

PRELIMINARY FINDINGS FROM THE EVALUATION OF

PROJECT ESCAPE 25-ALIVE

A Dissertation

by

CHRISTOPHER MICHAEL LEDINGHAM

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2006

Major Subject: Health Education

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ABSTRACT

Preliminary Findings from the Evaluation of *Project
ESCAPE 25-Alive*. (December 2006)

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Chair of Advisory Committee: Dr. B.E. Pruitt

This study was conducted as part of the evaluation process of a federally funded physical activity initiative undertaken by a large urban school district. The purpose of this study was two-fold: (1) to provide evidence of effectiveness of *Project ESCAPE 25-Alive*, an innovative physical activity promotion initiative; and (2) to examine the relationships among a number of factors related to observed changes in the health promoting physical activity levels of high school students.

The sample for the evaluation process consisted of 26 high school physical education teachers and their respective students enrolled in physical education class. Each teacher was observed three times while teaching physical education. Observations resulted in objective measures of the level and duration of physical activity in the classroom. Each teacher also was asked to complete a survey designed to measure his or her intent to adopt the *Project ESCAPE 25-Alive* program into their class curriculum. Finally, teachers were asked to complete a survey designed to measure self-efficacy related to teaching physical education.

The data from the class observations suggested that initially, physical education teachers conducted what could only be called sedentary class activities. However, activity levels did appear to improve over time. When the correlation between the levels of program adoption, teacher self-efficacy, and observed physical activity level were examined, only one significant association was found. The one positive significant correlation that was found was between the teacher adoption scores and the class observation scores obtained during the second observation.

While there were almost no significant correlations in this study, the study had merit. Over time the observed health promoting physical activity in physical education classes increased. This suggested that *Project ESCAPE 25-Alive* positively impacted the way physical education classes were run in the school district. With continued observation and training of teachers, the levels of health promoting physical activity were expected to continue to rise.

ACKNOWLEDGEMENTS

“So many of our dreams at first seem impossible, then they seem improbable, and then, when we summon the will, they soon become inevitable.” Christopher Reeve

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CHAPTER I

INTRODUCTION

One of the fastest growing health risk factors facing the United States today is that of overweight. Over the last thirty years the incidence and prevalence of overweight children has risen to unprecedented proportions (Center for Health and Healthcare in Schools, 2005). Parallel to this increase in number of children overweight over the last thirty years are the stable and relatively low percentages of high school students who are physically active in physical education (PE) class (Grunbaum, et al., 2004).

Because of these increasing rates in childhood overweight and the unchanging rates of participation in high school PE, a number of studies over the past ten years have been conducted to examine the causes of childhood overweight and it's reduction (Davison & Birch, 2001; Joliffe, 2003; Ogden, Flegal, Carroll, & Johnson, 2002; Campbell, Walters, O'Meara and Summerbell, 2001). Based on these studies a number of settings have been identified as prime targets for health promotion programs targeting the prevention of childhood overweight and obesity. These settings include the school, churches, homes, community centers, and after school programs to name a few (Davison & Birch; Joliffe; Ogden, et al.; Campbell, et al.).

The school setting is the primary and most frequently cited setting for programs that address childhood overweight, and while many programs have shown some success

This dissertation follows the style of the *Journal of Physical Education, Recreation and Dance*.

in both reducing and preventing childhood overweight, there is still room for improvement. School district officials in one urban city in the southwest identified the physical education classroom as a target for intervention in the fight against childhood overweight (R. Rodriguez, personal communication, July 7, 2005). District officials identified several gaps and weaknesses in their current program that prevented the implementation of high quality physical education programs that met the physical education standards set forth by the state board of education. The gaps and weaknesses identified in the school district's infrastructure included: curricula that were not aligned with state standards; large numbers of students physically inactive for at least 50% of their physical education class; students indicating that physical education class was "boring and not fun;" and an observed inconsistency in the daily delivery of instruction in secondary physical education classes. These areas were identified based on a 2004 District Secondary Physical Education Student Needs Assessment (R. Rodriguez, personal communication, July 7, 2005), a curriculum review, and physical education class visitations.

District officials from this urban school district theorized that changes in the way physical education was taught in the schools would result in a reduction of overweight among the students. Thus, district officials developed the *Project ESCAPE 25-Alive* program. The goal of the program was to reduce the prevalence of childhood overweight in the secondary physical education students of this school district. To achieve the goal, the staff of the school district, through the *Project ESCAPE 25-Alive* program, revamped the secondary physical education program in order to meet the state

and national physical education standards by developing strategies and implementing activities designed to improve the emotional and physical health for the population of interest.

In order to measure such changes, the school district, in collaboration with external specialists, identified some basic measures of improvement that were at the core of the *Project ESCAPE 25-Alive* program. These measures included the length of time students actually active in PE class, the level of exertion of students as observed in PE class, and the types of activities taught by teachers that both related to the state and national requirements and were enjoyed by the students.

The amount of time allotted to PE was fixed for all students in the school district at 55 minutes. It is recommended that children and adolescents strive for 30 minutes of activity daily (U.S. Departments of Agriculture and Health and Human Services, 2005). One of the emphases of the *Project ESCAPE 25-Alive* program was, therefore, to optimize the health effect of the time spent in PE by engaging students in at least 25 minutes of moderate to vigorous intensity physical activity every class period, an amount of time equal to about half of the time spent in PE class.

Moderate to vigorous intensity physical activity was defined as any activity that children and adolescents take part in that makes them exercise at 50% – 70% of their maximum heart rate. A target heart rate range of 130-180 was selected as a bench mark measure for all students and falls within the range of 50-70% for maximum heart rate as recommended by the U.S. Departments of Agriculture and Health and Human Services (2005). In terms of the types of physical activity being taught in the school district PE

classrooms, the state requirements provided a range of acceptable activities to serve as guidelines for teachers. Teachers therefore, chose from a variety of methods to meet the state requirements that were both appropriate and deemed as fun by their students.

In order to assure that the goals of *Project ESCAPE 25-Alive* were met by the teachers of the school district an external evaluator was sought to provide guidance in the evaluation of the grant funded project. The evaluation of *Project ESCAPE 25-Alive* provided the basis for this study.

Review of Selected Literature

A selected review of the literature was undertaken to assess that the employed evaluation criteria were current with the latest procedures. Included in this review are the following topics (1) childhood overweight and obesity, (2) physical activity in secondary school level adolescents, (3) teacher self efficacy, (4) competence and capacity in relation to program adoption, and (5) elements of effective physical activity programs.

Childhood Overweight and Obesity

Overweight and obesity are becoming more prevalent among Americans of all ages with the rates of overweight and obesity rising steadily over the last thirty years (Center for Health and Healthcare in Schools, 2005). Among high school aged students (12-19 years of age), this trend is readily apparent. In the time period 1963-1970, it was estimated that approximately 5% of adolescents were considered overweight or obese. This percentage rose significantly over the years and in the time period 1999 – 2002, this

percentage had risen to 15% (Ogden, Flegal, Carroll, & Johnson, 2002). When one adds the percentages of boys and girls at risk for becoming overweight these numbers are even higher, with approximately 29.2% of boys and 27% of girls being either at risk for overweight or considered overweight in the 1999-2002 time period (Hedley, Ogden, Johnson, & Carroll, 2004).

Defining overweight and obesity in children is a challenging task. Currently the Body Mass Index (BMI) system is used to assess overweight and obesity and these benchmarks are defined by examining height and weight of children in relation to estimated growth charts (CDC, 2003). A child is considered overweight if his or her BMI for age is at or above the 85th percentile, but less than the 95th percentile. Similarly, a child is considered obese if their BMI is at or above the 95th percentile for age (CDC, 2003).

It has been established that the rates of childhood overweight and obesity are linked to high rates of hyperlipidemia, hypertension, and impaired glucose tolerance (Weisberg, 2002). These health concerns have driven health professionals to emphasize prevention efforts as the best course of action against childhood overweight and obesity (Swinburn & Egger, 2002). Primary prevention efforts have been successful in public health campaigns to reduce smoking (Grizzard, 2002). Similar tactics that focus on the behavioral, socio-cultural, and environmental factors of obesity need be employed with in the context of obesity prevention if changes in the weight status of children are to be met (Grizzard).

Physical Activity in Secondary School Level Adolescents

Many researchers agree that there are two factors which can contribute significantly to the reduction of the incidence and prevalence of childhood overweight and obesity: an increase in physical activity and changes in nutritional consumption. This aspect of the review of selected literature and this study will focus on physical activity.

There are two objectives specific to physical activity outlined in the national health objectives, *Healthy People 2010* (US Department of Health and Human Services, (2000). The first is objective (22-9), a desired increase in the proportion of students who participate in daily physical education (PE) to a level of 50% or greater. The most recent data, which were collected from the Youth Risk Behavior Survey in 2003, suggest that this goal has been met, with 52.8% (+/- 7.7) of females and 58.5% (+/- 7.2) of males enrolled in PE nationwide (Grunbaum, et al. 2004).

The second objective (22-10) is a desired increase, to a level of 50% or greater, the proportion of students who are physically active at least half the time they are in PE class. This objective is far from being met, with approximately 34.7% of females and 43.6 % of males being physically active in PE class (Grunbaum, et al.).

Extensive research indicates that moderate physical activity leads to improvements in endurance, flexibility, and muscular strength, three measures often used to assess athletic performance. Physical activity also reduces overweight and obesity, alleviates depression and anxiety, and helps to build bone mass, measures that relate to general health. In adults, physically fit individuals are less likely than sedentary

individuals to develop hypertension, diabetes mellitus, and a number of cancers. In fact, all causes of mortality in adults are lowered through physical activity (U.S. Department of Agriculture and U. S. Department of Health and Human Services, 2005). Because of these known benefits of physical activity, the International Consensus Conference on Physical Activity Guidelines for Adolescents recommended that “all adolescents...be physically active daily.” (Sallis & Patrick, 1994) Furthermore, Sallis and Patrick (1994) recommended that “adolescents engage in three or more sessions per week of activities that last 10 minutes or more at a time and that require vigorous levels of exertion.” (p. 310)

Moderate to vigorous intensity physical activity was defined as any activity that children and adolescents take part in that makes them exercise at 50% – 70% of their maximum heart rate. It is recommended that children and adolescents strive for 30 minutes of such activity daily (U.S. Departments of Agriculture and Health and Human Services, 2005).

