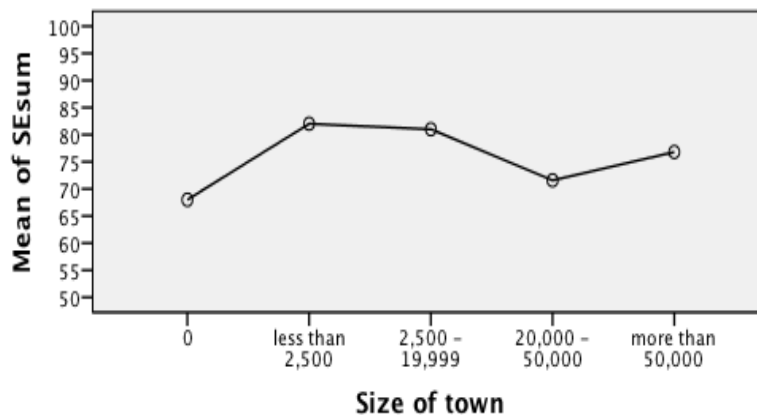
Table 9.

Self-efficacy by size of town where they teach (N = 83).

	N	Mean	S.D.
less than 2,500	13	82.00	12.12
2,500 - 19,999	21	81.00	10.71
20,000 - 50,000	20	71.40	14.30
more than 50,000	29	76.79	12.72
Total	83	77.37	12.95

$F(3, 79) = 2.70, p \leq .05.$

Figure 4. *Self-efficacy by size of town.*



Ho4: There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on their years of experience teaching.

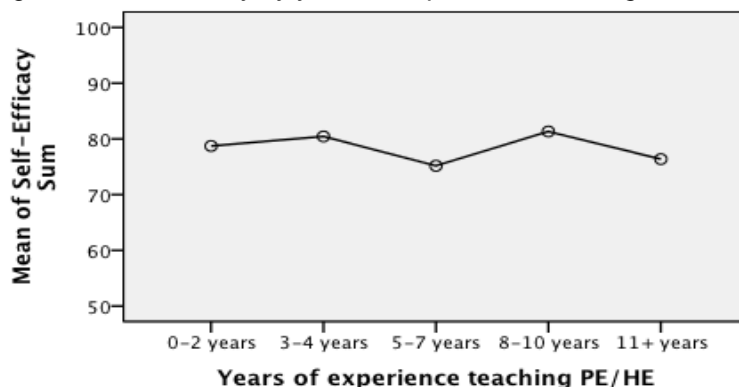
A one-way ANOVA was used to test for a significant difference in a teachers' level of perceived self-efficacy based on years of teaching experience (Table 10). There was no significant difference ($F(4, 78) = .50, p \leq .74$) when analyzed by years of experience teaching. A means plot is shown below to illustrate the difference (Figure 5).

Table 10.
Self-efficacy by teaching experience (N = 83).

	N	Mean	S.D.
0-2 years	7	78.71	9.29
3-4 years	9	80.44	9.24
5-7 years	12	75.17	12.76
8-10 years	9	81.33	9.85
11+ years	46	76.37	14.64
Total	83	77.37	12.95

$F(4, 78) = .50, p \leq .74.$

Figure 5. *Self-efficacy by years of experience teaching PE/HE.*



Ho5: There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on number of students previously taught with an orthopedic impairment.

A one-way ANOVA was used to test for a significant difference in a teachers' level of perceived self-efficacy based on the number of students previously taught with orthopedic impairments

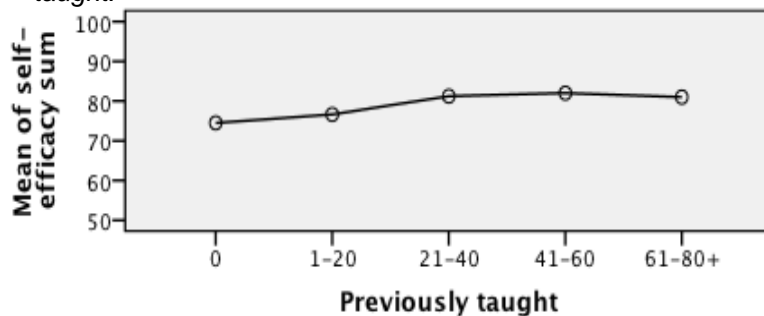
(Table 11). There was no significant difference, $F(5, 77) = .44, p \leq .78$. A means plot is shown below to illustrate the difference (Figure 6).

Table 11.
Self-efficacy by the number of students previously taught with an orthopedic impairment (N = 83).

Students	N	Mean	S.D.
0	4	74.50	24.12
1-20	64	76.63	12.16
21-40	9	81.22	13.19
41-60	3	82.00	9.00
61-80+	3	81.00	20.42
Total	83	77.37	12.95

$F(4, 78) = .44, p \leq .78$.

Figure 6. *Self-efficacy by children with orthopedic impairments previously taught.*



Ho6: There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the number of students currently teaching with an orthopedic impairment.

A one-way ANOVA was used to test for a significant difference in a teachers' level of perceived self-efficacy based on the number of students currently teaching with orthopedic impairments (Table 12). There was no significant difference ($F(1, 81) = .22, p \leq .64$) based on the number of students currently teaching with orthopedic impairments. A means plot is shown below to

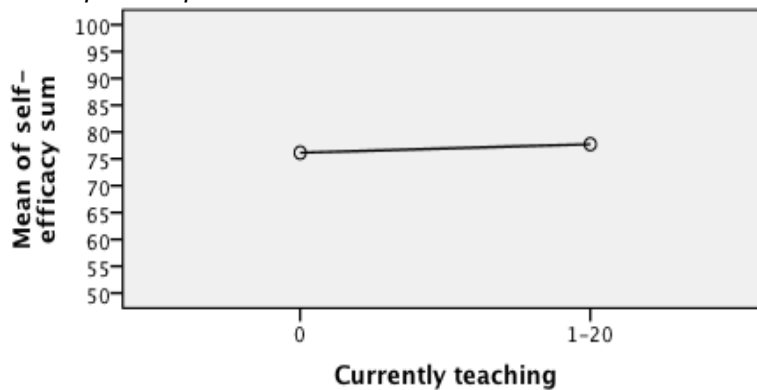
illustrate the difference (Figure 7).

Table 12.
Self-efficacy by number of students currently teaching with orthopedic impairments (N=83).

	<i>N</i>	<i>Mean</i>	<i>S.D.</i>
0	19	76.16	13.19
1-20	64	77.73	12.96
Total	83	77.37	12.95

$F(1, 81) = .22; p \leq .64.$

Figure 7. *Self-efficacy based on number of children currently teaching with orthopedic impairments.*



Ho7: There will be no significant relationship in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the teachers' number of undergraduate and/or graduate credits in adapted physical education or special education coursework.

A Pearson correlation coefficient analysis was used to determine the strength of the relationship between a teachers' level of perceived self-efficacy based on the teachers' numbers of credits earned in special education and adapted physical education undergraduate and graduate credits. The results (Table 13) suggest that teachers who earned undergraduate credits ($r = .40; p \leq .00$), or graduate credits ($r = .30; p \leq .04$) in adapted physical education were found to be positively correlated with perceived self-efficacy indicating a significant linear relationship. Further,

teachers who earned undergraduate and graduate credits in special education and adapted physical education, were positively correlated with perceived self-efficacy ($r = .35; p \leq .01$). To measure internal reliability of the 4-item special education/adapted physical education credits scale, a Cronbach's alpha was utilized ($\alpha = .82; \alpha_{\text{stand.}} = .84$) representing strong internal reliability to which all items are measuring the same construct.

Table 13.

Undergraduate and graduate credits in special education and adapted physical education. N = 53.

		SE sum	UG credits earned in Spec Ed	G credits earned in Spec Ed	UG credits earned in APE	G credits earned in APE	SE/APE credits
Self- efficacy sum	Pearson Correlation Sig. (2-tailed)	1	.25 .07	.21 .14	.40** .00	.29* .04	.35* .01

*Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Ho8: There will be no significant difference in a teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the teachers' degree(s) earned.

