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A SURVEY INVESTIGATING THE SELF-EFFICACY LEVELS OF
WISCONSIN ADAPTED PHYSICAL EDUCATION TEACHERS

DISSERTATION

Presented in Partial Fulfillment of the Requirements
for the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
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****

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1997

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ABSTRACT

This study was designed to examine the effects of five variables, educational training in adapted physical education, years experience teaching adapted physical education, comprehensiveness of preservice training, comprehensiveness of professional development activity, and the primary setting of adapted physical education instruction, on the efficacy expectation and outcome expectation beliefs of adapted physical education teachers. Subjects included certified adapted physical education teachers from the state of Wisconsin (N = 227). A descriptive correlational research design was implemented and utilized the Adapted Physical Education Teacher Efficacy Scale, a revised version of the Teacher Efficacy Scale. Factor analysis confirmed The Adapted Physical Education Teacher Efficacy Scale to be capable with measuring self-efficacy from a multidimensional framework and provided support for Bandura's theory that self-efficacy is not a unidimensional construct. Dimensions of self-efficacy which resulted from the factor analysis included
efficacy expectation beliefs ($r = .76$) and outcome expectation beliefs ($r = .70$). Multiple regression analysis indicated none of the five independent variables in the study explained a statistically significant amount of variance in the adapted physical education teachers' outcome expectation beliefs. Three variables, namely, comprehensiveness of professional development activity, comprehensiveness of preservice training and level of training in adapted physical education each explained a statistically significant proportion of variance in efficacy expectation beliefs when the effects of the other variables were held constant. The linear combination of scores on all five of the independent variables did not adequately explain an adapted physical education teacher's level of efficacy expectation or outcome expectation beliefs.
Dedicated to my parents,
Kenneth and Lois Haeuser
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I want to thank Dr. Daryl Siedentop for his willingness to serve as my advisor during my tenure at The Ohio State University. Working under Dr. Siedentop not only provided me with the opportunity to learn from one of the most influential physical educators of this century, but also allowed me to directly observe the qualities of a true mentor.

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CHAPTER I

Introduction

To address the needs of students in an ever-changing society, continuously evaluating the performance of teachers is essential. One framework from which teacher behavior can be analyzed is provided by Bandura's Social Cognitive Theory. This theory has been described as a theory of causation in which behavior, cognitions, physiological factors and environmental influences all operate as interacting determinants of one another (Bandura, 1986). Social cognitive theory suggests a person not only shapes, but is also shaped by his/her actions and environmental situation. Successful performance at any given task is often accomplished only after the individual has attempted numerous strategies and/or alternative forms of behavior, which frequently requires much persistence on behalf of the performer (Bandura, 1986).

The beliefs people have regarding their abilities to implement specific behaviors, or successfully execute a task in a given setting have been identified
as their self-efficacy (Bandura, 1986). The focus of perceived self-efficacy is not related to an individual's level of skill, but is rather with the judgments a person makes regarding what he/she can accomplish with whatever skills one may possess (Bandura, 1986). An individual's self-efficacy serves as a powerful determinant of behavior change and can influence the activities which a person chooses to engage in, or even the environmental settings which they may choose to interact (Bandura, 1977). The greater an individual's level of self-efficacy, the more persistent they will likely be when attempting to achieve a goal or complete a task (Bandura, 1986). When faced with difficult situations, people with limited confidence in their abilities exhibit less effort or may even give up completely prior to completion of the task, while people with high levels of self-efficacy will strive to accomplish their goal (Bandura & Cervone, 1983, 1986; Brown & Inouye, 1978; Schunk, 1984; Weinberg, Gould, & Jackson, 1979). Greater persistence in performing a task will often result in higher levels of achievement, suggesting individuals having low levels of perceived self-efficacy will ultimately be more limited in their performance accomplishments.
Bandura (1986) acknowledged accurate personal assessments of self-efficacy are critical to any performance. Overestimation of personal abilities will lead to individuals attempting activities which they cannot successfully perform, resulting in the experience of repeated failures. People who underestimate their performance capabilities will avoid initiating activities, or may choose to interact only in environments which they believe might otherwise be beneficial to them.

Bandura (1977, 1986) theorized self-efficacy as a multidimensional construct, influenced by a person's efficacy expectations (an individual's belief regarding his/her ability to perform the behavior(s) necessary to achieve an outcome) and outcome expectations (an individual's belief that performing specific actions will produce specific results). Bandura also believed self-efficacy to be domain (behavior) specific. This behavior specific quality allows self-efficacy to be distinguished from other psychological constructs (i.e. self-esteem, locus of control, and learned helplessness). Self-efficacy is most often measured as a specific state, rather than as a generalized trait, however some researchers have investigated the self-efficacy construct from a more global point of view (Tipton & Worthington, 1984;
Shelton, 1990; Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers, 1982). Woodruff and Cashman (1993) have suggested that efficacy may exist at multiple levels, which include task-specific, domain specific, and a general level.

Research has related self-efficacy to outcomes such as cognitive skill learning, career choices, pain tolerance, coping with fear, and performance in sales (Bandura, 1986; Maddux, 1993; Schunk, 1989). In the cognitive domain, studies have generally supported the existence of a positive relationship between levels of self-efficacy and student achievement in areas such as mathematics, writing, and reading (Schunk, 1981; Schunk & Gunn, 1986, Shell, Murphy, & Bruning, 1989; Schunk & Swartz, 1993, Schunk, 1995). Self-efficacy has also been shown to predict athletic performance among both children and adults (Wurtele, 1986; Schunk, 1995). Significant positive correlations between self-efficacy and athletic performance have been demonstrated in the areas of diving (Feltz, Landers, & Raeder, 1979), muscular endurance activities (Weinberg, Gould, & Jackson, 1979), tennis (Barling & Abel, 1983), gymnastics (Weiss, Wiese, & Klint, 1989), and exercise performance (McAuley, 1991).
Statement of the Problem

The use of Bandura's Social Cognitive Theory and self-efficacy theory to study the performance of teachers is not an original or novel idea. Hoy and Woolfolk (1993) reported a teacher's level of self-efficacy appears to be a salient variable in educational research, yet note that few researchers (Ashton, Webb, & Doda, 1983; Guskey, 1987) have chosen to use the self-efficacy construct as the dependent variable in their studies. Self-efficacy and its relationship to behavior change has been applied to studies of health education programs (Stretcher, DeVellis, Becker, and Rosenstock, 1986), yet these same researchers note that few of these health-related studies have investigated outcome expectations with efficacy expectations. Bryan, Beaudin, and Greene (1993) state these health studies have validated self-efficacy as a predictor of successful performance, yet do not go on to discuss ways in which an individual's efficacy expectations or outcome expectations might be improved. The limited attention researchers have given to both efficacy and outcome expectations has resulted in little available knowledge as to how self-efficacy can be appropriately developed and/or maintained in teachers (Hoy & Woolfolk, 1993).
Numerous models attempting to describe teacher efficacy have been developed by Denham and Michael (1981), Ashton and Webb (1982), Gibson and Dembo (1984), Guskey (1987), and Benz, Bradley, Alderman, and Flowers (1992). This plethora of research has resulted in a variety of definitions for the teacher efficacy construct (Lively, 1994). Woolfolk and Hoy (1990) suggested that the operational definitions of the term, as well as the methods used to measure the construct have been inconsistent, and that the concept of teacher efficacy was in need of greater clarification.

In addition to the problems of clarity, much of the self-efficacy research which has been completed in the area of education does not adhere to the theoretical model established by Bandura (Lively, 1994). In 1993, Hoy and Woolfolk argued that many researchers were providing little theoretical basis to support the definitions which were being used for the teacher efficacy construct.

Research has yet to be performed which would provide a data base regarding the relationship between self-efficacy and the performance of adapted physical education instructors. The importance of establishing such a data base is emphasized when consideration is given to the multiple competencies required of an
adapted physical education instructor (e.g. motor ability assessment, development and implementation of individual physical education programs, knowledge of various disabilities, understanding of special education law, and the ability to collaborate with professionals and related service staff). To address the issue of limited available data, investigations of self-efficacy and the adapted physical educator need to be initiated. Issues which future research should attempt to address include, but are not limited to, clarifying the ambiguity in current operational definitions of the teacher efficacy construct, developing a valid and reliable instrument to measure the self-efficacy of adapted physical education professionals, and providing the teacher efficacy literature with valid and reliable data.

The complexity of teacher efficacy requires that researchers study the concept carefully and investigate the impact which factors such as preservice training programs, social interaction of teachers, situational factors in the school, teacher attitudes, personal variables, and teaching experience can have on self-efficacy (Denham & Michael, 1981; Good & Tom, 1985; Hoy & Woolfolk, 1993). Due to the lack of research which has been conducted on the self-efficacy of adapted physical education instructors,
numerous questions in this area remain unanswered.

Understanding the impact of the previously mentioned variables is essential for the development of quality preservice and inservice training programs for adapted physical education teachers. These data would also be useful for professionals attempting to create strategies for the purpose of enhancing the effectiveness of adapted physical education instructors' performance.

**Purpose of the Study**

In addressing the importance of teacher self-efficacy, researchers have recommended the impact which teacher training programs have on a teacher's self-efficacy be carefully investigated (Good & Tom, 1985; Riggs & Enochs, 1990). In addition to teacher training, years of teaching experience has also been identified as an antecedent variable which has been shown to impact a teacher's sense of efficacy (Denham & Michael, 1981; Riggs & Enochs, 1990).

The context in which teachers provide instruction (i.e. grade level differences, large group versus single student settings) has been found to impact teachers perceptions of personal efficacy (Ashton & Webb, 1986; Guskey, 1982, 1987). These results indicate the need to investigate possible
relationships between adapted physical educators' efficacy beliefs and the environments/settings in which they provide instruction (i.e. inclusive, small group, and one-on-one).

The purpose of this study is to investigate the relationship between five selected variables and adapted physical education instructors' efficacy expectations and outcome expectations; the two dimensions which Bandura (1986) theorized influence an individual's behavior. The independent variables selected for this research study include: a) educational training in adapted physical education, b) comprehensiveness of adapted physical education preservice training, c) comprehensiveness of adapted physical education professional development activity, d) years experience teaching adapted physical education, and e) the primary setting of adapted physical education instruction.

Adapted physical education instructors who had been selected for this investigation all are employed in the state of Wisconsin. The primary reason for targeting Wisconsin teachers for this research was due to the ease with which the names and addresses of the subjects could be obtained. All subjects had completed a state approved, nine credit concentration in adapted physical education. The quality and degree
of each subject's preservice training experience was dependent on the requirements of the institution of higher education from which they completed their adapted physical education program.

**Research Questions**

1) What are the statistical properties of the distribution of efficacy expectation belief scores and outcome expectation beliefs scores for the sample of adapted physical education teachers?

2) To what extent can an adapted physical education teacher's efficacy expectation beliefs and outcome expectation beliefs be explained by a linear combination of scores on the independent variables (i.e. educational training in adapted physical education, years experience teaching adapted physical education, comprehensiveness of adapted physical education preservice training, comprehensiveness of adapted physical education professional development activity, and the primary setting of adapted physical education instruction)?

3) To what extent can an adapted physical education teacher's efficacy expectation beliefs and outcome expectation beliefs be explained by each of
the independent variables (i.e., educational training in adapted physical education, years experience teaching adapted physical education, comprehensiveness of adapted physical education preservice training, comprehensiveness of adapted physical education professional development activity, and the primary setting of adapted physical education instruction)?

**Definition of Terms**

**Adapted physical education teacher** - Adapted physical education is an individualized program of developmental activities designed to address the unique long-term physical education needs of individuals who have been identified as having specific disabilities (Winnick, 1995). The Random House College Dictionary (1982) defines a teacher as a person who instructs. An adapted physical education teacher in this study is defined as an individual who holds a current Wisconsin Adapted Physical Education (WI-860) license.

**Efficacy expectation beliefs** - Bandura (1977, 1986) defined an efficacy expectation as an individual's belief regarding his/her ability to perform the behavior(s) necessary to achieve an outcome. For the purpose of this study, an efficacy expectation belief
is defined as an individual's factor-based score on the efficacy expectation factor of the Adapted Physical Education Self-Efficacy Scale.

Outcome expectation beliefs - Bandura (1977, 1986) defined an outcome expectation as an individual's belief that the performance of particular actions will produce specific results. For the purpose of this study, an outcome expectation belief is defined as an individual's factor-based score on the outcome expectation factor of the Adapted Physical Education Self-Efficacy Scale.

Comprehensiveness of adapted physical education preservice training - Comprehensiveness is defined as being inclusive (Random House College Dictionary, 1982). Preservice means prior to working for, or, before being employed by (New Roget's Thesaurus, 1978). Training is defined as the instruction of a person who is being taught. In this study, comprehensiveness of adapted physical education preservice training will be defined by the sum total of content area and practical experience items selected in the preservice training section of the Adapted Physical Education Self-Efficacy Scale; a higher total score indicates the individual received a
more extensive preservice training experience in adapted physical education.

**Comprehensiveness of adapted physical education professional development activity** - Professional is defined as being engaged in one of the learned professions (Random House College Dictionary, 1982). Development is the act of bringing something to a more advanced or effective state (Random House College Dictionary, 1982). An activity is defined as a specific deed, action, or function (Random House College Dictionary, 1982). Comprehensiveness of adapted physical education professional development activity will be identified in this study by the sum total of content area and/or practical experience items identified in the professional development section of the Adapted Physical Education Self-Efficacy Scale; a higher total score indicates the individual's professional development activities have been more extensive.