Teacher Self-Efficacy

Teacher self-efficacy is often referred to as teacher efficacy and is defined in different ways depending on its usage and relevance to a given study. Over the years, several definitions have emerged in the professional literature. Berman, McLaughlin, Bass, Pauly and Zelman (1977) offer one definition which states that teacher efficacy is “the extent to which the teacher believes he or she has the capacity to affect student performance.” (p. 137) In 1994, Gusky and Passaro defined teacher efficacy as “teachers’ belief or conviction that they can influence how well students learn, even

those who may be difficult or unmotivated.” (p.4) No matter how the definition is written, teacher self-efficacy refers to an individual teacher’s belief in his or her abilities (Tschannen-Moran, Hoy, & Hoy, 1998).

Many of the studies done over the past thirty years in relation to teacher self-efficacy have examined these phenomena in relation to Bandura’s (1986) concept of self-efficacy (Woolfolk & Hoy, 1990). A commonly used concept of self-efficacy is part of the Social Cognitive Theory and is defined within the context of Social Cognitive Theory, as the individual’s confidence in their ability to take action and maintain the desired change (Bandura, 1986; Baranowski, Perry, & Parcel, 2002).

Based on the definitions mentioned, a number of studies have been conducted with teachers and Tschannen-Moran, Hoy, and Hoy (1998) report that for the most part those studies focused on the beliefs and knowledge of teachers and were quantitative in nature. In the study by Martin and Kulinna (2004), self-efficacy theory (Social Cognitive Theory) was studied as part of a series of predictors of teacher’s intention to teach physically active physical education classes. In this study, Martin and Kulinna found that self-efficacy accounted for almost none of the variance of the study that is teacher self-efficacy was not related to the behavioral intention of teaching physically active PE classes (2004). This finding is much different than the findings offered by Stajkovic and Luthans, which was the result of a meta-analysis of 114 studies of self-efficacy (1998). In this meta-analysis the authors found self-efficacy to be a strong predictor of work related performance (Stajkovic and Luthans, 1998).

In the research of Woolfolk and Hoy (1990), this concept of using teacher self-efficacy as a predictor of teaching ability was examined. Woolfolk and Hoy examined prospective teachers' sense of self-efficacy in relation to classroom control and motivation. Woolfolk and Hoy (1990) identified two main questions about the self-efficacy of prospective teachers, one, "is the structure of efficacy the same for prospective teachers as it is for experienced teachers?" (p. 82) And two, "are the prospective teachers' self-efficacy beliefs related to their orientation towards discipline, motivation, order and control in schools?" (p. 82)

From this research two scales were derived from a comprehensive analysis of items related to teacher self-efficacy (Woolfolk & Hoy, 1990). These scales were personal efficacy and teacher efficacy and the resulting instrument contained 20 items about teacher self-efficacy, with eight items related to teacher efficacy and twelve items related to personal efficacy (Woolfolk & Hoy). The items related to teacher efficacy focused on the role of the teacher as an outsider in relation to student behavior. These questions focused on the teachers personal concepts of perceived control over the achievement of the student. The personal efficacy questions, however, focused on the teachers ability to impact the behaviors and achievement of the students (Woolfolk & Hoy).

To develop the two factor scale, Woolfolk and Hoy, employed the techniques used by Gibson and Dembo (1984). Woolfolk and Hoy used a series of exploratory and confirmatory factor analyses to derive the two factors, which were similar in nature to Gibson and Dembo study. The result was an instrument with two distinct factors which

yielded Cronbach alpha coefficients of .74 for the teacher efficacy scale and .82 for the personal efficacy scale. The instrument was used to collect data which identified teachers with high self-efficacy as being more apt to thrive with in the bureaucratic school environment and contribute to higher levels of student achievement (Woolfolk & Hoy, 1990). In contrast those with lower scores were not identified as being incapable of impacting student achievement; rather the context in which the questions were asked was examined and listed as a possible limitation of the study (Woolfolk & Hoy).

Competence and Capacity in Relation to Program Adoption

Competence and Capacity are two factors that are the core of community organization and are two concepts that are often applied and examined in the school community (Newmann, King, & Youngs, 2000). Competence is the ability to be successful. Competence in physical education is marked when teachers know how to plan, implement, and assess educational experiences. This is usually assessed at the time of teacher hiring. Competence is maintained and developed through the continued training of teachers, as well as periodic professional evaluations (Newmann, King, & Youngs).

Capacity is defined as ability to operate in a given setting. Community capacity is defined as the elements of a community which are essential to successful implementation of new programs. In 1995, the Centers for Disease Control and Prevention (CDC) convened a two day symposium which resulted in two unique definitions of community capacity and a check list of ten dimensions of community capacity which need to be addressed in the community program planning process

(Goodman et al., 1998). The ten dimensions of community capacity identified at the CDC symposium were; participation and leadership, skills, resources, social and interorganizational networks, sense of community, understanding of community history, community power, community values, and critical reflection (Goodman et al.). However, based on the number of dimensions described in the article, the authors stressed that more research needed to be conducted to “operationalize the ways to assess capacity in communities” (Goodman et al., 1998, p. 273).

Effective Physical Activity Programs for the High School Setting

Developing programs to increase the rates of physical activity among children and adolescents have been of interest to researchers and health care providers for some time. A review of the literature produced 65 articles which consisted of program descriptions and outcomes, comprehensive literature reviews, and meta-analyses which identified physical activity programs for children and adolescents. In nearly all of these literature review studies, the primary purpose was to identify programs which have a positive impact on lowering the rates of overweight and obesity. However, few of these studies were focused on adolescents of high school age (Ages 14-19, Grades 9-12). Therefore, a series of criteria were put in place which limited the scope of the review. Of the articles reviewed, those that made reference to programs prior to 1990 were omitted, as were studies that were not student centered, high school based interventions or listed student centered, high school based interventions.

The final number of studies and comprehensive literature reviews/meta-analyses which focused on student centered, high school based initiatives was four (Flynn et al.,

2002; Neumark-Sztainer, Story, Hannan, & Rex, 2003; Hergenroeder et al., 1993; and Doack, Visscher, Renders, & Seidel, 2006). Of these, two were meta-analyses, one was an alternative physical education program for females only, and one was not well defined (Flynn et al., 2006; Neumark-Sztainer, Story, Hannan, & Rex, 2003; Hergenroeder et al., 1993; and Doack, Visscher, Renders, & Seidel, 2006). The only study of a single program that was uncovered was the New Moves program reported by Neumark-Sztainer, Story, Hannan, and Rex (2003). This program was also among the few high school based physical activity programs referenced in the Flynn et al. (2006), meta-analysis.

The first of the two meta-analyses, reported finding over 500 relevant articles on the prevention of obesity in children (Flynn et al. 2006). Of the over 500 articles, 21 studies were identified that focused on the secondary school setting that were deemed to be effective programs and of these 21 studies, two with a physical activity component were reported to have taken place since 1990 (Flynn, 2006). The two studies were the New Moves program reported by Neumark-Sztainer, Story, Hannan, and Rex in 2003 and an assessment study of skin fold measurements, oxygen uptake, and exercise in adolescents reported by Hergenroeder et al. in 1993.

The second of the two meta-analyses by Doack, Visscher, Renders, and Seidell (2006), reported finding only 25 articles which met their review criteria, which was primarily those programs which could be implemented on a large scale. Of the 25 articles only one study had a population of high school aged persons was reported in 1988 which did not meet the review criteria.

Of the two studies which met the review criteria of this literature, the New Moves program was limited in scope and generalizability (Neumark-Sztainer, Story, Hannan, & Rex, 2003). New Moves is a high school based physical activity program focused initiative for adolescent females. The study consisted of 201 adolescent females in six schools. Three of the schools were selected as intervention schools with 89 participants among the three schools and three schools served as control schools with 112 female adolescents in the control group (Neumark-Sztainer, et al.). The intervention consisted of a girls-only alternative physical education class in which girls were physically active four days per week for 16 weeks. In addition to instruction on physical activity students were taken on field trips, received social support and instruction on healthy eating and nutrition (Neumark-Sztainer, et al.). The authors of this report noted that at one year after the conclusion of the program, the three intervention schools continued to offer girls only physical education classes which were similar to the New Moves program. However, one aspect of the study is of particular interest; at the conclusion of the study there were no significant differences among any of the measurable factors reported between the intervention and control groups (Neumark-Sztainer, et al.).

As suggested in the literature, the rates of childhood overweight and obesity are at epidemic high proportions. An examination of the literature concerning the rates of physical activity among high school aged adolescents indicates that the rates physical activity have stabilized over the past ten years. The number high school students who are active in physical education class being far below the national health objectives.

The literature also suggests that teacher self-efficacy is strong predictor of student success when properly assessed. However, no studies with positive results were presented that assessed teacher self-efficacy as it relates to teaching physical education.

The literature on assessing competence and capacity in relation to physical education is significantly lacking and presents an area that needs to be further explored. But, when taken out of context, the dimension of capacity reported by Goodman et al. (1998) can and should be applied to high school based physical activity programs.

The results of the literature review also reveal a significant gap in the reporting of effective high school based physical education programs that address or are related to childhood overweight and obesity prevention. The one program that was found to be effective, in truth was not effective in terms of providing statistically significant outcomes between the intervention and control groups, but it did yield positive results which could be replicated.

Purpose of the Research

The purpose of this research was two-fold; to provide evidence of effectiveness of *Project ESCAPE 25-Alive*, and to examine the relationships among levels of teacher adoption of the *Project ESCAPE 25-Alive* program, self-efficacy of the physical education teachers related to the implementation of *Project ESCAPE 25-Alive* program, and the observed changes in the health promoting physical activity level (HPPAL) of the students.

Research Questions

To accomplish the purposes of this study, the following research questions were addressed:

1. Was there a significant change in health promoting physical activity level of the students exposed to the *Project ESCAPE 25-Alive* program in the first year of the program?
2. What was the relationship between the level of teacher adoption, teacher self-efficacy, and the health promoting physical activity levels of the students exposed to the *Project ESCAPE 25-Alive* program?

Theoretical Framework

The theoretical framework for this research study is informed by the Social Cognitive Theory (SCT) (Bandura, 1986) and Diffusion of Innovations Theory (Rogers, 1995). SCT has been the most frequently cited as a basis of understanding and modifying the behaviors associated with issues surrounding childhood overweight (Davison & Birch, 2001; Trevino, Pugh, Hernandez, & Menchaca, 1998; Campbell, Walters, O'Meara & Summerbell, 2001). The SCT concept of self-efficacy is at the core of the model that was used to guide this research. The SCT construct of "self-efficacy," is defined as the individual's confidence in his or her ability to take action and maintain the desired change (Bandura, 1986; Baranowski, Perry, & Parcel, 2002). If an individual, for example a child, wants or needs to lose weight, the self-efficacy of not only the child, but of the parents and or teachers comes into play. Some would argue these adults are part of the environment, but since these adults are often responsible for

the oversight of the child's behavior, their ability to change and maintain a healthier environment for the child directly impacts the change in behavior with the goal of losing the weight (Wheatley, 2005). Therefore, the focus on self-efficacy shifted to examine teacher self-efficacy. Teacher self-efficacy refers to the individual teachers' belief in their ability to influence student outcomes. While this is often and easily confused with actual teaching effectiveness, teachers' self-efficacy beliefs may underestimate, overestimate, or accurately reflect actual teaching effectiveness (Wheatley, 2005).