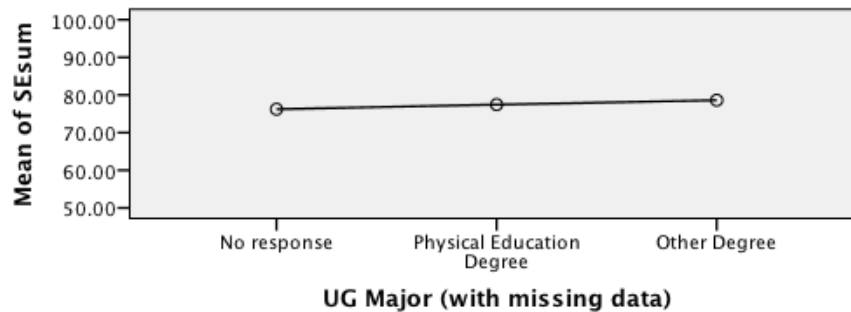
A one-way ANOVA was used to test for a significant difference in a teachers' level of perceived self-efficacy based on the teachers' degree(s) earned (Table 14). There was no significant difference ($F(2, 80) = .17, p \leq .85$) when analyzed by the teachers' degree(s) earned. A means plot is shown below to illustrate the difference (Figure 8).

Table 14.
Self-efficacy by UG degree earned (N=61).

	<i>N</i>	<i>Mean</i>	<i>S.D.</i>
No response	22	76.23	13.05
Physical Education	43	77.44	12.97
Other degree	18	78.61	13.39
Total	83	77.37	12.95

$F(2, 80) = .17, p \leq .85$

Figure 8. *Self-efficacy based on undergraduate degree earned.*



Ho9: There will be no significant relationship in teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on their perception of their undergraduate teaching preparation.

The Pearson correlation coefficient analysis was used to determine the strength of the relationship between the teachers' level of perceived self-efficacy based on their perception of their undergraduate teaching preparation to teach students with orthopedic impairments in general physical education class. These two items were found to have a moderate correlation ($N=66; r = .54; p \leq .00$), indicating a significant linear relationship between the two variables (Table 15). When examining the relationship among undergraduate/graduate credits earned in adapted physical education, undergraduate teaching preparation and self-efficacy, all items were found to have a significant positive correlation, indicating a significant linear relationship between the four variables (Table 16).

Table 15. *Self-efficacy and perceived undergraduate teaching preparation (N=66).*

		SE sum	UG Teacher Preparation
Self-efficacy sum	Pearson Correlation	1	.54**
	Sig. (2-tailed)		.000
UG Teacher Preparation	Pearson Correlation	.54**	1
	Sig. (2-tailed)	.000	

Correlation is significant at the 0.01 level (2-tailed).

a. Listwise N=66

Table 16. *Self-efficacy by UG/G credits in APE and UG teacher preparation (n = 51).*

		SEsum	UG credits earned in APE	G credits earned in APE	UG Teacher Preparation
SEsum	Pearson Correlation	1	.41**	.30*	.54**
	Sig. (2-tailed)		.00	.04	.00

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

a. Listwise N=51

Ho10: There will be no significant relationship in teachers' level of perceived self-efficacy toward teaching students with orthopedic impairments based on the number of in-services teachers attended in the last 10 years.

The Pearson correlation coefficient analysis was used to determine the strength of the relationship between the teachers' level of perceived self-efficacy based on the number of in-services teachers attended in the last 10 years. These two items were found to have a positive correlation ($r = .327, p \leq .000$), indicating a significant linear relationship between the two variables (Table 17). Descriptive statistics for the number of teacher in-services attended follow (Table 18).

Table 17. *Number of in-services attended in last 10 years.*

		Frequency	Percent
Valid	0	23	27.7
	1	17	20.5
	2	10	12.0
	3	2	2.4
	4	2	2.4
	5	1	1.2
	7	3	3.6
	8	1	1.2
	9	1	1.2
	10	5	6.0
	Total	65	78.3
Missing System	18	21.7	
Total	83	100.0	

Table 18.
Self-efficacy based on the number of in-services attended in the last 10 years (N = 65).

		SEsum	No inservices
SEsum	Pearson Correlation	1	.33**
	Sig. (2-tailed)		.01
No inservices	Pearson Correlation	.33**	1
	Sig. (2-tailed)	.01	

** . Correlation is significant at the 0.01 level (2-tailed).
a. Listwise N=65

RQ5: What are the requisites for pre-service and in-service physical education teachers related to teaching children with disabilities in Montana?

Participants were asked to rate the importance of topics of in-service training needs regarding teaching students with orthopedic impairments in general physical education classes on a scale from zero (unimportant) to four (most important). The mean for all items except for 'writing IEPs' was between 2.34 and 3.39 ($n = 68$) and standard deviations ranged from 0.63 to 1.12 indicating the participants in the sample varied in rating the importance of these topics. The majority (78%) of physical education teachers considered motor development and assessment of motor ability moderately to very important, 80% considered individualization of instruction moderately to very important, 82% considered modifying equipment and activities moderately

to very important, 77% considered behavior management moderately to very important, 64% considered writing Individual Education Plans (IEPs) moderately to very important, 82% considered knowledge of disability conditions and adapted physical education information moderately to very important, and 81% considered curriculum materials moderately to very important ($N = 67$). Appendix I, Table 3.

Other in-service topics that teachers reported as needed in adapted physical education included strategies on teaching students with autism and visual impairments, assessment and goal setting, personal care related concerns for students with disabilities (e.g., showers, dressing out, toileting), helping students with disabilities learn how to advocate for themselves, and disability awareness education to all students. One respondent thought that hands on interaction with students with disabilities during pre-service training would be extremely helpful.

Chapter V

Discussion

The main purpose of this study was to examine public school elementary physical education teachers' self-efficacy toward teaching children with orthopedic impairments in general physical education class. An additional purpose was to identify adapted physical education teacher pre-service and in-service training needs in Montana. This chapter will include a discussion of the results for these findings including comparisons to relevant literature and suggestions for future research.

Based on the main research questions and hypotheses considered for this study, the major findings of this study were:

RQ1: *How confident are elementary physical educators in teaching students with orthopedic impairments in their general physical education class?*

The 10-item self-efficacy scale used for this study was based on the PESEISD-Autism (Taliaferro, 2010) developed in accordance with Bandura's (2006) guidelines for constructing a self-efficacy scale following the format, wording and rating scale recommendations. Results of the descriptive data on the 10-item self-efficacy scale, Physical Educators' Self-Efficacy Toward Including Students with Disabilities-Orthopedic Impairments survey, suggested that physical education teachers held favorable self-efficacy beliefs toward teaching students with orthopedic impairments in their general physical education class ($M= 77.37$ on a scale of zero to 10). Standard deviations ranged from 1.63 to 2.33 indicating that teachers in the sample varied in their level of self-efficacy toward teaching students with orthopedic impairments. All self-efficacy items in the scale resulted in strong internal reliability ($\alpha = .87$) suggesting that the

items in the scale were highly intercorrelated and measuring the same construct. These findings are comparable to Taliaferro's report of internal reliability ($\alpha = .93$) for the PESEISD-A.

Teachers reported having the highest level of self-efficacy in regards to "collaborating effectively with other teachers/professionals regarding students with orthopedic impairments" ($M = 8.63$, $SD = 1.87$), "promoting social interactions with peers" ($M = 8.40$, $SD = 1.70$), and "managing behaviors" ($M = 8.08$, $SD = 1.73$). The lowest levels of self-efficacy reported were in regards to "assessing motor skills" ($M = 6.42$, $SD = 2.16$), "modifying equipment" ($M = 6.66$, $SD = 2.33$), and "modifying activities" ($M = 7.39$, $SD = 1.99$).

The strong positive levels of self-efficacy beliefs when "collaborating effectively with other teachers" may suggest that there is adequate support staff such as physical therapists, para-educators, and/or adapted physical education specialists in larger school districts. Whereas in smaller school districts, the physical education teacher may be assigned to teach other subjects within a particular grade level or several grade levels particularly if they have an elementary education "generalist" degree, which allows them to teach all subjects, kindergarten through 8th grade. This is also true at the middle school level in some school districts in MT. Therefore, they may feel a greater sense of support from other teachers and staff rather than feeling isolated.