**Educational training in adapted physical education** - Educational is defined as pertaining to education (Random House College Dictionary, 1982). Training is defined as the status or condition of a person who is being trained (Random House College Dictionary, 1982).
For the purpose of this study, educational training in adapted physical education will be defined by the highest level of formal education an individual has completed in the area of adapted physical education.

Years experience teaching adapted physical education - The Random House College Dictionary (1982) defines a year as a period of 365 or 366 days, running from January 1 through December 31. For the purpose of this study, years experience teaching adapted physical education will be defined as the number of academic years (including 1996-97) an instructor has taught adapted physical education.

Primary setting of adapted physical education instruction - The Random House College Dictionary (1982) defines primary as being most important or essential, and defines a setting as the surroundings or environment of anything. Instruction is defined as knowledge or information imparted (Random House College Dictionary, 1982). Primary setting of adapted physical education instruction will be defined in this study as the specific environment in which an adapted physical education teacher spends the greatest percentage of his/her day teaching physical education.
CHAPTER II

Review of the Literature

Self-Efficacy Theory

Self-efficacy theory is based on the assumption that psychological processes serve as the means by which people create, develop, and improve expectations of their individual efficacy (Bandura, 1977). Believing a person's self-efficacy to be multidimensional, Bandura identified two components of self-efficacy which include: a) efficacy expectations and b) outcome expectations. Efficacy expectations have been defined as a person's belief in his/her ability to successfully perform the behaviors which are required to achieve specific outcomes, while outcome expectations are the belief an individual holds that certain behaviors, when performed, will lead to specific outcomes. Bandura (1977, 1986) differentiated these two components from one another when providing an explanation of peoples' behavior. He noted a person may believe the performance of particular behaviors will produce certain outcomes, but if that person has self doubts regarding his/her
capability to successfully perform the necessary behavior, he/she may choose to avoid any attempt to perform the given activity. Social, intellectual, and physical pursuits are all impacted by self-efficacy beliefs as people who judge themselves highly efficacious will expect favorable outcomes, while people with self-doubt will expect themselves to perform poorly and thus expect negative outcomes (Bandura, 1986).

Bandura's theory suggests people with high levels of outcome expectations and efficacy expectations will respond to situations in a confident, active manner. People with low efficacy expectations but high levels of outcome expectations will attempt the behavior, but give up easily if they do not achieve the desired outcomes and persons low on both components will tend to avoid any attempt to perform the behavior.

In Bandura's model, belief of personal mastery regarding a skill performance impacts both initiation and persistence of coping behavior when attempting that activity. The extent of this personal conviction of effectiveness is likely to impact whether people will even attempt to cope with given situations (Bandura, 1977). In circumstances where both efficacy and outcome expectations vary, the performance of any behavior can best be predicted by considering each of
these two components. Mone (1994) found outcome expectations to be better predictors of performance in comparison to efficacy expectations, yet noted an individual's efficacy expectation level was a significant predictor of his/her outcome expectation level.

Judgments of self-efficacy also influence the choices made regarding performance settings. People fear, and tend to avoid, situations they find threatening and are perceived as exceeding their coping skills or abilities. However, they tend to become involved in activities, and perform with greater confidence, when they judge their performance capabilities to be adequate (Bandura, 1977).

Through expectations of eventual success, perceived self-efficacy can significantly impact the extent of a performance once the performance has been initiated. Efficacy expectations not only impact how much effort people will put into a performance, but also determine the length of time they will persist when faced with obstacles or negative experiences (Bandura, 1977, 1986). Higher levels of perceived self-efficacy are associated with greater effort being exhibited by individuals attempting to achieve a desired outcome. People demonstrating this increased persistence will ultimately develop a greater sense of
self-efficacy because they tend to find themselves as successful performers. The reason such persistent individuals achieve high rates of success is because in being persistent, they perform more attempts at the task, thereby increasing their potential opportunities to be successful. People who lack this persistence however, give up on their performance pre-maturely and tend to be less successful. By experiencing limited success, such individuals will retain feelings of inability which facilitates increased feelings of ineffectiveness.

Bandura (1977) also noted expectations of success alone will not produce desired outcomes if the appropriate prerequisite skills or competencies are not already in place. Additionally, there are skills which people could perform successfully, yet avoid because they have no incentive to do so. When individuals have the proper skills and adequate incentives however, efficacy expectations are a major factor in people's choice of activities, the amount of effort they will put forth, and the length of time they are willing to deal with stressful situations.

**Dimensions of Self-Efficacy**

Bandura argued that individual judgments of self-efficacy varied on three separate dimensions, each
having a distinct impact on the performance of any given skill or behavior. The first of the dimensions which Bandura identified he named magnitude or level, which he suggested to be changes in self-efficacy judgments related to performance as the skill being attempted increases in difficulty. Differences in self-efficacy judgments in this dimension are what limit some people to attempt only tasks which are considered simple or easy to perform, while others will attempt tasks which are considered moderate or even difficult to accomplish.

Bandura termed the second of these three dimensions as strength. Strength addresses people's confidence in their ability to persevere at the task being performed, despite experiencing obstacles or adverse situations which might appear to hinder eventual success.

The third dimension of self-efficacy is generality. Generality refers to the range of behaviors or contexts to which individual perceptions of personal self-efficacy extend. The statement "I am would not find it difficult (strength) to teach locomotor skills (level) to children identified with mild mental retardation (generality)" would address all three of Bandura's self-efficacy dimensions.
Sources of Efficacy Information

Four primary sources of information have been identified from which people base their judgments of personal self-efficacy (Bandura, 1981). These sources include: performance accomplishments, vicarious experiences, verbal persuasion, and physiological states of arousal. Each of these sources provide specific information which influences how people perceive their personal capability to perform any given behavior. By reviewing these four sources of information, identifying the various means by which perceived judgments of self-efficacy can be impacted is possible.

Performance accomplishments. This source of self-efficacy information is based on an individual's personal mastery of previous experiences. Successful performance of a task increases people's expectation of future mastery performances, whereas repeated failures in a performance will lower future expectation (Bandura, 1977). Once a high level of self-efficacy has been developed via repeated successful performances, occasional failures will have much less impact on a person's self-efficacy judgments. This increased level of self-efficacy will ultimately lead to the individual demonstrating greater persistence when faced with a difficult task,
and through this greater sustained effort persons will begin to learn how personal determination can lead to the accomplishment of even a very challenging task. The impact which failure can have on self-efficacy judgments therefore depends in part on both the time and the pattern in which these unsuccessful performances occur (Bandura, 1977).

Once developed, enhanced levels of self-efficacy have a tendency to generalize to other situations in which personal performance may have previously been thought improbable due to beliefs of personal inadequacies (Bandura, Jeffery, & Gajdos, 1975). As an individual's self-efficacy continues to increase, results in improved performance will transfer not only to similar situations, but also to tasks which are substantially dissimilar from those which were originally successfully performed (Bandura, 1977).

**Vicarious experience.** In addition to personal experience acting as a source of self-efficacy information, vicarious experiences also play a significant role in determining levels of self-efficacy. The observance of others successfully engaged in an activity will improve the self-efficacy judgments which people then maintain about themselves (Bandura, Adams, & Beyer, 1977). This improvement in self-efficacy will be especially significant when the
observers consider the performer of the activity to be at a similar level of ability as themselves. This increase in personal self-efficacy which eventually takes place is primarily because people begin to believe that if others can be successful at the task, they should also be able to accomplish the skill. However, when people observe others, who are perceived to be of similar ability, expend a great deal of effort only to fail, the observer's personal level of self-efficacy will be negatively affected and judgments of their capabilities will decrease (Brown & Inouye, 1978).

Amount of prior experience is one of several conditions under which self-efficacy judgments are particularly sensitive to vicarious information. When observing the performance of others, judgments of self-efficacy can be easily influenced if the observers have limited experience on which to base an evaluation of their own performance capabilities. When people have minimal knowledge of their own skills and capabilities, they tend to rely to a great extent upon the observed performance of others as indicators of their own possible success (Takata & Takata, 1976).

The impact of vicarious experiences tends to have a generally weaker effect on self-efficacy judgments when compared to direct performance experiences.
However, such experiences can produce consequential and lasting changes on how people perceive their performance abilities (Bandura, 1981). People who are convinced via vicarious means that their abilities are ineffective, are prone to behave in inefficient ways which ultimately confirms their belief of inability or lack of competence. On the other hand, vicarious influences which positively impact perceptions of self-efficacy have been shown to decrease the effect which unsuccessful experiences have previously had on self-efficacy judgments (Brown & Inouye, 1978).

Verbal persuasion. Bandura (1981), identified verbal persuasion as a third source of self-efficacy information and suggested the reason for its frequent use is because of both ease and availability. People can be verbally led to believe they possess specific skills and abilities, and also that they have the ability to overcome what might otherwise be perceived as a barrier to their performance (Bandura, 1981). Although the sole use of verbal persuasion may have limitations in producing lasting improvements in self-efficacy judgments, the method can contribute to increases in performance achievements. Much of this increase in performance achievements can be attributed to the power of suggestion causing people to feel determined when attempting an activity, thereby
promoting the development of underlying skills which are essential to the eventual mastery of performance.

Bandura (1981) suggested the production of lasting improvements in self-efficacy judgments through the use of verbal persuasion is probably much more difficult to achieve than decreasing levels of self-efficacy by using verbal means. Once people begin to develop a belief of self-incompetence, they tend to avoid participation in activities they may find challenging or difficult and are not easily persuaded to initiate the activity again.

**Physiological states of arousal.** When making judgments about their abilities, people often rely in part on their state of physiological arousal. Emotional arousal provides an additional source from which people base their self-efficacy information, since high levels of emotional arousal usually cause performance abilities to decrease (Bandura, 1981). Relying on emotional arousal as a source of efficacy information leads to expectations of success at times when individuals feel relaxed or under a limited amount of stress (Bandura, 1981). Bandura also suggests that the personal thoughts of inability could actually be the cause of high arousal levels in some individuals. This elevated level of anxiety produces the exact dysfunctions which created the initial fear.
related to the performance. Allowing these fear-provoking thoughts regarding personal inabilities to develop, people may reach a level of anxiety which far exceeds any fear which would have been experienced during the actual performance of the activity.

**Self-Efficacy and Teaching Effectiveness**

Berman and McLaughlin (1977), in performing an evaluation of 100 Title III projects of the 1965 Elementary and Secondary Schools Act, found the most important characteristic which determined the effectiveness of change was a teacher's sense of efficacy - a belief that teachers can help even the most difficult or unmotivated students. These projects used the summed score from teachers' responses to two questions to determine the level of teachers' self-efficacy beliefs. These two questions, based on Rotter's (1966) locus of control theory, included: a) "When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment"; and b) "If I try really hard, I can get through to even the most difficult or unmotivated students".

Berman and McLaughlin also found self-efficacy to be one of the best predictors of: a) the percentage of
project goals achieved, b) the amount of teacher change, c) improvement in student performance, and d) the continuation of project methods and materials. The conclusion of these researchers was that teachers' belief in their abilities to instruct students has a major impact on both project effectiveness and its continuation.

A similar conclusion regarding the self-efficacy of teachers was reached by Armor, Conroy-Osequera, Cox King, McDonnell, Pascal, Pauly, and Zellman (1976) when evaluating the effectiveness of the School Reading Program in Los Angeles. In performing a study of schools which were considered to be the most effective in increasing the reading performance scores of inner-city school students, teachers' sense of efficacy was found to be positively related to pupil achievement. These researchers suggested that teachers who were more successful in promoting student's learning tended to have higher expectations of their students and accepted greater responsibility for ensuring students learning.

Trentham, Silvern, and Brogdon (1985) found teachers of superior competency to be differentiated from teachers low in competency on the basis of several variables, one of which was level of self-efficacy. Ashton and Webb (1982) found a significant
relationship between a teacher's level of self-efficacy and student performance on the Metropolitan Achievement Test in high school math and language basic skills classes.

Support for the construct of self-efficacy has also been demonstrated by the results of studies in the teacher education field which were not specifically designed to study self-efficacy. Brookover, Schweitzer, Schneider, Beady, Flood, and Wisenbaker (1978) investigated variables related to school climate and achievement and found that teachers in higher achieving schools spent more time on instruction, demonstrated greater concern for students, and were more committed to the student's success than teachers in lower achieving schools. Brophy and Evertson (1977) reported that teachers whose students were more successful in achieving positive gains in the Texas Teacher Effectiveness study tended to have greater expectations and assumed more personal responsibility for the learning outcomes of their students. When these teachers were presented with challenges, they viewed these as obstacles to be addressed and attempted to find ways to do so by implementing various teaching methods. They did not perceive these difficulties as the students' inability to learn the material being presented.
Denham and Michael (1981) suggested the effective teacher was an individual who sought to reach student goals and was willing to continually modify personal teaching behaviors in order to accomplish the intended outcome(s). These researchers suggested a high level of self-efficacy was one possible source of motivation for these effective teachers.