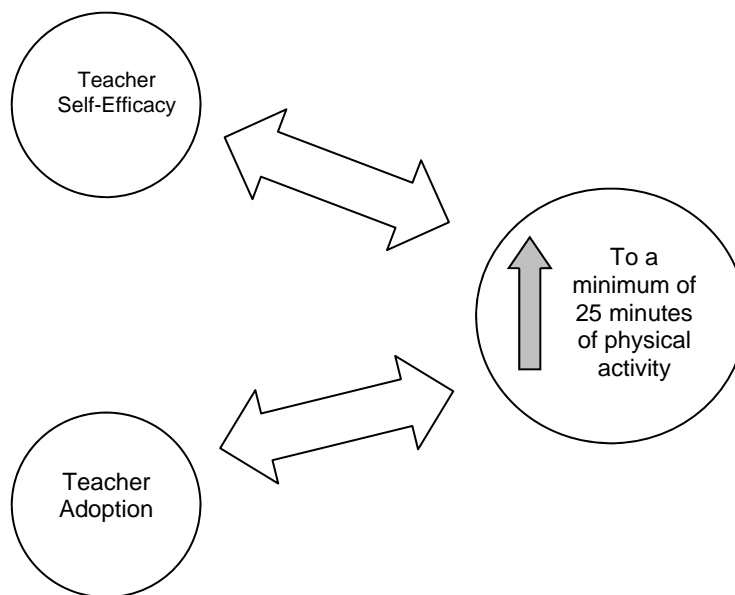
The second theory to be applied to this study is Diffusion of Innovations (Rogers, 1995). Diffusion of Innovations theory analyzes and helps to explain the adoption of new ideas or practices by members of a social system. Diffusion is a process in which an innovation (a new idea, practice, or object) is imparted over time. There are four main elements in the diffusion of innovations theory as proposed by Rogers: the innovation, the communication channels, time, and a social system (Rogers, 1995).

The innovation element was the focus of assessment of the level of teacher adoption of the *Project ESCAPE 25-Alive* program. This program was conceptually a new idea in the district, requiring a change in practice by physical education teachers at the high school level. The communication channels are avenues of information transfer between and among the leadership of the school district and the physical education teachers of the district. Some of these channels include teacher in-services and trainings, e-mail, mail, and policy enforced by the principals. The time frame for the diffusion process in this case is three years, beginning January 1, 2005. The social system is the school system of the school district which in part is made up of the continuous

interaction between the physical education teachers themselves, their supervisors, and the policies that guide their practice.

A theoretical model of the *Project ESCAPE 25-Alive* program is presented in Figure 1. This model graphically depicts the relationship of the variables associated with *Project ESCAPE 25-Alive* with each other. It was theorized that teacher self-efficacy and teacher adoption had a positive influence on the physical activity levels of the students exposed to the program.

Figure 1 Project ESCAPE 25-Alive Theoretical Model



Methods

This study consisted of two separate methodologies, one for study of teacher self-efficacy and one for study of the evaluation data collected by the school district. The methods of data collection for each study are herein reviewed.

Teacher Self-Efficacy

This study examined the physical education teacher's self-efficacy as it related to teaching ability, classroom management, and influence on the student's health promoting physical activity level. A survey was developed (See Appendix C) based on the teaching efficacy scale developed by Woolfolk and Hoy (1990) and based on the Social Cognitive Theory by Albert Bandura (1986). This survey included two main subscales, one based on personal efficacy and one based on teaching efficacy. This survey was tested in the late fall of 2005 and early spring of 2006 with approval from the Texas A&M University Institutional Review Board. The testing of the instrument prior to implementation allowed for the validity and reliability of the modified instrument to be established.

The teacher self-efficacy survey consisted of 14 questions divided into two separate subscales. The responses to each question of the subscales was assigned a numeric value from 1-6 with the highest value associated with the most positive response. The corresponding subscale scores were then summed to obtain an overall score for the teacher self-efficacy survey in which higher scores were associated with a more positive level of teacher self-efficacy.

Data Collected by the School District

Officials from the school district, in which the *Project ESCAPE 25-Alive* program was developed and implemented chose multiple aspects of the program to evaluate. The district officials chose to evaluate the levels of teacher adoption of the program using the teacher adoption survey, the changes in activity levels of the students

as a result of the changes made in the classroom by the teacher, and the student response to the changes in way the physical education classes were conducted.

Teacher Adoption Survey

The teacher adoption survey consisted of 55 questions divided into 11 separate subscales, or sections and five demographic questions. The responses to each question of the subscales was assigned a numeric value from 1-5 with the highest value associated with the most positive response. The corresponding subscale scores were then summed to obtain an overall score for the Teacher Adoption survey in which higher scores were associated with a purported higher level of program adoption of *Project ESCAPE 25-Alive*. The teacher adoption survey was given to each of the high school physical education teachers in the school district. Nineteen of the 26 teachers returned the completed survey after receiving two reminders from school district officials.

Observation of Student Activity Level and Student Response

In-class monitoring was conducted to assess the extent to which teachers had implemented *Project ESCAPE 25-Alive* and the extent to which students were engaging in moderate to vigorous physical activity. The monitoring process involved gathering and analyzing data at both the individual and class level. Two measures, or components, were the focus of this monitoring process:

Component 1 – class observation, by trained outsiders, of health promoting physical activity level;

Component 2 – student self-reports of health promoting physical activity level;

The first component was that of class observation. Evaluation researchers trained volunteers from Texas A&M University and the school district to observe each of the selected classes. The training consisted of round table discussions of the purpose and methods of evaluation, as well as one-on-one onsite field training. The one-on-one onsite field training paired new evaluators with experienced evaluators who both observed a single class. The paired evaluators then compared notes taken during the observation and discussed differences in order to assure consistency.

The trained evaluators then conducted the observations using a simple form as a guide for class level evaluation developed by TAMU (See Appendix D), the evaluators made note of the time the class actually began and ended, the type activity selected for the day, the number of teachers present (including substitutes) as well as any unforeseen situations such as fire drills that may have occurred. The evaluator then began to make observations of the class every two minutes. They were trained to look for and record the type of activity the students were engaged in, as well as the level of intensity, and the number students engaged in the activity.

The second component was done in addition to observing and recording the activities of the class and involved a short student report form that was distributed during the first two formal observations at the conclusion of the day's physical education activities. During these two time periods, over 900 students self report surveys were distributed, collected, and analyzed to gain a student perspective of the physical education experience in the school district. The student self report consisted of a simple six question instrument that was used to gain insight into the student's perceived level of

exertion, overall feeling, and attitude towards the class. The student's perceived level of exertion was reported by students using a 0-10 based scale with corresponding statements describing how hard they perceived themselves to have exercised that day in class. This scale was similar to the OMNI scale (Utter, Robinson, Nieman, & Kang, 2002), a simple method by which the student uses a picture and description of the sensation of tiredness. The OMNI scale was selected as a basis for the design of this new instrument because of its proven usefulness in measuring the physical exertion of children (Utter, Robinson, Nieman, & Kang).

Data Analysis

The data obtained from this research study were analyzed in a multi-stage process. The first stage involved the analysis of data collected by the school district. The second stage consisted of the evaluation of the data collected using the teacher self-efficacy survey. Finally the class level observation data collected by the school district was paired with the teacher self-efficacy data in order to test the theoretical model of this study.

Data Collected by the School District

The three aspects of the evaluation data collected by the school district were analyzed separately. The data collected using the teacher adoption survey were first coded by assigning a numeric value to the response of each question. The numeric values ranged from 1-5 with the highest value associated with the most positive response. The data were then entered into a statistical software package and the

corresponding section scores were summed to obtain an overall score for the teacher adoption survey in which higher scores were associated with a purported higher level of program adoption of *Project ESCAPE 25-Alive*.

The data from the student response surveys were also entered into statistical software packages and frequency analyses were completed. This data was then set aside and reported independently of the data used to assess the theoretical model.

The data collected during the class level observations were entered into spreadsheet program and a formula was developed which resulted in a class observation score. This formula, presented in Figure 2, first took the average of the number of students who were engaged in activity at or above a level of seven on the activity scale (See Observation Form, Appendix D) and divided that number by the total number of students who were taking part in the scheduled activity at the time of the observation. This ratio was then multiplied by the amount of time (in minutes) that was spent at or above a level of seven on the activity scale. Seven was considered the level at which health promotion was taking place (e.g., health promoting physical activity level).

The resulting observation score then tells a great deal about each class. For example, in a class of 40 students, if all 40 students were engaged in moderate to vigorous physical activity for a period of 25 minutes, the resulting observation score would be 25. However, if in that same class only 20 of the 40 students were engaged in moderate to vigorous physical activity for a period of 25 minutes, the resulting observation score would be 12.5.

Figure 2 Observation Score

$$\left(\frac{\text{Average No. of Students Engaged at 7 or Greater}}{\text{Average No. of Students Taking Part in the Activity}} \right) \times \text{Amount of Class Time Spent at 7 or Higher} = \text{Observation Score}$$

The observation scores calculated for each class were later used in the third stage of the data analysis process.

Teacher Self-Efficacy Data

The analysis of the teacher self-efficacy data was also undertaken using a multi-stage process. First, the data collected as part of the testing of the survey were entered into a statistical software package and analyzed. To ensure proper entry of the data, a selection of the returned surveys were reentered. Once entered, a frequency analysis was run on the data set as well as a factor analysis. The frequency analysis allowed for an examination of the levels of teacher efficacy and the factor analysis was used to further examine the validity of the instrument, more specifically the construct validity.

Second, the data collected from the administration of the teacher self-efficacy survey with the population of interest were entered into a statistical software package and analyzed. Like the data, the data collected from the population of interest were reentered to ensure proper entry of the data. A frequency analysis was then run with the data to obtain individual response rates and a final teacher self-efficacy score. The final

teacher self-efficacy score consisted of summing the numeric responses to each of the 14 items in the instrument. The data were later used in the third stage of the data analysis process.