"Promoting social interactions with peers" is encouraging as this is one of the main reasons to include a student with a disability in general physical education (Block, Klavina & Flint, 2007). It offers students with a disability opportunities to interact and play with their classmates in an active, fun setting as well as increasing the able bodied students' disability awareness and sensitivity through positive interactions with the child who is disabled. In addition, having a

high level of self-efficacy in regards to “managing behaviors” might imply that overall, teachers feel confident and successful about their classroom management skills. It may also suggest that students with orthopedic impairments do not necessarily exhibit behavior problems compared to a student without a disability. Moreover, all three of these self-efficacy items are entirely under a teachers’ control.

The three items with the lowest levels in self-efficacy toward teaching students with orthopedic impairments, “assessing motor skills,” “modifying equipment,” and “modifying activities,” are interrelated in the sense that they are all connected to knowledge, skills and abilities related to teaching a student with an orthopedic impairment. It may suggest that teachers are lacking in appropriate adaptive equipment and/or the ability to modify instructional strategies that support learning for students with orthopedic impairments. While the vast majority (77%) of participants in the study reported currently teaching at least one child with an orthopedic impairment, s/he may be the only child in a class of 30+ students. All students’ ability levels may not be considered when purchasing equipment. Absence of appropriate equipment can affect the success or failure of students and physical educators in physical education class (Menear & Davis, 2007). If requisite skills and knowledge are lacking or do not exist, the probability of succeeding in a given task diminishes. On the other hand, if given appropriate skills and adequate incentives (i.e., successful outcomes), efficacy expectations are a major determinant of an individual’s choice of activities (Bandura, 1977). Thus, when considering teaching strategies to include all students, certain teachers may lack the expertise and/or funding to purchase appropriate equipment for children with orthopedic impairments or modify existing equipment.

The results of Taliaferro's (2010) study regarding teachers' self-efficacy toward teaching students with autism, revealed that physical educators were more efficacious in regards to "collaborating effectively with other teachers/professionals." The next highest level of self-efficacy items was in regards to "creating a safe environment," and "modifying rules." On the other hand, teachers were found to be less efficacious on items in reference to "managing behaviors," "modifying instructions," and "promoting social interactions with peers." While the same 10-item self-efficacy scale was used in the current study by replacing "autism" with "orthopedic impairments," the differences in findings between this study and Talliaferro's may be attributable to a number of factors. First, in this study participants were asked to rate their self-efficacy based on their experience teaching students with orthopedic impairments. However, Talliaferro's study asked participants to rate their self-efficacy based on experience teaching students with autism. One's level of perceived self-efficacy toward teaching students with disabilities may vary depending on the type of disability and/or level of mastery experience. Mastery experience is the interpreted result of one's preceding performance and the most influential source of self-efficacy (Pajares, 2002). A qualitative study by Hardin (2005) reported master experience as the most valuable knowledge source to learn how to teach children with disabilities.

An additional factor may be that for this study, only elementary physical educators in Montana were recruited, whereas Talliaferro's sample included elementary, middle, and secondary physical educators in 13 states. Finally, due to the sampling method, participants in this study may not be representative of the population, as all teachers may not have received the notification e-mails to participate or may have chosen to delete the e-mails. On the other hand, teachers who did respond may have a higher level of self-efficacy toward teaching students with

disabilities, specifically, orthopedic impairments, and thus, more willing to volunteer, compelled to complete the survey, and interested in the results.

RQ2: How do elementary physical educators evaluate their own physiological state when including a student with an orthopedic impairment in their general physical education class?

The Cronbach alpha were employed to measure internal reliability of the two “physiological state” items regarding the participants’ feelings of “uneasy” or “tense” about including a child with an orthopedic impairment, representing strong internal reliability ($\alpha = .74$) suggesting that the items in the scale measured the same construct. A Pearson correlation coefficient analysis revealed a positive relationship ($r = .59; p \leq .00$) with the two items. Based on the overall measure of self-efficacy, there was a significant inverse relationship and physical educators’ physiological state toward teaching students with orthopedic impairment ($r = -.55; p \leq .00$). Thus, teachers who felt more tense or uneasy toward teaching students with orthopedic impairments were less efficacious. One study revealed that pre-service physical education students were more anxious and nervous when working with students with disabilities than without disabilities (Everhart, 2009). In an interview by Hardin (2005), a pre-service teacher expressed fear that the student “would flip out.” These findings support Bandura’s theory of self-efficacy and the relationship of the psychological source in judging one’s efficacy, competence and ability to perform (Bandura, 1994; Pajares, 2002). This may suggest the need for more pre-service teaching experience that includes students with disabilities, and disability awareness to help future teachers feel less tense or uneasy when teaching students with disabilities.

RQ3: What are the most compelling challenges for elementary physical educators that may make it difficult to include a student with an orthopedic impairment in their general physical education class?

Teachers were asked to rate the extent to which each situation (challenge) made it difficult to meaningfully include a student with an orthopedic impairment in their general physical education class on a 0-5 scale from “not applicable” to “very much an issue.” The results of a descriptive data analysis revealed that large class sizes ($M = 3.51$; $S.D. = 1.37$) were the greatest challenge, followed by “no appropriate equipment” ($M = 3.28$; $S.D. = 1.16$) and “limited training” ($M = 3.25$; $S.D. 1.25$). A Pearson correlation coefficient analysis revealed a significant inverse relationship between four of the challenge items and the overall measure of self-efficacy: “modify activities” ($r = -.66$; $p \leq .00$), “limited training” ($r = -.49$; $p \leq .00$), “no time for modifications” ($r = -.44$; $p \leq .00$), and “no appropriate equipment” ($r = -.35$; $p \leq .00$). Hence, teachers more efficacious toward teaching students with orthopedic impairments perceived these particular situations as less challenging. Two items, limited information and no information were very strongly correlated ($r = .90$; $p \leq .00$) meaning that these two items could be viewed as one item. Further investigation revealed that the relationship between the self-efficacy scale and all 12-items of the challenge scale were also significantly inversed ($r = -.39$; $p \leq .00$). This indicated that overall, individuals who had higher levels of self-efficacy perceived less challenges in including students with orthopedic impairments in general physical education class. These findings correspond to the results discussed in RQ1 in regards to teachers’ reported low levels of self-efficacy and their ability to modify equipment and modify strategies. Limited training may also contribute to one’s self-efficacy toward modifying equipment and strategies.

RQ4: Do particular experiences/demographic factors help explain the difference in levels of perceived teacher self-efficacy toward teaching students with orthopedic impairments in their general physical education class?

While some prior research has found a relationship between teachers' attributes and self-efficacy, other studies have reported no relationship. For example, a study by Rizzo (1985) with physical educators found that age and coursework were significant indicators of a teachers' self-efficacy. In another study by Hodge and Jansma (2000) with pre-service teachers determined that while females with experience teaching individuals with disabilities showed a more positive attitudes and comfort than male peers, both tended to be ambivalent and indecisive toward teaching students with physical disabilities. Block and Rizzo (1995) revealed that as the quality of teaching experiences improved and adapted physical education coursework increased, attitudes towards toward teaching students with profound disabilities resulted in more favorable attitudes.

A one way analysis of variance (ANOVA) was used to analyze the relationship in teachers' self-efficacy toward teaching students with orthopedic impairments based on age, gender, size of town where they taught, years of experience teaching, the number of students previously taught or currently teaching, and degree earned. There was no significant difference in teachers' self-efficacy toward teaching students with orthopedic impairments based on these findings indicating that there is no difference in one's self-efficacy toward teaching students with orthopedic impairments based on these particular attributes. It should be noted, however, that while the difference in self-efficacy based on age was not significant ($F = (5, 77) 1.81; p \leq .12$), teachers in the 26-30 year old range ($n = 12$) were the most efficacious ($M = 80.75; S.D. = 8.24$).

This may be attributable to their having taught fewer years and their zeal and enthusiasm for teaching. Teachers often experience a “burn-out” phase after five years of teaching as nearly half of all teachers who enter the field leave it within the first five years (Alliance for Excellent Education, 2005). In contrast, teachers over 60 years of age ($n = 4$) were the least efficacious toward students with disabilities. Teachers in this age group may be experiencing “burn-out,” as well as lower levels of energy and enthusiasm.