Research has demonstrated a teacher's level of self-efficacy to be significantly related to the extent of a student's learning outcomes (Armor et al., 1976; Berman & McLaughlin, 1977; Ashton & Webb, 1982). Ashton (1985) identified teachers' sense of efficacy as their belief in having the ability to positively impact student learning. In reviewing studies of self-efficacy in the area of education, Hoy and Woolfolk (1993) identified several researchers who found teacher appraisal of personal self-efficacy to be significantly related to critical variables such as student achievement (Armor, et al., 1976), student motivation (Midgley, Feldlaufer, & Eccles, 1989; Woolfolk, Rosoff, & Hoy, 1990), superintendents' evaluations of teacher competence (Trentham, Silvern, & Brogdon, 1985), and classroom management strategies (Ashton, & Webb, 1986).

Observation data on classroom behaviors and the performance of teachers indicate teachers with high
levels of teacher efficacy behave differently than their peers with lower levels of efficacy in areas such as classroom organization, student feedback, course planning, and instruction (Dembo and Gibson, 1985). Many of the findings indicated teachers with high levels of teacher efficacy displayed similar behaviors and characteristics attributed to teachers described as effective in the teacher effectiveness literature (Brophy, 1979).

There has also been support establishing a possible relationship between a teachers' level of efficacy and the type of pupil control they preferred. Barfield and Burlingame (1974) report teachers with low levels of efficacy preferred more rigid pupil control in comparison with teachers who had higher levels of efficacy. Ashton, Olejnik, Crocker, and McAuliffe (1982) found teachers' level of efficacy was negatively correlated with their use of greater control in the classroom and that the higher a teacher's level of efficacy, the less threatened they appeared to be by students who misbehaved. Woolfolk and Hoy (1990) found a teachers' ideology toward type of pupil control (i.e. custodial vs. humanistic) could be predicted by knowledge of a teachers' level of teaching efficacy, as well as the interaction between teaching and personal efficacy.
Ashton, Webb, & Doda (1983) predicted that cognitive and affective outcomes may be different depending on whether low sense of self-efficacy is a characteristic of teachers' judgments regarding their inability to motivate students, or to a belief that students simply cannot be motivated. The researchers believe both situations may lead to teachers having negative expectations of students, however the former may potentially produce high levels of teacher stress or even feelings of guilt, whereas the latter will produce minimal teacher stress or dissatisfaction. Dembo and Gibson (1985) note that understanding this difference is important because any effort to improve a teacher's perception of self-efficacy must be focused on the origin of the beliefs. Ashton et al (1982) state, "A teacher convinced of her ability to teach, but doubtful of her students' ability to learn would require a different intervention from a teacher who is convinced of her students' ability to learn, but doubtful of her competence as a teacher" (p.5). A distinction between these two dimensions was established when these researchers performed interviews with teachers and consistently found little correlation existed between personal and teaching efficacy.
Multidimensionality of Teacher Efficacy

Research supports the notion that a teacher's sense of efficacy is multi-dimensional, consisting of two relatively independent components (Armor, et al., 1976; Berman & McLaughlin, 1977; Denham & Michael, 1981; Ashton & Webb, 1982; Gibson & Dembo, 1984; Hoy & Woolfolk, 1993). Much of this research has been influenced by Bandura's (1977) discussion of self efficacy from a standpoint of social learning theory. Bandura believed all behavior was based on two components which he identified as efficacy expectations and outcome expectations. Bandura theorized that through various life experiences, people develop general beliefs as to the specific behaviors which will lead to certain outcomes (outcome expectations), as well as beliefs in their personal ability to perform specific behaviors (efficacy expectations). A person's behavior, therefore, is based on both the belief that the performance of a certain behavior will produce specific results, and the individual's belief in having the ability to perform the necessary behaviors. These two beliefs are differentiated however by the possibility of an individual to believe certain behaviors will lead to certain outcomes, yet avoid an attempt to perform the behavior because he/she has doubts concerning his/her
personal level of ability to achieve the desired outcomes.

Working from Bandura's theoretical framework, Gibson & Dembo (1984) developed and validated a 30-item instrument which they titled the Teacher Efficacy Scale. These researchers performed a factor analysis from data collected with this instrument which yielded two factors they believed corresponded to Bandura's theory of self-efficacy as a two component model. Gibson & Dembo felt the first of these factors, referred to as teaching efficacy, represented a belief that the ability of a teacher to bring about student change is limited to factors which are external to the teacher, such as home environment, parental influence, and family background. The second factor, identified by the researchers as personal teaching efficacy, represented the teachers belief that they had the necessary skills or abilities to impact student learning. Gibson and Dembo indicated their personal teaching efficacy and teaching efficacy dimensions corresponded with Bandura's (1986) dimensions of efficacy expectations and outcome expectancies. Additional work conducted by Gibson and Dembo (1984) includes a multitrait-multimethod analysis of three traits (teacher efficacy, verbal ability, and flexibility) analyzed across two different methods of
measurement (i.e. closed and open-ended). The traits of verbal ability and flexibility were chosen for this analysis because both of these constructs have been related to gains in student achievement, similar to teacher efficacy (Berman & McLaughlin, 1977). Results of this analysis supported the convergence of teacher efficacy when measured by two different approaches, and also demonstrated the discriminability of teacher efficacy from verbal ability and flexibility. These results suggest teacher efficacy is a construct distinctly different from verbal ability and flexibility (Dembo & Gibson, 1985).

Conclusions by Gibson and Dembo, however, have established self-efficacy operates multidimensionally within teaching, and that a teacher's sense of self-efficacy may influence particular patterns of behavior which in turn are related to students' achievement rates. The particular behaviors demonstrated by teachers with high levels of self-efficacy were similar to those behaviors reported in Brophy's (1979) review of research findings on general teaching effectiveness.

In a supporting study, Sakofske, Michayluk, and Randhawa (1988) conducted a factor analysis of data they obtained using the Teacher Efficacy Scale and found a two-factor structure similar to that of Gibson.
and Dembo's. This study also found small but statistically significant positive correlations between the level of a teacher's efficacy, the teacher's behavior, classroom management, and the format the teacher used when asking questions to students. These data appeared to support the hypothesis that level of teacher efficacy expectations may be related to teacher behaviors.

Hoy and Woolfolk (1990, 1993) utilized revised versions of the Gibson and Dembo scale and also found the scale consistently measured two independent dimensions of efficacy, results similar to the findings of Gibson and Dembo. These studies all appear to reinforce Bandura's (1977) multi-dimensional theory of self-efficacy since the results indicate the existence of two separate efficacy dimensions.

Hoy and Woolfolk (1990, 1993) however suggested that Gibson and Dembo's teaching efficacy dimension did not match the outcome expectation dimension as defined by Bandura. For Bandura (1977), an outcome expectation is a belief that performance of certain behaviors will result in a specific outcome. Hoy and Woolfolk (1990, 1993) suggest items from the Teacher Efficacy Scale which Gibson and Dembo claimed measure expected outcomes of effective teaching more appropriately reflected a teacher's general attitude
toward the extent which instruction can impact a child and actually reflects a teacher's attitude toward the power of education. Based on this interpretation of the data, Hoy and Woolfolk (1990) therefore chose to name this dimension "general teaching efficacy". Enochs, Scharmann, and Riggs (1995) found Hoy and Woolfolk's discussion of general teaching efficacy problematic since several items from the Teacher Efficacy Scale measuring general teaching efficacy appeared to actually measure teacher beliefs in the ability to teach and did not reflect beliefs in students' ability to learn if provided with effective instruction. Hoy and Woolfolk (1990) agreed that Gibson and Dembo's second efficacy dimension (personal teaching efficacy), was similar to Bandura's efficacy expectation dimension since it did appear to measure a teacher's belief in their personal abilities.

Ashton et al (1983) used a hierarchical, dual-dimensional model to conceptualize teachers' sense of efficacy. These researchers described teaching efficacy as the way teachers saw the relationship between teaching and learning; a declaration which was later reinforced by the writings of Gibson and Dembo (1984) and Hoy and Woolfolk (1993). In defining personal teaching efficacy however, Ashton et al (1983) represented their model as an integration of
teaching efficacy and a more general sense of effectiveness which is not situation specific and was termed personal efficacy. Additionally, they stated personal teaching efficacy to be the best predictor of teaching behavior. Gibson and Dembo describe teacher efficacy as teaching efficacy integrated with personal teaching efficacy. Conceptually these models are very comparable. However, differences exist in that Ashton, Webb, and Doda (1993) combine teaching efficacy and personal efficacy into what they refer to as personal teaching efficacy. Dembo and Gibson have questioned whether personal efficacy, being a general component, is critical to a model of the teacher efficacy construct since Bandura (1977) advocates self-efficacy is by definition situation specific and therefore cannot be appropriately identified in general terms (Dembo & Gibson, 1985).

An additional concern regarding the dimensions of the teacher efficacy construct which could affect the interpretation of the teacher efficacy literature has been attributed to the failure of particular researchers (Ashton & Webb, 1986; Evans & Tribble, 1986; Guskey, 1987) to keep the two dimensions of self-efficacy separate when performing the analysis of their data. Various researchers (Ashton & Webb, 1986; Evans & Tribble, 1986; Guskey, 1987) have used
methodology similar to the Rand Corporation studies and have summed the scores obtained on the two separate self-efficacy dimensions, thereby representing self-efficacy as a single score. The use of this single score results in misleading data since specific characteristics explaining one dimension of self-efficacy have been shown to be different from characteristics which explain the other dimension (Hoy & Woolfolk, 1993). Some variables may be related to each dimension of a teacher's self-efficacy in opposite ways. A study by Hoy and Woolfolk (1990) found student teachers increasing in one dimension of self-efficacy, while decreasing in the other dimension, as their student teaching experience progressed. A second study (Woolfolk & Hoy, 1990) demonstrated one dimension of teachers' self-efficacy positively correlated with bureaucratic orientation, while the second dimension was negatively correlated with the same orientation variable. Assessments of a teacher's level of self-efficacy may not be useful unless the construct is treated as multidimensional (Hoy & Woolfolk, 1993).

A study by Evans and Tribble (1986) which questioned the usefulness of Gibson and Dembo's Teacher Efficacy Scale also combined the scores of both dimensions during their analysis. This summing
of scores created the potential for the results of the study to reflect methods chosen, rather than the usefulness of the Gibson and Dembo scale. Studies which proceed to treat self-efficacy as a single dimension are inclined to continue reporting results that overlook meaningful relationships (Woolfolk & Hoy, 1990). Additionally, Woolfolk and Hoy (1990) have noted it is critical for anyone attempting to read a study in the teacher efficacy area to review the way teacher efficacy has been defined before interpreting the results of the data.

Summary

The available information on levels of self-efficacy indicates this construct can have considerable implications for the field of education (Berman & McLaughlin, 1977; Ashton, Webb, & Doda, 1983; Trentham, Silvern, & Brogdon, 1985; Guskey, 1987; Hoy & Woolfolk, 1993, Lively, 1994). The amount and quality of preservice training a teacher receives has shown to be associated with teachers' efficacy beliefs (Denham & Michael, 1981; Guskey, 1987; Hoy & Woolfolk, 1993; Prieto & Altmaier, 1994). Despite the apparent importance of preservice training, teachers have indicated their teacher training did not provide
them with the skills needed to be effective teachers (Hermanowicz, 1966; Ladd, 1966).

The focus of most teacher efficacy studies has been primarily with classroom teachers; the teacher efficacy research on adapted physical education instructors appears to be essentially non-existent. Riggs and Enochs (1990) note most studies in the area of teacher efficacy focus on investigations of teacher efficacy beliefs in general, rather than in specific subject areas. Studies which view teacher efficacy from this general point-of-view are inconsistent with Bandura's theory that self-efficacy is a domain specific construct. The concern with investigating self-efficacy levels from a general point-of-view is with the possibility that a teacher's general feeling of self-efficacy may not accurately reflect his/her efficacy beliefs when teaching a specific subject area. Appropriate measures of a teacher's self-efficacy can only be performed when the instruments used have been developed as subject specific (Riggs & Enochs, 1990). A purpose of this study is to develop a valid instrument which can be used to measure adapted physical educators' self-efficacy levels from a multi-dimensional, domain specific, point-of-view.
CHAPTER III
Methodology

Overview

The purpose of this chapter is to explain the procedures and methodology which were used to answer the research questions in this study. The sections of this chapter include: a) population and sample, b) instrumentation, c) research design/data collection, d) data analysis, and e) summary.

Population and Sample

For the purpose of this study, the target population was identified as teachers who provide physical education instruction to children with disabilities (i.e. adapted physical education teachers). The accessible population included a census of the 227 physical education teachers in Wisconsin who possessed current certification as an adapted physical education teacher for the 1996-97 school year. However, not all of the teachers in this accessible population were currently teaching adapted physical education in their school at the time they were surveyed for this project.
An attempt to control frame error, a problem occurring when discrepancies exist between the actual population and the target population, was made via a personal communication on January 27, 1997 with the Division of Teacher Certification at the Wisconsin Department of Public Instruction. By making this contact, it was possible to verify the list of 227 teachers as the Department's most current record of certified adapted physical educators. Frame error was not completely controlled, however, as eight (8) surveys were ultimately returned to the sender. Errors which can occur when a sample is selected from a population (i.e. selection and sample errors) were controlled for by performing a census of the 227 teachers on the list obtained from the Wisconsin Department of Public Instruction.