Summary

Childhood overweight and obesity rates have climbed in unprecedented ways over the last thirty years and in response to this, an increased number of studies have been conducted to examine the causes of obesity and what should be done to address this issue in children (Davison & Birch, 2001; Joliffe, 2003; Ogden, Flegal, Carroll, & Johnson, 2002; Campbell, Walters, O'Meara and Summerbell, 2001). Based on these studies, a number of recommendations have been made which range from limiting the amount of time children spend watching television to increasing the amount of time children spend engaged in activity during physical education class.

The school district officials at a large urban independent school district identified the physical education classroom as a target for change. District officials identified several gaps and weaknesses in their program that prevent the implementation of high quality physical education that met the standards set by the state. District officials theorized that changes in the way physical education was taught in the schools would result in a reduction of obesity among the students. Thus, district officials developed the *Project ESCAPE 25-Alive* program with the goal of reducing the prevalence of childhood obesity in the school district. Through the program, the staff of the school district revamped the secondary physical education program in order to meet the state and national physical education standards. They did so by enhancing both the

competence and capacity of classroom physical education teachers. While the competence of the teachers was established prior to hiring, it was further expanded through in-service training and feedback from the class observations. Capacity was increased through the purchase of new and better equipment which expanded on the range of activities the teachers could organize for their classes.

To measure such changes, the school district, in collaboration with external specialists, identified some basic measures of improvement. Measurement was taken on the self-efficacy of the teachers, the level of program adoption of the teachers, and basic classroom measurements including the amount of time students actually spent being physically active in P.E. class. Measurements were also taken on the level of exertion of students as observed in P.E. class, and the types of activities taught by teachers that both related to the state and national requirements and were enjoyed by the students

Chapter II consists of a proposed journal article entitled *Lessons Learned from the Evaluation of an Urban Physical Education Program*. Chapter III contains a second article entitled *Teacher Adoption, Teacher Self-Efficacy and Health Promoting Physical Activity Level – Do Intentions Lead to Results*. Chapter IV contains a summary of the overall study, conclusions that were drawn, and recommendations for future studies concerning the physical education classroom in relation to the rise of childhood overweight and obesity.

CHAPTER II

LESSONS LEARNED FROM THE EVALUATION OF AN URBAN PHYSICAL EDUCATION PROGRAM

Physical Education, as part of a coordinated school health program, is an important and vital part of the education process for today's children (Kolbe, 2005). Over the years, the physical education classroom has changed to make room for new technologies and a variety of new methods of teaching. However, one thing that has not changed is the need for physical education teachers to engage their students in health promoting physical activity. Only 34.7% of females and 43.6 % of males are physically active in physical education class (Grunbaum, et al. 2004). Suffice to say, there is room for improvement. To that end, a large urban school district in the Southwest sought and received funding from the U.S. Department of Education (2006) through the Carol M. White Physical Education Program (PEP) for a three year period to make improvements in the physical education classrooms of the high schools within the district. The purpose of this article is two-fold: 1) to highlight important implementation and evaluation components of the funded physical education program, and 2) to share several lessons that were learned in conducting the evaluation of the program.

Project ESCAPE 25-Alive: An Overview of the Program

“Every Step Counts at Physical Education” (ESCAPE), later named *Project ESCAPE 25-Alive*, was the physical education program, funded by the PEP grant, with

the overall purpose of creating systemic change to improve the existing physical education program in the secondary schools of the large urban school district. This change was put in place to facilitate an increase in physical activity among the district's approximate 10,000 high school students, attending eight different high schools.

Project ESCAPE 25-Alive proposed to:

- (1) Increase the level of teacher competence by providing staff and teacher training, and
- (2) Increase the capacity for success of the school district's physical education teachers by providing equipment and support to enable students to participate actively in physical education activities.

Officials in the school district theorized that by increasing teacher competence (teacher training) and capacity for success (administrative support and new equipment), the curriculum of physical education could be modified to include more extensive physical activity, which would lead to health benefits for students.

The Interaction of Competence and Capacity

In theory, *Project ESCAPE 25-Alive* was designed to build the competence of teachers and provide them with the capacity for success, resulting in an improvement in the physical education experiences for the high school students of the school district. Competence is the ability to be successful. Figure 3 illustrates how these two factors interact. Competence in physical education is evident when teachers know how to plan, implement, and assess educational experiences that are consistent with state standards for professional practice (Goodman et al., 1998). Competence is customarily assessed at

the time of teacher hiring, when personnel officers attempt to employ individuals with the knowledge and skills necessary for success on the job. Competence is maintained and developed through in-service training, along with monitoring and evaluation.

Capacity in physical education is necessary for success—the equipment, the space, the time, the support, and the determination for success (Goodman et al., 1998).

A program with the capacity for success includes: reasonable class size, adequate time, appropriate equipment, and administrative support (i.e., support from the Principal).

Figure 3 The Interaction of Competence and Capacity

	High Competence	Low Competence
High Capacity	When highly competent teachers are given the capacity to be successful, they usually are. This is what the program strives to accomplish.	Even if teachers are provided with all the materials and support that they want, low competence can lead to poor programs and wasted resources. This situation should be avoided.
Low Capacity	Occasionally, a competent teacher can be successful despite the lack of materials and support, but it is highly unusual. This is a situation that should be avoided.	When teachers of little competence are given little to support their work, there is little possibility for success. This situation should be avoided.

Competence and capacity interact to assure the greatest potential for success. Low competence and a low capacity interact as well to limit potential for success. By building the competence and capacity of physical education teachers, *Project ESCAPE 25-Alive* provided optimal conditions for change in the physical education program. Evidence of this change was the observed increase in physical activity level of students in physical education classes.

The purpose of the *Project ESCAPE 25-Alive* program was grounded on the concept of “health promoting physical activity level.” Health promoting physical activity level corresponded to the current recommendation from the U.S. Department of Health & Human Services and U.S. Department of Agriculture (2005). These agencies recommend that students take part in activities that will allow them to exercise at a moderate to vigorous level of intensity. Moderate to vigorous intensity physical activity is defined as any activity that children and adolescents take part in that allows them to exercise at levels which result in an elevation of their heart rate to 50% – 70% of their maximum (U.S. Department of Health & Human Services and U.S. Department of Agriculture, 2005). Although it is recommended that children and adolescents strive for 30 minutes of such activity daily, district officials opted to set a goal of 25 minutes to accommodate available time in their physical education classes. This time on task measure is in accordance with *Healthy People 2010*, objective 22-10, which indicates a desire to increase the proportion of students who are physically active at least half the time they are in PE class to a level of 50% or greater (US Department of Health and Human Services, 2000). Since the physical education period in the school district was

55 minutes in length, 25 minutes of physical activity was selected as the threshold of acceptable behavior to comply with the previously stated Healthy People 2010 objective.

Evaluation Methods

The evaluation of *Project ESCAPE 25-Alive* focused primarily on the physical activity of students in class. The level of physical activity and any change in that level were established through class observation. Using a standardized process, trained evaluators were able to make notes about the time the class began and ended, the type of activity selected for the day, the number of teachers present (including substitutes), as well as any unforeseen situations, such as fire drills, that may have occurred. Also, using a standardized form, the evaluator made notes about the type of activity the students were engaged in, as well as the level of intensity and the number of students engaged in the activity. The levels of intensity, which ranged from sedentary to moderate to vigorous, were standardized based on the guidelines set forth by the National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition and Physical Activity (1999).

Data collected using the observation forms were then used to assign a class observation score. The class observation score placed a numeric value on the observed levels of activity in relation to the amount of time actually spent on activity, as well as the percentage of the class engaged at those higher levels of activity. A scale of 1-10 was used by observers to estimate physical activity level of students. A formula was developed that first took the average of the number of students who were engaged in activity at or above a level of seven on the activity scale and divided that number by the

total number of students who were taking part in the scheduled activity at the time of the observation (See Figure 4). The level of seven serves as the midpoint between activity deemed as moderate and activity deemed as vigorous. This ratio was then multiplied by the amount of time (in minutes) that was spent at or above a level of seven on the activity scale. Seven was considered the level at which health promotion was taking place (e.g., health promoting physical activity level).

Figure 4 Class Observation Score Formula

$$\left(\frac{\text{Average No. of Students Engaged at 7 or Greater}}{\text{No. of Students Taking Part in the Activity}} \right) \times \text{Amount of Class Time Spent at 7 or Higher} = \text{Observation Score}$$

For example, in a class of 40 students, if all of the students were engaged in moderate to vigorous physical activity for a period of 30 minutes, the resulting observation score would be 30. However, if in that same class only 20 of the 40 students were engaged in moderate to vigorous physical activity for a period of 30 minutes, the resulting observation score would be 15. This example is presented in Figure 5.

Figure 5 – Class Observation Score Formula Example

$\frac{20 \text{ Students on average Engaged at 7 or Greater}}{40 \text{ Students Taking Part in the Activity}}$	$30 \text{ Minutes of Class Time Spent at 7 or Higher} = 15$
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Lessons Learned

The evaluation of Project ESCAPE 25-Alive resulted in many lessons learned. Among those were the following: (1) Class observation has a powerful influence on teacher practice; (2) Teacher training does make a difference; (3) New equipment does not guarantee success; (4) Evaluation need not be burdensome; and (5) The public school is a lousy laboratory.

Lesson 1: Class Observation Has a Powerful Influence on Teacher Practice.

In-class monitoring was conducted as a part of the *Project ESCAPE 25-Alive* evaluation plan. Monitors were looking for evidence that teachers were implementing the program, and for evidence that students were engaging in moderate to vigorous physical activity as dictated by the program. This process of having external evaluators observe and report yielded an unintended result—teachers, as the project proceeded, tended to change their lessons, not so much to adhere to the guidelines of the program, but to impress the external evaluators.

Evidence of this fact was found when comparing the reports of the evaluators. During the first observation, which the school district considered to be the baseline measure for assessing change in the activity levels exhibited in the classroom, only one class, of the 14 observed, had students who were exercising at a moderate to vigorous level of physical intensity for an observable length of time. The number of classes that increased their health promoting physical activity level rose during the second observation and third observations, with seven of fourteen classes exhibiting measurable levels of health promoting physical activity in the second observation and six of fourteen classes during the third observation. To illustrate the point, during the first observation, teachers were not aware that an evaluator would be observing their class. The observation, therefore, was unannounced. Observers found very little moderate to vigorous physical activity taking place in the first-round of class observations. Prior to observations two and three, however, teachers were given notice that observers would be in their classroom. Those observations yielded much more evidence of moderate to vigorous physical activity. During the second and third observations, some teachers were observed modifying their planned activity “on the spot” when observers arrived, thus ensuring that measurable levels of physical activity were evident in their classes.