In regards to gender, male teachers ($n = 37$) seemed slightly more efficacious ($M = 79.92$) than women ($n = 46$) ($M = 75.33$) toward teaching students with disabilities, yet not significantly ($F(1,81) = 2.63; p \leq .11$). Other studies have found little or no significant difference between attitudes toward teaching students with disabilities and attributes (Block & Rizzo, 1995; Hodge & Jansma, 2000; Rizzo, 1985). For example, Hodge & Jansma (2000) found females with experience teaching individuals with disabilities demonstrated more positive attitudes and perceived comfort than their male peers (with and without teaching experience) and female peers without teaching experience. Yet both females and males tended to be ambivalent and indecisive toward teaching students with physical disabilities.

The size of town where a teacher taught and self-efficacy was examined to determine if there was a relationship between teachers who taught in a small, rural school district compared to teachers in larger rural or urban school districts and levels of self-efficacy toward teaching students with disabilities ($N = 83$). While there was a significant difference ($F(3, 79) = 2.70; p \leq .05$), teachers from small rural school districts with less than 2,500 in population ($n = 13; M = 82.00$), were more efficacious than all other sizes of towns or cities. One may reason that teachers from small rural school districts are less dependent on outside services and support

staff (e.g., para-educators, physical therapists) and as a result, may be more innovative and resourceful in their teaching strategies. Additionally, if there is a lack of special education services, it may result in less “mainstreaming” and more “inclusivity” for students with disabilities, which may be the case in more rural areas.

Conversely, teachers from cities of 20,000 – 50,000 in population reported the least efficacious ($n = 20$; $M = 71.40$) compared to those in other sized towns or cities. One might speculate that teachers in this group may or may not have outside services and support staff available.

Moreover, others might lack in confidence or the requisite skills, knowledge and ability to assess students’ skills levels, and modify instructional strategies and activities. Additionally, whether school districts in these areas support the notion of inclusion or mainstreaming for students in the physical education classroom might be valuable information.

In regards to the difference in self-efficacy toward teaching students with disabilities and the number of years teaching, there was no significant difference ($F(4, 78) = .50$; $p \leq .74$). However, it is important to mention that teachers with less experience (0-2 years) ($n = 7$; $M = 78.71$), those with 5-7 years of experience ($n = 12$; $M = 75.17$), and those with over 10 years of experience ($n = 46$; $M = 76.37$) were less efficacious toward teaching students with orthopedic impairments. This might suggest that beginning teachers tend to be less efficacious as they have not yet developed the sources of self-efficacy (mastery experience, vicarious experience, social persuasion physiological states) compared to an experienced teacher. Teachers in the 5-7 year range may be experiencing some of the “burn-out” symptoms typical of this timeframe as discussed earlier. Those who have been teaching for more than 10 years could also be feeling burned out and/or physical strains due to the inherent nature of the job.

There was no significant difference in teachers' self-efficacy based on prior ($F(4, 78) = .44; p \leq .78$) or current experience ($F(1, 81) = .22; p = .64$) toward teaching students with orthopedic impairments ($N = 83$). Nonetheless, teachers with more prior experience were more efficacious ($M = 81.00$) compared to teachers with current experience ($M = 77.37$).

Participants' responses regarding degrees earned, undergraduate and graduate credits in adapted physical education and special education, and undergraduate teacher preparation was significantly less for these questions resulting in a smaller sample sizes, ranging from 53 to 61. The lower response rate may be attributable in part to an inability to recall specific coursework or perhaps a presumption that this information was not as important to the researcher.

For questions regarding undergraduate (UG) and graduate credits earned in special education (SE) and/or adapted physical education (APE), and undergraduate teaching preparation, Pearson correlation coefficient analyses were used to determine the strength of the correlation between teachers' level of perceived self-efficacy based on their past experiences related to teaching. Physical educators who earned undergraduate credits in adapted physical education ($r = .40; p \leq .00$), graduate credits in adapted physical education ($r = .29; p \leq .04$), and teachers who earned graduate and UG credits in special education and adapted physical education ($r = .35; p \leq .01$) were more efficacious toward teaching students with orthopedic impairments. Adapted physical education specifically, appears to affect an individual's level of confidence positively in regards to teaching students in this population. In addition, teachers who earned undergraduate and graduate credits in both special education and adapted physical education had more favorable self-efficacy toward teaching students with orthopedic impairments.

When self-efficacy scores in non-respondents ($n = 22$; $M = 76.23$) were compared to those who did respond with a physical education degree ($n = 43$; $M = 76.23$) or other degree ($n = 18$; $M = 78.61$), there was no significant difference among all three groups. Thus, the type of degree was not an indicator for perceived self-efficacy beliefs toward teaching students with orthopedic impairments.

A significant positive relationship ($r = .54$; $p \leq .00$) was found in the level of perceived self-efficacy based on teachers' perception of their undergraduate academic preparation to teach students with orthopedic impairments ($N = 66$). To analyze these variables further, a Pearson correlation coefficient was conducted to examine the strength of the relationship between undergraduate teaching preparation, undergraduate and graduate credits in adapted physical education and self-efficacy. When all three variables were considered, undergraduate teacher preparation was found to have the highest correlation ($r = .54$; $p \leq .00$), followed by undergraduate credits earned in adapted physical education ($r = .41$; $p \leq .00$), and graduate credits earned in adapted physical education ($r = .30$; $p \leq .04$). These results could suggest that a stronger emphasis in undergraduate teacher preparation to teach students with orthopedic impairments combined with adapted physical education may result in greater self-efficacy toward teaching students with orthopedic impairments.

In regards to teachers' level of perceived self-efficacy and the number of in-services attended in the last 10 years, there was a significant positive correlation ($r = .33$; $p \leq .01$). However, it should be viewed with caution. Of the teachers who responded, 27 (42%) reported as having attended one to two in-services in the last 10 years that related to teaching children with disabilities,

while five teachers reported having attended 10 or more in-services with information pertaining to children with disabilities. While it is plausible that an individual may have attended 10 or more in-services, it is not likely that all pertained to teaching children with disabilities. Thus, in these cases, some participants could have misread the question to mean all in-services attended, which may have skewed the results. For those who reported having attended one to two in-services, a typical in-service or workshop may last one-two hours compared to a quarter or semester course over approximately four months with 30-45+ contact hours. Hence, the breadth and depth of the in-service and how it related to children with disabilities might shed more light on the usefulness of this information.

RQ5: What are the requisites for pre-service and in-service physical education teachers related to teaching children with disabilities in Montana?

Hardin (2005) found that teaching experience, the example of other teachers, and the influence of the adaptive physical education coursework were the most important indicators of competence and confidence when teaching children with disabilities. He stated that teaching students with disabilities should be “a thread of information woven through the teacher education curriculum.” In a study assessing the attitudes of pre-service physical educators toward teaching students with mild disabilities, the results suggested that perceived competence and academic preparation were the best predictors of favorable attitudes (Rizzo & Kirkendall, 1995). A recent study with pre-service teachers majoring in adapted physical education with prior experience with persons with disabilities, were found to be more positive toward teaching individuals with disabilities (Duchane et al., 2008).

When asked to rate the importance of topics for in-service needs training, participants identified motor development and assessment of motor ability (78%), individualization of instruction (80%), and modifying equipment and activities as moderate to very important (77%). These items could be categorized as teaching skills and strategies that could correspond to the rating of challenges (modifying activities, limited training, no time for modifications, and no appropriate equipment) as discussed previously. Behavior management was rated by 77% of the respondents as moderate to very important, which may indicate that some teachers may feel a need for stronger classroom or individual behavior management strategies. A strong majority of respondents (82%) identified knowledge of disability conditions and adapted physical education information as well as curriculum materials (81%) as moderate to very important. This would suggest a definite need in this area for current and pre-service teachers. In the area of writing individual education plans (IEPs), 64% percent thought this to be moderately to very important, while 18.1% considered this area to be “unimportant or “of little importance.” These results indicate a strong need in regards to understanding the importance and value of physical educators’ involvement in the IEP process for students with disabilities.

Other in-service training needs were identified such as teaching students with other types of disabilities (e.g., autism, visual impairments), goal setting, personal care and advocacy as well as disability awareness education for all students. Hands on experience with students with disabilities during teacher preparation was also identified.