Instrumentation

Gibson and Dembo's Teacher Efficacy Scale (Gibson & Dembo, 1984) is a 30-item instrument, consisting of a six-point Likert-type scale, with response choices ranging from 1=strongly disagree to 6=strongly agree (see Appendix A). In 1984, Gibson and Dembo demonstrated the construct validity of this 30-item instrument in a study which included 208 elementary teachers from 13 elementary school districts. A
principal factor analysis of the data collected from this sample of teachers showed that 16 of the 30 scale items loaded on two factors, identified as personal teaching efficacy and teaching efficacy. These factors were slightly negatively related ($r = -0.19$), but appeared to indicate constructs which were relatively independent (Gibson & Dembo, 1984). The result of this analysis appeared to support the two-component model of self-efficacy originally suggested by Bandura (1977). Internal consistency for these factors, as measured by Cronbach's alpha, was calculated at 0.78 for personal teaching efficacy, 0.75 for teaching efficacy, and 0.79 for the 16 total items. Gibson and Dembo (1984) recommended future research should be performed with a revised scale consisting of 16-20 items since they had found acceptable reliability coefficients from only 16 of their original 30 items.

Construct validity of the Teacher Efficacy Scale was supported by Woolfolk and Hoy (1990) who used a scale containing revised versions of the 16 items Gibson and Dembo found to be reliable in their 1984 study. Using this revised version of the Teacher Efficacy Scale, Woolfolk and Hoy's factor analysis produced two independent dimensions of teacher efficacy, which they chose to call general efficacy.
and personal teaching efficacy. An additional study by these researchers utilized a shortened form of their revised Teacher Efficacy Scale which evaluated teacher efficacy with five general efficacy items and five personal efficacy items (Hoy & Woolfolk, 1993). Again, they found two dimensions of teacher efficacy, with alpha coefficients of reliability to be .77 for personal efficacy and .72 for general efficacy.

The ability of the Teacher Efficacy Scale to demonstrate both convergent and discriminant validity was supported by Gibson and Dembo (1984). This examination was accomplished through a multitrait-multimethod analysis of three traits (verbal ability, flexibility, and teacher efficacy) which had been gathered across both open-ended and closed-ended formats (Gibson & Dembo, 1984).

To appropriately measure the dimensions of an adapted physical education teacher's self-efficacy, the Teacher Efficacy Scale (Gibson & Dembo, 1984) was revised (Appendix B). The purpose for these revisions was to maintain consistency with self-efficacy theory as established by Bandura. According to Bandura (1981) self-efficacy is a situation-specific, rather than a general or global construct; in other words, a teacher's level of self-efficacy when teaching one subject, could be higher or lower than when teaching a
different subject. To address this issue, the content and terminology of the Teacher Efficacy Scale needed to be made specific for adapted physical education teachers, rather than for teachers in general. In making these changes to the Teacher Efficacy Scale, content and terminology was taken from selected standards identified in the Adapted Physical Education National Standards Project (Kelly, 1994), namely: Standard 1 (Human Development); Standard 2 (Motor Behavior); Standard 6 (Unique Attributes of Learners); Standard 8 (Assessment); Standard 9 (Instructional Design and Planning); Standard 10 (Teaching); and Standard 15 (Communication).

An additional issue which needed to be addressed was that certain items in the Teacher Efficacy Scale did not appear to accurately fit Bandura's multi-dimensional definition of self-efficacy (Enochs, Scharmann & Riggs, 1995). Bandura believed to appropriately evaluate an individual's self-efficacy level, it was necessary to consider his/her efficacy expectations and outcome expectations as separate dimensions. The Teacher Efficacy Scale, however, contains items which appear to combine elements of both efficacy expectation and outcome expectation dimensions (Enochs, Scharmann & Riggs, 1995). Therefore, in developing the Adapted Physical
Education Teacher Efficacy Scale, revisions were made so each item of the scale would evaluate only one of the two dimensions. These revisions to each scale item allows the Adapted Physical Education Teacher Efficacy Scale to be consistent with Bandura's hypothesis that the greatest prediction of human behavior can be derived from independent knowledge of both efficacy and outcome expectancy variables.

Response choices have also been revised from those on the original Teacher Efficacy Scale, which included: 1=strongly disagree, 2=moderately disagree, 3=disagree slightly more than agree, 4=agree slightly more than disagree, 5=moderately agree, 6=strongly agree) (Gibson & Dembo, 1984). To eliminate what appears to be unnecessary descriptors, for this study item 3 has been revised to disagree slightly, and item 4 has been revised to agree slightly.

Specific scale items of the Adapted Physical Education Teacher Efficacy Scale were based upon previously designed scales used to measure multidimensions of teacher efficacy (Gibson & Dembo, 1984; Riggs & Enochs, 1990). To evaluate the validity of the adapted physical education content used in each scale item, the instrument was reviewed by a panel of experts consisting of five adapted physical education specialists employed at various institutions of higher
education throughout the United States. Each member of this panel of experts received a packet of information which included a rating form on which they were asked to evaluate the content of each scale item as either appropriate for use, or in need of further revision (Appendix C). To be accepted for use in the final instrument, at least three out of the five panel members needed to mark the content as acceptable (i.e. valid). Items not meeting this criterion were revised and reviewed again by the panel. Any item not found acceptable after three rounds of review by the panel were omitted from the scale.

After the content validity review of the Adapted Physical Education Teacher Efficacy Scale was completed, fifteen adapted physical education teachers attending the 1997 AAHPERD National Convention in St. Louis were provided with a draft of the scale for the purpose of determining its reliability. The resulting Cronbach's alpha calculated on these data and was found to be .79 for scale items measuring the outcome expectation dimension and .79 for scale items measuring the efficacy expectation dimension. Pilot testing to determine the reliability of items included in Part 2 of the Adapted Physical Education Teacher Efficacy Scale was performed with twelve adapted physical education teachers from the Central Ohio
area. The reason that Part 1 and Part 2 of the instrument were not tested at the same time with the same individuals was because the principle researcher originally only thought it was necessary to pilot test Part 1. When it was learned it was essential to evaluate internal consistency of both Part 1 and Part 2, the Ohio teachers were contacted for the pilot test on Part 2 of the Adapted Physical Education Teacher Efficacy Scale. Cronbach's alpha for Part 2 was found to be .83.

Research Design/Data Collection

The research design of this study was descriptive correlational. Data collection was conducted through a mail survey and based on the four stage mailing procedure established by Salant and Dillman (1994). This procedure was specifically developed as a means for maximizing the response rate of mail surveys, thereby decreasing the amount of nonresponse error. Use of this four-stage mailing procedure should result in a response rate of between 50-60% (Salant and Dillman, 1994). Due to financial limitations of the researcher, the Salant/Dillman procedure was only used as a guideline in this study, and was unable to be followed in a step-by-step fashion. The following is
an overview of the mail survey process specific to this study.

Stage 1: A packet containing a cover letter, the survey instrument, and a stamped return envelope was mailed to the sample participants the week of April 13th, 1997.

Stage 2: On May 8th, 1997 a packet containing a new cover letter, a second copy of the survey instrument, and a stamped return envelope was mailed to everyone in the sample who had not returned the original survey.

Stage 3: After a period of three weeks, the final surveys were accepted on June 2nd, 1997. The concluding step was to perform a follow-up to address the issue of possible error associated with non-respondents. Miller and Smith (1983) noted data from late respondents have been found to be similar to non-respondents, a similarity which allows for the possibility to check for non-response bias in survey research by comparing data from early and late respondents. If no significant differences are demonstrated between these two groups when the data are compared, results can be generalized from the sample to the population. Tests of significance were run to compare the first twenty and last twenty respondents in this study on their responses to the
Adapted Physical Education Teacher Efficacy Scale. No significant differences were found between these two groups on any portion of the scale, suggesting non-response bias would not limit generalizing the results.

Data Analysis

To appropriately analyze the descriptive data in this study, a variety of statistical techniques were used. Measures of central tendency were used to determine the typical or average score, measures of variability were used to indicate how spread out the scores were, and correlations were used to demonstrate relationships between/among variables.

Woolfolk and Hoy (1990) address the complex combinations of variables which are commonly found when investigating the construct of teacher efficacy and stress the importance of using multivariate techniques when analyzing these data. To appropriately answer the research questions in this study, two multivariate techniques were used to analyze the data. These techniques included a factor analysis, and a multiple regression analysis.

A confirmatory factor analysis (Hair, Anderson, Tatham & Black, 1995) using principle components extraction was performed to evaluate the scale's
construct validity by confirming the adequacy of the revised scale to measure the two dimensions of self-efficacy (i.e. efficacy expectations and outcome expectations). Based on the results of this factor analysis, it was possible to derive factor-based scores by summing the respondents' answers to scale items on both the efficacy expectation and outcome expectation dimensions. These two factor-based scores were used to answer research question #1, and also formed the dependent variables for the multiple regression analysis.

Hair et al. (1995) has defined multiple regression as a technique which can be used to analyze the relationship between a single dependent variable and multiple independent variables. Therefore, to answer research questions #2 and #3, a multiple regression analysis was performed for both outcome expectation and efficacy expectation belief scores. These analyses required that categorical (i.e. nominal) variables be dummy coded to allow proper data analysis. The dummy coded variables were entered into the regression equation as a single block for the purpose of obtaining a part correlation (i.e. $R^2$ change) for the categorical variables level of educational training and setting of instruction. Results of the multiple regression analysis determined
the unique contribution each of the independent variables (i.e. level of training in adapted physical education, comprehensiveness of preservice training, and comprehensiveness of continuing development activity), as well as their interaction, were making to each of the two dependent variables (i.e. efficacy expectation and outcome expectation dimensions factor-based scores).

Summary

The purpose of this study was to investigate the relationship between five selected independent variables and adapted physical education instructors' efficacy expectations and outcome expectations. This chapter provided the procedures and methodology which were conducted regarding the population and sample, instrumentation, research design/data collection, and data analysis to perform this investigation.
CHAPTER IV

Results

Introduction

This chapter provides the statistical analyses of the data collected for this study. The chapter has been organized into three primary sections, which include: a) descriptive statistics; b) confirmatory factor analysis; and c) multiple regression analyses relation to the research questions. An alpha level of .05 was used for all tests of statistical significance. For each analysis, brief summary statements are provided regarding the results.

Descriptive Statistics

A total of 129 (57%) of the 227 teachers responded to the Adapted Physical Education Teacher Efficacy Survey. Of those surveys, 123 (54%) were usable. Eight (8) additional surveys were returned to the sender via the postmaster which brought the final non-response rate to forty percent (40%). Although a higher number of responses would have more ideal, the 40% non-response rate can be considered acceptable as
there is no agreed upon standard for minimum acceptable response rate (Fowler, 1993).

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<td>6-10</td>
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<td>6</td>
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</tr>
<tr>
<td>&gt;26</td>
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(Mean = 10.0; SD = 6.5; Range = 1-34)

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<tr>
<td>Other</td>
<td>13</td>
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Table 4.1: Summary of Demographic Statistics (n=123)

An analysis of the demographic data (refer to table 4.1) showed that the adapted physical educators had an average of ten (10) years teaching experience (standard deviation = 6.5). Table 4.1 also contains a breakdown of the frequency each setting was identified by the teachers as the one in which they currently spent the greatest portion of their day teaching adapted physical education and the level of
educational training in adapted physical education each teacher had accomplished.

For the purpose of this study, comprehensiveness of preservice training was defined as the sum total of content area and practical experience items selected in the preservice training section of the Adapted Physical Education Self-Efficacy Scale. A higher total score indicated the individual received a more extensive preservice training experience in adapted physical education. Comprehensiveness of professional development activity was defined as the sum total of content area and/or practical experience items identified in the professional development section of the Adapted Physical Education Self-Efficacy Scale; a higher total score indicating the individual's professional development activities had been more extensive.

Regarding these variables used to determine comprehensiveness of preservice training and professional development activity, the respondent's mean score for comprehensiveness of adapted physical education preservice training was 28.0 (standard deviation = 9.8). The mean score for comprehensiveness of adapted physical education professional development activity was 33.7 (standard deviation = 9.6). These mean scores on the two
comprehensiveness variables should be interpreted to mean the adapted physical educators in this study believe their professional development activities address adapted physical education content areas more extensively than their preservice training experience in adapted physical education.