District officials theorized that the reason for the increase in physical activity was not only related to an increase in adoption of *Project ESCAPE 25-Alive* by teachers, but also to the presence of the outside evaluators. It appeared that when teachers knew they were being observed, they conducted class in a manner that engaged students in

moderate to vigorous physical activity—a primary goal of the project. When they were not being observed, they tended not to do so.

Lesson 2: Teacher Training Does Make a Difference

One of the goals of *Project ESCAPE 25-Alive* was to increase teacher competence by providing training. At the conclusion of the second year of the program, it was evident that those teachers who attended training sessions were the same teachers who were observed conducting classes that engaged students in moderate to vigorous physical activity.

Over the course of the academic school year, all high school physical education teachers of the school district were provided paid opportunities to take part in training activities. These training activities taught them the goals and objectives of *Project ESCAPE 25-Alive*, as well as specific new teaching techniques and activities that could be incorporated into the classroom. Training was provided on the use of new equipment bought in conjunction with the project. The trainings were held at different times throughout the year, and in various locations around the district in order to accommodate the teachers.

A specific example of the impact of teacher training involves the concept of station drills. Station drills consist of students rotating through a variety of exercise stations ranging from cycling or jumping rope to performing sit-ups or drills with medicine balls. District officials hired physical education specialists to provide training on how to set up and teach these drills to students. Those teachers who attended the training readily incorporated the new technique in the classroom, especially on days in

which external evaluators were present. Those who did not attend the trainings seldom used the new techniques or have their students actively involved in activity, and while this does suggest a degree of self-selection bias it does help to re-iterate the point that teacher training does make a difference.

Lesson 3: New Equipment Does Not Guarantee Success

Equipment and materials were provided to assure that each participating school had access to high-quality items that teachers would use to enhance the health promoting experiences of students. Such new equipment was considered essential to the goal of building capacity for success among physical education teachers. To increase this capacity, the school district spent a large sum of money on new equipment for the district. Much of that new equipment was placed in the eight high schools of the district. Teachers were given some choice in the type and amount of equipment provided, and while some teachers chose to receive an extensive amount of equipment, others chose to limit the amount. This new equipment included, heart rate monitors, step-aerobic equipment, free weights, weighted jump ropes, sound systems, stationary bicycles, and other equipment desired by the individual teachers. For example, heart rate monitors were provided to all teachers through *Project ESCAPE 25-Alive*. These, however, were used sporadically. One classroom monitor observed a teacher opening a heart rate monitor box for the first time, seemingly for the purpose of appearing to be familiar with the equipment. The students in the class that day were unfamiliar with the equipment and unable to use it to its potential. Fortunately, this was not a common observance. It was evident that teachers who knew how to use equipment did so. And, when teachers

were observed not using equipment, a primary reason was that they had yet to understand how to use that equipment, even though training on the proper use of the new equipment was provided.

During the monitoring process, all classroom monitors reported evidence of equipment being used. The extent of usage, of course, changed over time. At the beginning of the project, there was less evidence of equipment usage because equipment had just been received or was not yet received. Also, early in the project, teachers had not been trained on the use of the new equipment. As time progressed, however, virtually all classroom monitors reported seeing equipment used that was purchased with funds from *Project ESCAPE 25-Alive*. After two years, however, some teachers did not take advantage of the available equipment.

Buying equipment, therefore, is no guarantee that teachers will change their practice in a way to assure increased physical activity of students. And, the importance of training on the use of that new equipment is evident.

Lesson 4: Evaluation Need Not be Burdensome

This large urban school district in which *Project ESCAPE 25-Alive* was introduced was no stranger to program evaluation. The district was accustomed to having external evaluators present in the classroom. Over the past ten years, a number of grant funded studies had been conducted in the school district and demanded extensive data collection. In fact, because of the previous studies, the *Project ESCAPE 25-Alive* evaluators intentionally minimized the evaluation burden of the project. The

evaluation plan was designed to be minimally intrusive, and in the end, focused primarily on evidence of physical activity in the physical education classroom.

For example, the process used in the classroom observations originally consisted of silently observing the class, and at the end of the class, distributing a short assessment form to the students. This student form was designed to gain the perspective of the students in relation to the new program. However, after the first round of observations, the student form was dropped from the evaluation process, in part due to the amount of time required to complete the assessment form, but also due to fears expressed by district officials that the assessment would be viewed as a survey, which necessitated parent permission slips. By withdrawing the student survey from the evaluation plan, the burden of the process on the teachers and students was lessened to the point that they could focus on the activity rather than the observer.

The results of the evaluation project were informative, and did verify the effectiveness of the program in increasing the physical activity of students in physical education classes. Evaluation burden is a constant concern of evaluators. In the *Project ESCAPE 25-Alive* program, valid and reliable information was acquired with minimum burden to the teachers, the staff, and the students of the district.

Lesson 5: The Public School is a Lousy Research Laboratory

The evaluation of *Project ESCAPE 25-Alive* was met with a number of limitations, which could have been controlled if the project has been carried out in the laboratory setting. However, this was the “real” world, not the “ideal” world.

The evaluation took part in a single school district. With only one school district taking part in the evaluation, the study sample was relatively homogenous, thus limiting the generalizability of the findings. The *Project ESCAPE 25-Alive* program also was implemented district wide. This level of implementation did not allow for the development of a control or comparison group. Thus, the degree of change in health promoting physical activity level directly attributable to *Project ESCAPE 25-Alive* could not be quantified in a controlled trial. These limits to the research design prevented the use of an experimental design, but did not prevent evaluators from finding evidence of effectiveness of the program.

Limitations included unanticipated changes in the observation schedule. It was not uncommon for district officials to change schedules (to accommodate unexpected events, such as equipment failures), for staff to change (teachers to be reassigned), for schools to change schedules (to schedule standardized testing with no advance notice), or for teachers to call in sick and substitutes to be found teaching. These realities of public schools inhibited carefully controlled data collection. The public schools are not good laboratories for research. Yet, much can be learned by conducting work inside schools. The *Project ESCAPE 25-Alive* provided evidence that despite the barriers presented by the real-world environment, lessons can be learned, and change can be accomplished.

Discussion

The designers of *Project ESCAPE 25-Alive* set out to positively influence the way physical education was conducted in the school district. They did so by enhancing

both the competence and capacity of classroom physical education teachers. The lessons learned in this process verify that, not only was the project effective in changing the way physical education was conducted in the district, but also the observed change could be reasonably credited to specific activities of the project staff and evaluation team.

The first lesson concerning the influence of observers in the class is good news for the program developers that can afford to monitor classes. This lesson suggests that teachers are capable of conducting physical education in a manner that engages students in moderate to vigorous physical activity, and that they will do so if held accountable. Teachers may be “performing” for the monitor, but such performances are positive evidence of competence. Class observation indeed does have a powerful influence on teacher practice.

The second lesson, that teacher in-service training makes a difference, is not news to physical education program leaders. For several generations of physical education teachers, participating in teacher training has been an important element of professional practice. The evaluation of *Project ESCAPE 25-Alive* verifies that this should continue, and a special effort should be undertaken to assure that all physical education teacher participate in in-service training.

Lesson three, new equipment does not guarantee success, presents a caution to physical education program leaders. When new equipment is introduced into the classroom, one of three things can happen. One, it gets left in the box and “saved” for use at a later time by protective teachers who want to get the most out of its use. Two, it gets opened up and used, but not properly. And, three, teachers open up the equipment

and use it properly. New equipment is an added benefit to the task of improving capacity and moving towards the goals of increasing both competence and capacity within a physical education program.

Lesson four is evaluation need not be burdensome. When evaluation is viewed to be burdensome, both quality and quantity are negatively affected. Evidence from previous school based programs indicates that the more complex the evaluative aspects of a program are, the lesser the likelihood of the program being sustainable after the initial grant funded period (Davison & Birch, 2001; Joliffe, 2003; Ogden, Flegal, Carroll, & Johnson, 2002; Campbell, Walters, O'Meara and Summerbell, 2001).

Project ESCAPE 25-Alive, a new, grant funded program in the school district was designed not to be a sustainable and non-burdensome process once the funding cycle was completed.

Finally, lesson five suggests that the public school is a poor laboratory. The school environment is nothing like the conventional laboratory setting, and anyone who thinks otherwise, obviously has not conducted research in the school environment. The researcher must understand that the school environment has the capability to change at the proverbial drop-of-a-hat. That is, even with the most comprehensive evaluation plan in place, and agreed upon, something can and will go wrong. However, in spite of these potential problems, proper evaluation and research must be conducted in schools.

Project ESCAPE 25-Alive facilitated a significant increase in the health promoting physical activity levels of high school students of a large urban district. Because of this significant increase, *Project ESCAPE 25-Alive* could potentially serve as

a model for other school districts in how to facilitate significant change in the physical education classroom environment.

CHAPTER III

TEACHER ADOPTION, TEACHER SELF-EFFICACY AND HEALTH PROMOTING PHYSICAL ACTIVITY LEVEL – DO INTENTIONS LEAD TO RESULTS?

Improving the current and life-long health of today's youth often occurs through changes within a school physical education program. Much of this change takes place by implementing a new curriculum or guidelines that the teacher is to follow in addition to their current, state mandated curriculum. To measure the impact of any new curriculum or guideline, changes in student performance are an important criterion, as is instilling a positive attitude about lifelong physical activity. The success of a new program is often dependent upon a number of other factors including “buy-in” from teachers, school administrators, parents, and students (King & Newmann, 2001). In the physical education classroom, a key measurement of success is an increase in students' health promoting physical activity.

The purpose of the present study was to assess if teacher adoption of a new physical education program and teacher self-efficacy had an effect on the health promoting physical activity level of students. *Project ESCAPE 25-Alive* was designed to create a systemic change that would improve the existing physical education program in the high schools of an urban school district in the southwestern United States. With funding from the U.S. Department of Education Carol M. White Physical Education Program grant, *Project ESCAPE 25-Alive* was designed to give teachers the resources and students the knowledge and skills to develop healthy lifestyles.