Future Research

The results of this study have expanded the current knowledge and research in Adapted Physical Education using the self-efficacy theory as it relates to physical educators inclusion of students

with disabilities, specifically orthopedic impairments. It is suggested that further research be conducted to:

1. Replicate this research with a larger sample in Montana and other similar populations to determine if the results from this study are generalizable to all physical educators in Montana.
2. Gain a clearer understanding of physical educators' self-efficacy beliefs toward including students with specific disabilities, replicate this research with other types of disabilities.
3. Conduct research with pre-service teachers to gain a better understanding of their perceived self-efficacy beliefs toward inclusion of students with disabilities. This may help to identify and address any preconceived notions regarding individuals with disabilities as well as to help develop strong self-efficacy beliefs toward teaching students with disabilities.
4. Conduct qualitative research concurrently to observe teachers' behaviors toward students with disabilities in general physical education. What are the most proficient practices among in-service teachers used for assessing motor skills, modifying equipment and activities for students with disabilities?
5. Determine the influence of pre-service teachers' practicum experiences (observations and student teaching) as it relates to the development of self-efficacy beliefs toward inclusion of students with disabilities.

6. Investigate the difference in self-efficacy beliefs toward inclusion of students with disabilities between pre-service students with undergraduate coursework in adapted physical education compared to those with no coursework in adapted physical education.
7. Explore the effects of relevant professional development workshops and in-services for physical educators' that improve their current level of knowledge, skills and abilities to meaningfully include students with disabilities.

Conclusion

This study explored the self-efficacy beliefs and physiological states among physical educators in regards to teaching students with orthopedic impairments in their general physical education classes. Additionally, the most compelling challenges for elementary physical educators that make it difficult to include a student with an orthopedic impairment were looked at and compared to self-efficacy beliefs. Finally, demographic/experiential factors and self-efficacy beliefs were examined to determine if these factors explained the difference in levels of perceived self-efficacy toward teaching students with orthopedic impairments. The major findings of this study were: (a) the lowest levels of self-efficacy reported among physical educators' were in regards to assessing motor skills, modifying equipment, and modifying activities; (b) physiological states significantly predict physical education teachers' self-efficacy beliefs; (c) individuals who had higher levels of self-efficacy perceived less challenges in including students with orthopedic impairments in general physical education class (specifically – to modify activities, limited training, no time for modifications, and no appropriate equipment); (d) teachers who earned undergraduate and graduate credits in adapted physical education and those with coursework in both special education and adapted physical education were positively

correlated with perceived self-efficacy toward teaching students with orthopedic impairments; (e) a significant positive relationship was found in the level of perceived self-efficacy beliefs based on teachers' perception of their undergraduate academic preparation to teach students with orthopedic impairments, and (f) teachers who taught in towns of 20,000 – 50,000 in population were significantly less efficacious than teachers in all other size towns.

The Physical Educators' Self-Efficacy Toward Including Students with Disabilities – Orthopedic Impairments (PESEISD-OI) instrument has contributed to the existing Physical Educators' Self-Efficacy Toward Including Students with Disabilities – Autism (PESEISD-A) (Taliaferro, et al. 2010) instrument and other self-efficacy instruments in the field of adapted physical education. It has also provided valuable insight in regards to the self-efficacy and perceived competency of physical educators and adapted physical education in Montana as well as useful data for higher education in regards to teacher preparation coursework and practicum experiences. This information will assist the Montana Office of Public Instruction and the Montana Alliance for Health, Physical Education, Recreation and Dance in identifying pre-service and in-service adapted physical education training needs for teachers in Montana.

These findings are valuable given that elementary and middle school teachers, certified as 'generalists' are licensed to teach all subject areas at the elementary and middle school levels, including physical education and health enhancement. In Montana, pre-service pedagogical coursework specifically related to adapted physical education and children with disabilities, is minimal or lacking. With approximately one fourth of physical education teachers in Montana certified as 'generalists,' it seems reasonable that including the philosophical notion of inclusion through a comprehensive experience with reference to individuals with disabilities could be

integrated and disseminated throughout all coursework in the undergraduate teacher education preparation curriculum to strengthen future educators self-efficacy toward inclusion of all students.

Furthermore, while teaching children with disabilities may be generally more challenging in a general physical education class than in a regular classroom due to the dynamic environment, all teachers are expected to meaningfully, safely and effectively meet the needs of all students, with and without disabilities. Some students may exhibit a subtle orthopedic impairment that may be difficult to notice and not recognized by the legal mandates or meet the criteria for direct services under the IDEIA or 504 Plan, such as a slight limp or missing fingers. These students manage to participate to the best of their ability but may lag behind in certain activities where the impairment becomes more apparent and problematic. He is relying on the physical educator to be proficient at modifying teaching strategies and lesson plans to promote inclusion for every child, as well as the opportunity to learn and participate in all activities in a positive, supportive environment. This requires a unique set of skills, knowledge and abilities to competently assess the skill levels of all students, and modify instructional strategies and activities accordingly to create a successful inclusive environment. Finally, this study will help to ensure that all children with disabilities receive “free and appropriate” education designed to meet their unique needs.

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APPENDIX A

Electronic Mail to Pilot Study Participants

Dear _____,

Thank you all for agreeing to offer your time and expertise to review the attached PILOT SURVEY created to examine elementary physical education teachers' perceived self-efficacy toward teaching children with orthopedic impairments in general physical education. Your professional feedback will be very useful for the completion of my thesis proposal slated for mid-February.

The survey is based on Bandura's model for creating surveys. Please REVIEW but do not respond to the actual survey as I will not be collecting data from the results. However, please DO respond to the questions at the end of the survey regarding format, readability, etc. and click the "submit" button.

Please feel free to call or email me (pholman@umconnect.umt.edu or 396-1158) or Dr. Arthur (Tucker) Miller (arthur.miller@mso.umt.edu or 243-5238) if you have any questions regarding the pilot survey.

Please review the following survey within the next week or by January 28th, 2011.

Note: Re-clicking an invite link will bring you back to your response for editing.

<http://s-pjv00-444454.sgizmo.com/i/97909e22910784p132215>

Best regards,

Patty Holman
Graduate Student
Health & Human Performance
University of Montana

APPENDIX B



The University of
Montana

INSTITUTIONAL REVIEW BOARD
for the Protection of Human Subjects
FWA 0000078

Research & Development
University Hall 116
The University of Montana
Missoula MT 59812
Phone 406-243-6670 | Fax 406-243-6330

Date: March 11, 2011

To: Patricia Holman, Rural Institute; Arthur Miller, HHP

From: Dan Corti, IRB Chair

RE: IRB 50-11: "Physical educators' self-efficacy toward including students with disabilities – orthopedic impairments - survey"

Your IRB proposal cited above is exempt from the requirement of review by the Institutional Review Board in accordance with the Code of Federal Regulations, Part 46, section 101. The specific paragraph which applies to your research is:

- (b)(1) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.
- (b)(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.
- (b)(3) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if: (i) The human subjects are elected or appointed public officials or candidates for public office; or (ii) federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.
- (b)(4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.
- (b)(5) Research and demonstration projects which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (i) Public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs.
- (b)(6) Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

University of Montana IRB policy does not require you to file an annual Continuation Report (Form RA-109) for exempt studies. However, you are required to timely notify the IRB if there are any significant changes or if unanticipated or adverse events occur during the study, if you experience an increased risk to the participants, or if you have participants withdraw from the study or register complaints about the study.



THE UNIVERSITY OF MONTANA-MISSOULA
Institutional Review Board (IRB)
for the Use of Human Subjects in Research
CHECKLIST / APPLICATION

IRB Protocol No.:
50-11

At The University of Montana (UM), the Institutional Review Board (IRB) is the institutional review body responsible for oversight of all research activities involving human subjects outlined in the U.S. Department of Health and Human Services Office of Human Research Protection (www.hhs.gov/ohrp) and the National Institutes of Health, Inclusion of Children Policy Implementation (<http://grants.nih.gov/grants/funding/children/children.htm>).