**Confirmatory Factor Analysis**

The means and standard deviations for each item of the original Adapted Physical Education Self-Efficacy Scale are contained in Table 4.2. An initial inspection of the correlation matrix showed that a

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>4.09</td>
<td>1.11</td>
</tr>
<tr>
<td>#2</td>
<td>4.65</td>
<td>1.03</td>
</tr>
<tr>
<td>#3</td>
<td>5.33</td>
<td>.88</td>
</tr>
<tr>
<td>#4</td>
<td>4.62</td>
<td>.77</td>
</tr>
<tr>
<td>#5</td>
<td>4.53</td>
<td>1.39</td>
</tr>
<tr>
<td>#6</td>
<td>4.46</td>
<td>1.29</td>
</tr>
<tr>
<td>#7</td>
<td>2.63</td>
<td>1.23</td>
</tr>
<tr>
<td>#8</td>
<td>4.18</td>
<td>1.39</td>
</tr>
<tr>
<td>#9</td>
<td>4.06</td>
<td>1.30</td>
</tr>
<tr>
<td>#10</td>
<td>3.16</td>
<td>1.48</td>
</tr>
<tr>
<td>#11</td>
<td>4.36</td>
<td>1.04</td>
</tr>
<tr>
<td>#12</td>
<td>5.27</td>
<td>.92</td>
</tr>
<tr>
<td>#13</td>
<td>3.88</td>
<td>1.46</td>
</tr>
<tr>
<td>#14</td>
<td>3.41</td>
<td>.73</td>
</tr>
<tr>
<td>#15</td>
<td>4.67</td>
<td>1.10</td>
</tr>
<tr>
<td>#16</td>
<td>4.06</td>
<td>1.05</td>
</tr>
<tr>
<td>#17</td>
<td>5.34</td>
<td>.73</td>
</tr>
<tr>
<td>#18</td>
<td>5.67</td>
<td>.55</td>
</tr>
<tr>
<td><strong>Total Scale</strong></td>
<td><strong>80.38</strong></td>
<td><strong>9.27</strong></td>
</tr>
</tbody>
</table>

Table 4.2: Means and Standard Deviations: Initial Instrument (n = 123)
limited number of correlations existed between variables which were of greater value than .30, suggesting a factor analysis may be inappropriate (Hair, Anderson, Tatham & Black, 1995). However, further analysis revealed a significant score of 565.89 (p<.01) on Bartlett’s Test of Sphericity, and a Kaiser-Meyer-Olkin Measure of Sampling Adequacy statistic was calculated at .711, both of which provided positive support for conducting a factor analysis.

The criteria for the extraction of two factors were based on a priori assumptions derived from Bandura’s multi-dimensional theory of self-efficacy. Hair, Anderson, Tatham & Black (1995) state that a priori assumptions can be used as criteria for the extraction of factors, and involves the selection of factors to adequately represent the variables in the original data set. The two extracted factors in this analysis accounted for a total of 35% of the cumulative variance, with an efficacy expectation factor accounting for 23%, and an outcome expectation factor accounting for 12% of the total variance. A review of the unrotated factor matrix indicated over half of the 18 items did not clearly load on one specific factor prior to rotation (Table 4.3). To clarify the interpretations of the factor loadings,
both orthogonal and oblique factor rotations were performed. The results of these rotations showed

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor #1</th>
<th>Factor #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>.36</td>
<td>.13</td>
</tr>
<tr>
<td>#2</td>
<td>.58</td>
<td>-.25</td>
</tr>
<tr>
<td>#3</td>
<td>.53</td>
<td>-.50</td>
</tr>
<tr>
<td>#4</td>
<td>.49</td>
<td>.15</td>
</tr>
<tr>
<td>#5</td>
<td>.60</td>
<td>-.41</td>
</tr>
<tr>
<td>#6</td>
<td>.47</td>
<td>-.38</td>
</tr>
<tr>
<td>#7</td>
<td>.35</td>
<td>.36</td>
</tr>
<tr>
<td>#8</td>
<td>.44</td>
<td>.32</td>
</tr>
<tr>
<td>#9</td>
<td>.50</td>
<td>.33</td>
</tr>
<tr>
<td>#10</td>
<td>.42</td>
<td>.27</td>
</tr>
<tr>
<td>#11</td>
<td>.36</td>
<td>.48</td>
</tr>
<tr>
<td>#12</td>
<td>.52</td>
<td>-.19</td>
</tr>
<tr>
<td>#13</td>
<td>.35</td>
<td>.51</td>
</tr>
<tr>
<td>#14</td>
<td>.56</td>
<td>-.09</td>
</tr>
<tr>
<td>#15</td>
<td>.60</td>
<td>.26</td>
</tr>
<tr>
<td>#16</td>
<td>.41</td>
<td>.44</td>
</tr>
<tr>
<td>#17</td>
<td>.53</td>
<td>-.49</td>
</tr>
<tr>
<td>#18</td>
<td>.42</td>
<td>-.21</td>
</tr>
</tbody>
</table>

Table 4.3: Unrotated Factor Matrix: Factor Loadings

negligible differences between the loadings, in which case, as recommended by Stevens (1992) the orthogonal solution was used.

Tabachnick and Fidell (1989) have proposed loadings of .30 or above be used to specify variables which have salient loadings on a component in a factor analysis via principle components methodology. This criterion, and the orthogonal rotation, resulted in scale items loading on an efficacy expectation factor and an outcome expectation factor. Scale item #8
however was problematic as it was originally designed as a measure of efficacy expectations but loaded on

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Item</th>
<th>Factor #1 Loading</th>
<th>Factor #2 Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome</td>
<td>#1</td>
<td>.16</td>
<td>.41</td>
</tr>
<tr>
<td></td>
<td>#4</td>
<td>.26</td>
<td>.48</td>
</tr>
<tr>
<td></td>
<td>#7</td>
<td>.07</td>
<td>.50</td>
</tr>
<tr>
<td></td>
<td>#9</td>
<td>.19</td>
<td>.50</td>
</tr>
<tr>
<td></td>
<td>#10</td>
<td>.13</td>
<td>.48</td>
</tr>
<tr>
<td></td>
<td>#11</td>
<td>-.05</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>#13</td>
<td>-.07</td>
<td>.61</td>
</tr>
<tr>
<td></td>
<td>#15</td>
<td>.29</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>#16</td>
<td>.001</td>
<td>.65</td>
</tr>
</tbody>
</table>

**Scale Alpha = .70**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Item</th>
<th>Factor #1 Loading</th>
<th>Factor #2 Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficacy</td>
<td>#2</td>
<td>.60</td>
<td>.19</td>
</tr>
<tr>
<td>Expectation</td>
<td>#3</td>
<td>.73</td>
<td>-.02</td>
</tr>
<tr>
<td></td>
<td>#5</td>
<td>.71</td>
<td>.10</td>
</tr>
<tr>
<td></td>
<td>#6</td>
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<td>.03</td>
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<td></td>
<td>#12</td>
<td>.51</td>
<td>.20</td>
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<tr>
<td></td>
<td>#14</td>
<td>.51</td>
<td>.24</td>
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<td></td>
<td>#17</td>
<td>.72</td>
<td>-.008</td>
</tr>
<tr>
<td></td>
<td>#18</td>
<td>.48</td>
<td>.07</td>
</tr>
</tbody>
</table>

**Scale Alpha = .76**

Table 4.4: Factor Loadings; Orthogonal Rotation

the factor with scale items designed to measure outcome expectations. Due to this cross loading, item #8 was deleted from the final scale. The two resulting factors, accounting for a total of 35.9% of the scale's variance after rotation, are listed with each variable's loading in Table 4.4.

The eight variables which loaded on the efficacy expectation factor accounted for 23.5% of the cumulative variance and the nine variables loading on
the outcome expectation factor accounted for the remaining 12.4% of cumulative variance. These results were consistent with others who have used the Teacher Efficacy Scale; Soodak & Podell's (1993) two factor solution resulted in factors accounting for 19.6% and 10.3%, while the factors for Saklofske et al. (1988) accounted for 23% and 18% of the total variance.

Reliability analysis of the Adapted Physical Education Teacher Efficacy Survey produced an alpha coefficient of .77 for the full scale (17 items). An alpha of .70 was obtained for the nine items measuring outcome expectation beliefs, and .76 for the eight scale items measuring efficacy expectation beliefs. Tabachnick & Fidell (1989) suggested that the sample size in any factor analysis consist of a minimum of five cases to each observable variable if the resulting factors are to be considered reliable. With 18 survey items and n = 123 in this analysis, the outcome expectation and efficacy expectation factors should be considered as meeting this criterion and therefore reliable.

The results of the factor analysis appear to confirm the Adapted Physical Education/Teacher Efficacy Scale's ability to adequately measure two separate dimensions of self-efficacy. Regarding reliability, the lower alpha for the items measuring
outcome expectation beliefs is consistent with past research in this area which also found reliability measures of this dimension to be lower than the efficacy expectation dimension (Gibson & Dembo, 1984; Enochs & Riggs, 1990; Woolfolk & Hoy, 1990).

The Research Questions

There were three research questions which this study answered.

Research Question #1: What are the statistical properties of the distribution of efficacy expectation belief scores and outcome expectation belief scores for the sample of adapted physical education teachers?

After the factor analysis was completed, it was possible to determine the statistical properties (Table 4.5) of the adapted physical education teachers' outcome expectation and efficacy expectation

<table>
<thead>
<tr>
<th>Outcome Expectation Beliefs Statistics</th>
<th>Percentiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>Mdn</td>
</tr>
<tr>
<td>35.5</td>
<td>36.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Efficacy Expectation Belief Statistics</th>
<th>Percentiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>Mdn</td>
</tr>
<tr>
<td>40.7</td>
<td>42.0</td>
</tr>
</tbody>
</table>

Table 4.5: Statistical Properties of the Distribution of Outcome Expectation and Efficacy Expectation Belief Scores
belief scores. These two factor-based scores were generated by summing the responses to the scale items designed to measure each of the two dimensions of self-efficacy. For the 123 adapted physical education teachers who completed the Adapted Physical Education Teacher Efficacy Survey, the mean outcome expectation score was 35.5 (standard deviation = 5.8), with higher scores representing a stronger belief that the performance of certain behaviors would lead to specific educational outcomes. Scores on the outcome expectation beliefs dimension ranged from 23 to 50. These outcome expectation scores displayed no significant skewness (.206) and appeared normally distributed.

The mean score on the efficacy expectation scale was 40.7 (standard deviation = 4.8). Higher efficacy expectation scores represented the teacher had greater personal belief in his/her ability to perform a given behavior related to teaching adapted physical education. The distribution of efficacy expectation scores were negatively skewed (-.737) and ranged from 24 to 48.

The mean efficacy expectation belief score (40.7) for the adapted physical education teachers in the study was slightly higher than their outcome
expectation belief score (35.5), a result consistent with previous teacher efficacy research (Gibson & Dembo, 1984; Woolfolk & Hoy, 1990; Coladarci, 1992). It should be noted the higher mean and the negatively skewed distribution of scores on the efficacy expectation beliefs scores may be due to the internal nature of items measuring the efficacy expectation dimension. Previous research has suggested teachers may rate themselves higher and more consistently on items dealing with themselves versus items which are more external to their control (Riggs & Enochs, 1990).

Research Question #2: To what extent can an adapted physical education teacher's efficacy expectation beliefs and outcome expectation beliefs be explained by a linear combination of scores on the independent variables (i.e. educational training in adapted physical education, years experience teaching adapted physical education, comprehensiveness of adapted physical education preservice training, comprehensiveness of adapted physical education professional development activity, and the primary setting of adapted physical education instruction)?

An analysis of a correlation matrix indicated low to moderate correlations existed between the independent variables and the two self-efficacy factors used in the survey (Table 4.6). This lack of
association suggested the independent variables would probably not explain a statistically significant

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor 1 (OE)</th>
<th>Factor 2 (EE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years Experience Teaching APE^</td>
<td>.05</td>
<td>.20*</td>
</tr>
<tr>
<td>Level of Educational Training in APE^</td>
<td>.09</td>
<td>.19*</td>
</tr>
<tr>
<td>Primary Setting of APE Instruction^</td>
<td>.06</td>
<td>.04</td>
</tr>
<tr>
<td>Comprehensiveness of Preservice Training^</td>
<td>.17*</td>
<td>.31*</td>
</tr>
<tr>
<td>Comprehensiveness of Professional Dev. Activity^</td>
<td>.23*</td>
<td>.56*</td>
</tr>
</tbody>
</table>

Table 4.6: Correlation Matrix: Independent Variables with Outcome and Efficacy Expectation Factors (n=123)

* = significant correlation at p<.05
^ = Pearson r
^ = Spearman rho

amount of the variance in the multiple regression analysis. To determine the variance accounted for in the adapted physical education teacher's efficacy expectation beliefs and outcome expectation beliefs by a linear combination of scores on the independent variables two multiple regression analyses were implemented which utilized a hierarchical entry of independent variables. The first entry into the regression equation was a block of dummy coded variables which represented the categories of the
variable level of educational training. This entry was followed by a block of dummy coded variables representing the variable setting of instruction. The remaining variables were then entered into the equation in the following order (a) years teaching experience, (b) comprehensiveness of preservice training, and (c) comprehensiveness of professional development activity. The hierarchical entry method allowed variables to be entered into the regression equation while controlling for possible influences of the other independent variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>b</th>
<th>SE b</th>
<th>Beta</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concen.</td>
<td>.32</td>
<td>3.23</td>
<td>.03</td>
<td>.10</td>
<td>.92</td>
</tr>
<tr>
<td>Minor</td>
<td>-.50</td>
<td>3.27</td>
<td>-.04</td>
<td>-.15</td>
<td>.87</td>
</tr>
<tr>
<td>Major</td>
<td>3.71</td>
<td>4.37</td>
<td>.12</td>
<td>.84</td>
<td>.39</td>
</tr>
<tr>
<td>Masters</td>
<td>1.48</td>
<td>3.25</td>
<td>.11</td>
<td>.46</td>
<td>.64</td>
</tr>
<tr>
<td>Other</td>
<td>1.50</td>
<td>3.30</td>
<td>.11</td>
<td>.46</td>
<td>.64</td>
</tr>
<tr>
<td>Inc. PE Class</td>
<td>-1.32</td>
<td>1.88</td>
<td>-.11</td>
<td>-.70</td>
<td>.48</td>
</tr>
<tr>
<td>Inc Small Gp</td>
<td>-.73</td>
<td>2.96</td>
<td>-.02</td>
<td>-.24</td>
<td>.80</td>
</tr>
<tr>
<td>Seg Small Gp</td>
<td>-1.82</td>
<td>1.88</td>
<td>-.15</td>
<td>-.96</td>
<td>.33</td>
</tr>
<tr>
<td>1:1 Setting</td>
<td>-4.84</td>
<td>2.75</td>
<td>-.21</td>
<td>-1.76</td>
<td>.08</td>
</tr>
<tr>
<td>Other</td>
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<td>1.79</td>
<td>-.13</td>
<td>-.76</td>
<td>.80</td>
</tr>
<tr>
<td>Yrs Exp</td>
<td>-.05</td>
<td>.09</td>
<td>-.04</td>
<td>-.39</td>
<td>.69</td>
</tr>
<tr>
<td>Pre Train</td>
<td>.07</td>
<td>.06</td>
<td>.11</td>
<td>1.11</td>
<td>.27</td>
</tr>
<tr>
<td>Prof Dev</td>
<td>.09</td>
<td>.06</td>
<td>.15</td>
<td>1.53</td>
<td>.12</td>
</tr>
<tr>
<td>(Constant)</td>
<td>31.91</td>
<td>3.89</td>
<td></td>
<td>8.14</td>
<td>.00</td>
</tr>
</tbody>
</table>

Standard Error = 5.74
R Square = .12
Adjusted $R^2 = .03$
For Model: $F = 1.39$; $p=.187$

Table 4.7: Summary of Multiple Regression Results: Outcome Expectation Belief Scores Regressed on Independent Variables (n = 123) (Hierarchical Entry)
The first analysis regressed outcome expectation belief scores on the independent variables. This analysis resulted in a regression model which was not statistically significant \((F = 1.39; p = .187)\) with an estimated 12% of the variance accounted for \((R^2 = .12)\) (Table 4.7).