Significance of the Program

The benefits of increased physical activity are well documented (Sallis & Patrick, 1994). Research indicates that moderate-to-vigorous physical activity leads to improvements in muscular strength, flexibility, and endurance (Sallis & Patrick). Physical activity also reduces obesity, alleviates depression and anxiety, and helps to build bone mass. These are measures that relate to general health. As adolescents grow into adulthood, physically fit individuals become less likely than sedentary individuals to develop hypertension, diabetes mellitus, and a number of cancers (as cited in Sallis & Patrick, 1994). Because of the known benefits of physical activity, the International Consensus Conference on Physical Activity Guidelines for Adolescents (Sallis & Patrick) recommended that “all adolescents...be physically active daily” (p. 302). Furthermore, this Consensus Conference recommended that “adolescents engage in three or more sessions per week of activities that last 10 minutes or more at a time and that require a moderate to vigorous level of exertion” (as cited in Sallis & Patrick, p. 303). The *Project ESCAPE 25-Alive* initiative sought to engage students in health promoting physical activity for 25 minutes during each physical education class (thus, the name 25-Alive) to achieve optimal health outcomes from physical activity.

Project ESCAPE 25-Alive: An Overview of the Program

Project ESCAPE 25-Alive, was designed to change the physical education curriculum and environment in order to advance the existing physical education program in the secondary schools of the San Antonio Independent School District (SAISD).

Project ESCAPE 25-Alive was also designed to improve the level of physical activity of the students.

Through the *Project ESCAPE 25-Alive* program SAISD officials proposed to:

- (1) Increase the capacity of the school district by providing equipment and support to enable students to participate actively in physical education activities,
- (2) Increase the level of teacher competence by providing staff and teacher training in order to make progress toward meeting the state standards for physical education, and
- (3) Give students the knowledge and resources needed to develop healthy lifestyles.

An external evaluator was retained to provide guidance in the evaluation of the grant funded project. The evaluation component of *Project ESCAPE 25-Alive* provided the basis for the present study.

Because of the focus on physical activity, the concept of health promoting physical activity was developed and defined as any activity that resulted in students taking part in moderate-to-vigorous intensity physical activity daily. Officials in the SAISD theorized that, the curriculum of physical education could be modified to include more extensive physical activity that would lead to health benefits for students. This could be accomplished by increasing teacher competence and organizational capacity. The outcomes of this program included improved health and well-being (i.e., reduced

obesity, reduced diabetes, and improved fitness among secondary-level students in the school district).

Methods

Sample and Setting

Project ESCAPE 25-Alive was implemented in eight high schools in SAISD.

The annual enrollment of SAISD is approximately 10,000 students at the high school level, each of whom takes part in a physical education for a time period of three semesters throughout their academic high school career. The sample for the evaluation process consisted of 26 high school physical education teachers and their respective students enrolled in physical education classes in SAISD.

Study Design and Procedure

The present study consisted of two separate methodologies, one for the direct observation of the physical education classroom, and one for the collection of survey data from the teachers. Data were collected using the teacher adoption and teacher self-efficacy surveys. In the following narrative each methodology, including instrument development and data collection techniques are described.

Observation of the Physical Education Classroom

In-class monitoring was conducted to assess the extent to which teachers had implemented *Project ESCAPE 25-Alive* and the extent to which students were engaging in moderate-to-vigorous physical activity during the physical education class period. To guide the process and minimize bias among evaluators a standardized evaluation form

was developed by the project evaluators. The form facilitated trained evaluators to make notes about the time the class began and ended, the type activity selected for the day, the number of teachers present (including substitutes) as well as any unforeseen situations, such as fire drills, that may have occurred. Also included within the form was an area in which the evaluator could make notes about the type of activity in which the students were engaged as well as the level of intensity, and the number students who were engaged in the activity. The levels of intensity, which ranged from sedentary to moderate-to-vigorous, were standardized using the guidelines set forth by the National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition and Physical Activity (1999). The scores utilized in *Project ESCAPE 25-Alive* and examples of activity are presented in Table 1.

Table 1 – Intensity Scores and Examples

<i>Intensity Level Score</i>	<i>Intensity Level (Sedentary, Moderate, or Vigorous)</i>	<i>Example of type of Activity</i>
0	Sedentary	Sitting on floor
1	Sedentary	Standing in line
2	Sedentary	Walking Slowly (Less than 3 mph)
3	Sedentary	Calisthenics—push-ups, pull-ups, little or no effort
4	Moderate	Basketball—shooting baskets*
5	Moderate	Weight training using free weights*
6	Moderate	Softball—fast pitch or slow pitch*
7	Vigorous	Jogging*
8	Vigorous	Calisthenics—push-ups, pull-ups, vigorous effort*
9	Vigorous	Running*
10	Vigorous	Basketball game*

* National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition and Physical Activity (1999).

Data collected using the observation forms were then used to assign a class observation score to each class observed. The class observation score consisted of determining a numeric value for the observed levels of activity in relation to the amount of time actually spent in activity as well as the percentage of the class engaged at those higher levels of activity.

A formula was developed (See Figure 6) that first took the average of the number of students who were engaged in activity at or above a level of seven on the activity scale and divided that number by the total number of students who were taking part in the scheduled activity at the time of the observation. The level of seven was mid point between activity deemed moderate and activity deemed vigorous. This ratio was then multiplied by the amount of time (in minutes) that was spent at or above a level of seven on the activity scale. Seven was considered the level at which health promotion was taking place (e.g., health promoting physical activity level). The maximum score possible using the formula was 55, and the minimum desired score was 25, based on goals of the project.

Figure 6 Class Observation Score Formula

$$\left(\frac{\text{Average No. of Students Engaged at 7 or Greater}}{\text{No. of Students Taking Part in the Activity}} \right) \times \text{Amount of Class Time Spent at 7 or Higher} = \text{Observation Score}$$

For example, in a class of 40 students, if all of the students were engaged in moderate to vigorous physical activity for a period of 55 minutes, the resulting observation score would be 55. However, if in that same class only 20 of the 40 students were engaged in moderate to vigorous physical activity for a period of 30 minutes, the resulting observation score would be 15 (See example in Figure 7).

Figure 7 – Class Observation Score Example

$\frac{20 \text{ Students on average Engaged at 7 or Greater}}{40 \text{ Students Taking Part in the Activity}}$	$30 \text{ Minutes of Class Time Spent at 7 or Higher} = 15$
--	--

Over the course of the 2005-2006 academic school year, three sets of 14 classroom observations were made in the school district resulting in 42 total observations. Because this was a new project, this first round of observations, conducted in November of 2006, served as the baseline measurements for the district. The same classes were also observed during the second and third observation periods in the district, which took place in February and May of 2006 respectively. The maximum class observation score possible was 55, with a desired score goal of 25 or higher, as determined by the project evaluators in conjunction with the leadership of the school district. A summary of all scores used in the present study are presented in Table 2.

At the conclusion of each of the data collection periods, the data were entered into a statistical analysis software package where frequency analyses were calculated. The frequency analyses allowed both researchers and school district officials to quickly identify schools that needed to make changes in their programs to better impact the health promoting physical activity level of students in those schools.

Table 2 Summary of Present Study Scores

<i>Instrument</i>	<i>Minimum Desired Score</i>	<i>Maximum Score</i>
Teacher Adoption Survey	N/A	275
Teacher Self-Efficacy Survey	N/A	84
Class Observation Sheet	N/A	55

Self-Efficacy Survey

The self-efficacy survey was designed to assess the physical education teacher's self-efficacy as it related to teaching ability, classroom management, and influence on the student's health promoting physical activity level. The teacher self-efficacy survey was based on the teaching efficacy scale developed by Woolfolk and Hoy (1990) and also was based on the Social Cognitive Theory (Bandura, 1986). The survey consisted of 14 questions based on personal efficacy and teaching efficacy.

This survey was pilot tested in the spring of 2006 with approval from the Texas A&M University Institutional Review Board. The pilot testing of the instrument prior to implementation allowed for the validity and reliability of the modified instrument to be

established. First, five professional school health researchers were selected to review the instrument and provide feedback. Second, the survey was distributed to 42 pre-service health educators enrolled in an undergraduate program evaluation class. The pre-service health educators were given the survey to help determine the reliability of the instrument. Cronbach's reliability coefficients for two pilot tests conducted with the instrument were .68 and .69.

The analysis of the teacher self-efficacy survey involved a simple frequency analysis to assess the level of teacher self-efficacy as it related to the teaching of physical education. The responses to each question were assigned a numeric value from 1-6 with the highest value associated with the most positive response. The scores were then summed to obtain an overall score for the teacher self-efficacy survey in which higher scores were associated with a more positive level of teacher self-efficacy. The maximum score possible on the teacher self-efficacy survey was 84.

Teacher Adoption Survey

The assessment of the level of teacher adoption of *Project ESCAPE 25-Alive* was undertaken using the teacher adoption survey developed by Pruitt (2005) and was adapted from the principal adoption survey developed by Wilson (2004). The original scoring was based on the Diffusion of Innovations Theory (Rogers, 1995). This survey was created to assess the level of adoption of *Project ESCAPE 25-Alive* by teachers within the selected school district and because *Project ESCAPE 25-Alive* was conceptually a new idea, requiring a change in practice by physical education teachers at the high school level.

The teacher adoption survey consisted of 55 questions separated into 11 sections. Also included were five demographic questions. The sections contained questions about teachers' perceptions of the relative advantage of the new program, the complexity of the program (as influenced by professional beliefs and personal beliefs), the trial nature of the program, and the compatibility of the program with existing practices.

The responses within each section were assigned a numeric value from 1-5 with the highest value (5) associated with the most positive response depending upon the nature of the question. The coded responses were then summed to obtain an overall score for the level of teacher adoption with the maximum score possible being 275. Cronbach's reliability coefficient was calculated each time the survey was distributed, and at each administration, the results were above 0.92.

Results

The results from the classroom observations and each of the surveys are presented below. These results were later used to determine the correlation between the levels of teacher adoption and teacher self-efficacy with that of the observed levels of moderate-to-vigorous physical activity in each class. To calculate such correlations the data from the two surveys had to be matched with each of the teachers observed.

Classroom Observations

As previously stated, three separate, formal observations were made within each of the districts eight high schools. The maximum class observation score possible was

55, with a desired score goal of 25 or higher, as determined by the project evaluators in conjunction with the leadership of the school district.

In the first observation, students in only two of the classes observed exhibited activity levels considered to be health promoting, based on the scoring formula. The scores obtained were far below the desired goal. Most teachers did not conduct classes that produced physical activity at or above a level of seven on the date of observation.

The results from the second round of observations were a little better with students in six classes exhibiting activity levels which could be considered health promoting. However, the scores for this observation ranged from 2 – 22 respectively with no single class reaching the desired score of 25. At the third observation, the number of students in classes exhibiting activity at or above a level of seven using the *Project Escape 25-Alive* activity scale, rose to seven. The range of the scores for the third observation was 6 – 28, with students in one class exceeding the desired score of 25. The raw data from the classroom observations are presented in Table 3.