Instructions: A separate registration form must be submitted for each project. IRB proposals are approved for three years and must be continued annually. **Faculty members** may email the completed form as a Word document to IRB@umontana.edu. **Students** must submit a hardcopy of the completed form to the Office of the Vice President for Research & Development, University Hall 116.

1. Administrative Information

Project Title: Physical Educators' Self-Efficacy Toward Including Students with Disabilities - Orthopedic Impairments - Survey	
Principal Investigator: Patricia Holman	Title: Student
Email address: patricia.holman@umconnect.umt.edu	
Work Phone: 406-243-2808	Cell Phone: 406-396-1158
Department: Rural Institute	Office location: Corbin 043

2. Human Subjects Protection Training (All researchers, including faculty supervisors for student projects, must have completed a self-study course on protection of human research subjects within the last three years (<http://www.umt.edu/research/complianceinfo/IRB/>) and be able to supply the "Certificate(s) of Completion" upon request. Add rows to table if needed.

NAME and DEPT.	PI	CO-PI	Faculty Supervisor	Research Assistant	DATE COMPLETED Human Subjects Protection Course
Patricia A. Holman/Rural Institute	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2/25/2010
Dr. Arthur Miller	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>	4/2008
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Expires 4/1/2011 needs update

3. Project Funding

Is grant application currently under review at grant funding agency? <input type="checkbox"/> Yes (If yes, cite sponsor on ICF if applicable) <input checked="" type="checkbox"/> No		Has grant proposal received approval and funding? <input type="checkbox"/> Yes (If yes, cite sponsor on ICF if applicable) <input type="checkbox"/> No	
Agency	Grant No.	Start Date	End Date
Is this part of your thesis or dissertation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		If yes, date you successfully presented your proposal to your committee: February 25, 2011	

For UM-IRB Use Only

IRB Determination:

- Approved Exempt from Review, Exemption # 2 (see memo)
- Approved by Expedited/Administrative Review (see *Note to PI)
- Full IRB Determination
 - Approved (see *Note to PI)
 - Conditional Approval (see memo) - IRB Chair Signature/Date: _____
 - Conditions Met (see *Note to PI)
 - Resubmit Proposal (see memo)
 - Disapproved (see memo)

*** Note to PI:** Study is approved for one year. Use any attached IRB-approved forms (signed/dated) as "masters" when preparing copies. If continuing beyond the expiration date, a continuation report must be submitted. Notify the IRB if any significant changes or unanticipated events occur. Notify the IRB in writing when the study is terminated

Final Approval by IRB Chair: [Signature] Date: 3/14/2011 Expires: _____

APPENDIX C

PRE-NOTICE ELECTRONIC MAIL REQUEST TO POTENTIAL PARTICIPANTS

March 16, 2011

RE: UM Graduate Research Thesis Project – Teaching Children with Disabilities

Dear Physical Educators/Health Enhancement Teachers,

My name is Patty Holman. I am a health promotion graduate student in the Health & Human Performance Masters Program at the University of Montana and working as a research assistant for the Montana Disability and Health Program at the University of Montana Rural Institute.

Currently, I am working on my graduate thesis research project that includes an online survey about teaching children with disabilities. I understand teachers' limited time and demanding schedules, however, I will greatly appreciate your time and attention to this survey. It will only take approximately 10-15 minutes. Your responses will be strictly *confidential* and *anonymous*.

Please expect an email within the next 3 working days with a link to the survey. Please add my e-mail address to your Safe Senders list to prevent any future e-mails from me being sent to your junk e-mail. If you prefer to complete a paper copy of the survey, you may print a copy and mail it to me or send me your contact information (name, address) via e-mail and I will be happy to mail one to you through U.S. Mail with a self-addressed stamped envelope for returning the survey.

Feel free to contact me with any questions or for the thesis results at patricia.holman@umconnect.umt.edu or at 406-396-1158. Thank you in advance for your valuable time and participation.

Best regards,

Patty Holman
Graduate Student
Health & Human Performance
University of Montana

APPENDIX D

ELECTRONIC MAIL REQUEST TO PARTICIPANTS WITH SURVEY LINK

March __, 2011

Dear Health Enhancement and Physical Education Teachers,

My name is Patty Holman. I am a health promotion graduate student in the Health & Human Performance Masters Program at the University of Montana and working as a research assistant for the Montana Disability and Health Program at the University of Montana Rural Institute.

Currently, I am working on my graduate thesis research project that includes an online survey about teaching children with disabilities and would greatly appreciate your time and attention to this survey. It will only take approximately 10-15 minutes. Please click on the link below and you will be directed to the first page (Informed Consent). You may save and continue the survey at a later time. An e-mail will be sent to the address you provide. When you are ready to continue your survey, simply click on the link in that e-mail. Please complete the survey within the next 5 days. Your responses will be strictly confidential and anonymous.

<http://ruralinstitute.physicaleducators.sgizmo.com>

If you prefer to complete a paper copy of the survey, please send me your contact information (name, address) via e-mail and I will be happy to mail one to you through U.S. Mail with a self-addressed stamped envelope for returning the survey.

Feel free to contact me with any questions or for the thesis results at patricia.holman@umconnect.umt.edu or at 406-396-1158. Thank you in advance for your valuable time and participation.

Best regards,

Patty Holman
Graduate Student
Health & Human Performance
University of Montana

APPENDIX E

Physical Educators' Self-Efficacy Toward Including Students with Disabilities -
Orthopedic Impairments
(PESEISD-OI)

Informed Consent

Title: Physical Educators' Self-Efficacy Toward Including Students with Disabilities Appraisal Inventory - Orthopedic Impairments (PESEISD-OI)

Sponsor: Montana Disability and Health Program (MTDH) and National Center on Physical Activity and Disability (NCPAD)

Project Director(s):

Patty Holman (graduate student), University of Montana, 052 Corbin Hall, Missoula, MT, 59812, 406-243-2808. Faculty Advisor: Dr. Arthur Miller, University of Montana, McGill 206, 32 Campus Drive, MS 4536, Missoula, Montana, 59812, 406-243-5238.

Purpose:

This is a research project in partial fulfillment for my masters degree in Health and Human Performance. The purpose of this survey is to examine the self-efficacy of public school elementary physical education teachers' toward teaching children with orthopedic impairments in general physical education class. An additional purpose is to identify pre-service and in-service adapted physical education teacher training needs in Montana.

Procedures:

You will be asked to complete an online survey. It will take approximately 10-15 minutes to complete.

Risks/Discomforts:

There is minimal anticipated discomfort for those who choose to participate in this study. However, answering the questions may cause you to think about feelings that make you sad or upset.

Benefits:

Although you may not benefit directly from taking part in this research, your participation may help to expand knowledge in the adapted physical education and health enhancement field. An additional benefit may be to identify adapted physical education teacher pre-service and in-service training needs in Montana.

Confidentiality:

No names or other identifying information will be collected.

Voluntary Participation/Withdrawal:

Your decision to take part in this research is entirely voluntary. You may skip questions or stop participating at any time.

Questions:

If you have any questions about the research now or during the study contact: Patty Holman at patricia.holman@umconnect.umt.edu (406-396-1158) or Dr. Tucker Miller at arthur.miller@mso.umt.edu (406-243-5238).

If you have any questions regarding your rights as a research subject, you may contact the Chair of the IRB through The University of Montana Research Office at 243-6670.

Statement of Consent:

I have read the above description of this research study. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions I may have will also be answered by a member of the research team. I voluntarily agree to take part in this study. I understand I can print a copy of this consent form.

- I Accept
- I Decline

APPENDIX F

Physical Educators' Self-Efficacy Toward Including Students with Disabilities - Orthopedic Impairments (PESEISD-OI)

Note: The following instrument is an adaptation of the PESEISD-A instrument developed by Dr. Andrea Talliaferro and colleagues (2010) and used with permission on December 5, 2010.

Directions:

The survey should take approximately 10-15 minutes. For optimal viewing, please maximize your screen display on your computer. Thank you!

For the purposes of this research project, we ask that you read the definition of "orthopedic impairment" below:

Orthopedic Impairment -

A severe orthopedic (muscle or bone) impairment* that adversely affects a child's educational performance. Students may have issues using their legs, arms and hands and some may use assistive technology or devices to help them function as independently as possible. It includes impairments caused by a congenital anomaly (different or unusual at birth), by disease (e.g., polio, bone tuberculosis), and from other causes (e.g., cerebral palsy, amputations, and fractures or burns that limit muscle use or movement (IDEIA, 2004).