The second regression analysis, efficacy expectation beliefs regressed on the independent variables resulted in a significant outcome \((F = 7.62; p < .01)\) with an estimated 43% of the variance accounted for by the combination of independent variables \((R^2 = .43)\). Three independent variables contributed significantly to the regression model; namely comprehensiveness of professional development activity \((t = 5.74; p < .01)\), comprehensiveness of preservice training \((t = 2.67; p < .001)\), and level of training \((F = 2.84; p = .02)\) (Table 4.8).

The efficacy expectation beliefs regression model did not violate any of the residual assumptions associated with multiple regression: linearity, constant variance, independence, and normality (Hair, et al, 1995). Independence of errors was demonstrated via a Durbin-Watson score of 1.96. A histogram of residuals indicated these errors did not deviate from a normal distribution, thereby addressing the normality assumption. A plot of the residuals and the
### Table 4.8 Summary of Multiple Regression Results: Efficacy Expectation Belief Scores Regressed on Independent Variables (n = 123) (Hierarchical Entry)

<table>
<thead>
<tr>
<th>Variables</th>
<th>$R^2$</th>
<th>$R^2_{adj}$</th>
<th>$F$</th>
<th>Sig</th>
<th>$b$</th>
<th>$t$</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentration</td>
<td>3.50</td>
<td>1.64</td>
<td>.103</td>
<td>Minor</td>
<td>3.48</td>
<td>1.61</td>
<td>.109</td>
</tr>
<tr>
<td>Minor</td>
<td>5.89</td>
<td>2.03</td>
<td>.04</td>
<td>Major</td>
<td>4.86</td>
<td>2.26</td>
<td>.03</td>
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<td>Masters</td>
<td>3.08</td>
<td>1.84</td>
<td>.02</td>
</tr>
<tr>
<td>Masters</td>
<td>Inc. Pre Class</td>
<td>-2.28</td>
<td>-1.82</td>
<td>.07</td>
<td>Inc Small Group</td>
<td>-1.68</td>
<td>-.86</td>
</tr>
<tr>
<td>Inc. Pre Class</td>
<td>-2.28</td>
<td>-1.82</td>
<td>.07</td>
<td>Inc Small Group</td>
<td>-1.68</td>
<td>-.86</td>
<td>.39</td>
</tr>
<tr>
<td>Inc Small Group</td>
<td>3.20</td>
<td>1.75</td>
<td>.08</td>
<td>1:1 Setting</td>
<td>-3.34</td>
<td>-1.80</td>
<td>.07</td>
</tr>
<tr>
<td>1:1 Setting</td>
<td>3.20</td>
<td>1.75</td>
<td>.08</td>
<td>Other</td>
<td>3.14</td>
<td>1.97</td>
<td>.10</td>
</tr>
<tr>
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<td>1.84</td>
<td>.02</td>
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<td>.08</td>
<td>2.84</td>
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<tr>
<td>Full Block</td>
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<td>1.84</td>
<td>.02</td>
<td>Yrs Exp</td>
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<td>4.70</td>
<td>.03</td>
</tr>
<tr>
<td>Yrs Exp</td>
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<td>1.97</td>
<td>.10</td>
<td>Pre Trn</td>
<td>.09</td>
<td>8.51</td>
<td>.01</td>
</tr>
<tr>
<td>Pre Trn</td>
<td>.064</td>
<td>1.05</td>
<td>.29</td>
<td>Prof Dev</td>
<td>.13</td>
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<td>.01</td>
</tr>
<tr>
<td>Prof Dev</td>
<td>27.34</td>
<td>10.61</td>
<td>.001</td>
<td>(Constant)</td>
<td>27.34</td>
<td>10.61</td>
<td>.001</td>
</tr>
</tbody>
</table>

Standard Error = 3.80  
$R^2$ Square = .43  
For Model: $F = 7.62$; $p < .01$

Predicted dependent variable scores demonstrated a horizontal band which indicated constant variance. Mean of the residuals = 0.00. In addition to the residual assumptions being met, multicollinearity was not found to be a problem.

It is fair to conclude that a linear combination of scores on the independent variables specifically selected for this study could not adequately explain an adapted physical education teacher's level of...
efficacy expectation or outcome expectation beliefs. Outcome expectation belief scores regressed on the independent variables produced a model which was insignificant. When efficacy expectation belief scores were used as the dependent variable in the regression equation, the model was statistically significant.

Research Question #3: To what extent can an adapted physical education teacher's efficacy expectation beliefs and outcome expectation beliefs be explained by each of the independent variables (i.e. educational training in adapted physical education, years experience teaching adapted physical education, comprehensiveness of adapted physical education preservice training, comprehensiveness of adapted physical education professional development activity, and the primary setting of adapted physical education instruction)?

To determine the unique contribution each variable was providing to explain variance in outcome and expectation efficacy beliefs required an analysis of the part correlation coefficients (i.e. $R^2$ change) produced by each independent variable. For the two categorical independent variables in the analysis, (i.e. level of educational training and setting of instruction) the $R^2$ change produced by the block of
dummy coded variables was analyzed. The outcome expectation regression model which was not statistically significant contained no variables with a statistically significant $R^2$ change. However three independent variables in the efficacy expectation model made unique, significant contributions to the explanation of efficacy expectation beliefs. These significant variables included: comprehensiveness of professional development activity ($t = 5.74; p<.01$), comprehensiveness of preservice training ($t = 2.67; p<.001$), and level of training ($F = 2.84; p=.02$). The amount of variance in the dependent variable accounted for by each of these significant independent variables included: comprehensiveness of professional development activity = 13%; comprehensiveness of preservice training = 9%; and level of training = 8%.

The extent to which the independent variables in this study can be used to individually explain an adapted physical education teacher's level of outcome expectation or efficacy expectation beliefs was found to be less than originally believed following initial reviews of the literature. None of the five independent variables explained a significant amount of variance in the teachers' outcome expectation beliefs. Three variables, comprehensiveness of professional development activity, comprehensiveness
of preservice training and level of training in adapted physical education each explained a statistically significant amount of variance in efficacy expectation beliefs when the effects of the other variables were held constant.

**Summary**

Statistical analyses performed during this study provided positive support that the Adapted Physical Efficacy/Teacher Scale is an appropriate measure of two separate dimensions of self-efficacy. Factor analysis using principle components extraction yielded a two factor solution consistent with past research (Saklofske et al., 1988; Woolfolk et al., 1990; Soodak & Podell, 1993) using Gibson & Dembo’s Teacher Efficacy Scale. This result provided additional support for Bandura's multidimensional theory of self-efficacy.

The adapted physical education teachers in the study scored higher on the efficacy expectation dimension of the Adapted Physical Efficacy/Teacher Scale in comparison to their mean scores on the outcome expectation dimension. This finding was consistent with previous research which had found teachers to score higher on the efficacy expectation dimension of self-efficacy in comparison to scores on
the outcome expectation dimension (Gibson & Dembo, 1984; Coladarci, 1992; Enochs, Scharmann, & Riggs, 1995).

Correlations between the independent variables in the study and the outcome expectation and efficacy expectation dimensions of self-efficacy were found to be less than the results of previous research had indicated. Due to this lack of correlation between the independent and dependent variables, the independent variables accounted for minimal variability in the adapted physical education teachers' outcome expectation and efficacy expectation beliefs. Results of multiple regression analysis using hierarchical entry of the variables indicated that some of the independent variables in the linear combination did not significantly account for variance in efficacy expectation beliefs. Outcome expectation beliefs regressed on the independent variables produced an insignificant model.

A significant amount of variance in efficacy expectation beliefs were uniquely explained by three independent variables including comprehensiveness of professional development activity, comprehensiveness of preservice training and level of training in adapted physical education. These results indicate adapted physical education teachers who's professional
development activities are more extensive, who participated in a more extensive adapted physical education preservice training experience, and who have received a higher level formal education in the area of adapted physical education, demonstrated greater beliefs in their ability to perform the skills necessary to achieve specific outcomes.
Overview

Bandura (1977, 1986) theorized self-efficacy to be a multidimensional construct, influenced by an individual's efficacy expectations and outcome expectations. The limited attention researchers have given to both efficacy and outcome expectations however, has resulted in little available knowledge as to how self-efficacy can be appropriately developed and/or maintained in teachers (Hoy & Woolfolk, 1993). Woolfolk and Hoy (1990) suggested that the operational definitions of self-efficacy, as well as the methods used to measure the construct, have been inconsistent, and that the concept of teacher efficacy was in need of greater clarification. Lively (1994) believed that in addition to problems of unclearly defined terms, a second problem of self-efficacy research in education is that much of the work does not adhere to the theoretical model established by Bandura. Research providing data regarding the relationship between
self-efficacy and the performance of adapted physical education instructors has yet to be performed.

The intent of this study was to investigate the impact of selected variables upon the self-efficacy of teachers, specifically those who teach adapted physical education. Bandura (1986) suggested that self-efficacy existed at various levels, task-specific, domain-linked, and a general level. Previous research into the self-efficacy of teachers, however, has been limited to the domain of the general education teacher. Domain specific investigations of science teacher efficacy has been completed by Enochs and Riggs (1990), Riggs and Enochs (1990), and Enochs et. al. (1995).

It was essential that this self-efficacy research of adapted physical education instructors be based on sound theory and valid, reliable instrumentation. Lively (1994) noted that measurement scales used to previously evaluate self-efficacy in teachers deviated from the theoretical model of self-efficacy established by Bandura. In this study, care was taken to provide a review of Bandura's multidimensional theory of self-efficacy and the attempt was made to validate an appropriate self-efficacy instrument using content specific to the field of adapted physical education.
This study used a descriptive correlational research design to investigate the extent to which selected variables (i.e. educational training in adapted physical education, years experience teaching adapted physical education, comprehensiveness of preservice training, comprehensiveness of professional development activity, and the primary setting of instruction) were related to the two dimensions Bandura (1986) theorized comprised an individual's self-efficacy: efficacy expectations and outcome expectations. The target population included certified adapted physical education teachers working in Wisconsin. The Adapted Physical Education/Teacher Efficacy Scale, a revised version of the Teacher Efficacy Scale (Gibson & Dembo, 1984) was used to obtain data.

A census of the 227 adapted physical education teachers in Wisconsin was performed. The four stage mailing procedure established by Salant and Dillman (1994) served as a guideline for implementation of the survey. A total of 129 (57%) of the teachers completed the survey after all follow-up mailings. Of the returned surveys, 123 were usable.
Summary of the Findings

Results of this study showed the Adapted Physical Education/Teacher Efficacy Scale to be a valid and reliable instrument for measuring outcome and efficacy expectation beliefs of adapted physical educators. Factor analysis further demonstrated the two scales of the instrument measure discrete homogeneous constructs and provided support for the multidimensional theory of self-efficacy espoused by Bandura (1977, 1986). These results were also consistent with previous research employing the Teacher Efficacy Scale (Gibson & Dembo, 1984; Saklofske et al., 1988; Woolfolk et al., 1990; Soodak & Podell, 1993) all of which support the contention that self-efficacy exists as a multidimensional construct within teachers.

Reliability scores obtained on both the outcome expectation (.70) and efficacy expectation (.76) scales of the instrument were appropriate in demonstrating their adequacy. The lower alpha for the outcome expectation scale was consistent with previous research efforts of this construct which has led to the suggestion the external nature of outcome expectation items make them more difficult to define and measure (Gibson and Dembo, 1984). Riggs and Enochs (1995) have also suggested the internal nature of efficacy expectation items may contribute to higher
reliability scores because teachers are able to rate their beliefs more consistently on scale items which deal specifically with themselves.