Teacher Self-Efficacy Survey

Of the 26 eligible high school physical education teachers in the San Antonio Independent School District, 19 teachers returned the teacher self-efficacy survey. This yielded a response rate of 73%. However, only 17 of the 19 surveys were used in the analysis due to an inability to match the teacher self-efficacy survey results with those of the teacher adoption survey and classroom observation results. No formal query into the reasons for not completing the surveys was undertaken.

The scores for the teachers who returned the survey and were formally observed ranged from a minimum score of 36 to a maximum score of 83. The mean self-efficacy score for the population of interest was 64. This score represents a moderate level of teaching self-efficacy. The raw data from the teacher self-efficacy survey are reported in Table 3.

Teacher Adoption Survey

Results of 17 of the 19 returned surveys from eligible high school physical education teachers in the district were used in the analysis. Of the teachers who returned the survey and were formally observed, the score results ranged from a minimum of 194 to a maximum of 275. The mean observation score for the teacher adoption survey was 236. This means there was a moderate to high level of purported adoption of *Project ESCAPE 25-Alive* in the school district. The raw data from the teacher adoption survey are reported in Table 3.

Table 3 Summary of Teacher Scores

<i>Teacher ID</i>	<i>Self-Efficacy Score</i>	<i>Adoption Score</i>	<i>Observation Score</i>		
			1	2	3
3	76	258		22	28
4	56	244	0	0	0
7	52	201	.	0	16
9	69	237	.	.	28
11	60	246	0	17.4	6
13	83	275	0	11.6	11
14	75	237	0	0	0
15	56	236	.	12	0
16	59	222	0	0	.
17	63	240	0	0	.
20	67	261	.	.	6
21	74	228	2	.	.
22	36	275	0	11.6	11
23	63	206	0	.	.
24	62	194	0	0	0
26	76	272	0	10.2	0
27	61	218	.	0	.
Mean Scores	64	238.23	0.18	6.52	8.83

Correlations

To examine the relationships between teacher adoption, teacher self-efficacy, and class observation score, a simple correlation analysis was done to compare the teacher adoption and teacher self-efficacy survey scores across the classroom observation period. The Pearson Correlation Coefficient was calculated to help determine each correlation. In the first observation it was found that there were no significant positive correlations between the teacher adoption and self-efficacy scores. The class observation scores obtained during the first observation period are presented in Table 4.

Table 4 Observation 1 Correlations

		Correlations		
		Observation 1	Self-Efficacy Score	Adoption Score
Pearson Correlation	Observation 1	1.000	.253	-.146
	Self-Efficacy Score	.253	1.000	.022
	Adoption Score	-.146	.022	1.000
Sig. (1-tailed)	Observation 1	.	.226	.334
	Self-Efficacy Score	.226	.	.474
	Adoption Score	.334	.474	.
N	Observation 1	11	11	11
	Self-Efficacy Score	11	11	11
	Adoption Score	11	11	11

The results of the correlation analysis from the second observation were similar to those of the first observation with one exception. There was a significant correlation between the teacher adoption score and the class observation scores. The Pearson correlation coefficient for this relationship was 0.642 with a significance level of 0.009 (See Table 5). The reason for this significant correlation may be due to the fact that the number of number of teachers who both completed the surveys and were observed in the classroom increased from 11 to 13.

Table 5 Observation 2 Correlations

		Correlations		
		Observation 2	Self-Efficacy Score	Adoption Score
Pearson Correlation	Observation 2	1.000	.192	.642
	Self-Efficacy Score	.192	1.000	.239
	Adoption Score	.642	.239	1.000
Sig. (1-tailed)	Observation 2	.	.264	.009
	Self-Efficacy Score	.264	.	.215
	Adoption Score	.009	.215	.
N	Observation 2	13	13	13
	Self-Efficacy Score	13	13	13
	Adoption Score	13	13	13

At the third observation it was found that no significant positive correlations existed between the teacher adoption and self-efficacy scores and the class observation scores obtained during the third observation period (See Table 6). One potential reason for this lack of significance could be due to the decrease in the sample size of the number of teachers who were both observed in the classroom and completed both surveys (n=12).

Table 6 Observation 3 Correlations

		Correlations		
		Observation 3	Self-Efficacy Score	Adoption Score
Pearson Correlation	Observation 3	1.000	.119	.077
	Self-Efficacy Score	.119	1.000	.220
	Adoption Score	.077	.220	1.000
Sig. (1-tailed)	Observation 3	.	.356	.406
	Self-Efficacy Score	.356	.	.246
	Adoption Score	.406	.246	.
N	Observation 3	12	12	12
	Self-Efficacy Score	12	12	12
	Adoption Score	12	12	12

Limitations

The present study had a number of limitations. First, only one school district took part in the evaluation, as that was a limit of the extent of the grant. Because of this, the sample was relatively homogenous, which limits the generalizability of the findings. Second, the *Project ESCAPE 25-Alive* program was implemented district wide. This level of implementation did not allow inclusion of a comparison/control group. Thus the degree of change in health promoting physical activity level directly attributable to *Project ESCAPE 25-Alive* could not be quantified in a controlled trial.

Another limitation was that of the unforeseen changes in the observation plan. Because of unanticipated changes in the observation schedule by district officials and staff changes within the schools, different teachers were observed during the pre-selected class periods at different points in the evaluation process due to teacher absence on the day of observation. Another reason the same teachers and classes were not consistently measured was because of unanticipated events in the individual schools such as a class being cancelled due to a lack of air-conditioning or a teacher being absent during the scheduled observation period.

Discussion

Project ESCAPE 25-Alive was designed to both influence and change the way physical education was conducted in the school district. The present study was designed to see what effect the level of teacher adoption of *Project ESCAPE 25-Alive* and teacher self-efficacy had on the health promoting physical activity level of students. Most

would probably agree that teachers with high self-efficacy in regard to their teaching ability and those who both agree with and realize the importance of physical activity and nutrition would teach in a manner in which students would be encouraged participate in high levels of health promoting physical activity. However, in the school district included in the present study, this was not evident through the first observation.

The data from the first observations suggest that initially, some of the physical education teachers conducted classes that offered little instruction that resulted in the opportunity for students to exercise at a moderate to vigorous level of physical activity as reported by the external class evaluators. When the relationship between the levels of adoption and teacher self-efficacy were compared in relation to the observed activity levels of the students at the time of the first observation, there were no significant positive correlations among any of the factors.

At the time of the second class observations, as the level of activity increased to a point where more students were in engaging in what could be considered health promoting physical activity, the correlation between teacher adoption and observed activity level did increase. This suggests that with time (a key construct in the Diffusion of Innovations theory [Rogers, 1995]), the improvement could be due to adoption. But this is only a suggestion, because the level of program adoption was not determined at the time of the observations.

An unexpected finding was that of the correlation between teacher adoption and teacher self-efficacy, and the class observation score during the third observation. Both of the surveys were distributed prior to this observation. Most were completed within

three weeks of the final observation. The lack of significant correlations and the relatively low levels of correlation in this instance suggest that there were no positive relationships in this sample between the purported level of teacher adoption, teacher self-efficacy and the health promoting physical activity levels of the students.

While there were almost no significant positive correlations in this study, these findings do not imply the study was without merit. Over time there was an increase in the observed levels of health promoting physical activity amongst the students of the San Antonio Independent School District. This suggests that *Project ESCAPE 25-Alive* did have a positive impact on the way physical education classes were being conducted in the school district. With continued observation and training of teachers, the levels of health promoting physical activity should continue to rise. However, the true test of the impact of *Project ESCAPE 25-Alive* will be seen over time, as both the teachers and students exposed to the program age and incorporate a consistent level of health promoting physical activity into their future classes and lives.

CHAPTER IV

CONCLUSION

The purpose of this research was to provide evidence of effectiveness of *Project ESCAPE 25-Alive*, more precisely the purpose was to examine the relationships among levels of teacher adoption of the *Project ESCAPE 25-Alive* program, self-efficacy of the physical education teachers related to the implementation of *Project ESCAPE 25-Alive* program, and the observed changes in the health promoting physical activity level of the students. In this chapter, the study is summarized, findings and conclusions that appear warranted are presented and recommendations for additional research are offered.

Summary

Childhood overweight and obesity are among the fastest growing epidemics facing the United States today. In 1970, 6.5% of U.S. children between ages 6 and 11 were considered overweight, and in 2000 this number rose to 15.3%. Research with adolescents, aged 12 to 19, showed similar trends (Center for Health and Healthcare in Schools, 2005).

Because of these increasing rates in childhood overweight and obesity, *Project ESCAPE 25-Alive* program was developed by a large urban school district in the southwestern United States. This program, district officials theorized, would change the way physical education was taught in the schools, ultimately resulting in a reduction of overweight and obesity among the students. To achieve the goal, the staff of the school district, through the *Project ESCAPE 25-Alive* program, revamped the secondary

physical education program in order to meet the state and national physical education standards by developing strategies, implementing activities, and improving the emotional and physical health for the targeted population.

As part of this research study, two research questions were asked. Was there a significant change in health promoting physical activity level of the students exposed to the *Project ESCAPE 25-Alive* program in the second year of the program? And second, what was the relationship between the level of teacher adoption, teacher self-efficacy, and the health promoting physical activity levels of the students exposed to the *Project ESCAPE 25-Alive* program?

In order to answer the first question, the researcher, in collaboration with other evaluators and school district officials, identified some basic measures of improvement that are at the core of the *Project ESCAPE 25-Alive* program. These measures included the amount of time students actually spent being physically active in P.E. class, the level of exertion of students as observed in P.E. class, and the types of activities taught by teachers that both relate to the state and national requirements and are enjoyed by the students.

Over the course of one academic school year, 42 formal classroom observations were made throughout the eight district high schools. The data collected as part of the class observations were of particular interest, as it appears that initially, some of the physical education teachers conducted classes which resulted in a lack of opportunity for students to exercise at a moderate to vigorous level.

The subsequent class observations yielded significant increases in the observed levels of physical activity exhibited by the students. This is most evident when comparing the class activity level scores. During the first observation, only the students in one physical education class exhibited physical activity which resulted in a calculable observation score. Data from the second observation period indicate that six of the classes exhibited activity levels which resulted in calculable activity level scores and this number increased to seven observed classes at the third observation.