**Severe Impairment -*

A severe impairment means a problem that is present more than 50% of the time, with an intensity, which is partially disrupting the person's day to day life and which happens frequently over the last 30 days. Impairments can be temporary or permanent; progressive, regressive or static; intermittent or continuous. The deviation from the population norm may be slight or severe and may fluctuate over time.

Please recall a specific child or children in your physical education class(es) who you currently teach or have taught with an orthopedic impairment who may benefit from lesson modifications or adaptations to accommodate their unique needs related to their disability. As you complete the questionnaire, please refer to your experiences with this child or children as a reference point. If you have not taught any students with orthopedic impairments, answer the questions based on your perception of how you might feel or believe.

Following are 24 questions about how you feel about performing certain tasks to accommodate a student with an orthopedic impairment. Please answer these questions as if this student is currently participating in your general physical education class. There are no correct answers, and each person will answer these questions differently. The survey continues with 15 questions about your demographics (e.g., age, gender) and past experiences teaching students with orthopedic impairments in general physical education class.

PESEISD-OI

A. Using the scale below, please rate your degree of confidence by placing an “x” in the appropriate box.

0 = Cannot do at all.

5= Moderately can do.

10 = Highly certain can do.

<i>I am confident in my ability:</i>	0 - Cannot do at all.	1	2	3	4	5 - Can do moderately.	6	7	8	9	10 - Highly certain can do.
1. Modify equipment for students with orthopedic impairments who are included in my general physical education classes.											
2. Modify activities for students with orthopedic impairments who are included in my general physical education classes.											
3. Create a safe environment for students with orthopedic impairments who are included in my general physical education classes.											
4. Promote social interactions with peers for students with orthopedic impairments who are included in my general physical education classes.											
5. Manage behaviors of students with orthopedic impairments who are included in my general physical education classes.											
6. Modify instruction for students with orthopedic impairments who are included in my general physical education class.											
7. Assess the motor skills of students with orthopedic impairments who are included in my general physical education classes.											
8. Modify rules to games for students with orthopedic impairments who are included in my general physical education classes.											

<i>I am confident in my ability:</i>	0 - Cannot do at all	1	2	3	4	5 - Can do moderately.	6	7	8	9	10 - Highly certain can do.
9. Collaborate effectively with other teachers/professionals regarding students with orthopedic impairments who are included in my general physical education classes.											
10. Motivate students with orthopedic impairments who are included in my general physical education classes.											

Physiological States - Section B

11. Please rate how *you feel* about including a child with an orthopedic impairment in your general physical education class by placing a check in the appropriate box.

I **feel uneasy** about including a student with an orthopedic impairment in my general physical education class.

- () Definitely false
- () Moderately false
- () Neither true nor false
- () Moderately true
- () Definitely true

12. Please rate how *you feel* about including a child with an orthopedic impairment in your general physical education class by placing a check in the appropriate box.

I **feel tense** about including a student with an orthopedic impairment in my general physical education class.

- Definitely false
- Moderately false
- Neither true nor false
- Moderately true
- Definitely true

Challenges – Section C

A number of situations are described below that may make it difficult for you to include students with orthopedic impairments in your general physical education classes. Please rate the *extent to which each situation makes it difficult* for you to meaningfully include a student with an orthopedic impairment into your general physical education class.

13. To what extent does the following situation make it difficult for you to meaningfully include a student with an orthopedic impairment into your general physical education class?

I am not sure how to **modify activities**.

- Not applicable
- Not at all an issue
- Not much of an issue
- Sometimes an issue
- Sometimes not an issue
- Somewhat of an issue
- Very much an issue

14. To what extent does the following situation make it difficult for you to meaningfully include a student with an orthopedic impairment into your general physical education class?

I do not have time to **make modifications.**

- Not applicable
- Not at all an issue
- Not much of an issue
- Sometimes an issue
- Sometimes not an issue
- Somewhat of an issue
- Very much an issue

15. To what extent does the following situation make it difficult for you to meaningfully include a student with an orthopedic impairment into your general physical education class?

I do not have **appropriate equipment.**

- Not applicable
- Not at all an issue
- Not much of an issue
- Sometimes an issue
- Sometimes not an issue
- Somewhat of an issue
- Very much an issue

16. To what extent does the following situation make it difficult for you to meaningfully include a student with an orthopedic impairment into your general physical education class?

I have **large class sizes**.

- Not applicable
- Not at all an issue
- Not much of an issue
- Sometimes an issue
- Sometimes not an issue
- Somewhat of an issue
- Very much an issue

17. To what extent does the following situation make it difficult for you to meaningfully include a student with an orthopedic impairment into your general physical education class?

There are **multiple classes** in the gym.

- Not applicable
- Not at all an issue
- Not much of an issue
- Sometimes an issue
- Sometimes not an issue
- Somewhat of an issue
- Very much an issue

18. To what extent does the following situation make it difficult for you to meaningfully include a student with an orthopedic impairment into your general physical education class?

The student's **skill level is very different** than peers in the class.

- Not applicable
- Not at all an issue
- Not much of an issue
- Sometimes an issue
- Sometimes not an issue
- Somewhat of an issue
- Very much an issue

19. To what extent does the following situation make it difficult for you to meaningfully include a student with an orthopedic impairment into your general physical education class?

I have **no aid or support** to help.

- Not applicable
- Not at all an issue
- Not much of an issue
- Sometimes an issue
- Sometimes not an issue
- Somewhat of an issue
- Very much an issue

20. To what extent does the following situation make it difficult for you to meaningfully include a student with an orthopedic impairment into your general physical education class?

I **do not have information** about the student.

- Not applicable
- Not at all an issue
- Not much of an issue
- Sometimes an issue
- Sometimes not an issue
- Somewhat of an issue
- Very much an issue

21. To what extent does the following situation make it difficult for you to meaningfully include a student with an orthopedic impairment into your general physical education class?

I **have limited information** about the student.

- Not applicable
- Not at all an issue
- Not much of an issue
- Sometimes an issue
- Sometimes not an issue
- Somewhat of an issue
- Very much an issue

22. To what extent does the following situation make it difficult for you to meaningfully include a student with an orthopedic impairment into your general physical education class?

I have **limited training** on orthopedic impairments.

- Not applicable
- Not at all an issue
- Not much of an issue
- Sometimes an issue
- Sometimes not an issue
- Somewhat of an issue
- Very much an issue

23. To what extent does the following situation make it difficult for you to meaningfully include a student with an orthopedic impairment into your general physical education class?

The student has **behavior problems**.

- Not applicable
- Not at all an issue
- Not much of an issue
- Sometimes an issue
- Sometimes not an issue
- Somewhat of an issue
- Very much an issue

24. To what extent does the following situation make it difficult for you to meaningfully include a student with an orthopedic impairment into your general physical education class?

The student has problems staying on task.

- Not applicable
- Not at all an issue
- Not much of an issue
- Sometimes an issue
- Sometimes not an issue
- Somewhat of an issue
- Very much an issue

Section D - Please tell us:

25. What is your age?

- 21-25
- 26-30
- 31-40
- 41-50
- 51-60
- 61+

26. What is your gender?

- Male
- Female

27. What is the approximate size of town or city where you teach?

- less than 2,500
- 2,500 - 19,999
- 20,000 - 50,000
- more than 50,000

28. How many **years of experience** teaching physical education or health enhancement do you have?

- 0-2 years
- 2-4 years
- 5-7 years
- 8-10 years
- 11+ years

29. Approximately how many children with an orthopedic impairment have you **previously** (prior to this year) taught in your physical education classes?

- 0
- 1-20
- 21-40
- 41-60
- 61-80
- 81+

30. How many children with an orthopedic impairment do you **currently** teach in your physical education classes?

- 0
- 1-10
- 11-20
- 21-30
- 31-40
- 41+

31. & 32. How many **undergraduate** and **graduate** credits have you completed in **special education**?

Undergraduate	
Graduate	

33. & 34. How many **undergraduate** and **graduate** credits have you completed in **adapted physical education**?