The existence of an instrument which can validly measure self-efficacy of adapted physical educators provides the opportunity to evaluate the extent which self-efficacy levels may impact various behaviors of teachers in this specialty area. The continuous evaluation of teacher effectiveness is necessary if we are to develop strategies which will enhance the quality of the adapted physical education teacher's pedagogical techniques.

Mean scores for the adapted physical education teachers' outcome expectation beliefs was 35.5 (standard deviation = 5.8) and appeared normally distributed. The range on outcome expectation belief scores was from 23 to 50. The mean score on the efficacy expectation scale was 40.7 (standard deviation = 4.8). The distribution appeared negatively skewed (-.737 skewness) and scores ranged from 24 to 48. Previous research using the Teacher Efficacy Scale has consistently resulted in higher mean scores on the efficacy expectation dimension (Gibson & Dembo, 1984; Woolfolk & Hoy, 1990; Coladarci, 1992; Enochs, Scharmann, & Riggs, 1995). It has been proposed the higher mean scores on
efficacy expectation beliefs suggest that teachers demonstrate greater feelings on the dimension of self-efficacy which they perceive themselves to have greater personal control (Riggs & Enochs, 1990). Efficacy expectations, defined as a person's belief in his/her personal ability to successfully perform behaviors required to achieve specific outcomes, perhaps are also better understood by the individual, in which case teachers feel more comfortable rating the items in this dimension (Riggs & Enochs, 1990, Enochs, et al., 1995).

Although it was believed the independent variables which had been selected for this study would explain significant amounts of variance in both efficacy and outcome expectation belief scores, the data analysis demonstrated otherwise. Results of the multiple regression analysis showed that linear combinations of all the independent variables did not adequately account for the variance in the dependent variable(s). The analysis performed to examine the linear effect of the independent variables on outcome expectation beliefs produced a model which was not statistically significant ($F = 1.39; p = .187$) and accounted for only an estimated 12% of the variance in outcome expectation beliefs.
Using efficacy expectation beliefs as the dependent variable, the model was found to be significant ($F = 7.62; p < .01$) with an estimated 43% of the variance accounted for by the combination of independent variables. Independent variables making a significant contribution to this regression model included, comprehensiveness of professional development activity ($t = 5.74; p < .001$), comprehensiveness of preservice training ($t = 2.67; p < .01$), and level of training ($t = 2.43; p < .01$). Since the effects of the other independent variables were not significant, it was determined the linear combination of all variables in the study could not adequately account for variance in either outcome or efficacy expectation beliefs (i.e. Research Question #2).

The results of the analysis performed to determine the unique proportion of variance explained by the independent variables showed none of the independent variables were statistically significant in explaining variance in the adapted physical education teacher's outcome expectation beliefs. Independent variables explaining significant, unique, proportions of variance in efficacy expectation beliefs included: comprehensiveness of professional development activity = 13%; comprehensiveness of
preservice training = 9%; and level of training in adapted physical education = 8%. The regression analysis produced a significant model for efficacy expectation beliefs, however the variance explained by the significant independent variables was small. These results indicate that even though comprehensiveness of professional development activity, comprehensiveness of preservice training, and level of training in adapted physical education may account for statistically significant proportions of variance in the two dimensions of self-efficacy, the proportion of the variance that these three independent variables explain when the others are held constant is quite small; indeed it appears to have limited practical value as an outcome.

Recommendations

The results of this investigation support the contention that the Adapted Physical Education/Teacher Efficacy Scale is a valid and reliable instrument, capable of measuring two separate dimensions of self-efficacy. However, as an attempt to insure the data which is collected is of high quality and meaningful, the process of developing valid and reliable instruments should be ongoing. Therefore, future studies using the Adapted Physical Education/Teacher
Efficacy Scale must be initiated so that its reliability can be assessed and the scale can be refined and improved as needed. When drawing conclusions from results of research in the teacher efficacy area it is recommended that individuals reviewing the data be sure to understand how the teacher efficacy dimension(s) is/are defined and measured in each study. Variations of how self-efficacy is defined in studies of teachers continues to be a problematic issue in the literature. What one study may identify as a teacher's sense of efficacy, might actually be a teacher's sense of political power within the school (Woolfolk & Hoy, 1990). Woolfolk and Hoy (1990) additionally believe studies which combine the two dimensions of teacher efficacy into one index (e.g., Ashton & Webb, 1986; Fuller & Izu, 1986; Glickman & Tamashiro, 1982; Guskey, 1988) likely are unable to provide meaningful data.

In addition to taking care when defining the dependent variables in future studies of self-efficacy, it is recommended that researchers be sure to select independent variables which can be clearly defined and measured. Perhaps one of the reasons the independent variables in this study didn't account for a greater amount of variance in the dependent variables was because the constructs which these
independent variables represented which were too broad or global in scope. Examples of variables having greater specificity which it is recommended be investigated in future studies might include, but are not limited to: a) gender, b) age of teacher, c) size of annual budget, and/or d) amount of input from supervisor or administrator. Studies using these variables should not be limited to investigating the extent to which independent and dependent variables are related, but should also investigate the direction (i.e. positive or negative) of the existing associations and how these associations impact teacher behavior(s) in various environments.

Future research of self-efficacy and adapted physical educators must be performed on larger sample sizes than the one in the present study. A greater geographical area should also be covered in future studies. Studies performed within limited geographical areas, and which have small sample sizes, limit generalizability of the findings, and in turn limit the value of the research findings.

Since the amount of previous self-efficacy research which has been performed with adapted physical education teachers is essentially non-existent, it is difficult to reach definitive conclusions regarding the practical significance of
the results reported in this study. It is recommended that further research be performed which can determine the practical significance of the statistically significant results found in this study.

Dembo and Gibson (1985) recommended researchers investigate possible causal relationships between educational variables so intervention programs could be designed which would facilitate teachers' sense of efficacy. These studies should include investigations into possible differences between the characteristics of adapted physical education teachers and their levels of self-efficacy. Longitudinal studies are needed to determine if, and to what extent, the outcome and efficacy expectation levels of these teachers are impacted as their careers progress.

Additional studies are necessary which include behavioral (i.e. single subject) research for the purpose of observing, recording and assessing specific teacher behaviors which would then be compared to the teacher's level of efficacy and outcome expectations. Self-efficacy related specifically to teachers in their professional work may be highly context specific, especially perhaps for experienced teachers. Teachers may well learn to distinguish between those situations for which their skills and resources are likely to yield a positive influence from those
situations in which they are unlikely to be able to exert any strong influence over student learning. Thus, it would make sense to analyze the relationship between teacher responses to the Adapted Physical Education Self-Efficacy Scale and their teaching behavior in more or less difficult teaching contexts. This research could also lead to investigations of Bandura's argument that individual judgments of self-efficacy varied on the dimensions of strength, magnitude, and generality.

The non-response rate in this study was 40% and although the follow-up technique implemented (i.e. comparison of early and late respondents) indicated no non-response bias, it is possible meaningful data could have been gained if a more thorough technique would have been utilized to determine the self-efficacy beliefs and personal characteristics of the non-respondents. Due to financial limitations and timeline restrictions, implementation of a more thorough follow-up was not possible in this study. It is recommended however, that in future studies follow-up of non-respondents include actual contact via telephone with a sample of non-respondents so an interview can be performed.
APPENDIX A

The Teacher Efficacy Scale
# Teacher Efficacy Scale

*Copyright 1983 Sherri Gibson, Ph.D.*

Please indicate the degree to which you agree or disagree with each statement below by circling the appropriate number to the right of each statement.

1=strongly disagree; 2=moderately disagree; 3=disagree slightly, more than agree; 4=agree slightly, more than disagree; 5=moderately agree; 6=strongly agree

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td>1. When a student does better than usual, many times it is because I exerted a little extra effort.</td>
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<td>2. The hours in my class have little influence on students compared to the influence of their home environment.</td>
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<td>3. If parents comment to me that their child behaves much better at school than he/she does at home, it would probably be because I have some specific techniques of managing his/her behavior which they may lack.</td>
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<td>4. The amount that a student can learn is primarily related to family background.</td>
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<td>5. If a teacher has adequate skills and motivation, he/she can get through to the most difficult students.</td>
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<td>6. If students aren’t disciplined at home, they aren’t likely to accept any discipline.</td>
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<td>7. I have enough training to deal with almost any learning problem.</td>
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<td>8. My teacher training program and/or experience has given me the necessary skills to be an effective teacher.</td>
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<td>9. Many teachers are stymied in their attempts to help students by lack of support from the community.</td>
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<td>10. Some students need to be placed in slower groups so they are not subjected to unrealistic expectations.</td>
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<td>11. Individual differences among teachers account for the wide variations in student achievement.</td>
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<td>12. When a student is having difficulty with an assignment, I am usually able to adjust to his/her level.</td>
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<td>13. If one of my new students cannot remain on task for a particular assignment, there is little that I could do to increase his/her attention until he/she is ready.</td>
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<td>14. When a student gets a better grade than he usually gets, it is usually because I found better ways of teaching that student.</td>
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85
15. When I really try, I can get through to most difficult students. 1 2 3 4 5 6

16. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement. 1 2 3 4 5 6

17. Teachers are not a very powerful influence on student achievement when all factors are considered. 1 2 3 4 5 6

18. If students are particularly disruptive one day, I ask myself what I have been doing differently. 1 2 3 4 5 6

19. When the grades of my students improve it is usually because I found more effective teaching approaches. 1 2 3 4 5 6

20. If my principal suggested that I change some of my class curriculum, I would feel confident that I have the necessary skills to implement the unfamiliar curriculum. 1 2 3 4 5 6

21. If a student masters a new math concept quickly, this might be because I knew the necessary steps in teaching that concept. 1 2 3 4 5 6

22. Parent conferences can help a teacher judge how much to expect from a student by giving the teacher an idea of the parents' values toward education, discipline, etc. 1 2 3 4 5 6

23. If parents would do more with their children, I could do more. 1 2 3 4 5 6

24. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson. 1 2 3 4 5 6

25. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him quickly. 1 2 3 4 5 6

26. School rules and policies hinder my doing the job I was hired to do. 1 2 3 4 5 6

27. The influences of a student's home experiences can be overcome by good teaching. 1 2 3 4 5 6

28. When a child progresses after being placed in a slower group, it is because the teacher has had a chance to give him/her extra attention. 1 2 3 4 5 6

29. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty. 1 2 3 4 5 6

30. Even a teacher with good teaching abilities may not reach many students. 1 2 3 4 5 6
APPENDIX B

Request for Permission to Revise the Teacher Efficacy Scale
To: Sherri Gibson, Ph.D.

From: Michael Haeuser

Re: Request for permission to revise the Teacher Efficacy Scale

Date: May 2, 1996

As per our phone conversation on the evening of May 1st, I am interested in conducting research on self-efficacy levels of physical education specialists, particularly those who provide services to children with disabilities. To perform this research I would like to revise, then implement, the Teacher Efficacy Scale which has been copyrighted in your name.

The purpose of this letter is to request documentation indicating I have your permission to make these revisions to your instrument. If you are willing to grant me this permission, please acknowledge this by signing the attached form and returning it to me in the self-addressed stamped envelope which I have enclosed.

Your assistance with this is greatly appreciated. Please do not hesitate contacting me if you have any questions regarding this request, or if I can be of assistance to you in the future. My address and phone number are given below.

2376 Northstar Road, #2K
Columbus, Ohio 43221
Phone: (614) 481-8279 (H)
(614) 292-6226 (W)
ACKNOWLEDGEMENT OF PERMISSION

I grant Michael Haeuser permission to revise the Teacher Efficacy Scale for the purpose of conducting self-efficacy research on populations which include regular and adapted physical education teachers.

Sherri Gibson, Ph.D. 5/6/96
Date
APPENDIX C

Correspondence with Panel of Experts
To: Dissertation Panel of Experts
From: Michael Haeuser
Re: Instrument Review
Date: February 19, 1996

I want to sincerely thank each of you for agreeing to assist me with the validation of this instrument. Enclosed you should find all the information which will be necessary to complete round #1 of this process. This packet contains a copy of:

- a note from Sherri Gibson granting me permission to revise the Teacher Efficacy Scale
- a brief overview of my dissertation project and your instructions;
- a revised version of the Teacher Efficacy Scale;
- a self-addressed stamped envelope.

If you have any questions regarding this information, please do not hesitate contacting me. My address:

2376 Northstar Road, #2K
Columbus, Ohio 43221
Phone: (614) 481-8279 - home
E-mail: haeuser.1@osu.edu
PROJECT OVERVIEW

Numerous researchers have demonstrated self-efficacy as a construct measured most appropriately from a multidimensional perspective (Bandura, 1977; Denham & Michael, 1981; Ashton & Webb, 1982; Evans & Tribble, 1986; Guskey, 1988; Hoy & Woolfolk, 1993). The purpose of this research project is to investigate the relationship between preservice training variables and self-efficacy levels of adapted physical educators.