The results, which yielded the answer to the second research question (What is the relationship between the level of teacher adoption, teacher self-efficacy, and the health promoting physical activity levels of the students exposed to the *Project ESCAPE 25-Alive* program?) are of particular interest. First, there were almost no significant correlations (or relationships) in this aspect of the study. The one significant positive relationship that was found was the correlation between teacher adoption and teacher self-efficacy with the class observation score in the third observation. It should be noted that both of the surveys were distributed prior to this observation and most were completed within three weeks of the final observation.

Overall, the lack of significant correlations and the relatively low levels of correlation in this study suggest that there were no relationships among the levels of teacher adoption, teacher self-efficacy and the health promoting physical activity of the students as determined by the class observations. However, these findings do not mean the study was without merit. Over time there was an increase in observed levels of health promoting physical activity in the district, which suggests that *Project ESCAPE*

25-Alive did have a positive impact on the way physical education classes were run in the school district.

With continued observation and training of teachers, the levels of health promoting physical activity should continue to rise. However, the true test of the impact of *Project ESCAPE 25-Alive* will be seen over time, as both the teachers and students exposed to the program age and incorporate a consistent level of health promoting physical activity into their future classes and lives.

Limitations

This study had a number of limitations. First, only one school district took part in the evaluation, as that was a limit of the extent of the grant. Because of this, the sample was relatively homogenous, which limits the generalizability of the findings. Second, the *Project ESCAPE 25-Alive* program was implemented district wide. This level of implementation did not allow for the development of a control or comparison group. Thus the degree of change in health promoting physical activity level directly attributable to *Project ESCAPE 25-Alive* could not be quantified in a controlled trial.

Another limitation was that of the unforeseen changes in the observation plan. Because of unanticipated changes in the observation schedule by district officials and staff changes within the schools, different teachers were observed during the pre-selected class periods at different points in the evaluation process. Another reason the same teachers and classes were not consistently measured was because of unanticipated events in the individual schools such as a class being cancelled due to a lack of air-conditioning or a teacher being absent during the scheduled observation period.

Recommendations

Evaluation is by no means an easy or simply standardized process when conducted in an active school district. Based upon the findings and conclusions from the present study, the following recommendations are offered based on the three components of the study model: level of teacher adoption, level of teacher self-efficacy, and classroom observation.

In regards to the teacher adoption levels, the instrument needs to be revised in the third year of the program to measure the degree of adoption of *Project ESCAPE 25-Alive*, not the intent to adopt. The data obtained from this modified survey, when coupled with the class observation data will “paint” a truer picture of the changes in the school district and the impact of *Project ESCAPE 25-Alive*.

The teacher self efficacy survey needs to be modified and expanded to ensure that a proper measure of teacher self-efficacy is obtained from the survey. While the reliability coefficients were decent (a Cronbach Alpha of 0.68), changes may increase the reliability of the instrument in assessing teacher self-efficacy.

Finally, the classroom observation process needs to be modified to remove the observation effect. That is the classroom observations need to be made more frequently and be unannounced so that the teacher is not inclined to modify the activity that day to appeal to the evaluators.

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APPENDIX A
TEACHER ADOPTION SURVEY



“Twenty Five Alive” Adoption Survey 2005 Carol White Physical Education for Progress “PEP Grant” Texas A&M University



For the purpose of this survey, **“Twenty Five Alive”** refers to a new strategy of the “2005 Carol White Physical Education PEP Project ESCAPE Grant” program that promotes physical activity and nutrition among San Antonio I.S.D. middle school and high school students.

Please clearly mark one circle that best reflects your answer. Please note when there are **two** answers requested.

1. I believe one of the advantages of “Twenty Five Alive” is to...					2. How important is it for you to be able to...				
Strongly Agree	Agree	Disagree	Strongly Disagree	I’m Not Sure	Extremely Important	Important	Not Very Important	Not Important At All	I’m Not Sure
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. How compatible is the following statement with your personal standards?						4. How consistent is the following statement with your professional standards?				
Strongly Agree	Agree	Disagree	Strongly Disagree	I'm Not Sure		Strongly Agree	Agree	Disagree	Strongly Disagree	I'm Not Sure
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	f. My physical education instruction should be aligned with the state's physical education standards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. How easy or difficult is it for you to...					8. How important is it for you to be able to...						
Very Easy	Somewhat Easy	Somewhat Difficult	Very Difficult	I'm Not Sure			Extremely Important	Important	Not Very Important	Not Important At All	I'm Not Sure
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		a. increase the physical activity level among youth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		b. increase understanding among youth of the benefits of improving nutrition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		c. assure that all SAISD students are able to develop a personal fitness plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		d. assure that all SAISD students are able to develop a personal nutrition plan..	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		e. assure that all SAISD students decrease television time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		f. align your physical education instruction with the state's physical education standards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. How much do you agree with the following...					10. Before you consider adopting "Twenty Five Alive," how important is the following...						
Strongly Agree	Agree	Disagree	Strongly Disagree	I'm Not Sure			Extremely Important	Important	Not Very Important	Not Important At All	I'm Not Sure
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		a. I have seen or heard of other physical education teachers in SAISD adopting "Twenty Five Alive" into their school's curriculum.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. How likely are you to...					
Extremely Likely	Somewhat Likely	Not Likely	Not Likely At All	I Already Do	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a. adopt "Twenty Five Alive" into your physical education curriculum.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b. attend in-service training designed to promote the "Twenty Five Alive" program.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c. align your curriculum with the state physical education standards.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d. focus your instruction on good nutrition, a reduction in television watching, and daily physical education.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e. assure that all of your students participate and are more active during physical education class time.

12. Which best describes your professional practice?

- ☐ Middle school physical education teacher
- ☐ High school physical education teacher
- ☐ Other _____

13. Are you male or female?

- ☐ Male
- ☐ Female

14. What is your age? _____

15. What year did you start your teaching career? _____

16. Which of the following best describes you?

- ☐ White
- ☐ African American/Black
- ☐ Hispanic
- ☐ Asian, Oriental, or Pacific Islander
- ☐ American Indian or Native American
- ☐ Other (Please Name) _____

APPENDIX B
TEACHER SELF-EFFICACY SURVEY

“Twenty Five Alive” Teacher Self-efficacy Survey **Texas A&M University**

A number of statements about teaching physical education are presented below. The purpose of this survey is to gather information regarding the attitudes of educators concerning these statements. There are no correct or incorrect answers. We are interested only in your frank opinions. Your responses will remain confidential.

INSTRUCTIONS: Please indicate your personal opinion about each statement by filling in the circle under the appropriate response at the right of each statement.

	Strongly Disagree	Moderately Disagree	Disagree slightly more than agree	Agree slightly more than disagree	Moderately Agree	Strongly Agree
1. When a student does better than usual, many times it is because I exert a little more effort.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I have enough training to deal with almost any learning problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. When a student is having difficulty with an activity, I am usually able to adjust the assignment his/her level.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. When a student gets a better grade than he/she usually gets, it is usually because I found better ways of teaching that student.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. When I really try, I can get through to most difficult students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Teachers are not a very powerful influence on student achievement when all factors are considered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>


APPENDIX C
CLASS OBSERVATION FORM

CLASS OBSERVATION SHEET

School: _____ Class Period: _____ Date (MM/DD/YY) _____

Teacher(s): _____,
(e.g. Mr. Smith or Ms. Smith)

Observer: _____

- | | |
|---|--------------|
| 1. How many teachers were present?
(Including student teachers, aids, and other adults) | 1. _____ |
| 2. Were there any substitute teachers? (Circle one) | 2. Yes or No |
| 3. How many students were present today? | 3. _____ |
| 4. How many students took part in today's activity? | 4. _____ |
| 5. Were there any unplanned interruptions in class today?
(If yes please detail in the notes section) | 5. Yes or No |
|  6. What time did class begin? | 6. _____ |
| 7. What time did class end? | 7. _____ |

Notes:

Ask the teacher what TEKS requirements were used and/or met today?

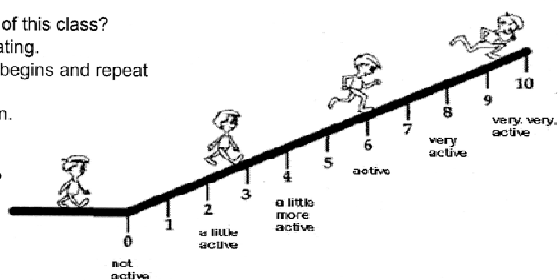
CLASS OBSERVATION SHEET

Observation of Activity Level of Participants

How would you rate the health promotion activity level of this class?

- Do not include those students not participating.
- Begin taking observations when the class begins and repeat every 2 minutes.
- Please fill in all blanks on each observation.
- Please be as specific as possible.

8. What time did the observations begin?



Every 2 Minutes	Level of Intensity	Type of Activity	Number of Students Engaged	Number of Students Not Engaged
Observation 1				
Observation 2				
Observation 3				
Observation 4				
Observation 5				
Observation 6				
Observation 7				
Observation 8				
Observation 9				
Observation 10				
Observation 11				
Observation 12				
Observation 13				
Observation 14				
Observation 15				
Observation 16				
Observation 17				
Observation 18				
Observation 19				
Observation 20				
Observation 21				
Observation 22				
Observation 23				
Observation 24				
Observation 25				

APPENDIX D
STUDENT SELF REPORT FORM

STUDENT SELF REPORT FORM

School: _____ Class Period: _____ Teacher(s): _____

Please answer each of these questions to the best of your ability.

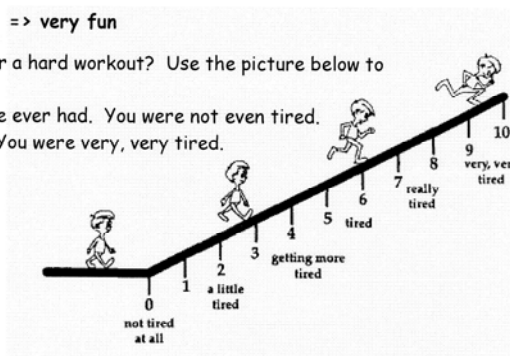
1. What is your age? _____
2. Are you? (Circle One) Male Female
3. Did your heart rate reach 125 or higher today? (Circle One) Yes No
4. Today's physical education class made me feel?
not so good <= 1 2 3 4 5 => really good
5. Today's physical education class was?
very boring <= 1 2 3 4 5 => very fun

6. Was today's physical education class an easy workout...or a hard workout? Use the picture below to rate the class from 0 to 10, where

- 0 means this class was the easiest PE class you have ever had. You were not even tired.
- 10 means this class was the hardest PE class ever. You were very, very tired.

Circle one:

0 1 2 3 4 5 6 7 8 9 10



VITA

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