Undergraduate	
Graduate	

35. Please indicate which degree(s) you have earned by placing a checkmark in the appropriate space. In addition, please indicate the year, major and minor area(s) of study for each degree.

	Degree	Graduation Year	Major	Minor
Undergraduate				
Masters				
Doctorate				
Other				

36. How well do you feel your undergraduate teacher preparation program prepared you to teach students with orthopedic impairments in general physical education?

- Extremely poorly
 Poorly
 Barely Acceptable
 Good
 Very good

37. Please estimate how many in-services have you attended in the last 10 years that had information on teaching children with disabilities? _____

38. Please rate the importance of the following topics as in-service needs of physical education teachers regarding teaching students with orthopedic impairments in general physical education classes.

	Unimportant	Of little important	Moderately important	Important	Very Important
Motor development and assessment of motor ability					
Individualization of instruction					
Modifying equipment and activities					
Behavior management					
Writing IEPs*					
Knowledge of disability and adapted physical education information					
Curriculum Materials					

**The IEP process, state/federal laws concerning the education of children with disabilities.*

39. Please specify and rate the importance of other in-service workshops you believe are needed in adapted physical education.

	Unimportant	Of little important	Moderately important	Important	Very Important
1.					
2.					
3.					
4.					

Thank you for taking part in this research project. Your time and response is very important to us. If you are interested in receiving a copy of the results from this survey, please email Patty Holman @ patricia.holman@umconnect.umt.edu or 406-396-1158.

APPENDIX G

1ST ELECTRONIC MAIL REMINDER

March , 2011

Dear Health Enhancement and Physical Education Teachers,

My name is Patty Holman. I am a health promotion graduate student in the Health & Human Performance Masters Program at the University of Montana and working as a research assistant for the Montana Disability and Health Program at the University of Montana Rural Institute.

Currently, I am working on my graduate thesis research project that includes an online survey about teaching children with disabilities. If you recently completed the online survey, Physical Educators' Self-Efficacy Toward Including Students with Disabilities, **thank you** for your participation and please disregard this e-mail.

If you have not had a chance to complete the survey, this e-mail is a friendly reminder that your participation is very valuable. I will greatly appreciate your time in completing the survey. Please click on the link below and you will be directed to the first page (Informed Consent). It will take approximately 10-15 minutes. You may save and continue the survey at a later time. An e-mail will be sent to the address you provide. When you are ready to continue your survey, simply click on the link in that e-mail. Please complete the survey within the next 10 days. Your responses will be strictly confidential and anonymous.

<http://ruralinstitute.physicaleducators.sgizmo.com>

If you prefer to complete a paper copy of the survey, please send me your contact information (name, address) via e-mail and I will be happy to mail one to you through U.S. Mail with a self-addressed stamped envelope for returning the survey.

Please feel free to contact me with any questions or for the thesis results at patricia.holman@umconnect.umt.edu or at 406-396-1158. Thank you in advance for your time and participation.

Best regards,

Patty Holman
Graduate Student
Health & Human Performance
University of Montana

APPENDIX H

FINAL ELECTRONIC MAIL REMINDER

April 4, 2011

Dear Health Enhancement and Physical Education Teachers,

My name is Patty Holman. I am a health promotion graduate student in the Health & Human Performance Masters Program at the University of Montana and working as a research assistant for the Montana Disability and Health Program at the University of Montana Rural Institute.

Currently, I am working on my graduate thesis research project that includes an online survey about teaching children with disabilities. If you recently completed the online survey, Physical Educators' Self-Efficacy Toward Including Students with Disabilities, **thank you** for your participation and please disregard this e-mail.

If you have not had a chance to complete the survey, this e-mail is a friendly reminder that your participation is very valuable. I will greatly appreciate your time in completing the survey. Please click on the link below and you will be directed to the first page (Informed Consent). It will take approximately 10-15 minutes. You may save and continue the survey at a later time. An e-mail will be sent to the address you provide. When you are ready to continue your survey, simply click on the link in that e-mail. Please complete the survey by Friday, April 8th as the survey will close on Saturday, April 9th. Your responses will be strictly confidential and anonymous.

<http://ruralinstitute.physicaleducators.sgizmo.com>

If you prefer to complete a paper copy of the survey, please send me your contact information (name, address) via e-mail and I will be happy to mail one to you through U.S. Mail with a self-addressed stamped envelope for returning the survey.

Please feel free to contact me with any questions or for the thesis results at patricia.holman@umconnect.umt.edu or at 406-396-1158. Thank you in advance for your time and participation.

Best regards,

Patty Holman
Graduate Student
Health & Human Performance
University of Montana

APPENDIX I

PEARSON CORRELATION COEFFICIENT FOR CHALLENGES BY TEACHERS TO INCLUDE
STUDENTS WITH ORTHOPEDIC IMPAIRMENTS

Table I1. *Pearson Correlation coefficient for challenges by teachers to include students with orthopedic impairments. (N =82).*

		CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12
CH1 modify activities	Pearson Correlation Sig. (2-tailed)	1											
CH2 no time for modifications	Pearson Correlation Sig. (2-tailed)	.428**	1										
CH3 No appropriate equipment	Pearson Correlation Sig. (2-tailed)	.389**	.170	1									
CH4 large class sizes	Pearson Correlation Sig. (2-tailed)	.067	.167	.205	1								
CH5 multiple classes	Pearson Correlation Sig. (2-tailed)	.104	.088	.037	.302**	1							
CH6 skill level is very different	Pearson Correlation Sig. (2-tailed)	.229*	.199	.075	.022	.134	1						
CH7 no aid or support	Pearson Correlation Sig. (2-tailed)	.120	.265*	.230*	.149	.050	.372**	1					
CH8 no information	Pearson Correlation Sig. (2-tailed)	-.008	-.007	.167	.151	-.034	.120	.222*	1				
CH9 limited information	Pearson Correlation Sig. (2-tailed)	.033	.047	.261*	.162	-.010	.147	.211	.902**	1			
CH10 limited training	Pearson Correlation Sig. (2-tailed)	.491**	.355**	.432**	.176	.044	.197	.279*	.257*	.323**	1		
CH11 behavior problems	Pearson Correlation Sig. (2-tailed)	-.222*	-.115	.018	-.002	-.065	.082	.054	.310**	.344**	-.028	1	
CH12 problems staying on task.	Pearson Correlation Sig. (2-tailed)	-.226*	-.063	.051	-.035	-.163	.244*	.076	.241*	.257*	.019	.778**	1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Listwise N=80.

FACTOR LOADINGS FOR THE 12 CHALLENGE ITEMS

Table I2. *Factor loadings for the 12 challenge items*

	<u>Component</u>
	<u>1</u>
CH9 - limited information	.732
CH10 - limited training	.685
CH8 - no information	.660
CH3 - no appropriate equipment	.582
CH7 - no aid or support	.560
CH6 - skill level is very different	.475
CH1 - modify activities	.446
CH2_ no time for modifications.	.400
CH12_ problems staying on task.	.398
CH11_ behavior problems	.344
CH4_ large class sizes.	.298
CH5_ multiple classes	.027

Extraction Method: Principal Component
Analysis.

a. 1 components extracted.

IN-SERVICE NEEDS BY IMPORTANCE

Table 13. *In-service needs by importance (N=67).*

In-service Needs	Mean	S.D.	Unimportant		Of little Important		Moderately Important		Important		Very Important	
			<i>f</i>	Percent	<i>f</i>	Percent	<i>f</i>	Percent	<i>f</i>	Percent	<i>f</i>	Percent
Knowledge of disability and APE information	3.38	6.27	--	--	--	--	5	6	32	38.6	31	37.3
Modifying equipment and activities	3.24	.670	--	--	--	--	9	10.8	34	41.0	25	30.1
Individualization of instruction	3.06	.736	--	--	--	--	13	15.7	34	41.0	19	22.9
Curriculum materials	3.01	.749	--	--	1	1.2	15	18.1	34	41.0	18	21.7
Behavior management	3.00	.945			4	4.8	18	21.7	20	24.1	26	31.3
Writing IEPs*	2.34	1.12	4	4.8	11	13.3	22	26.5	20	24.1	11	13.3