Hoy and Woolfolk (1993) state the use of Gibson & Dembo's (1984) Teacher Efficacy Scale has consistently produced results which support teacher efficacy as consisting of two separate dimensions. This is consistent with Bandura's (1977, 1986) earlier work on the self-efficacy construct. A closer analysis of Gibson and Dembo's Teacher Efficacy Scale however, demonstrates the scale to be problematic in a number of ways (Riggs & Enochs, 1990). To address the limitations of the Teacher Efficacy Scale, scale items have been altered to appropriately reflect content specific to the adapted physical education teacher.

INSTRUCTIONS FOR THE PANEL OF EXPERTS

Please evaluate the appropriateness of the attached scale according to the validity of its content (i.e. do you feel the scale items appropriately represent adapted physical education content). Provide comments or suggestions as to how you would improve any item you feel needs revision. Circle the number of each item you feel is appropriate.

When you've completed your evaluation, please return the scale using the self-addressed stamped envelope. If three out of five panel members do not determine an item as acceptable for use, the item will be edited as per your suggestions and a second mailing will be made to the panel. Items which are not rated as being appropriate after three mailings will be deleted from the scale.
APPENDIX D

Survey Correspondence
TO: , Adapted Physical Education Teacher

FROM: Michael Haeuser, Project Coordinator

RE: Self-Efficacy Survey of Wisconsin Adapted Physical Educators

DATE: April 16, 1997

Researchers have shown teacher training to be one of five specific variables which can impact a teacher’s level of self-efficacy, however the focus of these studies has been primarily on the self-efficacy levels of classroom teachers. Possible relationships between self-efficacy levels of adapted physical education teachers and their teacher training experiences have yet to be adequately investigated.

To address this issue, you have received the enclosed information as part of a research study which is being coordinated at The Ohio State University with all currently employed, WI-860 certified, adapted physical education teachers in Wisconsin. It would be greatly appreciated if you would take 8-10 minutes of your time to complete the enclosed survey and return it in the self-addressed, stamped envelope which is provided. Please be assured all of your answers will remain completely confidential. The identification number which is placed on each survey is only to provide assistance with any follow-up of non-respondents which might be necessary.

Please know your assistance with this project is greatly appreciated. If you have any questions regarding this survey, or the project, please do not hesitate contacting me at:

2376 Northstar Road, #2k
Columbus, Ohio 43210
Phone: (614) 481-8279
E-mail: haeuser.1@osu.edu

Enclosure
May 7, 1997

Dear Adapted Physical Educator,

Recently, a copy of the enclosed survey was mailed to all certified adapted physical education teachers in Wisconsin as part of a research project currently being coordinated at The Ohio State University. Because your input is vital to this project, and since I have yet to receive a completed survey from you, I am asking that you please take a few minutes of your time to complete the enclosed survey and return it to me at:

2376 Northstar Road, #2k
Columbus, Ohio 43210

Please know your assistance with this project is greatly appreciated. If you have any questions regarding this survey, or the project, please do not hesitate contacting me.

Sincerely,

Michael Haeuser
Project Coordinator

Enclosure
APPENDIX E

Survey Instrument
Investigating Teacher Efficacy: An Analysis of Wisconsin Adapted Physical Education Teachers

Please return your completed questionnaire in the enclosed envelope to:

Michael Haeuser
Ohio State University
344 Larkins Hall
337 West 17th Avenue
Columbus, Ohio 43210
PART I: Adapted Physical Education
Teacher Efficacy Scale
A revision of the Teacher Efficacy Scale - ©1983 Sherri Gibson, Ph.D.

DIRECTIONS: Please indicate your opinion to each of the following statements by circling the number below which best represents the extent to which you agree or disagree.

1. When a child performs a motor skill better than expected, it is directly related to his/her physical education teacher having exerted extra effort while providing instruction.

   1  STRONGLY DISAGREE  
   2  MODERATELY DISAGREE  
   3  SLIGHTLY DISAGREE  
   4  SLIGHTLY AGREE  
   5  MODERATELY AGREE  
   6  STRONGLY AGREE  

2. I believe I am more effective than the average adapted physical educator in addressing the needs of children who have a disability.

   1  STRONGLY DISAGREE  
   2  MODERATELY DISAGREE  
   3  SLIGHTLY DISAGREE  
   4  SLIGHTLY AGREE  
   5  MODERATELY AGREE  
   6  STRONGLY AGREE  

3. I understand the developmental progressions of fundamental motor skills necessary to teach locomotor skills to students who have a disability.

   1  STRONGLY DISAGREE  
   2  MODERATELY DISAGREE  
   3  SLIGHTLY DISAGREE  
   4  SLIGHTLY AGREE  
   5  MODERATELY AGREE  
   6  STRONGLY AGREE  

98
4. When the motor performance of children significantly improves, it is primarily due to their teacher having used an effective teaching strategy.

1. STRONGLY DISAGREE
2. MODERATELY DISAGREE
3. SLIGHTLY DISAGREE
4. SLIGHTLY AGREE
5. MODERATELY AGREE
6. STRONGLY AGREE

5. I am competent in using a wide variety of assessment instruments that are available to measure the physical and motor fitness of children with a disability.

1. STRONGLY DISAGREE
2. MODERATELY DISAGREE
3. SLIGHTLY DISAGREE
4. SLIGHTLY AGREE
5. MODERATELY AGREE
6. STRONGLY AGREE

6. I understand, and am able to explain to others, the primary components of the major laws which impact special education (e.g. PL 94-142, PL 99-457, PL 101-476).

1. STRONGLY DISAGREE
2. MODERATELY DISAGREE
3. SLIGHTLY DISAGREE
4. SLIGHTLY AGREE
5. MODERATELY AGREE
6. STRONGLY AGREE

7. When a student with a disability fails to reach his/her potential, it is primarily because the teacher has been ineffective when working with that child.

1. STRONGLY DISAGREE
2. MODERATELY DISAGREE
3. SLIGHTLY DISAGREE
4. SLIGHTLY AGREE
5. MODERATELY AGREE
6. STRONGLY AGREE
8. I can help children with even the most severe impairments successfully perform a motor activity.

1 STRONGLY DISAGREE
2 MODERATELY DISAGREE
3 SLIGHTLY DISAGREE
4 SLIGHTLY AGREE
5 MODERATELY AGREE
6 STRONGLY AGREE

9. The limitations experienced by a child because of his/her disability can be overcome with effective teaching techniques.

1 STRONGLY DISAGREE
2 MODERATELY DISAGREE
3 SLIGHTLY DISAGREE
4 SLIGHTLY AGREE
5 MODERATELY AGREE
6 STRONGLY AGREE

10. The low levels of success in physical education class that at times are experienced by students who have a disability are directly related to poor teaching performances.

1 STRONGLY DISAGREE
2 MODERATELY DISAGREE
3 SLIGHTLY DISAGREE
4 SLIGHTLY AGREE
5 MODERATELY AGREE
6 STRONGLY AGREE

11. When the physical fitness level of children improves, it can be attributed to additional attention they've received from their teacher.

1 STRONGLY DISAGREE
2 MODERATELY DISAGREE
3 SLIGHTLY DISAGREE
4 SLIGHTLY AGREE
5 MODERATELY AGREE
6 STRONGLY AGREE
12. I can use a variety of teaching styles during any lesson to promote the learning of a child with a disability.

   1  STRONGLY DISAGREE
   2  MODERATELY DISAGREE
   3  SLIGHTLY DISAGREE
   4  SLIGHTLY AGREE
   5  MODERATELY AGREE
   6  STRONGLY AGREE

13. Extra effort from the physical education teacher will result in students with a disability demonstrating an improved motor performance, regardless of the child's impairment.

   1  STRONGLY DISAGREE
   2  MODERATELY DISAGREE
   3  SLIGHTLY DISAGREE
   4  SLIGHTLY AGREE
   5  MODERATELY AGREE
   6  STRONGLY AGREE

14. When a student is experiencing difficulty with a particular skill because of his/her disability, I can implement modifications which will help him/her achieve success.

   1  STRONGLY DISAGREE
   2  MODERATELY DISAGREE
   3  SLIGHTLY DISAGREE
   4  SLIGHTLY AGREE
   5  MODERATELY AGREE
   6  STRONGLY AGREE

15. The degree of success a child with a disability achieves in physical education is directly related to the effectiveness of the physical education teacher.

   1  STRONGLY DISAGREE
   2  MODERATELY DISAGREE
   3  SLIGHTLY DISAGREE
   4  SLIGHTLY AGREE
   5  MODERATELY AGREE
   6  STRONGLY AGREE
16. When children participate in more physical activities at home, it is a direct result of the impact their physical education teacher is making with them at school.

1 STRONGLY DISAGREE
2 MODERATELY DISAGREE
3 SLIGHTLY DISAGREE
4 SLIGHTLY AGREE
5 MODERATELY AGREE
6 STRONGLY AGREE

17. I feel competent implementing a variety of behavior management techniques when providing instruction to my students.

1 STRONGLY DISAGREE
2 MODERATELY DISAGREE
3 SLIGHTLY DISAGREE
4 SLIGHTLY AGREE
5 MODERATELY AGREE
6 STRONGLY AGREE

18. When speaking with the parents of my students, I'm able to explain the positive impact which a physically active lifestyle can make in their children's lives.

1 STRONGLY DISAGREE
2 MODERATELY DISAGREE
3 SLIGHTLY DISAGREE
4 SLIGHTLY AGREE
5 MODERATELY AGREE
6 STRONGLY AGREE

Please continue to PART II.
**PART II. TRAINING COMPREHENSIVENESS**

**DIRECTIONS:** The content areas and practical experience opportunities listed below were based upon the 1994 Adapted Physical Education National Standards Project. Please rate each item on the extent to which you believe it was addressed during your preservice training, as well as, during any professional development activities you have engaged in since becoming a teacher (e.g. graduate coursework, workshops or conferences, reading books or journals, etc.).

**RATING SCALE**

<table>
<thead>
<tr>
<th>Extent Item Was Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>0............................Item was not addressed</td>
</tr>
<tr>
<td>1............................Poor</td>
</tr>
<tr>
<td>2............................Fair</td>
</tr>
<tr>
<td>3............................Good</td>
</tr>
<tr>
<td>4............................Excellent</td>
</tr>
</tbody>
</table>

**NOTE:** Please be sure to circle a number for both the Preservice Training and the Professional Development columns.

<table>
<thead>
<tr>
<th>CONTENT AREA or PRACTICAL EXPERIENCE</th>
<th>Preservice Training</th>
<th>Professional Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Information on the psychomotor implications of disabilities</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>2) Aspects of human motor development and motor learning</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>3) Information regarding the evaluation of the physical performance of individuals with disabilities</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>4) Instructional strategies and teaching methodology</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>5) Implications of special education law</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>6) Information regarding the appropriate use of adaptive equipment</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>7) Information pertaining to the development of individual educational plans (IEP's, ITP's, etc.)</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>8) Opportunities to perform assessments of individuals with disabilities</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>9) Opportunities to design individual physical education programs for individuals with a disability</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>10) Opportunities to collaborate with related service professionals (OT's, PT's, etc.)</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>11) Opportunities to provide instruction to persons with a disability in off-campus settings (public school, rec center, etc.)</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>12) Opportunities to enhance your communication skills</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
</tbody>
</table>
PART III. BIOGRAPHICAL INFORMATION

DIRECTIONS: Please complete the following information by selecting the most appropriate number or by filling in the blank.

1. In what field(s) did you major as a college undergraduate? (Circle all numbers that apply)
   - 1 PHYSICAL EDUCATION
   - 2 HEALTH
   - 3 RECREATION
   - 4 SPECIAL EDUCATION
   - 5 OTHER (PLEASE SPECIFY)__________________________

2. In what field(s) did you minor as a college undergraduate? (Circle all numbers that apply)
   - 1 PHYSICAL EDUCATION
   - 2 ADAPTED PHYSICAL EDUCATION
   - 3 HEALTH
   - 4 RECREATION
   - 5 OTHER (PLEASE SPECIFY)__________________________
   - 6 DID NOT RECEIVE A MINOR

3. If you have a graduate degree, what is the area of emphasis? (Circle one number)
   - 1 PHYSICAL EDUCATION
   - 2 ADAPTED PHYSICAL EDUCATION
   - 3 HEALTH
   - 4 RECREATION
   - 5 OTHER (PLEASE SPECIFY)__________________________
   - 6 DO NOT HAVE A GRADUATE DEGREE

4. What is the highest level of educational training which you have completed in adapted physical education? (Circle one number)
   - 1 UNDERGRADUATE CONCENTRATION
   - 2 UNDERGRADUATE MINOR
   - 3 UNDERGRADUATE MAJOR
   - 4 MASTERS DEGREE
   - 5 OTHER (PLEASE SPECIFY)__________________________

5. Counting this year, how many years you have taught adapted physical education?
   _______________YEARS

6. In which setting do you currently spend the greatest percentage of your day teaching adapted physical education? (Circle one number)
   - 1 INCLUSIVE REGULAR PHYSICAL EDUCATION CLASS
   - 2 INCLUSIVE SMALL GROUP SETTING (APE STUDENTS WITH REGULAR PE STUDENTS ASSISTING)
   - 3 SEGREGATED SMALL GROUP SETTING (APE STUDENTS ONLY)
   - 4 A 1:1 SETTING (YOURSELF AND THE APE STUDENT)
   - 5 OTHER (PLEASE SPECIFY)__________________________

THANK YOU FOR COMPLETING THIS SURVEY
REFERENCES


